



저작자표시-동일조건변경허락 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.
- 이차적 저작물을 작성할 수 있습니다.
- 이 저작물을 영리 목적으로 이용할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



동일조건변경허락. 귀하가 이 저작물을 개작, 변형 또는 가공했을 경우에는, 이 저작물과 동일한 이용허락조건하에서만 배포할 수 있습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)

국제학석사학위논문

**Determinants of PPP Project Allocation:
A Study of European Donors**

민관협력 프로젝트 배분의 결정요인:
유럽공여국가를 중심으로

2015년 2월

서울대학교 국제대학원
국제학과 국제지역전공
박 세 은

**Determinants of PPP Project Allocation:
A Study of European Donors**

Thesis by

Se Eun Park

Graduate Program in International Area Studies
In Fulfillment of the Requirements
For the Degree of Master of International Studies

February 2015

**Graduate School of International Studies
Seoul National University
Seoul, Republic of Korea**

Determinants of PPP Project Allocation: A Study of European Donors

민관협력 프로젝트 배분의 결정요인:
유럽공여국가를 중심으로

지도교수 김 종 섭

이 논문을 국제학 석사학위논문으로 제출함
2014년 10월

서울대학교 국제대학원
국제학과 국제지역전공
박 세 은

박세은의 석사학위논문을 인준함
2014년 12월

위 원 장	_____ 김 태 균 _____	(인)
부 위 원 장	_____ 이 영 섭 _____	(인)
위 원	_____ 김 종 섭 _____	(인)

© Copyright by Se Eun Park 2015

All Rights Reserved

Abstract

Determinants of PPP Project Allocation: A Study of European Donors

Se Eun Park

International Area Studies (Europe)

The Graduate School of International Studies

Seoul National University

This thesis investigates the determinants of European donors' PPP project allocation and their partnership patterns. Using regression models, this study empirically analyzed 22 European countries' PPP project allocation in 135 developing countries for the period of 1990 to 2013.

The empirical results indicate that European donors consider market size, regulatory quality of developing country, and bilateral economic and political relations. What is more, it was found that European donors with less external debt are more likely to implement PPP projects.

The analysis also showed that European donors are not only influenced by their own economic and political interests, but they are also reactive to any other European donors behaviors when implementing PPP projects in developing countries.

Key words

Public-Private Partnership, European donors, Development Finance, Determinants of PPP

TABLE OF CONTENTS

I. INTRODUCTION

1. BACKGROUND
2. DEFINITION OF PUBLIC-PRIVATE PARTNERSHIP
3. BENEFITS OF PUBLIC-PRIVATE PARTNERSHIP
4. STRUCTURE OF THE STUDY

II. LITERATURE REVIEW

1. NEED FOR NEW DEVELOPMENT FINANCE AND CONTRIBUTION OF PPP
2. DETERMINANTS OF PPP
3. FACTORS DISCOURAGING/ENCOURAGING PRIVATE INVESTMENTS
4. OTHER DONORS' INFLUENCE
5. RESEARCH QUESTION

III. ANALYTICAL FRAMEWORK

1. RN-DI MODEL
2. HYPOTHESES
3. METHODOLOGY

IV. ANALYSIS ON DETERMINANTS OF EUROPEAN DONORS' PPP PROJECT ALLOCATION AND PARTNERSHIP PATTERNS

1. ANALYSIS ON THE DETERMINANTS OF PPP PROJECT
2. ANALYSIS ON THE DETERMINANTS OF EUROPEAN DONORS' PARTNERSHIP PATTERNS

V. CONCLUSION

1. CONCLUSION
2. SUGGESTIONS FOR FURTHER STUDIES

ANNEX I – LIST OF DEVELOPING COUNTRIES BY REGION

ANNEX II – SUMMARY STATISTICS FOR THE SAMPLE

ANNEX III – REGIONAL DISTRIBUTION OF EUROPEAN DONORS' PPP PROJECTS (1990-2013)

ANNEX IV – REGIONAL DISTRIBUTION OF EUROPEAN DONORS' PPP PROJECT PARTNERSHIP (1990-2013)

ANNEX V – SECTORAL DISTRIBUTION OF EUROPEAN DONORS' PPP PROJECT ALLOCATION AND PARTNERSHIP (1990-2013)

ANNEX VI – DISTRIBUTION OF EUROPEAN DONORS' PPP PROJECT ALLOCATION AND PARTNERSHIP BY INCOME LEVEL OF THE RECIPIENT COUNTRY (1990-2013)

REFERENCES

ABSTRACT (KOREAN)

LIST OF TABLES AND FIGURES

Table 2.1	Summary of previous studies
Table 3.1	Explanations for variables and sources
Table 4.1	Determinants of total number of PPP project implemented by European donors
Table 4.2	Determinants of total investment made on PPP projects implemented by European donors
Table 4.3	Determinants of European donors' partnership patterns in implementing PPP projects
Table 5.1	Summary of hypothesis testing
Figure 3.1	Average annual foreign aid (2000-2009, % GDP)
Figure 4.1	Regional distribution of top 10 European donors' PPP projects
Figure 4.2	Regional distribution of top 5 European donors' PPP projects

List of Acronyms and Abbreviations

DAC	Development Assistance Committee
EIB	European Investment Bank
FDI	Foreign Direct Investment
HLF-4	4 th High Level Forum on Aid Effectiveness
LAC	Latin America and the Caribbean
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PPI	Private Participation in Infrastructure
PPP	Public-Private Partnership
RN-DI Model	Recipient Need – Donor Interest Model
UK	United Kingdom
WB	World Bank
WDI	World Development Indicators
WGI	Worldwide Governance Indicators

I. Introduction

1. Background

For many decades, calls for adequate supply of infrastructure service have been increasing from the developing countries, especially in the beginning of infrastructure project launch when a huge amount of money is needed. Academia, civil society, and government policy-makers have all emphasized economic contribution that infrastructure brings to developing countries' economic growth and social development.¹

However, unlike increasing demands for infrastructure and its importance to the economy, donor governments lag behind in terms of supplying enough finance for aid. The European donors, who have traditionally been main donors of official development assistance (ODA), are facing both domestic and external problems to reduce their total amount of ODA as most European donors have suffered from recent global financial crisis and at the same time they are moving toward aging societies. Therefore, such demand-supply gap of infrastructure has asked for more private actors to actively participate in infrastructure industries.

The international community has emphasized the role of private sector in development cooperation. In 2002 in Monterrey, Mexico, the heads

¹ Aschauer, D. 1989, "Is public expenditure productive?", *Journal of Monetary Economics*, vol. 23, pp. 177-200.

of States and governments gathered to address the challenges that the world was facing regarding development finance, especially in developing countries.² This was again highlighted in the 4th High-Level Forum on Aid Effectiveness in Busan (HLF-4).³ The international development co-operation recognized that we need increase in volumes of development finance to enhance development effectiveness, and such finance could be driven from the private sector. Against this backdrop, public-private partnership (PPP) has become an alternative to solve financing matter, and more and more governments are using PPPs to build, finance, operate and plan infrastructure projects in developing countries. European countries are no exceptions. Since many decades ago, they have been actively participating in PPP projects worldwide. Total PPP projects and investment made by European countries have increased.⁴ However, the pattern of European donors' PPP project allocation differs in terms of PPP project sectors, income level and geographical location of recipient countries etc.⁵ What is more, when European countries go into PPP projects, they show certain patterns of partnership among themselves (Annexes IV, V, and VI)⁶. For instance, France makes partnership more often with Luxembourg, Spain and UK than with other European donors. Likewise, Germany partners with Spain more often than any other European countries.

² Monterrey Consensus on Financing for Development, <http://www.un.org/esa/ffd/monterrey/MonterreyConsensus.pdf>

³ Busan Partnership for Effective Development Cooperation http://effectivecooperation.org/files/OUTCOME_DOCUMENT_-_FINAL_EN2.pdf

⁴ World Bank PPI Database.

