Effects of FDI & Remittances on the International Migration and Tourism from Asian Countries to Japan

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ABSTRACT

The main thrust of this paper to investigate and identify the effects of FDI and remittances on international migration & tourism from Asian countries to Japan. Secondary data was used to examine the effect of FDI and Remittances by use of gravity models with panel data analysis. This analysis indicates that FDI & Remittances positively correlated with migration and tourism and considered effective and efficient.

KEYWORDS: FDI, International Migration, Tourism, Remittances

JEL CLASSIFICATION: F21, F22, F24, L83

1. INTRODUCTION

Japan and most of the Asian counties have a long history especially in terms of migration and tourism, which has had a significant impact on their economic, social, and demographic development. However, recently, this has had unequal impact and diversity on the two regions, raising an alarm. Currently, FDI, international migration, tourism, and remittances are being known to be the structural features of this particular region. Japan has had very good relations with majority of the Asian nations, which is characterized by inflows of foreign capital. This coalition between Japan and the ASEAN member states was first initiated in the year 1973. Initially, the coalition was started to settle business disputes arising from the production of synthetic rubber. However, the first significant coalition was the Fukuda Doctrine of 1977, which laid emphasis on the significance of the economic cooperation between Japan and Asia. Since then, Japan has had cooperative relationships with Asia as a whole, both economically and politically, and that has deepened their economic interdependence over time. It is this gradual relationship that motivated this research.

In 2015, the AEC (ASEAN Economic Community) was developed with the aim of enhancing economic integration and the performance of the production network in general. Further, AEC seeks to reduce trade costs, hence, creating a larger integrated market. In return, this larger and unified market has opened better business opportunities that are likely to attract foreign direct investments (FDI). Nonetheless, despite its imminent success, like any other organization, AEC has its weaknesses. They include insufficient labor movement freedom, poor trade liberalization, and unavailability of rules to govern the procurement. Studies conducted previously have suggested that FDI is positively associated with an increase in the productivity of the host countries through the creation of better business opportunities.

The Japan-Asia relationship has been strengthened by FDI, migration, tourism, remittances and government support. These have been said to be the prominent boosters of external source of finance for this coalition. This has resulted to a close relationship between private enterprises and official development assistance (ODA). This relationship is a reflection of the classical comparative

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Japan Social Innovation Journal, Vol. 9, No. 1, 2020

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advantage which plays a very paramount role in economic integration between Japan and Asian countries.

In relevance to the viewpoint, this paper empirically investigates the conceptualization of effects of FDI and remittances on the economic integration in terms of international migration and tourism. The research question was: What is the effect of FDI and remittances on international migration and tourism from Asian countries to Japan? This paper tends to utilize the variables population, distance and GDP, FDI and remittances to estimate the gravity models. In general, this paper tends to furnish the concept of FDI, remittances, international migration and tourism in the context of Japan-Asia relationship.

The relationship between FDI and remittances and other explanatory variables were trying to attempt parameters of effect on international migration and tourism from seven Asian countries to Japan. The relationship between these variables were investigated by use of OLS using gravity models. The strength of effect was investigated using panel data analysis.

2. LITERATURE REVIEW

Recent empirical studies indicate that there are significant relationships between FDI, remittances and economic growth for both developed and developing countries. FDI creates employment opportunities and increases welfare by enabling build-up of physical capital, developing productive capacity, enhancing skills of local labor through technology transfer and managerial know-how, and integrating the domestic economy with the global economy (Liang, 2017; Melane-Lavado, Álvarez-Herranz and González-González, 2018). The implication of remittances is the same as foreign direct investment and private capital inflows to support economic growth. (Calin-Adian comes et al 2018).

The stage of domestic development and international migration are not independent but rather are interdependent. Remittances have been known as a key developmental vehicle associated with migration. Remittance flows have gradually increased in volume from the 1990s to the present day. After a year of decline by 1.6 per cent in 2016, international remittances to low- and middle-income countries increased by 8.8 per cent in 2017. An increase in the rate of migrate remittances in the origin country also influences migration abroad & tourism also. For instance, the World Bank projected that remittances to these countries would grow by 10.8 per cent by the end of 2018 and later estimated that they had increased by 9.6 per cent to reach USD 529 billion in 2018 (World Bank. 2018a).

Historically, FDI has been showed to follow the paths of migrants just as much as it does differences in education, tax rates, and productivity etcetera. For instance, as Burchadi, Chaney, and Hassan (2016) state, “for the average US county, doubling the number of individuals with ancestry from a given origin country increases by 4 percentage points the probability that at least one firm from this US county engages in FDI with that origin country, and increases by 29% the number of local jobs at subsidiaries of firms headquartered in that origin country.” That could explain why FDI is positively correlated with migration and tourism.

