THE MOTIVES BEHIND KOREA'S LEADING E-GOVERNMENT AID PROGRAM

James C. Schopf

Keimyung University

Associate Professor

Postal Address: Dept. of Political Science, 1095 Dalgubeol-daero, Daegu 704-701, Korea

E-mail: jcschopf@kmu.ac.kr

—Abstract —

During the past decade Korea has provided the most Official Development Assistance (ODA) in the field of Information and Communication Technology (ICT) among the Organisation for Economic Co-operation and Development (OECD)'s Development Assistance Committee (DAC) members. E-government reforms helped South Korea cut corruption and improve government effectiveness, and the Korean ICT ODA programs offer poor countries a similar opportunity to promote economic and social development. Tobit regression analysis of Korean ICT ODA to 153 developing nations reveals, though, that the Korean program has emphasized economic self-interest to the detriment of humanitarian concerns, potentially jeopardizing the program's mission and effectiveness. To improve aid effectiveness, Korea should direct more E-government assistance to recipients with democratic political institutions and greater humanitarian need.

Key Words: *Korea, ICT ODA, E-government, Motivations, Development*

JEL Classification: F35, H11, O00, O10, O38

1. INTRODUCTION

South Korea (hereafter referred to as Korea) has dominated the provision of E-government ODA to developing countries during the last decade, accounting for nearly 40% of Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) Official Development Assistance (ODA) in the field of Information and Communication Technology (ICT). Among different forms of assistance ICT ODA holds particular potential to promote economic development by improving government productivity and cutting corruption (Podobnik et al 2008, Igwike et al. 2012). ICT was included as one of the U.N.'s 16 Millennium Development Targets (U.N. Millennium Project) and important U.N. and O.E.C.D. international conferences have acknowledged its critical development role. Korea, in fact, employed E-government to improve bureaucratic effectiveness and drastically reduce domestic corruption in the late 1990s (Schopf forthcoming). As the largest provider of ICT ODA, the Korean program offers developing countries an opportunity to emulate the Korean development model.

A donor state's motivations can influence the effectiveness of its ODA programs, however. Isham, Kaufmann, Pritchett (1995) Burnside and Dollar (2000), have shown that ODA directed to developing nations with sound institutions and good governance most effectively promotes economic development. Countries which use ODA as a means of furthering their own economic or security interests, however, are more likely to prioritize recipients with strong trade and security ties instead. Thus, Korea's motivations for providing ICT ODA are particularly important, not only for the success of the Korean foreign aid program, but also for the effectiveness of ICT ODA programs in general, since Korean ICT aid accounts for such a large portion of overall ICT ODA.

While Koo and Kim (2011) Kim and Oh (2012) Kim and Won (2016) have identified key motivates behind the overall Korean foreign aid program, no work

has yet to apply the established Tobit regression method with panel data to deduce the intentions driving Korea's allocation of ICT ODA.[1]

This article therefore employs Tobit regression analysis to determine the distinct characteristics of Korean ICT ODA recipients, which can provide insight into the intentions behind Korean ICT ODA giving. The Tobit regression results reveal that in comparison to ICT ODA from non-Korean sources, the Korean ODA ICT program has been primarily motivated by economic objectives, favoring nations with growing markets and large natural resource stocks. The Korean ODA ICT program ignored humanitarian concerns, failing to favor poor recipients to the extent of non-Korean ICT ODA donors, and tended to neglect recipients with good governance institutions in favor of more authoritarian regimes, which were less likely to effectively employ E-government to improve bureaucratic governance (Burnside and Dollar 2000). As the world's leading ICT ODA program, the Korean program must set a better example by directing more ICT aid to recipients with greater humanitarian need and with stronger, more representative political institutions.

The paper first explores the two primary categories of motivations behind ODA, namely self-interested motives (focused on the donor's economic and security interests) and humanitarian motives (oriented towards meeting the recipient's needs), and then applies Tobit regression analysis to determine the motivations underlying Korean and non-Korean ICT giving. The findings reveal that in comparison to non-Korean ICT giving, Korean ICT ODA sought to enhance Korea's economic gain and disregarded recipient nation political institutions and humanitarian concerns. The paper concludes with a call to redirect Korean ICT ODA to more democratic and needier recipients.

2. PERSPECTIVES ON ODA

1 Tobit regressions are necessary to correct for the censored nature of aid flows. The range of aid flow as a dependent variable is truncated at zero, since no aid recipient receives negative levels of ODA.