⁵ Private Participation in Infrastructure Database, <http://ppi.worldbank.org/>

⁶ Calculation from World Bank PPI Database, <http://ppi.worldbank.org/>

2. Definition of Public-Private Partnership

What is public-private partnership? There is no universally accepted definition for it. This paper uses the term PPP defined by OECD DAC European members and the European Commission. Five key criteria exist for its definition:

- (i)* a cooperation between the public sector and private sector with a common development goal,
- (ii)* a clear agreement between the public sector and private sector on the goal(s) of the PPPs,
- (iii)* a combination of public and private funding,
- (iv)* a clear agreement between the public sector and private sector on the sharing of resources and tasks, and
- (v)* distribution of risks between the public sector and the private sector

3. Benefits of Public-Private Partnership

With more supply of finance from the private sector, chances are that development projects could last with less possibility of dropping out in the middle of the project. Donor countries could share risks and funds with the private sector, implement larger and more development projects in a more efficient way with the expertise of the private sector. Recipient

countries may receive more investments for their national development projects which will boost economic growth as well as social development. PPP is also a favorable option for the private side. As the government guarantees the project, the risk of going into a developing country and launching a project could be reduced, which will thereby ensure privates' continuous profit and at the same time more opportunities will be given to private companies in a larger market.

4. Structure of the study

Against this backdrop, this paper is an attempt to find out the determinants of European donors' PPP project allocation and see what factors affect them to go for specific partnerships when they go into PPP projects in certain developing countries.

The paper is organized as follows: following the introduction, Chapter two presents previous studies on *(i)* the need for new development finance, *(ii)* the contribution of PPP to economic growth, *(iii)* determinants of PPP, *(iv)* factors that discourage and/or encourage private investment through PPP route, and *(v)* other donors' influence on one donor's behaviors. Then, Chapter three presents analytical framework. Chapter four shows determinants of European donors' PPP project allocation and partnership patterns among them based on empirical regression analysis. Finally the last Chapter concludes the paper and gives suggestions for future studies.

II. Literature Review

1. Need for new development finance and contribution of PPP

For the purpose of finding out determinants and explanations for European donor's PPP project allocation and partnership patterns, this paper first introduces some previous studies made on the need for new development finance. PPP has been implemented by many countries worldwide since many decades ago. As said in the introduction, PPP serves as a new source for development finance which brings in additional funds from the private side, alleviates financial problems for development, and enhances development effectiveness (Anthony B. Atkinson 2004A and 2004B, OECD 2010, and World Bank 2013).

In line with the need for new development finance, Price Waterhouse Coopers (2005) explains why PPP has come into use as a new way of public procurement. Reviewing on European Union members' PPP activities and related issues, the study emphasizes that PPP serves as a growing element of public sector procurement across Europe where many governments are facing limited financial resources. Private sectors bring in additional finance to improve infrastructure industries, which serves as a condition for successful economic growth.

2. Determinants of PPP

Studies were made to explain determinants of PPPs in developing countries. Using cross country data, Hammami et al. (2006) found out that PPPs tend to take place more often in countries where market size and aggregate demands are large, and where governments suffer from heavy debt. Sharma (2012) also found that larger market attracts more PPP projects. Adding to this, Sharma argues that regulation quality, macroeconomic stability and governance level are also crucial factors that determine infrastructure PPPs.

Anna Peters (2011) analyzed how donors can better engage the private sector for development. The study found out that political stability and financial resource allocation should be taken into consideration at the initial stage of PPP project planning. European Investment Bank (EIB) (2005) also emphasized that appropriate financial, legal and regulatory environment are essential in implementing PPP projects. EIB analysis deals with financial and legal frameworks for PPP projects in each of the Mediterranean partner countries. Chan et al. (2010) found out that political and social environment, and stable macroeconomic circumstances are important factors in determining PPP projects.

3. Factors discouraging/encouraging private investments

What is more, some studies have found out factors that discourage

private investments. Pessó (2010) argued that unstable regulations and weak governance significantly increase transaction cost and risk in projects, making PPP arrangements less effective. Thus enhancing regulation and efficiency of the government mechanism and resource allocation will contribute to attracting more funds into PPP projects (Pongsiri, 2002).

4. Other donors' influence

Lastly, contributions were also made to explain a donor's behavior influenced by other donors' actions. Berthelemy (2006) found out that there is a complementary relationship between aid commitments of different donors in recipient countries. Admitting Berthelemy's findings, Fabian Barthel (2013) adds that other donors' behavior influences one's economic, military and political interests. Moreover, Frot and Satiso (2009) found out that there are strategic herding behaviors among donors in recipient countries just like in financial markets. According to them, when aid is provided by one donor, then the other donors take it as a signal for good investment which reduces the risk on aid projects, and thereby causes and boosts herding effects among donors. What is more, Katada (1997) finds collaboration effort between donors exist.

Table 2.1 is the summary of previous studies on *(i)* the need for new development finance, *(ii)* the contribution of PPP to economic growth, *(iii)* determinants of PPP, *(iv)* factors that discourage and/or encourage private investment through PPP route, and *(v)* other donors' influence on one donor's behaviors.

<Table 2.1> Summary of previous studies

Category	Authors	Main argument
Need for new development finance	Anthony B. Atkinson (2004A & 2004B), OECD (2010), and World Bank (2013)	PPP serves as a new source for development finance.
Contribution of PPP	Price Waterhouse Coopers (2005)	Need for improving infrastructures as a condition to successful economic growth. However, since governments have limited financial resources, more active role of PPPs is requested.
Determinants of PPP	Hammami et al (2006)	PPPs tend to take place more often in countries where market size and aggregate demand are large, and where governments suffer from heavy debt.
	Sharma (2012)	Market size, regulation quality, macroeconomic stability and governance level are crucial factors that attract PPP projects.
	Reside (2009) and Reside and Mendoza (2010)	Macroeconomic environment and openness of economy, political risk determine PPPs.
	Anna Peters (2011)	Political stability, financial resource allocation, principle of harmonization should be taken into consideration at the initial stage of PPP project planning.
	European Investment Bank (2005)	Appropriate financial, legal, and regulatory environments are essential in implementing PPP projects.
	Chan et al. (2010)	Political and social environment, stable macroeconomic circumstances are important factors in determining PPP projects.
Factors discouraging/encouraging private investments through PPP route	Allayannis and Weston (2000), Estache (2006), and Banerjee et al. (2006)	Excess volatility in currencies, weak financial institutions, ineffective regulation and absence of a well functioning capital market discourage private investment through PPP route.

Category	Authors	Main argument
	Pesso (2010)	Unstable regulations and weak governance increase transaction costs and risk in PPP projects.
	Pongsiri (2002)	Regulation quality, efficient government mechanism, and resource allocation contribute to attracting more funds into PPP projects.
Other donors' influence	Berthelemy (2006)	Complementary relationship between the donors exists.
	Fabian Barthel (2013)	Other donors' behavior influences one's economic, military and political interests.
	Frot and Satiso (2009)	Aid by other donors serves as a signal for good investment, boosting donors to herd on giving aid projects in developing countries.
	Katada (1997)	Collaboration effort among donors exist

5. Research Question

Despite many previous studies on the need of PPPs as a new development finance and on the determinants of PPP projects and their contribution to economic growth, not much attention has been made on donors' motivation for PPP projects. Against this backdrop, this study tries to find out determinants of European donors' PPP projects in terms of numbers and total investments. Then the study tries to explain partnership patterns among European donors. Therefore, research questions are: (i) What are the determinants of European donors' PPP project allocation?, and (ii) What are the determinants of European donors' partnership when they implement PPP projects?

III. Analytical Framework

1. RN-DI Model

In this study we borrow RN-DI (Recipient Need - Donor Interest) model, which is often used in finding out determinants of official development assistance (ODA), since variables and analytical methods used in this study overlap a lot with those of RN-DI model.⁷ We will first see determinants of each RN model and DI model, then we will compare different variables that determine European donors' interest in going for PPP projects by setting up a hybrid model of RN-DI model.