Despite the fact that FDI is one of the most significant indicators of growth in international production, it accounts for less than 20% of the total investment in any foreign investment (Balasubramanyam, Salisu & Sapsford, 1996). However, the volume and efficiency of FDI is usually dependent on whether a country is keen on export promotion or import substitution policies. According to Lall and Narula (2004), the quality of FDI differs due to cross-border operations, leeway in the proficiency and scope of FCFs, strategies and scope of MNE operations and nature of firm-specific assets accessed/possessed by the FCFs. Since time in memorial, FDI has been considered to propel economic growth of countries facing huge gaps of resources such as Japan and Asia countries. This is because they lead to productivity, market competition and innovation through exchange of skills, expertise, resources and technology.

Japan is among the most densely populated countries in the world. In fact, it is the 10th populous nation

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Japan Social Innovation Journal, Vol. 9, No. 1, 2020

in the world covering an approximate area of 377,973 kilometer square (GSI, 2018). Recently, Japan has risen to be one of the major economic powers in the world. This has been attributed to the large working labor force, supportive government, highly skilled and educated labor force and advanced technology. Due to the rising economic growth, the living standards of the Japanese citizens has increased to almost the same level as those of the United States of America.

The Japanese FDI in Asia started to increase rapidly in the late 1960s. This could perhaps be explained by both internal factors in Japan such as a reduction in the marketability of Japanese products and external factors in Asia. In 1970, Japan shifted their concentration to Asia newly industrializing economies (NIEs) to secure an export base following the NIEs export promotion policies. In 1981, a number of direct investments related to natural resources were assumed in the developing countries in Asia resulting to a significant increase in the Japanese economy. The portion of manufacturing of Japanese FDI in Asia has been diminishing over time but it is still larger than the corresponding shares for Japanese FDI in other parts of the world as it can be seen in the table 1 below.

Table 1: Japanese FDI in Asia: Cumulative Reported Amount (in million U.S. dollars), 1951-89

	Asia		NIEs		ASEAN		World	
Sector	Amount	Share	Amount	Share	Amount	Share	Amount	Share
Food	1,049	2.6	685	3.4	301	1.7	3,266	1.3
Textiles	1,569	3.9	433	2.2	1,003	5.7	3,203	1.3
Wood & pulp	450	1.1	50	0.3	385	2.2	2,654	1
Chemicals	2,077	5.1	1,307	6.6	712	4.1	8,649	3.4
Metals	2,578	6.4	449	2.3	2,072	11.8	9,261	3.6
General mach	1,387	3.4	774	3.9	543	3.1	6,479	2.6
Electric mach	3,348	8.3	1,637	8.2	1,447	8.3	14,676	5.8
Trans.Mach	1,326	3.3	625	3.1	622	3.5	9,009	3.5
Other manu-fac	1,807	4.5	929	4.7	739	4.2	8,932	3.5
Manufac. Total	15,591	38.5	6,891	34.6	7,824	44.6	66,127	26.9
Agri-forestry	297	0.7	46	0.2	236	1.3	1,205	0.5
Fishing	177	0.4	8	0.04	119	0.7	6,78	0.3
Mining	7,124	17.6	14	0.07	6,997	33.9	15,211	6
Construction	643	1.6	375	1.9	257	1.5	2,089	0.8
Commerce	2,575	6.4	2,077	10.4	439	2.5	25,159	9.9
Finance	3,588	8.9	3,054	15.3	514	2.9	57,271	22.6
Services	4,815	11.9	3,617	18.2	540	3.1	23,375	9.2
Transportation	982	2.4	901	4.5	58	0.3	15,268	6
Real estate	2,351	5.8	1,957	9.8	297	1.7	34,742	13.7
Others	1,632	4	493	2.5	121	0.7	7,515	3
Nonmanufac.	24,184	59.8	12,542	63	9,577	54.6	182,514	71.9
Branches	628	1.6	473	2.4	118	0.7	4,659	1.8
Real estate	37	0.1	14	0.07	13	0.07	5,95	0.2
Total	40,465	100	19,919	100	17531	100	253,896	100

Source: National Bureau of Economic Research, University of Chicago Press, Volume 2, 1993, p.280

The geographical location of Japan does not allow them to practice agriculture. However, the amount of farmland that is available is too small to feed its large and growing population. Additionally, Japan lacks a significant amount of raw materials which are important for its industries and energy. It is for this reason that Japan is less competitive in energy intensive industries and agricultural products. To solve this problem of insufficiency, Japan has been importing most of its food products as well as food products from Asia as an effect of the FDI. Japan then uses its trade surpluses obtained from the import of manufactured goods such as electronic equipment and automobiles to pay for its trade deficits with Asia (Paul, James & Fortmann, 2005). It is for this reason that Japan upholds international trade with

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Asian countries.