Scholars have undertaken extensive research to determine the motivation behind the large increase in foreign aid following World War Two. Self-interest and humanitarian motives are the two most common explanations for allocation of official developmental assistance.

According to the self-interest perspective, governments allocate aid to pursue their national interests (Black 1968 and Eberstadt 1988). Aid can provide donors with economic benefits and security advantages. Economic interests of donors furthered through aid include promotion of trade and foreign direct investment (FDI), access to energy, or natural resources. Maizels and Nissanke (1984) showed that aid allocation partly reflected trade relations, while Younas (2008) revealed correlation between aid and flows of capital and trade. Security and political alliances are also viewed as important determinants of aid allocation. Alesina and Dollar (2000) found that donors tend to provide more aid to countries with similar United Nations voting patterns, while Fleck and Kilby (2010) revealed strategic considerations influencing U.S. aid allocation.

Other scholars emphasize that aid is primarily driven by humanitarian motives and the needs of recipients. Kegley (1993) Lumsdaine (1993) Cigranelli (1993) emphasized the humanitarian motivations underlying aid, arguing that donors are more concerned with improving the economic, social, and political conditions in recipient countries. Foreign aid is viewed as a tool to stimulate economic growth, fight poverty and promote democracy and good governance. David Lumsdaine argued that foreign aid "cannot be explained simply on the basis of donor states political and economic interests" but instead is determined by "the humanitarian concern in the donor countries"(Lumsdaine 1993, 3).

The motivations underlying ODA also matter because they can impact effectiveness of aid programs. Donors motivated by humanitarian concerns are more likely to use aid to promote good governance and institutional quality, which has been found to both further development and increase the effective use of aid (Burnside and Dollar 2000). Svensson (1999) found that ODA's positive effect on growth depended on the recipient's level of political and civil liberties, and Kosack's (2003) results revealed that ODA's positive effect on Human Development Index scores depended on the recipient nation's democratic polity

score. These findings have affected major multilateral donors. The World Bank ISI and Asian Development Bank now distribute development funds according to Performance Based Allocation (PBA) systems, which rate prospective recipient's governance levels.

As Schraeder, Hook, and Taylor(1998) point out, different nations have emphasized divergent motivations for providing ODA. While the United States allocated ODA to secure allies during the Cold War, economic motives drove Japan's aid flows, and humanitarianism motivated Swedish aid. As the top ICT ODA provider, the nature of Korean aid motives deserves greater attention.

3. THE KOREAN ODA PROGRAM

While Korea's level of ODA giving ranks among the bottom half of OECD nations, Korea has been the top national provider of ODA in the fields of ICT and E-Government from 2006 to 2014 (U.N. Division for Public Administration and Development Management), while topping the U.N.'s E-Government Development Index from 2010 to 2014.

Korea was the first major ODA recipient country to become a prime donor, increasing its ODA levels from $0.21 billion in 2000 to become the world's 14th largest contributor, with $1.91 billion in 2015 (OECD QWIDS). The Korean government established the Economic Development and Cooperation Fund (EDCF) to provide concessional loans in 1987 and the Korea International Cooperation Agency (KOICA) in 1991 to distribute and manage grant aid. Korea's ODA volume rapidly expanded under the Roh Moo Hyeon administration (2003-2008) and was increasingly targeted toward poverty alleviation following Korea's 2007 application for OECD DAC membership and 2009 accession during the Lee Myoung Bak administration (2008-2013).

Roh's 2005 ODA Policy Framework gradually shifted the geographic focus of Korea's ODA from Asia to the region with greatest need, Africa, which increased its share from 6% of Korean ODA in 2005 to 21% in 2013 (Kwak 2015). KOICA

began to designate “priority recipient countries” for grants, which expanded giving to Least Developed Countries (LDCs) from $89.83 million in 2006 to become the largest portion of Korean ODA at $494.96 million in 2013, at 30.8% of all bilateral aid. The Lee administration also increasingly emphasized humanitarian development assistance, introducing a development agenda and 'Anti-Corruption Action Plan' at the 2010 meeting of the G-20 in Busan, and hosting the 2011 High Level Forum on Aid Effectiveness, HLF-4, the main aid related forum. While Chun, Lee, and Munyi (2010) concluded that Korean ODA exhibited a low ODA/GNI ratio, a high ratio of concessional loans per grants, a high portion of tied aid, regional bias and large number of recipients, following recent improvements, Marx and Soares (2013) classified Korea with most DAC donors in a group characterized by high grant share, low multilateral giving, a high ODA/GNI ratio, and moderate share of aid to LDCs.