In traditional RN model, the variables used are a recipient country's per capita GDP, population, infant mortality rate and basic education level. Whereas in traditional DI model, donors' economic as well as political interests are considered. However, this study will select some variables from the RN-DI model as well as the model's framework, but at the same time, the study will build a hybrid model by adding other explanatory variables that affect donors' interest in allocating PPP projects.

⁷ McKinlay, R. D. and Little, R., "A Foreign Policy Model of U.S. Bilateral Aid Allocation", World Politics, 1977.

2. Hypotheses

So far, many previous studies have found out factors that determine PPP project allocation, private partnership in infrastructure etc.

1-1. Size of the market

Above all, there are more demands for infrastructure where the size of the market is larger.⁸ For instance, higher the GDP per capita and population of a recipient country, it is more likely to attract more firms to invest in that country.⁹ When there is more inflow of total foreign direct investment (FDI) into a country, it may serve as a positive signal for donors to invest into that country. What is more, when a donor country is an open economy and tends to spend some more, it is more likely that the donor goes for more PPP projects.

1-2. Country stability

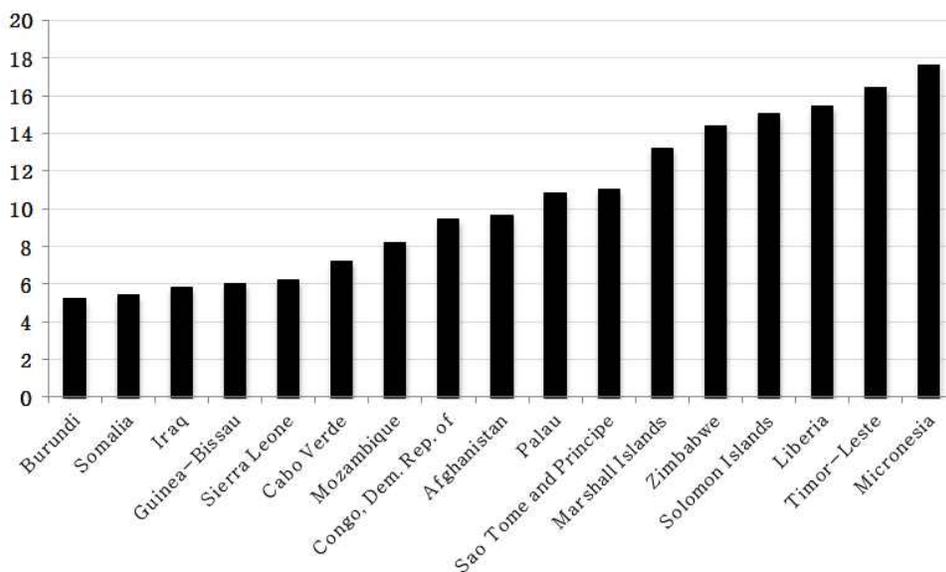
Stability of a recipient country is also important factor to consider especially in a globalized world where countries are all closely interrelated with each other economically, politically and socially. We have witnessed

⁸ Sharma, C. 2012, "Determinants of PPP in infrastructure in developing economies", *Transforming Government: People, Process and Policy*, vol. 6, no. 2, pp. 149-166.

⁹ Hammami, M., Ruhashyankiko, J. & Yehoue, E.B. 2006, *Determinants of Public-Private Partnerships in Infrastructure*, International Monetary Fund.

how much countries are vulnerable to each other when global financial crisis outbreak. It is especially the case of recipient countries who are often small economies and whose economics rely a great part on foreign aid. For some recipient countries, foreign aid accounts for a big portion of GDP (Figure 3.1).

<Figure 3.1> Average annual foreign aid (2000-2009, % GDP)¹⁰



Besides, in case of investing one's money in a recipient country, many donors consider governance level of a recipient country as vital element (Hammami et al. 2002, Reside 2009, Reside and Mendoze 2010). Studies of Chan et al. (2010) and Reside and Mendoza (2010) found out that political stability of a country plays a crucial role in attracting private sectors' investment in PPP projects. What is more, Hamammi et al. (2006)

¹⁰ Source: OECD Statistics

emphasized that the institutional and regulatory quality of a country also affect the success of PPP projects.

1-3. Natural resources

Endowment of natural resources a recipient country has is also important in determining whether a donor country should go into that country or not. Like in the case of giving ODAs to a recipient country, many donors consider level and quantity of natural resources (*e.g.* coals and natural gaz) a recipient country has as well as other factors (*e.g.* bilateral economic and political relations). Likewise, more PPP projects are to be implemented in align with natural resource endowment level.¹¹ For instance, as Latin America reserves world's largest natural resources (*e.g.* bio oil and cooper) (ECLAC, 2011), more private participation investments are disbursed to this region.¹²

1-4. Government's resource constraint

The level of a donor country's external debt may also affect its resources available for PPP projects. As PPP permits public sector to leverage more financial resources by using the private sector as an

¹¹ Sunwu Kim, A Study of determinants of Public-Private Partnership in infrastructure in Latin America, Hankuk University of Foreign Studies, 2013, pp. 45-46.

¹² Sunwu Kim, A Study of determinants of Public-Private Partnership in infrastructure in Latin America, Hankuk University of Foreign Studies, 2013.

intermediary,¹³ a country with high external debt and less foreign aid to income ratio is more likely to go for PPP. Especially, as European donors have suffered from recent financial crisis and the fact that they are moving toward aging societies, domestic pressures have been made to reduce the share of foreign aid which comes from citizens' tax money. So, European donors in line with international development community are boosting private sectors to actively participate in PPP projects.¹⁴

1-5. Bilateral relations between a donor and a recipient country

Both economic and political bilateral relationships of a donor and a recipient country are important factors. This is especially true when a donor has a long history with relevant recipient country, *e.g.* past colonial ties.

1-6. Other donors' influence

Lastly, how many PPP projects and how much investment a donor does and gives may influence other donors' behavior.¹⁵

¹³ Trujillo, L., Martin, N., Estache, A. & Campos, J. 2002, *Macroeconomic effects of private sector participation in Latin America's infrastructure*, World Bank, Washing DC.

¹⁴ Price Waterhouse Coopers, *Delivering the PPP promise: A review of PPP issues and activity*, 2005, available at www.pwc.com

¹⁵ Barthel, Fabian. "Exploring Spatial Dependence in bi-and multilateral Aid giving Patterns." London School of Economics and Political Science. http://s3.amazonaws.com/aiddata/Barthel_aiddata.pdf

All in all, these lead to the following hypotheses:

Hypothesis 1.

The larger the size of the market, the more PPP projects are to be implemented.

Hypothesis 2.

The more stable a country, the more PPP projects are to be implemented.

Hypothesis 3.

The more natural resource endowment a recipient country has, the more PPP projects are to be implemented.

Hypothesis 4.

A donor with high external debt is likely to implement more PPP projects.

Hypothesis 5.

The less foreign aid a donor country gives, the more likely PPP projects are implemented.

Hypothesis 6.

Donors do more PPP projects with a recipient country that is economically and politically important.

Hypothesis 7.

The more other donors implement PPP projects and the more they are closely linked with a recipient country economically and politically, the more PPP project are implemented.

3. Methodology

3-1. Model design

To test hypotheses, this study uses a hybrid model of RN-DI model with a set of possible determinants as explanatory variables. The basic model for the analysis is as follows:

$$Y_1 \text{ \& } Y_2 = \beta_1 + \beta_2\text{pcgdpdon} + \beta_3\text{popdon} + \beta_4\text{tradon} + \beta_5\text{govexdon} + \beta_6\text{debtton} + \beta_7\text{pcgdp} + \beta_8\text{poprec} + \beta_9\text{trarec} + \beta_{10}\text{govconrec} + \beta_{11}\text{fdirec} + \beta_{12}\text{foraid} + \beta_{13}\text{polrec} + \beta_{14}\text{regurec} + \beta_{15}\text{conrec} + \beta_{16}\text{govrec} + \beta_{17}\text{rulerec} + \beta_{18}\text{biltrade} + e$$

$$Y_3 = \beta_1 + \beta_2\text{numppp} + \beta_3\text{investppp} + \beta_4\text{pcgdpdon} + \beta_5\text{popdon} + \beta_6\text{tradon} + \beta_7\text{govexdon} + \beta_8\text{debtton} + \beta_9\text{pcgdp} + \beta_{10}\text{poprec} + \beta_{11}\text{trarec} + \beta_{12}\text{govconrec} + \beta_{13}\text{fdirec} + \beta_{14}\text{foraid} + \beta_{15}\text{biltrade} + e$$

Underlined variables will be altered into and/or added with other explanatory variables as regressions run. The first and second models (Y_1 and Y_2) will be run using regression, whereas the third model (Y_3) will be run using logistic.

