Factors Impact To Performance Of Public-Private-Partnership Projects In Vietnam

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Abstract

This paper presents a study of factors that affect activities- performance of Vietnamese Public Private Partnership (PPP) investment; a consideration of many investors who intend to invest in infrastructure. It finds out seven factors that impact PPP projects. The paper also indicates obstacles and solutions to attract investors. The authors use quantitative methods for analysis and experiences from the Vietnamese investment environment.

Keywords: Public-private-partnership investment, performance, support, commitment, competence, corruption.

1. Introduction

Vietnamese public investment has increased rapidly in recent years. Projects of fundamental infrastructure: electricity, water supply, transport works, and healthcare facilities require a large sum of the state budget.

On the way to development, the infrastructure investment needs a lot of capital; estimated data show that it asks a large budget for investment. The Transportation Ministry proposes hundreds of USD billions to invest in highways, airports, railways, seaports, etc. (see Table 1). Over the decades, Vietnam has attracted private capital for road projects; however, many investors have failed. With this practice, there are adjustments and lessons for the

government and investors to correct mistakes in PPP investment.

The table below shows an estimation of PPP investment for highways in the decades with the participation of the private sector.

Table 1: Highway planning and investment capital needs

Number	Region	Length (km)	Investment capital 2021-2030 (USD billion)	Investment capital 2031-2050 (USD billion)	Estimated PPP capital
1	Northern Midlands and Mountains	1823			
2	Red River delta	1388			
3	North Central and Central Coast	2420			
4	West highlands	1205	27.2	60.7	35% -50%
5	Southeast	936			
6	Mekong Delta	1242			
Total		9014			
Length already made		1163			

Source: Asem-Connect

According to electricity planning VIII of the government (draft), the national ability to meet investment capital for EVN (Electricity Company of Vietnam) is about 40%. In one decade (2010-2020), Vietnam attracted several USD billions in wind power and solar power; however, in early 2023, 85 projects faced precariousness because of the inconsistency of the Vietnamese government. Electricity Planning VIII estimates the investment demand for electric works (see Table 2).

Table 2: Electricity Investment need (Draft of Electricity Planning VIII, 2021)

Period	2021-2030	2031-2045
Investment demand (USD billion)	133	184

Investment arrangement of governmental budget (USD billion)	53	80
Fund shortage	**80**	**104**

Source: Vietnam Energy Partnership Group

Besides, there are other public investment demands of water supply, healthcare, socio-housing, etc. It also needs thousands of USD billion for 2020-2040 (Le, 2020; NAO, 2010).

For a long time, public investment has almost exclusively relied on the state budget. This policy is lagging and cannot meet the overwhelming demand for public investment. Therefore, the calling for investment from other sources is necessary to satisfy social-economic needs.

For nearly two decades, Vietnam has begun to attract non-state capital sources, and public-private partnership investments (PPP) are the main. However, there are many obstacles to attracting capital. Many investors don't appreciate about PPP environment of Vietnam, and the PPP investment flows from domestic and foreign investors are still modest.

In Vietnam, the law regulates six types of PPP investment (Build-Operate-Transfer BOT, Build-Transfer-Operate BTO, Build-Own-Operate BOO, Operation, and Maintenance O&M, Build-Transfer-Lease BTL, Build-Lease-Transfer BLT), the BOT is usually applied, especially for traffic and power works. The BOO of Vietnam may explain as BOOT (Built-Own-Operate-Transfer). Because of the negative phenomena encountered by the government, the new law has abandoned the form of BT (Built-Transfer) investment.

This study presents the relationship of factors with the performance (activities) of the PPP project. Based on the research result, the authors can reveal the obstacles to hinder this investment type. Besides, the authors propose a solution to reattract investors. It hopes that this study can be helpful for Vietnam and other developing countries.

2. Literature review and experiences

There are studies and experiences from developing countries about the relationship between impact factors and PPP project activities. The study results are different; they depend on countries environment.

Government support

The UNESCAP, a UNITED NATIONS AGENCY concludes that the PPP projects cannot be successful without sufficient government support. The main types of support consist of land acquisition, capital grant, other financial aid, foreign exchange risk, revenue guarantee, tax incentives, threats about tariffs or shortening of the concession period, loan guarantee, and force majeure situation. However, some authors prove that some supports are helpful for the profitability of PPP firms, but some supportive behaviors are harmful to their activities (Han Xu, 2023). According to the study by Dominicus S. Priyarsono et al. (2019), government support is the most important for the success of PPP projects.