Recent studies have stressed the importance of economic motivations in Korean ODA allocation, not altogether surprising considering Korea's high dependence on exports for over 40% of G.D.P. Koo and Kim (2011) concluded that ODA allocation was positively related to trade and FDI flows with recipient nations, while Kim and Oh (2012) found Korean ODA commitments related to the recipient's economic growth rate. While Kim and Oh determined after using trade per population to control for recipient size, that Korean ODA was unrelated to trade, Kim and Won (2016) revealed that Korean ODA was related to manufacturing and heavy chemical exports. Koo and Kim (2011) concluded that Korean ODA had also been motivated by humanitarian concerns, pointing to the negative regression coefficient for per capita GDP.

4. A LEADER IN E-GOVERNMENT AND ICT-RELATED ODA

Korea's dominance in the provision of ICT aid coincided with the nation's climb into the U.N.'s top five E-Government rankings in 2005. Korea's use of E-government to curb corruption and improve government performance has provided an example for its aid recipients. Seoul City Mayor Goh introduced Korea’s first E-government program, the 'Online Procedures Enhancement for Civil Applications' (OPEN) program in 1998. Korean President Kim Dae Jung spread E-government throughout the Korean government in January 2001 by

establishing a legal framework for E-government, increasing funding for E-government projects and implementing 11 major E-government initiatives, including a version of OPEN to handle citizen government service applications, the NTS Home Tax System, the E- Procurement program 'NaraJangteo' and the Customs Departments Electronic Processing System. Nine years later the U.N. recognized Korea as the world's leader in E-government.

The spread of E-government coincided with a dramatic improvement in Korean government effectiveness and regulatory quality and a sharp drop in corruption (Schopf forthcoming). According to the World Bank, from 1998 to 2004 Korea improved its government effectiveness and regulatory quality index ratings by 211% and 170%, respectively. Perceived rates of bureaucratic corruption improved by 7% and 76% according to Transparency International's CPI and the World Bank's Corruption Control indicator, respectively, while Seoul City's Integrity Index improved by 30% from its first year in 1999 to 2004. The Korean central government (ACRC) Anti-Corruption Index and survey of bribery also improved by 30% and 63%, respectively from their first year in 2002 to 2004.

E-government and ICTs hold particular potential to promote economic development, and they were included as one of the U.N.'s 16 Millennium Development Targets. ICT aid takes the form of investment, rather than consumption, and includes the transfer of valuable high technology, which is scarce in least developed countries. ICT ODA promises to improve government efficiency, and is therefore also less likely to draw labor and investment away from productive sectors of a recipient's economy (Radelet, Clemens, Bhavnani 2006).

E-government's role in promoting development and economic growth by improving government productivity and cutting corruption was acknowledged at international conferences, including the Geneva 2003 OECD Knowledge Forum and the 2005 Tunisia World Summit on Information Society, which called for increased ICT ODA to reduce the digital divide between advanced and developed countries.

Korea began to specialize in the provision of ICT ODA following Roh Moo Hyeon's 2005 Policy Framework. Korea's ICT expertise and unique history as a former aid recipient attracted developing countries who sought to replicate Korea's state-led success in ICT development and industrialization. A DAC campaign to promote more efficient division of labor among donors, outlined through the 2005 Paris Declaration and the 2008 Accra Action Plan, further encouraged Korea's ICT ODA specialization. Each year from 2006 to 2014 Korea led the DAC in annual ICT ODA disbursements, providing a total of $342 million during the period, 38% of the DAC total. ICT ODA accounted for 3.2% of Korea's overall ODA disbursement, far exceeding the .08% DAC member average (OECD QWIDS).

The Korean ICT ODA program aimed to build E-government sites and ICT infrastructure, impart IT skills, and offer ICT consulting to developing nations. Increasing administrative productivity would help to erase the digital divide and promote development.

To develop recipient nation IT human resource capacity, Korean government agencies dispatched youth and IT expert internet service teams, and offered IT courses in Korea to foreign specialists. By 2009, youth teams from the Ministry of Public Administration and Security, KOICA and the Education Technology Ministry, and 2,900 Korean ICT specialists had provided on-site IT education to over 100,000 officials, professors, teachers, and students in over 67 developing nations.