3-2. Data explanation

To test above hypotheses, this study uses the World Bank's

time-series project database of private participation in infrastructure (PPI).¹⁶ The analysis covers 22 European countries¹⁷ of all OECD DAC members and 135 recipient countries worldwide.¹⁸ Data used here range from 1990 to 2013. Besides, since PPI project-level database has been collected and organized on the basis of recipient countries, this paper reorganized the data on the basis of 22 European donor countries after summing up the data of all infrastructure sectors.¹⁹ The analysis covers a total of 71,280 dataset.

3-3. Explanation for the variables

To find out determinants of European donors' PPP project allocation and their partnership patterns, this study uses (i) the number of PPP projects and (ii) total investment made to PPP projects from the World Bank's PPI database. Therefore, dependent variables are as follows:

Y_1 : Total number of PPP projects implemented by European donors

Y_2 : Total investment made to PPP projects by European donors

Y_3 : Partnership among European donors when implementing PPP project
(dummy variable: Yes=1, No=0)

¹⁶ Private Participation in Infrastructure Database,
<http://ppi.worldbank.org/explore/Report.aspx>

¹⁷ Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom

¹⁸ List of recipient countries are attached at the Annex I.

¹⁹ World Bank PPI database categorizes infrastructure sectors into four big sectors - energy, telecom, transport, and water and sewerage - each sector with sub-sectors.

Then, in line with previous studies on determinants of PPP projects, this study will include a set of possible explanatory variables to verify above hypotheses. Data used in this study are provided by the IMF Statistics, OECD Statistics, UN Comtrade, Worldwide Governance Indicators (WGI), World Bank PPI Database (WB PPI), World Development Indicators (WDI) etc. Details for all variables and their sources are summarized in Table 3.1.

<Table 3.1> Explanations for the variables and their sources

Variable code	Explanation	Data Source
numppp	(Y ₁) Total number of PPP projects implemented by a European donor	WB PPI
investppp	(Y ₂) Total investment to PPP projects by a European donor	WB PPI
partnership	(Y ₃) Partnership among European donors when implementing a PPP project (dummy variable: Yes=1, No=0)	WB PPI
pcgdpdon	log of per capita GDP of a donor country	WDI
pcgdprec	log of per capita GDP of a recipient country	WDI
popdon	log of population of a donor country	WDI
poprec	log of population of a recipient country	WDI
fdidon	log of net FDI inflow to a donor country	WDI
govexdon	log of gross national expenditure of a donor country	WDI
tradon	total trade of a donor	UN Comtrade
fdirec	log of net FDI inflow to a recipient country	WDI
trarec	total trade of a recipient	UN Comtrade
govconrec	a recipient government's final consumption expenditure over GDP	WDI

naturec	total natural resource rent of a recipient country	World Energy Statistical Review
debratiorec	log of a recipient government's external debt ratio over GDP	WDI
debtndon	log of a donor government's external debt ratio over GDP	WDI
foraid	foreign aid (ODA) disbursement from a donor country to a recipient country	OECD Statistics
biltrade	log of bilateral trade	UN Comtrade
collink	direct past colonial link of a donor country and a recipient country (dummy variable: Yes=1, No=0)	ICOW Colonial History Data
polrec	political stability and absence of violence of a recipient country	WGI
regurec	regulatory quality of a recipient country	WGI
conrec	control of corruption in a recipient country	WGI
govrec	government effectiveness of a recipient country	WGI
rulerec	rule of law of a recipient country	WGI

IV. Analysis on the determinants of European donors' PPP project allocation and partnership patterns

1. Analysis on the determinants of PPP projects

Tables 4.1 and 4.2 show empirical results of determinants of European donors' PPP project allocation in terms of total project numbers and investments made, respectively.

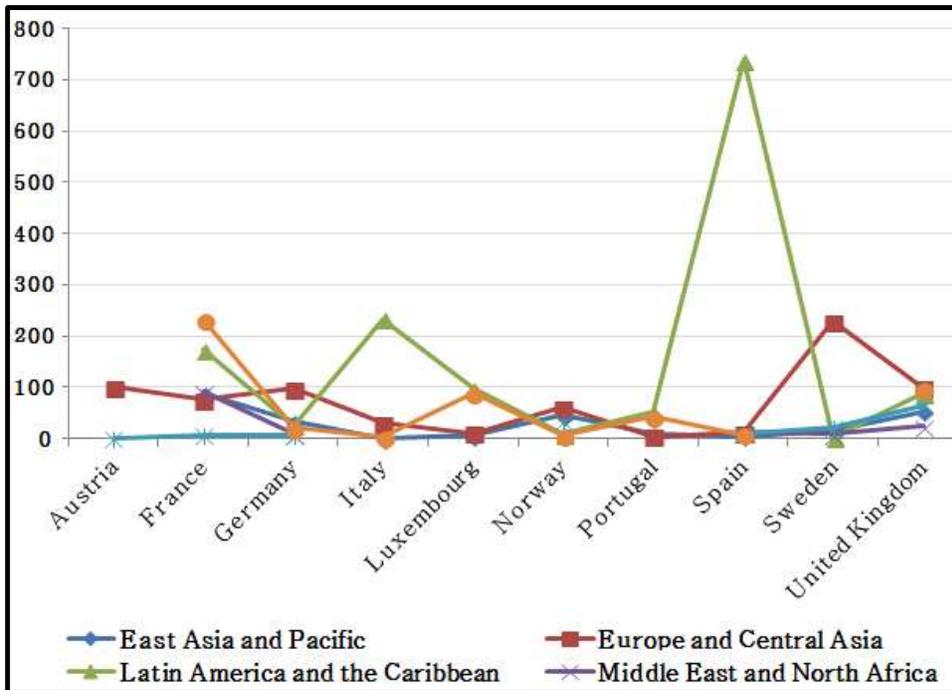
GDP per capita (*pcgdpdon*), gross national expenditure (*govexdon*) and total trade volume (*tradon*) of donor country show positive correlation with both project numbers and investments made. On the other hand, however, government's external debt ratio over GDP (*debtton*) of a donor country shows negative correlation with project numbers and investments made at a significant level. Such empirical results imply that a donor country, which tends to have and spend more funds, but at the same time has less external debt, goes for public-private partnerships. This can be attributed to the fact that as donors have more disposable funds, but not enough to entirely fund development projects, they combine and cooperate with the private sector to procure additional fund.

What is more, a donor country with larger trade volume tends to do more PPP projects with its partner countries at a significant level. However, this does not imply that the donor always give more investment. Empirical results show similar trend for trade volume of a recipient country

(*trarec*). In general, a recipient country that does more trade and whose economy is more open receives more PPP projects in terms of project numbers. However, this does not ensure donors to give more investments to the partners. Only when there is more bilateral trade between the two (*biltrade*), more PPP projects are implemented in terms of both project numbers and investment.