According to Fontagne (1999), globalization has proven to be an important trend in the global economy. The connection between FDI and trade are said to be the main significant characteristic of globalization. This relationship between FDI and international trade can be analyzed at microeconomic, macroeconomic and industry levels. For Japan and Asia, the effect of trade and FDI on economy is more significant. Japan's rapid economic growth is characterized by high degree of dependence on international trade and high flows of inward FDI. According to World Bank (2018), Japan is considered the world's 4th largest exporter and importer.

According to Glass A.J. (2008), multinational activities are divided into two: Horizontal and vertical FDI. Horizontal FDI is when a firm invests in the same business in an overseas that it operates in its home country. Vertical FDI on the other hand, is when a company in a totally different business abroad as compared to its operations at home. These two types of FDI have distinctive impact on international trade. It is important to note that Japan has been classified as one of the nations with equal income among its citizens as a result of FDI and MNCs.

Other than effects such as employment, transfer of skilled labor and exports, the most significant effect of FDI on the international trade between Japan and Asia is that FDI have helped maintain or capture local and regional markets. Additionally, Japanese FDI in Asia is the leading cause of regionalization of foreign trade in Asia which has resulted to economic development of Asian countries.

Migration is the movement of people from one region to another, in this case from Asia to Japan (Thapan, 2008). However, in the case of Asia and Japan, international labor migration (ILM) is of economic origin. In that, it was as a result of the "push" and "pull" forces trying to create a balance between capital and labor. Often, scholars suggest that this movement from Asia to Japan ("flock of flying geese") is a world economic development pattern (Freeman and Mo, 1996). The ILM from Asia to Japan began in the 1960s and 1970s. The first wave of the Japanese FDI hit majority of the Asian NIEs in the early 1980s. Japan was experiencing a shortage of labor and hence a large number of illegal workers moved in to meet the needs of firms as well as fill the vacancies of the tangent workers. Majority of these workers were uneducated and unskilled. In the years 1992, Japan started importing contract workers from Southeast Asia. According to Vernon (1966), developed countries tend to be the source of FDI in third world countries. This could perhaps explain the ILM effect of Japanese FDI in Asia.

FDI has direct or indirect impact on ILM. The direct impact is creation of job opportunities while the indirect/long term effect is economic development (Sauvant et al., 1993; UN, 1996). Main reason behind the short term effect of the FDI on ILM is the fact that, it reduces financial constraints by providing better employment opportunities thus prompting poverty driven workers to move abroad (To Japan). According to Dunning and Narula (1996), the relationship between FDI, ILM and economic development can be explained by the investment-migration-development path (IMDP) which is shown in figure 1 below where the NOI is the FDI and NOM is the ILM.

Figure 1: The Investment-Migration-Development Path

Travel and tourism industry are one of the world's largest sectors in the 21st century owing to globalization (Lee & Brahmastreene, 2013). Annually, Japan accommodates more than 30 million tourists from different countries including Asia. Recently, Japan and Asia as a whole have been experiencing a tourism boom owing to the many tourist destinations. This increasing number of tourist arrivals has resulted into an increase in the demand for food and accommodation. FDI being a major source of capital, has provided the necessary capital and infrastructure to meet this demand (Samimi et al, 2013). It is for this reason that they have partnered with Trip Advisor to help advertise and control the massive number of tourists.

The relationship between FDI and international tourism between Asia and Japan is rather strong. Empirical studies have suggested that FDI has both direct and indirect effects on tourism. Directly, FDI has increased the productivity levels and hence enhancing tourism ((Rappaport, 2000). These studies have drawn that FDI has only positive impact on the tourism industry. Indirectly, through the FDI, workers originating from Asian countries to Japan tour the country and increase the percentage of local tourists significantly.

Remittances are the amount of funds sent by foreign workers to friends and families in their home country (World Bank, 2012). Remittances have been considered to be very vital in the economic development of countries all around the globe, especially since they are responsible for poverty eradication and foreign exchange reserves (Adams et al, 2005). The amount of global remittances in 2018 was estimated to be US\$642 billion.

Citizens from different countries in Asia travel to Japan in search of better employment and security annually (ILO,2014) as a result of the FDI. Majority of them leave their families behind with the promise that once they are employed they will help with the family burden of poverty. The Japanese FDI creates a favorable policy for these workers to send to their loved ones in their home country.