Korean ICT aid programs constructed E-procurement, E-customs, E-licensing, and E-government service websites, and introduced information sharing services. Aid-established infrastructure included communication networks, consolidated government computer centers, and 22 IT Access Centers with IT training facilities, software and over 20,000 used computers (Jung, Jung and Eom, 2010).[2]

2 The National IT Promotion Agency has continued to develop new E-governments programs for recipient nations in post office administration, internet banking, budget accounting, transportation cards, and personnel.

Korean ICT ODA consulting included the design of national master plans outlining construction of recipient nation IC networks and E- government systems.

5. METHODOLOGY AND DATA

Applying a Tobit regression to identify the key characteristics of Korean ICT ODA recipients can reveal the motivations and objectives underlying Korea's ICT ODA program. The dataset includes a sample of 153 developing nations from 2006 to 2014, the period for which national level ICT ODA is available. The dependent variable is South Korea's annual commitment of ICT ODA.[3] Like Kim and Oh (2012) and Berthélemy and Tichit (2004), I use a per capita measurement of Korean and non-Korean ICT ODA to control for the propensity of more populous countries to receive more ODA, and lag the ODA commitment data by one year to overcome possible endogeneity problems.

To determine the distinct characteristics of Korean ICT ODA recipients, I employ the random-effect Tobit model, used by Kim and Oh (2012), Berthélemy and Tichit (2004), and Alesina and Dollar (2000) and look for correlations between ICT ODA commitments from Korea and non-Korean sources and 22 key political and economic independent variables frequently included in the ODA literature. The Tobit regression is appropriate for cases in which the range of the dependent variable is restricted, such as when it contains many zeros. Studies of ODA recipients, including this one, often include many nations that did not receive aid. Truncating the data by excluding these cases would cause the sample selections to become correlated with the error term, which violates a crucial OLS assumption about the independence of the residual. The Tobit overcomes this problem by regarding each zero value in the dependent variable as a latent variable that cannot be estimated as an observed value (Green 2003). The statistic Pr(>|z|) determines whether or not the null hypothesis, that a particular predictor's regression coefficient is zero, can be rejected. If the P statistic is less than .1, then the null hypothesis can be rejected and the parameter estimate is considered statistically

3 I use aid commitments when measuring selection, because donors have fuller control compared to disbursements (Bertbélemy and Tichit 2004).

significant. Tobit regression coefficients are interpreted similarly to OLS regression coefficients. The coefficient output provides the predicted increase in the value of the dependent variable for a one unit increase in the independent variable. The Tobit output also indicates the number of truncated, or censored, observations and does not contain an R squared value (UCLA IDRE).

6. RESULTS

Korea's motivations for giving ICT ODA can be deduced from the distinct characteristics of its main aid recipients. An economic motive is indicated by the direction of more Korean, relative to non-Korean, ICT ODA to recipients with economic traits beneficial to Korea. Indeed the results reveal that, as with overall Korean ODA, economic motives underlay Korea's commitment of ICT ODA, although trade per population was not positively related to receipt of Korean ICT ODA. [4] In contrast to non-Korean commitments, Korea provided more ICT ODA to nations with higher rates of per capita GDP growth (see Table 1). Larger negative coefficients also indicate that more non-Korean than Korean ICT ODA was targeted to recipient nations with lower levels of GDP per capita. High growth rates and higher per capita GDP meant brighter prospects for increased imports of Korean ICT goods and services.

Resource scarce Korea also committed more ICT ODA to recipient nations with a high percentage of mineral rents per GDP and share of ore and metal exports, unlike non-Korean ICT ODA (Table 2). Korean ICT ODA commitments were also not negatively related to recipient oil and natural resource rents as a percentage of GDP or with fuel exports as a share of merchandise exports, as was true with non-Korean ICT ODA.

4 While Ryu (2014) finds more Korean ICT ODA directed to Korean trade recipients, he fails to control for size.

Korean ICT ODA did not appear to be strongly motivated by humanitarian concerns. Larger negative coefficients show that more non-Korean ICT ODA was targeted to recipients with less developed ICT infrastructure and lower levels of human capital (Table 3), as well as lower GDP per capita (Table 1). More Korean ICT ODA was also committed to recipients with higher levels of web development, as measured by the UN's Online Services Index.

Korean ICT ODA also ignored important good governance measures which would have improved effective use of ICT aid and promoted development. While non-Korean ICT ODA was aimed at more democratic recipients with higher Polity Index scores, Korean ICT ODA commitments disproportionately favored recipients with lower levels of civil liberties, political rights, voice, rule of law and political stability (Table 4).