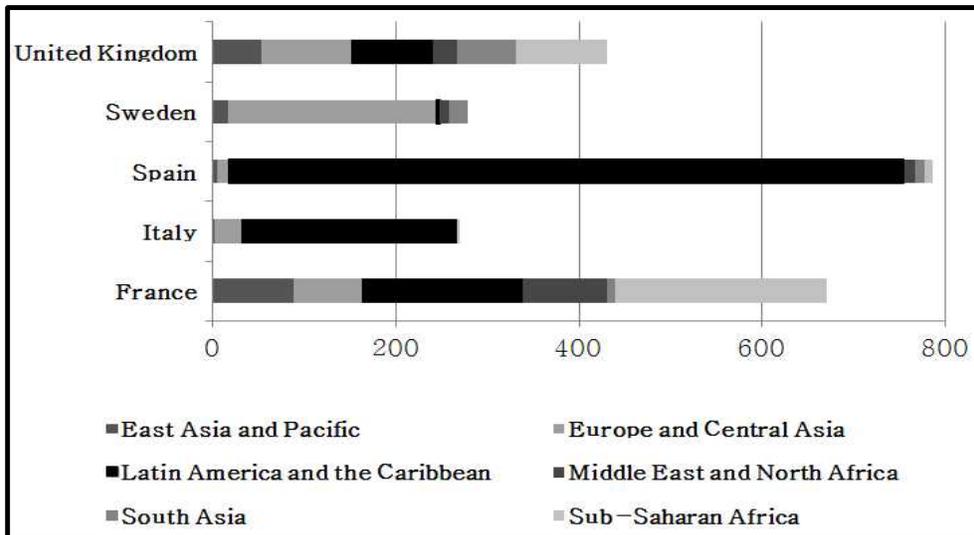
Together with their bilateral trade volume, direct colonial link of a donor and a recipient country shows positive correlation (*collink*). Figures 4.1 and 4.2 show regional distribution of top 10 and top 5 European donors' PPP projects, respectively. Although these graphs may not explain all European donors behaviors, one remarkable fact is that France and Spain who have many colonies in Sub-Saharan Africa and in LAC, respectively, do more PPP projects in those regions. For instance, in the case of Spain, about 94% of total PPP projects are (744 out of 792 PPP projects) implemented in LAC region. In the case of France, about 47% (340 out of 721 PPP projects) of total PPP projects are implemented mainly in North Africa and Sub-Saharan Africa where former French colonies are, say, Algeria, Burkina Faso, Cameroon, Gabon, Mali, Niger etc (Annexes III and IV).

<Figure 4.1> Regional distribution of top 10 European donors' PPP projects²⁰



²⁰ Ten European countries ranked high in terms of total number of PPP project implemented - Austria, France, Germany, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, United Kingdom.

<Figure 4.2> Regional distribution of top 5 European donors' PPP projects



It can be attributed to the fact that historical experience may reduce donors' searching cost of partners' business culture, of economic and legal environments etc., and thereby reduce additional cost and time with less trial and error. Use of similar language also serves as a benefit for both donor and recipient countries to implement PPP projects.

However, contrary to what previous studies found out, total net FDI a recipient country receives (*fdirec*) has negative correlation with PPP project allocation. It implies that the less FDI a recipient country receives, the more PPP projects are implemented. Chances are that most of recipient countries are yet to be fully open-economy and therefore have less experience of getting FDIs from abroad. Or this could be explained by other factors. Contrary to what previous studies argued, factors other than a recipient country's characteristics could influence allocation of PPP projects. For instance, a recipient country's geopolitical location and/or donor-recipient

bilateral political and social relationships could leverage more than total inflows of FDIs.

Lastly, overall governance level of a recipient country does not have much significance when European donors implement PPP projects. Unlike what Chan et al (2010) and Reside and Mendoza (2010) found, political stability and absence of violence, control of corruption and government effectiveness did not have much significance (*polrec*, *conrec*, *govrec*, and *rulerec*). When donors decide how much amount to invest, empirical results shows that the European donors consider regulatory quality of the recipient country of all other governance indicators (*regurec*).

<Table 4.1> Determinants of total number of PPP projects implemented by European donors

Motives	Explanatory variables	1	2	3	4
Donor characteristic	pcgdpdon	1.243*** (0.280)	1.466*** (0.293)	0.765*** (0.298)	1.242*** (0.281)
	popdon	299.142** (146.336)	307.61** (151.811)	302.864** (153.74)	279.042* (146.601)
	tradon	0.118*** (0.002)	0.012*** (0.002)	0.013*** (0.002)	0.017*** (0.002)
	govexdon	14.132*** (0.187)	14.938*** (0.216)	13.419*** (0.201)	14.132*** (0.187)
	debtndon	-5.786*** (0.189)	-5.482*** (0.199)	-5.805*** (0.205)	-5.775*** (0.190)
Recipient characteristic	pcgdprec	-16.732 (10.345)	-18.212* (10.744)	-17.784 (10.912)	-15.252 (10.365)
	poprec	-169.316* (80.950)	-165.311** (83.875)	-163.097* (84.706)	-158.688* (81.087)
	trarec	0.007*** (0.002)	0.101*** (0.002)	0.008*** (0.002)	0.063*** (0.002)
	govconrec	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.001)	-0.006 (0.001)
	fdirec	-0.447*** (0.756)	-0.409*** (0.079)	-0.524*** (0.080)	-4.58*** (0.076)
	foraid	0.001 (0.001)	0.001 (0.001)	-0.004*** (0.001)	0.001 (0.001)
	polrec	-0.043 (0.118)	-0.141 (0.127)	-0.55 (0.127)	-0.025 (0.118)
	regurec	-0.125 (0.211)	0.107 (0.222)	0.002 (0.231)	-0.229 (0.217)
	conrec	-0.358 (0.282)	-0.674 (0.301)	-0.292 (0.292)	-0.422 (0.284)
	govrec	-0.028 (0.306)	0.789 (0.340)	0.107 (0.328)	0.032 (0.308)
	rulerec	0.569** (0.290)	0.431 (0.317)	0.116 (0.326)	0.497* (0.292)
	Donor's interest	biltrade		0.539*** (0.722)	
collink				8.929*** (0.379)	
naturec					-0.137** (0.006)
Intercept C		-278.727 (65.290)	-281.866 (67.656)	-269.009 (68.378)	-270.172 (65.400)
Observations		19425	17978	16378	19329
R ²		0.38	0.39	0.40	0.38

*** denotes significance at 1% level, ** at 5% level and * at 10% level.

Numbers in the parentheses are t-statistics.

<Table 4.2> Determinants of total investments made on PPP projects implemented by European donors

Motives	Explanatory variables	1	2	3	4
Donor characteristic	pcgdpdon	453.875*** (73)	479.063*** (75.849)	503.447*** (78.708)	450.668*** (73.224)
	popdon	-3571.496 (36727.79)	-12742.03 (37919.13)	-23322.3 (39091.65)	-4917.546 (36817.8)
	tradon	0.335 (0.508)	0.863 (0.532)	0.348 (0.552)	0.321 (0.51)
	govexdon	2877.495*** (51.852)	2915.016*** (58.587)	2772.473*** (56.51)	2883.88*** (52.043)
	debtton	-810.79*** (50.087)	-815.287*** (52.196)	-796.11*** (55.006)	-810.487*** (50.201)
Recipient characteristic	pcgdprec	349.74 (2599.097)	1051.509 (2687.071)	1792.286 (2777.292)	428.371 (2605.706)
	poprec	9567.846 (20291.66)	14406.56 (20922.2)	20455.12 (21512.29)	10436.22 (20339)
	trarec	1.083 (0.576)	1.741 (0.603)	1.481 (0.613)	1.14* (0.589)
	govconrec	0.277* (0.151)	0.322** (0.152)	0.296** (0.15)	0.274* (0.151)
	fdirec	-32.01 (19.62)	-12.586 (20.317)	-62.125*** (21.03)	-34 (19.672)
	foraid	-0.006 (0.257)	0.017 (0.261)	-0.734*** (0.263)	-0.016 (0.258)
	polrec	45.105 (30.474)	55.411 (32.729)	47.871 (33.397)	45.099 (30.638)
	regurec	123.323** (54.727)	155.661*** (57.207)	77.137** (60.339)	111.144** (56.222)
	conrec	-125.838 (73.541)	-182.165 (77.966)	-108.098 (77.141)	-130.334 (73.98)
	govrec	8.756 (79.397)	90.661 (87.489)	32.344 (86.14)	14.495 (79.853)
	rulerec	-31.195 (75.397)	-63.826 (81.66)	-43.609 (85.556)	-31.146 (75.869)
Donor's interest	biltrade		48.179*** (18.669)		
	collink			1059.608*** (92.857)	
	naturec				0.045 (1.467)
Intercept C		-27913.82 (16353.56)	-24350.74 (16863.38)	-18132.52 (17351.97)	-27271.39 (16391.62)
Observations		16014	14960	13489	15939
R²		0.30	0.30	0.31	0.30

*** denotes significance at 1% level, ** at 5% level and * at 10% level.

Numbers in the parentheses are t-statistics.