3. RESEARCH METHODOLOGY

3.1 Data and Sources

The secondary data used in this study was obtained from OECD, World Bank and Statistics of Japan database. The main data variables were Japanese GDP, population index, passengers, distance,

migration, FDI and remittances for the countries: Philippines, Vietnam, India, Korea, Indonesia, Thailand, and China for the years 2000 to 2015. These countries were selected because they have a very close interaction with Japan. The dependent variables were migration and passengers while all the rest were explanatory variables.

3.2 Variables Used

3.2.1 Gross Domestic Product (GDP)

The values of gross domestic product (GDP) provided are annual estimates. The values are time-variant variables obtained from they were found from reliable sources such as national statistical databases. The estimate values of the GDP represent gross values for the entire country given in US dollars for easy comparison. Gross domestic product is generally a measure of a country's economic size. Consequently, nations having high GDP values are presumably considered to have greater trade flows with one another compared to nations with lower values.

3.2.2 Population

Similarly, all the countries' population estimates were obtained from statistics in OECD Factbook as well as national statistical databases. Similar to GDP, population is also a variable that is time variant and ought to be positively correlated with trade inflows since larger populations have expanded markets that lead to the development of expansive trade flows with one another. Besides, in countries with big populations, large economies produce an extensive variety of trading products, which may result in reduced needs for imports from foreign countries.

3.2.3 Distance

As a time invariant variable, distance does not change over the study period hence remains constant unlike other variables. Distance is often used in the gravity model of trade to act as a proxy for values of transaction costs for bilateral trades. As a result, longer distances between two nations tend to reduce the extent of trade existing between the countries, since trade costs are presumably high. However, measurements of distances between countries is often challenging since not all regions from which the measurements are directly taken may have similar economic factors. Data on the distance (in kilometer) between Tokyo International airport *i* (capital of Japan) and other capital city's airport of country *j* are obtained from a Website: <https://www.distancefromto.net/>.

3.2.4 Migration and Remittance

Migration and remittance are also other time variant variables. The estimates for migrations were obtained from national statistics especially from migration administrative departments of each country. This was accessed from online databases of the migration departments of the selected countries under study. Besides, the World Bank in collaboration with various institutions from member states facilitated the access of data on migration and remittance. The estimate values of the remittance for the entire country given in US million dollars for easy comparison. The rising number of diasporas of Japan from the selected thirteen countries has significantly led to higher rates of remittance. It is presumed that this rising number correlates with increased bilateral trade flows that this study explores.

3.2.5 Passengers & Foreign Direct Investments (FDI)

Visitor Arrivals to Japan are calculated based on the numbers of travelers of selected 7 foreign nationalities yearly entering Japan provided by the Ministry of Justice. Data is collected from Japan National Tourism Organization (JNTO).

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Foreign direct investments (FDI) also time variant variables. The data for FDI were obtained from national statistics from the departments of finance and other institutions of finance. Besides, the World Bank in collaboration with other institutions provide data on FDI net flows between countries in their databases. The estimate values of the FDI for the Japan to other countries given in US million dollars for easy comparison. The data the net flows of FDI are often presented on net decreases or net increase bases. With the rise in the spirit of globalization, it is assumed that the rise in FDI's correlates with bilateral trade flows, which the study explores using the gravity model of migration.

The below appendix shows how the dependent variables and years vary with each country. Table 2 below gives the summary statistics of these variables. From this table, it can be observed that the mean of the population for the countries (i) & (jp) involved was 433.07 and 127.54 million respectably. The average GDP for (i) & (jp) between the years 2000 and 2015 was 4811.54 & 38731.07 US\$ respectably. The maximum and minimum values of passenger were 4993689 and 9964 persons. On average the distance between the countries was 3790.97 km. The highest value of migration was 687156 while the lowest was 10064. On average, the remittances were 974.31 million with a median of 173.50. The Std. Dev. Of FDI is 2728.96.