TABLE 1: Effect of Recipient Economic Characteristics on ICT ODA Commitments

	Korean ICT ODA/pop	**Non-Korean ICT ODA/pop**		**Korean ICT ODA/pop**	**Non-Korean ICT ODA/pop**
GDP per capita growth rate			**ICT Imports as % of Total Imports**		
Coefficient	0.00830***	0.10	Coefficient	0.01***	0.22.
St. Err	0.002	0.099	St. Err	0.002	0.19
Pr(>|z|)	4.6 E-005	0.29	Pr(>|z|)	7.3 e-06	0.062
Z Value	4.1	1.1	Z Value	4.5	1.9
Left Cens.	816	633	Left Cens.	590	430
Obs	1286		Obs		
GDP per capita, PPP (current $)			**Inflow of Korean FDI per population**		
Coefficient	-7.8 e-06 ***	-3.9 e-04***	Coefficient	4.9 e-04***	0.007*
St. Err	1.8 e-06	8.5 e-05	St. Err	5.6 e-05	0.003
Pr(>|z|)	1.9 e-05	5.0 e-06	Pr(>|z|)	2e-16	0.01
Z Value	-4.3	-4.6	Z Value	8.7	2.51
Left Cens.	807	631	Left Cens.	898	633
Obs	1273		Obs	1377	
Trade with Korea per population					
Coefficient	-8.1 e-05 *	-0.0067**			
St. Err	3.9 e-05	0.002			
Pr(>|z|)	0.04	0.005			
Z Value	-2.1	-2.8			
Left Cens.	898	401			
Obs	1377				

TABLE 2: Effect of Recipient Natural Resources Rents on ICT ODA Commitments

	Korean ICT ODA/pop	**Non-Korean ICT ODA/pop**		**Korean ICT ODA/pop**	**Non-Korean ICT ODA/pop**
Oil rents (% of GDP)			**Mineral rents (% of GDP)**		
Coefficient	-0.0012	-0.029***	Coefficient	0.011***	0.14
St. Err	0.00097	0.008	St. Err	0.0021	0.1074
Pr(>|z|)	0.234	0.00016	Pr(>|z|)	1.2 e-07	0.21
Z Value	1.2	-3.8	Z Value	5.3	1.3
Left Cens.	745	570	Left Cens.	810	629
Obs	1191		Obs	1281	
Fuel exports (% of merchandise exports)			**Ores and metal exports (% of merchandise exports)**		
Coefficient	-0.0002	-0.007**	Coefficient	0.0016 .	0.0048
St. Err	0.0005	0.002	St. Err	0.0008	0.004
Pr(>|z|)	0.8	0.0051	Pr(>|z|)	0.053	0.26
Z Value	-0.29	-2.8	Z Value	1.93	1.1
Left Cens.	534	401	Left Cens.	555	417
Obs	934		Obs	962	
Total natural resources rents (% of GDP)					
Coefficient	0.0009	-0.11**			
St. Err	0.0007	0.039			
Pr(>|z|)	0.24	0.0049			
Z Value	1.2	-2.8			
Left Cens.	725	553			
Obs	1181				

TABLE 3: Effect of Recipient ICT Infrastructure on ICT ODA Commitments

	Korean ICT ODA/pop	**Non-Korean ICT ODA/pop**		**Korean ICT ODA/pop**	**Non-Korean ICT ODA/pop**
Percent of Individuals using the Internet			**Secure Servers per population**		
Coefficient	-0.0015***	-0.06.	Coefficient	-0.001***	-0.047***
St. Err	0.00038	0.034	St. Err	0.00024	0.0096
Pr(>|z|)	0.0001	0.06	Pr(>|z|)	3.4 e-05	1.2 e-06
Z Value	-3.9	-1.9	Z Value	-4.1	-4.9

Left Cens.	797	620	Left Cens.	728	561
Obs	1271		Obs	1187	
Fixed-telephone subscriptions per population			**Telecommunication Infrastructure Index**		
Coefficient	-0.0054***	-0.197***	Coefficient	-0.72***	-2.27**
St. Err	0.001	0.052	St. Err	0.217	0.73
Pr(>|z|)	1.9 e-06	0.00016	Pr(>|z|)	0.00097	0.00172
Z Value	-4.8	-3.8	Z Value	-3.3	-3.13
Left Cens.	800	624	Left Cens.	370	295
Obs	1275		Obs	571	
Online Service Index			**Human Capital Index**		
Coefficient	0.514***	0.54	Coefficient	0.035	-0.86 .
St. Err	0.14	0.48	St. Err	0.13	0.45
Pr(>|z|)	0.00018	0.26	Pr(>|z|)	0.79	0.054
Z Value	3.7	1.1	Z Value	0.27	-1.9
Left Cens.	357	284	Left Cens.	351	277
Obs	556		Obs	553	