2. Analysis on the determinants of European donors' partnership patterns

Table 4.3 shows empirical results of determinants of European donors' partnership patterns when implementing PPP projects. In general, how many PPP projects and how much investment other donors' do and give (*numppp* and *investppp*) influence one donor's behavior in all regression models. In other words, the more other European donors implement PPP projects and gives more investments, one tends to partner with others and implement PPP projects together.

What is more, gross national expenditure of a donor (*govexdon*) has positive correlation with partnership patterns at a significant level, whereas central government debt of a donor country (*debtidon*) has negative correlation. In align with previous empirical results in Tables 4.1 and 4.2, donors with more funds tend to go for public-private partnerships, procuring additional funds from other donors as well as from the private sector. Besides, bilateral trade volume and direct colonial past between a donor and a recipient country have positive correlation. GDP per capita of both a donor and a recipient country, total volume of net FDI and foreign aid a recipient country receives also positively affect partnership patterns.

<Table 4.3> Determinants of European donors' partnership patterns
in implementing PPP projects

Motives	Explanatory variables	1	2	3	4
Other donors' characteristics	numppp	0.163*** (0.035)	0.163*** (0.035)	0.157*** (0.033)	0.156*** (0.033)
	investppp	0.001*** (0.000)	0.009*** (0.000)	0.003*** (0.000)	0.014*** (0.000)
Donor characteristic	pcgdpdon	-0.563*** (-0.120)	-0.598*** (-0.128)	-0.578*** (0.120)	-0.560*** (0.125)
	popdon	41.365 (8.830)	63.431** (13.547)	78.956** (16.429)	107.675*** (22.503)
	tradon	-0.001 (-0.001)	-0.001 (0.000)	0.000 (0.000)	0.000 (0.000)
	govexdon	2.074*** (0.443)	1.923*** (0.411)	2.125*** (0.442)	1.986*** (0.415)
	debtton	-2.276*** (-0.486)	-2.378*** (-0.508)	-2.403*** (-0.500)	-2.479*** (-0.518)
Recipient characteristic	pcgdprec	-5.124** (-1.094)	-6.665*** (-1.423)	-7.989*** (-1.662)	-9.931*** (-2.075)
	poprec	-7.805 (-1.666)	-20.048 (-4.282)	-27.551* (-5.733)	-43.959* (-9.187)
	trarec	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)
	govconrec	-0.000 (0.000)	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)
	fdirec	0.068*** (0.015)	0.079*** (0.017)	0.117*** (0.024)	0.127*** (0.265)
	foraid	-0.001*** (0.000)	0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Donor's interest	biltrade		0.109*** (0.023)		0.095*** (0.020)
	collink			2.021*** (0.262)	1.941*** (0.258)
Intercept C		-25.472	-34.162	-41.847	-53.972
Observations		19296	17886	16256	15201
R²		0.33	0.34	0.35	0.35

*** denotes significance at 1% level, ** at 5% level and * at 10% level.
Numbers in the parentheses are dy/dx values.

V. Conclusion

1. Conclusion

The purpose of this study was to find out determinants of European donors' PPP project allocation and their partnership patterns. To examine the research questions, this study used time-series project database of private participation in infrastructure of the World Bank from 1990 to 2013. Unlike previous studies on public-private partnerships in recipient countries, this study analysed determinants of allocation of PPP projects from the donor side, especially focusing on 22 European donors.

By borrowing RN-DI model, we made a hybrid model and analysed factors that affect European donors' behavior in PPP project allocation from both donor and recipient sides, and from their interactions. The analysis of this study showed some mixed results: some hypotheses are accepted and partly accepted, whereas some are rejected (Table 5.1). The empirical results confirmed that the market size of a donor country counts; larger the GNP per capita and more trade it does, more PPP projects are implemented. However, trade volume is an important element to only PPP projects allocation in terms of numbers, but not in terms of total investment made. Total net inflow of FDI showed negative results contrary to what previous studies found. Unlike the previous findings, the analysis confirmed that governance level of recipient country does not always matter. It verified that the European donors consider regulatory quality of the recipient country over

all other governance indicators.

However, empirical results indicate that European donors with less external debt is more likely to implement PPP projects both in terms of project numbers and investments. This implies that donors tend to have and more funds, but at the same time who have not enough funds to entirely implement PPP projects on their own partner with the private sector.

Expected results also partly accept that European donors go for PPP in countries where natural resources are abundant and where less foreign aid is given. Lastly, most of European donors react to what other donors do. When others go for more PPP projects in terms of numbers and total investments, one goes for more. Bilateral economic and past colonial relationships also play an important role in their partnership patterns as well as their PPP allocation. Table 5.1 is the summary of hypothesis testing.

<Table 5.1> Summary of Hypothesis Testing

Hypothesis		Accept? or Reject?
Hypothesis 1	The larger the size of the market, the more PPP projects are to be implemented.	Partly accept
Hypothesis 2	The more stable a country, the more PPP projects are to be implemented.	Partly accept
Hypothesis 3	The more natural resource endowment a recipient country has, the more PPP projects are to be implemented.	Partly accept
Hypothesis 4	A donor with high external debt is likely to implement more PPP projects.	Reject
Hypothesis 5	The less foreign aid a donor country gives, the more likely PPP projects are implemented.	Partly accept
Hypothesis 6	Donors do more PPP projects with a recipient country that is economically and politically important.	Accept
Hypothesis 7	The more other donors implement PPP projects and the more they are closely linked with a recipient country economically and politically, the more PPP project are implemented.	Accept

2. Suggestions for further studies

This study tried to give an analysis on the determinants of PPP project allocation from the European donor side, however, still findings of this study is insufficient and further studies are needed in order to find out more specifically why do some European donors partner with certain other donors, *e.g.* France partners more often with Luxembourg, Spain and UK than other European countries, whereas Germany partners more with Spain than any other European countries.

**Annex I. List of developing countries by region
(categorized by the World Bank)**

East Asia & Pacific	
American Samoa	Myanmar
Cambodia	Palau
China	Papua New Guinea
Fiji	Philippines
Indonesia	Samoa
Kiribati	Solomon Islands
Korea, Dem. Rep.	Thailand
Lao PDR	Timor-Leste
Malaysia	Tonga
Marshall Islands	Tuvalu
Micronesia	Vanuatu
Mongolia	Viet Nam

Europe & Central Asia	
Albania	Macedonia
Armenia	Moldova
Azerbaijan	Montenegro
Belarus	Romania
Bosnia and Herzegovina	Serbia
Bulgaria	Tajikistan
Georgia	Turkey
Kazakhstan	Turkmenistan
Kosovo	Ukraine
Kyrgyz Republic	Uzbekistan

Middle East & North Africa	
Algeria	Libya
Djibouti	Morocco
Egypt	Syrian Arab Republic
Iraq	Tunisia
Jordan	West Bank and Gaza
Lebanon	Yemen, Rep.