Table 2: Summary Statistics of Study Variables

	Pop (i) million	Pop (jp) million	GDP (i) (current US\$)	GDP jp (current US\$)	Distance (km)	Number of Passeng ers	Number of Migratio n	Remittan ces (US\$ mil lion)	FDI (US\$ mil lion)
Mean	433.07	127.54	4811.54	38731.07	3790.97	538390.40	210223.10	974.31	2296.68
Media n	92.35	127.55	2009.81	37899.07	3731.86	110266.50	42718	173.50	1135.03
Maxim um	1371.20	128.10	27811.37	48603.48	5908.62	4993689	687156	4394	13480.26
Minim um	47.00	126.90	388.27	32289.35	1228.11	9964	10064	48	85.39
Std. Dev.	525.94	0.30	6718.04	4714.40	1666.62	880121.80	242030.60	1247.90	2728.96
Observ ations	112	112	112	112	112	112	112	112	112

Source: Author's' Calculation

3.3 Empirical Models

There are mainly four gravity models that are to be estimated using the panel data collected. They are as presented below, where $M_{i,j}$ – Migration, $D_{i,j}$ – Distance, $POP_{i,j}$ – Population (cross term representing total events in zones j), $GDP_{i,j}$ – GDP (cross term representing total events in zones i), $P_{i,j}$ – Passengers, $F_{i,j}$ – FDI, and $R_{i,j}$ – Remittances. The independent variables were FDI, Japanese GDP, population index, remittances, and distance. All other variables were dependent variables. Appendix-1 gives shows a graphical presentation of four key variables per country, over the selected period of study. It is important to note that the gravity models are simply log transformations of multiple regression equations as shown below.

Equation for Migration with FDI

$$M_{i,j} = \alpha_{11} \left(\frac{GDP_{i,j} * POP_{i,j}}{Dist_{i,j}^2} \right) + \alpha_{12} * FDI$$

$$Gravity\ model\ 1: Log[M_{i,j}] = \alpha_{1,j} Log[D_{i,j}] + \alpha_{2,j} Log[P_{i,j}] + \alpha_{3,j} Log[GDP_{i,j}] + \alpha_{4,j} Log[F_{i,j}]$$

Equation for Migration with Remittances

$$M_{i,j} = \alpha_{21} \left(\frac{GDP_{ij} * POP_{ij}}{Dist_{ij}^2} \right) + \alpha_{22} * Rem$$

$$Gravity\ model\ 2: Log[M_{i,j}] = \alpha_{1,j} Log[D_{i,j}] + \alpha_{2,j} Log[P_{i,j}] + \alpha_{3,j} Log[GDP_{i,j}] + \alpha_{4,j} Log[R_{i,j}]$$

Equation for Passenger with FDI

$$P_{ij} = \alpha_{31} \left(\frac{GDP_{ij} * POP_{ij}}{Dist_{ij}^2} \right) + \alpha_{32} * FDI$$

$$Gravity\ model\ 3: Log[P_{i,j}] = \alpha_{1,j} Log[D_{i,j}] + \alpha_{2,j} Log[P_{i,j}] + \alpha_{3,j} Log[GDP_{i,j}] + \alpha_{4,j} Log[F_{i,j}]$$

Equation for Passenger with Remittances

$$P_{ij} = \alpha_{41} \left(\frac{GDP_{ij} * POP_{ij}}{Dist_{ij}^2} \right) + \alpha_{42} * Rem$$

$$Gravity\ model\ 4: Log[P_{i,j}] = \alpha_{1,j} Log[D_{i,j}] + \alpha_{2,j} Log[P_{i,j}] + \alpha_{3,j} Log[GDP_{i,j}] + \alpha_{4,j} Log[R_{i,j}]$$

3.4 Methodology

The panel data analysis on the 4 gravity models above was conducted using the *plm* package in the EViews software. Generally, 3 models were used for estimation for panel data: PEM (Pooled Estimation Model), FEM (Fixed Effects Model) and REM (Random Effects Model). A set of statistical tests that was done for choosing among the three models. That is

- FEM versus PEM where the F test was used to choose between FEM and PEM, i.e., to test if there are fixed effects in data.
- REM versus PEM: The Breusch and Pagan Lagrangian Multiplier Test (LM test) was used to test for random effects.
- REM versus FEM: The Hausman test was used to choose between FEM and REM.

It is important to note that to know the true value of the coefficients of the models, the exponential of the log value was obtained ($e^{\log \text{value}}$). The initial and foremost test involved was to establish the ability of the variables adopted to assume a stationary position. In macro-economics, it is a rare occurrence to have stationary variables due to the constantly changing hypothetical environment especially in relation to the matters of the economy of any given nation. Most variables in macro-economics are thus integrated in the order of zero. However, should we ever establish a stationary variable then it would be easy to estimate the coefficients since the initial specifications of the variables would be available. The estimation can be taken as an autocorrected model where the series are non-stationary but co-integrated. Variables which are not stationary and co-integrated imply that there is a necessity in specifying the variables as differences.