TABLE 4: Effect of Recipient Institutional Governance on ICT ODA Commitments

	Korean ICT ODA/pop	**Non-Korean ICT ODA/pop**		**Korean ICT ODA/pop**	**Non-Korean ICT ODA/pop**
Civil Liberties Index (1 to 6 , 1 is best)			**Rule of Law Index**		
Coefficient	0.016*	-0.24	Coefficient	-0.05**	-0.92
St. Err	0.007	0.35	St. Err	0.02	0.82
Pr(>|z|)	0.033	0.5	Pr(>|z|)	0.0019	0.26
Z Value	2.1	-0.7	Z Value	-3.1	-1.1
Left Cens.	826	649	Left Cens.	838	654
Obs	1302		Obs	1317	
Voice Index			**Political Stability Index**		
Coefficient	-0.04**	0.2	Coefficient	-0.023***	-0.06
St. Err	0.014	0.68	St. Err	0.0045	0.22
Pr(>|z|)	0.0024	0.77	Pr(>|z|)	3.70E-007	0.78
Z Value	-3	0.29	Z Value	-5.1	-0.28
Left Cens.	841	657	Left Cens.	834	650
Obs	1320		Obs	1313	
Polity Index			**Political Rights Index (1 to 6 , 1 is best)**		
Coefficient	0.0019	0.02**	Coefficient	0.01 .	-0.12

St. Err	0.002	0.01	St. Err	0.01	0.29
Pr(>|z|)	0.36	0	Pr(>|z|)	0.08	0.69
Z Value	0.9	3.1	Z Value	1.78	-0.4
Left Cens.	607	450	Left Cens.	826	649
Obs	1061		Obs	1302	

Normal distribution and censoring at zero.
.(.10), *(.O5), **(.O1), ***(.OO1)
153 nation sample size, 2006 to 2014

Sources for tables: OECD QWIDS, International Telecommunication Union, World Bank statistics, World Bank Worldwide Governance Indicators, Freedom House, U.N. Public Administration Country Studies, U.N. Population Division, IMF Direction of Trade Statistics, Export Import Bank of Korea, Polity Index.

These findings accord with reports from local Korean ICT ODA experts. Jung, Jung and Eom (2010) blamed Korean ICT ODA's failures on the use of aid to bolster ICT service exports, while Hwang (2010) argued that Korean ICT ODA allocations ignored important political institutional and cultural attributes of recipient nations. One of Jung and Eom's interviews, in fact, uncovered a case in which the officials of a country receiving a KOICA E-customs program intentionally sabotaged the system in order to maintain receipt of bribes.

The Korean government attributed strategic value to the ICT sector, which had aided Korea's recovery from the 1998 IMF and 2008 global financial crises and contributed 20% of overall Korean economic growth from 2005 to 2012. The government hoped that exports would reinvigorate the slumping ICT sector, whose contribution to economic growth had contracted to only 10% by 2014 due to a slowing global economy, saturated Korean ICT market, and increased international competition (Lee 2015).

Korean ICT ODA programs promoted Korean ICT service exports by publicizing the "ICT KOREA" brand of Korean technology and by establishing a network for Korean firms to obtain ICT service orders. Foreign students attending Korean

ODA ICT courses spread the reputation of Korean ICT, serving as foreign connections for Korean firms.[5]

Korean ICT firms also directly participated in the design of ICT ODA policy. In February 2010 KOTRA reached an agreement with four ICT industry associations (the Korea Telecommunications Operators Association, the Korea Information Technology Service Industry Association, Korea Software Industry Association, and Korea Information Security Industry Association) for Korean ICT ODA project contractors to market Korea's E-government programs and the intellectual property rights of Korean ICT firms (Jung, Jung and Eom 2010). Korean ICT firms also demanded specific educational programs for foreign trainees and requested involvement in the selection of course attendees and in the design of E-government ODA programs (Kim, I.S. 2015).