Latin America & Caribbean

Argentina	Guyana
Belize	Haiti
Bolivia	Honduras
Brazil	Jamaica
Colombia	Mexico
Costa Rica	Nicaragua
Cuba	Panama
Dominica	Paraguay
Dominican Republic	Peru
Ecuador	St. Lucia
El Salvador	St. Vincent and the Grenadines
Grenada	Suriname
Guatemala	Venezuela, RB

South Asia

Afghanistan	Maldives
Bangladesh	Nepal
Bhutan	Pakistan
India	Sri Lanka

Sub-Saharan Africa

Angola	Malawi
Benin	Mali
Botswana	Mauritania
Burkina Faso	Mauritius
Burundi	Mozambique
Cabo Verde	Namibia
Cameroon	Niger
Central African Republic	Nigeria
Chad	Rwanda
Comoros	Sao Tome and Principe
Congo, Dem. Rep.	Senegal
Congo, Rep.	Seychelles
Cote d'Ivoire	Sierra Leone
Eritrea	Somalia
Ethiopia	South Africa

Gabon
Gambia, The
Ghana
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Madagascar

South Sudan
Sudan
Swaziland
Tanzania
Togo
Uganda
Zambia
Zimbabwe

Annex II. Summary statistics for the sample

Variable	Observation	Mean	Standard Deviation	Min	Max
ppp	71280	0.864717	0.3420284	0	1
numppp	71279	7.528473	11.32235	0	56
investppp	45201	1919.392	2749.38	0	16857.8
partnership	71280	0.352483	0.4777468	0	1
pcgdpdon	71280	4.384952	0.3188022	3.22885	5.04933
pcgdprec	66660	3.110624	0.4857441	1.81164	4.20012
popdon	66660	0.487376	0.0696158	0.25807	0.62326
poprec	66660	-0.31683	0.0649032	-0.58826	-0.20533
fdidon	62775	9.768545	0.76815	5.32451	11.4175
govexdon	70605	11.34433	0.6476789	9.77324	12.5365
tradon	70605	94.25769	51.16356	35.2884	333.532
govcondon	71280	1.045695	4.003651	0	69.6458
fdirec	61688	8.169531	1.251687	1	11.5414
trarec	61798	79.94289	38.21214	0.3088	280.361
govconrec	66659	7.254253	94.38452	0	7509.58
naturec	63338	10.14661	14.00853	0	94.6403
debtratiorec	66659	0.026286	0.0694625	-0.49963	7.05844
debtton	45494	1.819019	0.4382522	0.55754	3.59709
foraid	38628	13.23096	55.87317	-315.79	3185.74
biltrade	56834	6.843008	1.595481	0	11.3116
collink	60191	0.029905	0.1703261	0	1
polrec	40282	-0.40705	0.9378759	-3.32	1.54
regurec	40414	-0.51547	0.7011288	-2.68	1.31
conrec	40546	-0.52426	0.5784043	-2.06	1.25
govrec	40414	-0.52791	0.6095569	-2.45	1.25
rulerec	40986	-0.53348	0.6714913	-2.67	1.38

Annex III. Regional distribution of European donors' PPP projects (1990-2013)

	East Asia & Pacific	Europe & Central Asia	Latin America and the Caribbean	Middle East & North Africa	South Asia	Sub-Saharan Africa
Austria		101			1	
Belgium			1			1
Czech Republic		33				
Denmark	9	3	16	5	6	9
Finland	1	4				
France	88	76	175	92	8	232
Germany	34	97	26	9	8	23
Greece		60		6		
Ireland			1			3
Italy	1	31	234			3
Luxembourg	6	10	98			88
Netherlands	8	40	25		3	18
Norway	45	61	10		35	7
Portugal	9	5	52			44
Slovak Republic		10				
Slovenia		25				
Spain	5	12	738	12	11	8
Sweden	16	228	4	10	21	
Switzerland	3	3	29		14	5
UK	53	99	88	26	65	99
Total	278	898	1497	160	172	540

Annex IV. Regional distribution of European donors' PPP projects partnership (1990-2013)

	East Asia & Pacific	Europe & Central Asia	Latin America and the Caribbean	Middle East & North Africa	South Asia	Sub-Saharan Africa	Total
Austria France Germany						1	1
Austria Germany		1					1
Austria Portugal Spain		1					1
Belgium Germany						1	1
Belgium Netherlands		3					3
Czech Republic Luxembourg		1					1
Denmark Netherlands			1				1
Denmark UK	2					1	3
France Germany			1			1	2
France Germany Switzerland				1			1
France Greece				1			1
France Luxembourg				10			10
France Norway	2						2
France Spain			14	1		1	16

France UK	15	1	1			1	18
Germany Spain			22	1			23
Germany Switzerland					2		2
Germany UK	1					1	2
Ireland UK						1	1
Italy Germany		1	1				2
Italy Netherlands		1					1
Italy Portugal			6				6
Italy Spain			3				3
Italy UK		1	2	2			5
Netherlands UK	1		18				19
Norway Sweden	4	4					8
Norway Switzerland					1		1
Portugal Spain			56				56
Spain UK			6				6
Switzerland Sweden		13					13
Switzerland UK						3	3
Total	25	27	131	16	3	11	

Annex V. Sectoral distribution of European donors' PPP project allocation and partnership (1990-2013)

	Energy	Telecom	Transport	Water and sewerage	Total
Austria	38	57	1	6	102
Austria France Germany				1	1
Austria Germany	1				1
Austria Portugal Spain			1		1
Belgium	1		1		2
Belgium Germany			1		1
Belgium Netherlands			3		3
Czech Republic	33				33
Czech Republic Luxembourg	1				1
Denmark	4		44		48
Denmark Netherlands			1		1
Denmark UK			3		3
Finland	4			1	5
France	210	285	47	129	671
France Germany	2				2
France Germany Switzerland			1		1
France Greece				1	1
France Luxembourg		10			10

France Norway			2		2
France Spain	4		1	11	16
France UK	1	15		2	18
Germany	69	76	21	31	197
Germany Spain	21		2		23
Germany Switzerland			2		2
Germany UK				2	2
Greece	1	65			66
Ireland	1		3		4
Ireland UK	1				1
Italy	132	110	21	6	269
Italy Germany		1	1		2
Italy Netherlands	1				1
Italy Portugal		6			6
Italy Spain	1		1	1	3
Italy UK	4			1	5
Luxembourg	3	199			202
Netherlands	40	42	11	1	94
Netherlands UK	16			3	19
Norway	24	132	2		158

Norway Sweden	4	4			8
Norway Switzerland	1				1
Portugal	57	48	3	2	110
Portugal Spain	1	53	2		56
Slovak Republic	10				10
Slovenia		25			25
Spain	333	287	114	52	786
Spain UK	6				6
Sweden	3	274	1	1	279
Switzerland	28	12	13	1	54
Switzerland Sweden		13			13
Switzerland UK	3				1
UK	116	219	30	15	430
Total	1225	1933	333	267	

Annex VI. Distribution of European donors' PPP project allocation and partnership by income level of the recipient country (1990-2013)

	Low income	Lower middle income	Upper middle income	Total
Austria		7	95	102
Austria France Germany			1	1
Austria Germany			1	1
Austria Portugal Spain			1	1
Belgium	1		1	2
Belgium Germany			1	1
Belgium Netherlands		3		
Czech Republic		8	25	33
Czech Republic Luxembourg			1	1
Denmark	2	19	27	48
Denmark Netherlands			1	1
Denmark UK		1	2	3
Finland			5	5
France	98	219	354	671
France Germany			2	2
France Germany Switzerland		1		1
France Greece			1	1
France Luxembourg			10	10

France Norway		2		2
France Spain	1	1	14	16
France UK		15	3	18
Germany	23	30	144	197
Germany Spain		1	22	23
Germany Switzerland		2		2
Germany UK	1		1	2
Greece		6	60	66
Ireland		2	2	4
Ireland UK			1	1
Italy		32	237	269
Italy Germany		1	1	2
Italy Netherlands			1	1
Italy Portugal			6	6
Italy Spain			3	3
Italy UK		3	2	5
Luxembourg	57	114	31	202
Netherlands	11	24	59	94
Netherlands UK		2	17	19
Norway	20	24	114	158

Norway Sweden		2	6	8
Norway Switzerland		1		1
Portugal	1	36	73	110
Portugal Spain			56	56
Slovak Republic		10		10
Slovenia		7	18	25
Spain	1	82	703	786
Spain UK			6	6
Sweden	13	65	201	279
Switzerland	17	7	30	54
Switzerland Sweden	13			13
Switzerland UK	1	2		3
UK	49	137	244	430
Total	209	866	2583	3758