4. RESULTS AND DISCUSSION

4.1 Unit Root Tests

The establishment of the presence of unit roots and determination of the order of integration of the variables was done by the Augmented Dickey-Fuller & Levin, Lin & Chu t^* test. In this test, it is evident that the confirmation of a unit root which always indicates non-stationary variables is bound to acceptance if the variables are at the level of 5% and 1%. This is in proper harmony with the initial assumption made in macro-economics that data series of this kind are often non-stationary. The null hypothesis of the non-stationary data is accepted at the 5% level of significance because the statistics of the ADF test at the same level form two variables that are less than their respective critical values. It was also found that it could not be rejected for the level. The results are represented in the table below.

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Table 3: Unit Root Test Result

Variables	Statistics value		Sig.	Conclusion
Δ (Gdp i)	Levin, Lin & Chu t*	-3.370	0.000	I(1)
	ADF - Fisher Chi-square	29.330	0.009	I(1)
Δ (Gdp jp)	Levin, Lin & Chu t*	-7.401	0.000	I(1)
	ADF - Fisher Chi-square	43.653	0.000	I(1)
Δ (Pop i)	Levin, Lin & Chu t*	-3.352	0.000	I(1)
	ADF - Fisher Chi-square	39.751	0.000	I(1)
Δ (Pop jp)	Levin, Lin & Chu t*	-4.743	0.000	I(1)
	ADF - Fisher Chi-square	26.057	0.026	I(1)
Δ (Dist)	Levin, Lin & Chu t*	-2.882	0.002	I(2)
	ADF - Fisher Chi-square	60.659	0.000	I(2)
Δ (Migration)	Levin, Lin & Chu t*	-1.825	0.034	I(1)
	ADF - Fisher Chi-square	26.074	0.025	I(1)
Δ (FDI)	Levin, Lin & Chu t*	-3.536	0.000	I(1)
	ADF - Fisher Chi-square	45.985	0.000	I(1)
Δ (Remittances)	Levin, Lin & Chu t*	-8.209	0.000	I(1)
	ADF - Fisher Chi-square	58.967	0.000	I(1)

Source: Author's Calculation

4.2 Gravity Model 1

Table 4 below shows the results of the panel data analysis conducted on the gravity model 1. From this table, it can be observed that the p-values of the FEM gravity model necessary to estimate migration were less than 0.05. First, to decide between PEM and REM, the LM test was used, and since the p-value of the test was less than 0.05, the REM model was chosen over PEM. To choose between FEM and REM, the Hausman test was used and the p-value of the test was 0.000. Since it is less than 0.05, the FEM proved to be a better model. According to the FEM results, the coefficient of $\ln FDI$, 0.020, was positive, thus suggesting a positive impact on migration. However, the coefficients of $\ln Pop_{ijp}$ ($p=0.000$), and $\ln Distance$ ($p=0.000$), were statistically significant since their p-values were less than 0.05. And the t-values of $\ln Gdp_{ijp}$ (0.593) is positive showing no reversal in the direction of the effect. The value of the FEM R^2 was 0.999, which meant that the variables FDI , $\ln Pop_{ijp}$, and $\ln Distance$ accounted for 99.9% of the variability in the dependent variable, migration. That could be as a result of the close interaction between FDI , migration, Gdp_{ijp} and Pop_{ijp} .

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Table 4: Results for PEM, FEM & REM Models for Migration with FDI

	Pooling model			Fixed model			Random model		
	Coef.	t-value	p-value	Coef.	t-value	p-value	Coef.	t-value	p-value
Intercept	13.207	12.629	0.000	-21.728	-7.989	0.000	9.497	5.020	0.000
lnGdpijp	-0.609	-5.552	0.000	0.010	0.593	0.554	0.087	1.826	0.071
lnPopijp	-0.187	-3.225	0.002	1.887	11.685	0.000	0.005	0.047	0.963
lnDistance	-0.897	-17.410	0.000	-0.215	-19.301	0.000	-0.283	-7.257	0.000
lnFDI	0.083	1.449	0.150	0.020	4.221	0.000	0.041	1.777	0.078
R ²	0.849			0.999			0.580		
Prob (F-statistic)	0.000			0.000			0.000		
n (no. of groups/panel)	7			7			7		
N	112			112			112		

Note: P-value of LM test is (0.0000). P-value of Hausman test is 0.0000.