7. CONCLUSION

Korea has emerged as the world's leading provider of E-government Official Development Assistance (ODA) to developing countries during the last decade, accounting for nearly 40% of the OECD Development Assistance Committee's (DAC) ICT ODA. Korea employed E-government to drastically reduce domestic corruption and improve bureaucratic effectiveness in the late 1990s, and ICT ODA programs offer poor countries a similar opportunity to promote economic and social development.

Tobit regressions reveal that the Korean ODA ICT program has been motivated primarily by economic objectives, however, favoring nations with growing markets and large natural resource stocks. The Korean ODA ICT program

5 In fact the Ministry of Public Administration and Security's National Information Society Agency publishes an annual ICT service export guide book, titled "National E-Government Conditions and Export Prospects," containing lists of the names and positions of officials in each recipient nation who had attended Korean ICT courses.

ignored humanitarian concerns by not favoring poor recipients to the extent of non-Korean ICT ODA. Korean ICT ODA has also tended to neglect recipients with good governance institutions in favor of more authoritarian regimes. Ignoring good governance institutions and the humanitarian mission of ODA potentially undermines the effectiveness and the objective of Korea's ICT ODA program.

To improve E-government aid effectiveness, Korean aid agencies must offset the heavy influence of Korean ICT firms. One suggestion is to institutionally empower representatives from Korean civic groups, such as the People's Solidarity for Participatory Democracy, YMCA, and the Citizen's Coalition for Economic Justice to participate in ICT ODA related policy decisions. Establishing lending quotas and targets could also help ensure that more ODA is allocated to recipients that effectively use aid and to those with good governance institutions. Such measures would help to ensure that Korea, as the first major ODA recipient-turned-donor, E-government world leader, and greatest provider of ICT ODA, fulfills its tremendous potential to further development through the spread of ICT.

8. REFERENCES

Alesina A and Dollar D (2000) Who Gives Foreign Aid to Whom and Why? *Journal of Economic Growth* 5(1)2: 33-63.

Berthélemy J and Tichit A (2004) Bilateral donors' aid allocation decisions–a three-dimensional panel analysis. *International Review of Economics & Finance* 13: 253–274.

Black L (1968) The Strategy of Foreign Aid. Princeton: D. Van Nostrand.

Burnside C and Dollar D (2000) Aid, Policies, and Growth. *American Economic Review* 90 (4): 847-868.

Chun HM, Munyi EN and Lee HJ (2010) South Korea as an emerging donor, challenges and changes on its entering OECD/DAC. *Journal of International Development* 22(6): 788-802.

Cigranelli D (1993) *Ethics, American Foreign Policy and the Third World*. New York: St. Martin's Press.

de Mesquita BB, Smith A, Siverson RM and Morrow JD (2003) *The Logic of Political Survival*. Cambridge, MA: MIT Press.

Eberstadt N (1988) Foreign Aid and American Purpose. Washington, D.C.: American Enterprise Institute.

Export Import Bank of Korea. Available at: http://211.171.208.92/odisas.html (accessed 17 October 2016).

Fleck R and Kilby C (2010) Changing aid regimes? U.S. foreign aid from the Cold War to the War on Terror. *Journal of Development Economics* 91(2): 185-197.

Freedom House. Available at: https://freedomhouse.org (accessed 17 October 2016).

Greene W (2003) *Econometric Analysis (3)*. Upper Saddle River, NJ Prentice Hall.

Hwang WK (2010) The Developmental Effect of ODA and Korea's Developmental Experience. Material produced for a Seoul National University Asia Research Institute Workshop. December 3 (in Korean).

Igwike R, Hussain E. and Noman A (2012) The Impact of Corruption on Economic Development: A Panel Data Analysis. *Social & Cultural Issues*

I.M.F. Direction of Trade Statistics. Available at: http://data.imf.org (accessed 17 October 2016).

Isham J, Kaufmann D, Pritchett L (1995) Governance and Returns on Investment: An Empirical Investigation Policy Research Working Paper 1550. Policy Research Department, World Bank, Washington, D.C.

International Telecommunication Union. Available at: https://www.itu.int

(accessed 17 October 2016).

Jung YD, Jung CS and Eom SJ (2010) Research on Expanding Korean E-government Systems to International Society. The Korean Association for Regional Information Society (in Korean). Available at: http://www.prism.go.kr/homepage/entire/retrieveEntireDetail.do;jsessionid=B3A0245B649416550F3501C0BD74B581.node02?cond_research_name=&cond_research_start_date=&cond_research_end_date=&research_id=1311000-201100075&pageIndex=974&leftMenuLevel=160

Kegley C (1993) The Neoidealist Moment in International Studies? Realist Myths and the New International Realists. *International Studies Quarterly* 37:131-146.