References

- 김태균, 개발재원의 다양화와 ODA의 중심성: 이론과 쟁점, 국제개발협력 학회, 2012.
- Allayannis, G. & Weston, J.P. 2001, "The use of foreign currency derivatives and firm market value", *The review of financial studies*, vol. 14, no. 1, pp. 243-276.
- Andrés, L., Guasch, J. Haven, T. and Foster, V. 2008, *The impact of private sector participation in infrastructure*. Washington DC: The World Bank.
- Anna Peters, *Partners in Development: How donors can better engage the private sector for development in LDCs*, 2011.
- Anthony B. Atkinson (2004A), *Innovative sources to meet a global challenge, New sources of Development Finance*, Oxford University Press, 2004.
- Anthony B. Atkinson (2004B), *Over-arching Issues, New sources of Development Finance*, Oxford University Press, 2004.
- Banerjee, S.G., Oetzel, J.M. and Ranganathan, R. 2006 "Private Provision of Infrastructure in Emerging Markets: Do Institutions Matter?", *Development Policy Review*, vol. 24, no. 2, pp. 128-45.
- Barthel, Fabian. "Exploring Spatial Dependence in bi-and multilateral Aid giving Patterns." London School of Economics and Political Science, http://s3.amazonaws.com/aiddata/Barthel_aiddata.pdf.

- Berthelemy, J. and A. Tichit. Bilateral Donors' Aid Allocation Decisions: a Three-dimensional Panel Analysis. WIDER Discussion Paper 2002.
- Berthélemy, Jean-Claude. “Bilateral Donors’ Interest vs. Recipients’ Development Motives in Aid Allocation: Do All Donors Behave the Same?” *Review of Development Economics*, 10(2), 2006.
- Carsten Greve and Graeme Hodge, *Public-private partnerships and public governance challenges*, *The new public governance?*, Routledge, 2009.
- Chan, A.P.C., Lam, P.T.I., Chan, D.W.M., Cheung, E. and Ke, Y. 2010, “Critical success factors for ppps in infrastructure developments: Chinese perspective”, *Journal of Construction Engineering and Management*, vol. 136, no. 5, pp. 484-494.
- Estache, A. 2006, *Infrastructure: A survey of recent and upcoming issues*, The World Bank, Washing DC.
- European Commission, A New Focus to EU Assistance for Enlargement, Brussel, ES Vol. 61, No. 10, pp.1715-1734, 2009.
- European Investment Bank (2005), Evaluation of PPP projects financed by the EIB: Synthesis Report, 2005.
- European Investment Bank (EIB 2011A), FEMIP Study on PPP Legal & Financial Frameworks in the Mediterranean Partner Countries, Vol. 1 A regional approach, 2011.
- European Investment Bank (EIB 2011B), FEMIP Study on PPP Legal & Financial Frameworks in the Mediterranean Partner Countries, Vol. 2 Country analysis, 2011.

European Investment Bank (EIB 2011C), FEMIP Study on PPP Legal & Financial Frameworks in the Mediterranean Partner Countries, Vol. 3 Best practices and lessons learned: Selected experiences from other countries, 2011.

Fabian, Barthel. "Exploring Spatial Dependence in bi-and multilateral Aid giving Patterns." London School of Economics and Political Science. http://s3.amazonaws.com/aiddata/Barthel_aiddata.pdf.

Hammami, M., Ruhashyankiko, J. & Yehoue, E.B. 2006, Determinants of Public-Private Partnerships in Infrastructure, International Monetary Fund.

ICOW Colonial History Data, <http://www.paulhensel.org/icowcol.html>.

Katada, Saori N. "Two aid hegemons: Japanese-US interaction and aid allocation to Latin America and the Caribbean." *World Development* 25 (6), 1997: 931-945.

Kristof Kleenmann, How effective is the European Neighborhood Policy in promoting good governance?, Hertie School of Governance, 2010.

Lavenex, S. (2004). EU External Governance in "Wider Europe", In *Journal of European Public Policy*, 11, 4, pp. 680 - 700.

McKinlay, R. D. and Little, R., "A Foreign Policy Model of U.S. Bilateral Aid Allocation", *World Politics*, 1977.

Milica Zatezalo-Falatar, Public private partnerships in France - state guarantee supports the congested pipeline, *The Columbia Journal of European Law* online.

OECD, Development Finance Challenges 2010-2015, Paris, OECD, 2010.

Pesso, A. 2010, *Reviewing PPP performance in developing economics*, in Hodge, G., Greve, C. and Boardman, A. (Eds), *International Handbook on Public Private Partnerships (PPPs)*, Chapter 26, Edward Elgar, Cheltenham.

Pongsiri, N. 2002, Regulation and public private partnerships, *The International Journal of Public Sector Management*, vol. 15, no. 6, pp. 487-495.

PPP in Infrastructure Resource Center,
<http://ppp.worldbank.org/public-private-partnership/legislation-regulation/laws/ppp-and-concession-laws>.

Price Waterhouse Coopers, *Delivering the PPP promise: A review of PPP issues and activity*, 2005, available at www.pwc.com.

Renato, E. & Reside, J. 2009, *Global Determinants of stress and risk in Public-Private Partnerships in Infrastructure*, Asian Development Bank Institute, Japan.

Sharma, C. 2012, "Determinants of PPP in infrastructure in developing economies", *Transforming Government: People, Process and Policy*, vol. 6, no. 2, pp. 149-166.

Stefan Ganzle, *EU Governance and the European Neighborhood Policy: A Framework for Analysis*, EUROPE-ASIA STUDY.

Sunwu Kim, *A Study of determinants of Public-Private Partnership in infrastructure in Latin America*, Hankuk University of Foreign Studies, 2013.

Trujillo, L., Martin, N., Estache, A. & Campos, J. 2002, *Macroeconomic effects of private sector participation in Latin America's infrastructure*, World Bank, Washing DC.

UN, Public Governance Indicators: A Literature Review, Department of Economic and Social Affairs, United Nations, New York, 2007.

United Nations Development Programme (UNDP), Examples of Successful Public-private Partnerships, Volume 15, UNDP, 2008.

United Nations Economic Commission for Europe (UNECE), GUIDEBOOK ON PROMOTING GOOD GOVERNANCE IN PUBLIC-PRIVATE PARTNERSHIPS, UNITED NATIONS, New York and Geneva, 2008.

World Bank, Public-Private Partnerships Reference Guide, Version 1.0, World Bank Institute, 2012.

World Bank, Financing for Development Post-2015, The World Bank Group, 2013.

국문초록

민관협력 프로젝트 배분의 결정요인: 유럽공여국가를 중심으로

박 세 은

서울대학교 국제대학원
국제학과 국제지역전공

본 논문은 유럽공여국가들의 민관협력 프로젝트 배분 및 그 과정에서 유럽 국가들이 맺고 있는 파트너십의 결정요인을 알아보고자 한다. 이에 본 논문은 1990년부터 2013년까지 OECD DAC 유럽공여국가 22개국이 對 전 세계 개도국 135국에서 추진한 민관협력사업의 주요 결정요인을 회귀분석 모델을 통해 실증적으로 분석할 것이다.

개도국에서의 민관협력 사업의 결정요인을 공여국과 수원국 모두의 이해관계에 입각하여 분석한 결과, 유럽공여국은 민관협력 사업을 추진함에 있어 시장규모, 개도국 제도의 질, 경제·정치 외교적 관계 등을 고려하는 것으로 나타났다. 또한 본 논문은 기존에 다루지 않았던 유럽공여국가간의 민관협력 파트너십 패턴을 분석함으로써 유럽 국가들은 자국의 이해관계뿐 아니라 서로의 존재와 행동에 영향을 받아 민관협력 사업을 추진한다는 것을 발견할 수 있었다.

주요어

민관협력 결정요인, 유럽공여국가, 인프라PPP, 개발금융, 파트너십

학번: 2012-22119