Source: Author's Calculation

4.3 Gravity Model 2

The second gravity model used the same independent variables as the first to predict their effect on remittances. In the table 5 below it is clear that the P values of PEM & REM were less than 0.05 hence the models were statistically significant. The Hausman test whose null hypothesis is that the preferred model is REM, was used to choose between REM and FEM. As it can be observed, the P value of the test was 1.000 which was greater than 0.05 which means that REM was a better model. The LM test (whose null hypothesis is: No panel effect) was used to compare REM to PEM. The p-value of the test was ((0.000) hence the null hypothesis was rejected. This means that the REM model was considered more appropriate than PEM. In REM The p-values of Remittances (0.000) and distance (0.000) are less than 0.05 rendering them statistically significant. And the coefficient of Remittances (0.472) positive impact on migration. And the t-values of lnGdpijp (0.905) and lnPopijp (0.671) were positive hence portraying a positive impact on migration. Additionally, the R² of REM was 0.729 which means that Remittances, Gdpijp and Popijp explained only 72.9 % of the total variability in migration.

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Table 5: Results for PEM, FEM & REM Models for Migration with Remittances

	Pooling model			Fixed model			Random model		
	Coef.	t-value	p-value	Coef.	t-value	p-value	Coef.	t-value	p-value
Intercept	8.449	15.210	0.000	-19.927	-9.788	0.000	8.247	6.435	0.000
lnGdpijp	-0.035	-0.632	0.529	0.044	2.932	0.004	0.045	0.905	0.367
lnPopijp	-0.113	-4.600	0.000	1.794	14.835	0.000	0.049	0.671	0.504
lnDistance	-0.184	-3.781	0.000	-0.213	-19.903	0.000	-0.251	-4.793	0.000
lnRemittances	0.727	17.213	0.000	-0.039	-1.871	0.064	0.472	6.254	0.000
R ²	0.959			0.999			0.729		
Prob(F-statistic)	0.000			0.000			0.000		
n (no. of groups/panel)	7			7			7		
N	112			112			112		

Note: P-value of LM test is (0.0000). P-value of Hausman test is 1.0000.

Source: Author's Calculation

4.4 Gravity Model 3

Using the Passenger value as the dependent variable of tourism, the PEM, REM, and FEM models were estimated on the gravity model, and the results were as presented in table 6 below. Since the p-values of of PEM and FEM were less than the conventional 0.05, Hausman and LM test were used to decide on the more appropriate one. As can be observed, the p-value of the LM test was less than 0.05 (0.000). The Hausman test, whose null hypothesis is that the preferred model is FEM, was used to choose between REM and FEM. As observed, the p-value of the test was 0.000, which was less than 0.05, suggesting that FEM was a better model. Consequently, the null hypothesis of no panel effect was accepted, and FEM was the preferred model. The positive values of the coefficients of lnFDI (0.000), confirm the positive effects of FDI on tourism. The p-values of the coefficients of lnFDI (0.013), lnDistance (0.000), lnPopijp (0.001), and lnGdpijp (0.000), were less than 0.05, which meant that they were the variables that could significantly predict the passenger value. The value of the FEM R² was 0.999, signifying that the variable Distance, lnFDI, Popijp, and Gdpijp accounted for 99.9 % of the variability in the dependent variable, tourism.

Table 6: Results for PEM, FEM & REM Models for Tourism with FDI

	Pooling model			Fixed model			Random model		
	Coef.	t-value	p-value	Coef.	t-value	p-value	Coef.	t-value	p-value
Intercept	6.530	18.067	0.000	7.796	85.142	0.000	6.515	6.585	0.000
lnGdp _{ijp}	0.172	4.526	0.000	0.003	4.080	0.000	0.010	0.301	0.764
lnPop _{ijp}	0.106	5.292	0.000	0.020	3.560	0.001	0.106	1.819	0.072
lnDistance	-0.665	-37.345	0.000	-0.998	-1381.044	0.000	-0.913	-33.701	0.000
lnFDI	0.046	2.303	0.023	0.000	2.525	0.013	0.012	0.720	0.473
R ²	0.984			0.999			0.544		
Prob (F-statistic)	0.000			0.000			0.000		
n (no. of groups/panel)	7			7			7		
N	112			112			112		

Note: P-value of LM test is (0.0000). P-value of Hausman test is 0.0000.

Source: Author's Calculation

4.5 Gravity Model 4

As it can be observed in the table 7 below, the P values of PEM & REM were less than 0.05 hence the models were statistically significant. The Hausman test, whose null hypothesis is that the preferred model is REM, was used to choose between REM and FEM. As it can be observed, the p-value of the test was 1.0000 which was greater than 0.05 which means that REM was a better model. The LM test (whose null hypothesis is: No panel effect) was used to compare REM to PEM. The p-value of the test was ((0.000) hence the null hypothesis was rejected. This means that the REM model was considered more appropriate than PEM. The coefficient of Remittances -0.110, was negative hence portraying a negative impact on tourism. However, the coefficients of lnRemittances (p=0.004), lnPop_{ijp} (p=0.043) & lnDistance (p=0.000) were statistically significant since their P values were less than 0.05 (p=0.0005). And the t-values of lnGdp_{ijp} (1.017) & lnPop_{ijp} (2.050) are positive. The value of the REM R² was 0.994 which means that the 3 significant variables explained almost (99.4%) the whole variability in the dependent variable tourism.