Kim EM and Oh JH (2012) Determinants of foreign aid: The case of South Korea. *Journal of East Asian Studies* 12: 251–273.

Kim IS et al (2015) An ODA project strategy to address changes in the ICT development cooperation paradigm. Korea Information Society Development Institute policy material 15-15 (in Korean). Available at:

http://www.kisdi.re.kr/kisdi/fp/kr/board/selectSingleBoard.do?cmd=selectSingleBoard&boardId=GPK_PRESS&seq=31294&reStep=1322799&ctx=_(accessed 17 October 2016).

Kim JS and Won YK (2016) Korea`s official development assistance (ODA) and sectoral manufacturing exports: A gravity model analysis using a linear approximation method. *Journal of Korean Economic Studies* 34(1): 5-39 (in Korean).

Koo JW and Kim DW (2011) World society and foreign aid: Explaining determinants of Korean ODA, [1989–2007]. *Korean Journal of Sociology* 45 (1): 153–190 (in Korean).

Kosack S (2003) Effective aid: How democracy allows development aid to improve the quality of life. *World Development* 31(1): 1–22.

Kwak SG (2015) South Korea's development assistance and economic outreach toward Southeast Asia. Joint U.S. Korea Academic Studies. Available at: http://www.keia.org/sites/default/files/publications/south_koreas_development_assistance.pdf(accessed 17 October 2016).

Lee IS (2015) The Growth of the ICT Industry *Trends* 27 (8):1-8 (in Korean).

Lumsdaine D (1993) *Moral Vision in International Politics: The Foreign Aid Regime, 1949-89*. Princeton: Princeton University Press.

Maizels A and Nissanke M (1984) Motivations for aid to developing countries. *World Development* 12 (9): 879-900.

Marx A and Soares J (2013) South Korea's transition from recipient to DAC donor: Assessing Korea's development cooperation policy. *International Development Policy* 4 (2): 107-142. Available at: https://poldev.revues.org/1535#tocto1n5(accessed 17 October 2016).

OECD Query Wizard for International Development Statistics. Available at: https://stats.oecd.org/qwids(accessed 17 October 2016).

Podobnik B, Shao J, Njavro D, Ivanov P and Stanley H (2008) Influence of Corruption on Economic Growth Rate and Foreign Investment. *European Physical Journal B* 63, 547

Polity Index. Available at: http://www.systemicpeace.org/polity/polity4.htm (accessed 17 October 2016).

Radelet S, Clemens M, and Bhavnani R (2006) "Aid and Growth: The Current Debate and Some New Evidence," in Isard P, Lipschitz L, Mourmouras A and Heller P (eds.), Macroeconomic Management of Foreign Aid: Opportunities and Pitfalls, International Monetary Fund.

Ryu JM (2014) Research into the Factors Determining Korea's ICT ODA. *Journal of Social Science* 40 (3): 1-24 (in Korean).

Schraeder P, Hook S and Taylor B (1998) Clarifying the Foreign Aid Puzzle: A Comparison of American, Japanese, French, and Swedish Aid Flows. *World Politics* 50(2): 294-323

Svensson, J (1999) Aid, Growth and Democracy. Economics and Politics 11 (3): 275-297.

UCLA Institute for Digital Research and Education. Available at: http://www.ats.ucla.edu/stat/stata/output/Stata_Tobit.htm (accessed 20 December 2016).

U.N. Population Division. Available at: https://esa.un.org/unpd/wpp (accessed 17 October 2016).

U.N. Division for Public Administration and Development Management, Global E-Government Survey. Available at: https://publicadministration.un.org/egovkb/en-us/#.WFp-ENJ96Uk (accessed 21 December 2016).

U.N. Millennium Project. Available at: http://www.unmillenniumproject.org/goals/gti.htm(accessed 21 December 2016).

World Bank Statistics. Available at: http://data.worldbank.org (accessed 17 October 2016).

World Bank Worldwide Governance Indicators. Available at: http://data.worldbank.org/data-catalog/world-development-indicators (accessed 17 October 2016).

Younas J (2008) Motivation for Bilateral Aid Allocation: Altruism or Trade Benefits. *European Journal of Political Economy* 24 (3):661–74.