Table 7: Results for PEM, FEM & REM Models for Tourism with Remittances

	Pooling model			Fixed model			Random model		
	Coef.	t-value	p-value	Coef.	t-value	p-value	Coef.	t-value	p-value
Intercept	7.121	22.364	0.000	7.897	68.929	0.000	6.695	6.654	0.000
lnGdpijp	0.111	3.477	0.001	-0.001	-1.604	0.112	0.019	1.017	0.312
lnPopijp	0.128	9.099	0.000	0.014	1.988	0.050	0.121	2.050	0.043
lnDistance	-0.814	-29.196	0.000	-1.000	-1705.693	0.000	-0.979	-51.954	0.000
lnRemittances	-0.160	-6.626	0.000	-0.001	-0.946	0.346	-0.110	-2.925	0.004
R ²	0.988			0.999			0.994		
Prob(F-statistic)	0.000			0.000			0.000		
n (no. of groups/panel)	7			7			7		
N	112			112			112		

Note: P-value of LM test is (0.0000). P-value of Hausman test is 1.0000.

Source: Author's Calculation

5. CONCLUSION AND RECOMMENDATIONS

The trends of international migration to Japan have been shaken by external events in recent years. The total number of foreign settlers dropped as well in the wake of the Great East Japan Earthquake. Global economic crises, particularly the disaster and calamities that happened in 2002, combined with a number of patterns, caused a higher rate of migration from Japan. The speedy growth in Japan's ageing population, which is of the fastest rates across the domain, is also a major factor in determining migration rates. In essence, if the population of the old increases faster than that of the young due to issues like infertility, the labor force shrinks with time. As a result, the economy starts to suffer a labor deficit, which always invites more immigrants seeking employment. Therefore, following the rapidly ageing population, rising foreign community, dynamic government employment of targeted immigrant sets, and efforts to better incorporate the foreign community already in Japan, it is likely that migration to Japan will continue to rise.

The primary objective of this study was to analyze the effects of FDI and remittances on international migration and tourism from seven Asian countries to Japan. The panel data used for the research was collected over time across different countries. The gravity model, using the panel data estimation technique, was employed in the analysis. As observed from the panel data analysis results, FDI and Remittances positively correlated with migration and tourism from Asian countries to Japan. However, remittances alone negatively correlated with tourism. That is, the foreigners working in Japan and sending money to their people back home lowered the incentive of those people to travel to Japan and tour it. They instead received the money and used it to start economic activities or other engagements back home that kept them from going to tour Japan. FDI had a greater reverse effect, resulting in a net positive impact on tourism and migration when the combined effect of FDI and remittances was assessed.

The study's results also indicate a positive impact of the population size of the destination on migration. On the other hand, distance is negatively correlated to the size of migration movements. That suggests that more people prefer to move to countries close to their home nations. Based on the positive and significant effect of the destination country's GDP, we conclude that migration and tourism are directed from Asian countries towards the more developed Japan. Following the results

of this study, other developing nations that wish to move closer to the developed status of Japan and attract more tourists need to strive to attain three major things. First, they need to create conducive policies for the reception and absorption of remittances into the economy. That would increase the amount of capital available for citizens to improve their living standards and develop the amenities necessary to host tourists. At the same time, it would help increase their GDP, which has been seen to have a positive relation to tourism and migration. Increasing FDIs would also have a similar effect as more investments abroad would bring in more foreign cash flow. That way, overtime, more tourists and people will flock the country, helping it to generate more revenue and continue to develop. For future studies, variables like distance should be controlled for specific factors in origin and destination locations to see if its effect on migration and tourism remains the same. A wider period of study could also be used to increase the validity of the results of future research. As Gheasi and Nijkamp (2017) argues, the links connecting FDI and migration flows could be complex and hard to understand. As a result, more comprehensive assessments of migration that will exhaust all the discussed variables for one type of migration per study are needed.

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Japan Social Innovation Journal, Vol. 9, No. 1, 2020

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Japan Social Innovation Journal, Vol. 9, No. 1, 2020

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7. APPENDIX

Appendix 1

Korea

China

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Philippines

Thailand

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Vietnam

Indonesia

Japan Social Innovation Journal, Vol. 9, No. 1, 2020

Source: Author's Calculation