Because the PPP project is a public investment, many specialists agree that governmental support is always an important policy. Vladimir and Evgenia (2020) conclude that the supports of the government in financing, state guarantees, benefits, and market participation are helpful for PPP projects. But Huanming and Juhai Liu (2019) find that in-kind policies such as revenue subsidies attract more capital; the guarantee policies modestly impact PPP projects. However, a survey by The Vietnamese Transportation Ministry shows that the means of government support for its guarantee and commitment to PPP projects are high (3.5/5). USAID says that PPP investment cannot develop in monopoly policies countries, so the government should support an equal environment. Wang Xiao Xiao (2022) finds out that government equity participation affects better than financing subsidies to activities of PPP projects.

Laws and guidelines

Mohammed Khaled Al Hanawi et al. (2020) conclude that the legal barriers consist of delays in receiving approval and permits, and changes in laws and regulations are the main

obstacles to PPP projects. In China, inadequate legal frameworks are shortcomings in the PPP investment environment. China has not yet PPP law which causes many problems in practice; besides, there are conflicts between central and local regulations of PPP attraction (Cheng Cheng and Zhengxu Wang, 2009).

Wahyu Kurniawan et al. (2021) say legal devices help mitigate the risks of PPP projects; the government considers them as standards for the subject, object, and legal relationship. There are many management obstacles to PPP projects in the UK, Hong Kong, and Malaysia. These problems arise from lacking legal documents in the bidding mechanism, financial provision, and key performance indicator (KPI) management. For long projects, there are risks as the law and environment change (H. Hashim, 2017). Jamali (2004) discovers poorly drafted regulatory and legal frameworks are reasons for project failure. Carter and Florin (2020) also agree that the unclear legal framework to deal with PPP investment issues; they prove in transition countries, the fail reason of PPP is an incomplete and not well enforced regulatory system. In Vietnam, a survey by VCCI and USAID (2020) finds out the hinder to PPP investment is the contradiction between laws and regulations. Besides, Phong et al. (2020) conclude the law system and regulation are impact factors of the PPP projects success.

Approval of people

In many countries, PPP projects are public welfare works, but some projects cant receive inhabitants' approval and beneficiaries. This problem causes difficulty in land clearance and also in the implementation phase. According to reports from the Vietnamese government, many highways and metros are stagnant because of the protest of inhabitants (e,g. Metro projects of Hanoi and HCM City).

In Iraq, when the government approved a draft law on PPP investment to attract private sector capital, there was a mass protest movement, and they could not issue this new law (Wil Crisp, 2020). An Indian PPP commercial project at Dharna Mudasarlova Lake confronted a violent protest from inhabitants because of land-water protection though the

center was necessary for the region. In India, Ramakrishna Nallathiga et al. (2017) say that road PPP projects hinder an obstacle of public opposition to the project; they are land acquisition and compensation. A conference of DIIS (2015) presents the public resistance can cause the failure of PPP projects; In India, Kenya, and South Africa, the project can proceed if there is an agreement on the loss-land citizen (80%); the main barrier is the price of land compensation.

Project selection

Phong et al. (2020) conclude that in Vietnam, there are five success factors of PPP projects: land compensation and acquisition, financial capacity of investors, project management, legal framework regulations, financial feasibility, and attraction; in this study, an attractive project selection can make a profit for investors. The project economic sector choice and examination of project cost-benefit analysis (NPV, IRR) is crucial (Dominicus, 2019) for project results. Marco Airoldi et al. (2013) say that one of the best practices for the public sector is project identification so that they are well suited for PPPs.

One of the PPP project experiences is the careful selection and proposal. The report of the Transportation Ministry of Vietnam shows that many proposed projects are failures because these projects could not get profit for investors (45/61 BOT highway projects). Many PPP projects were in a sloppy appraisal; this mistake is the main reason for their downfall. So, the project selection of government and investors decides the project's success or failure.

Government commitment

Jamali (2004) says that PPP projects usually face difficulties when it lacks government commitment, especially changes in country leaders. The PPP investment requires the political support of the government commitment and the private sector's dedication (ADB and AFD, 2012). The World Bank (2022) concludes that for the success of PPPs Government should commit to budgeting for PPP projects; it consists of ongoing payments such as shadow tolls, capital subsidies, service payments, capital contributions, and costs reduction for users..., this commitment is most important. Esther et al.

(2012) say that commitment and responsibility of government and investors, risk sharing, and risk allocation are the main success factors of PPP projects. One of the government commitments is risk sharing, a strong assurance for PPP investors (Bonny and Zwelinzima, 2023).

Investor competence

According to USAID and VCCI (2020), there are reasons for the weaknesses of the PPP Project Management Unit and internal investors, which cause the failure of many PPP projects in Vietnam. Some Vietnamese domestic investors can't implement projects because of the weaknesses of finance and management. The public partner should select the right private partner for the projects (Marco Airoldi et al., 2013). A study by Ali Mistarihi et al. (2012) concludes that the managers of PPP projects should be able to cope with and adapt to changes; they need social skills, project management, communication, and coordination. They also say both partners should have the skills to make PPP works.

Corruption

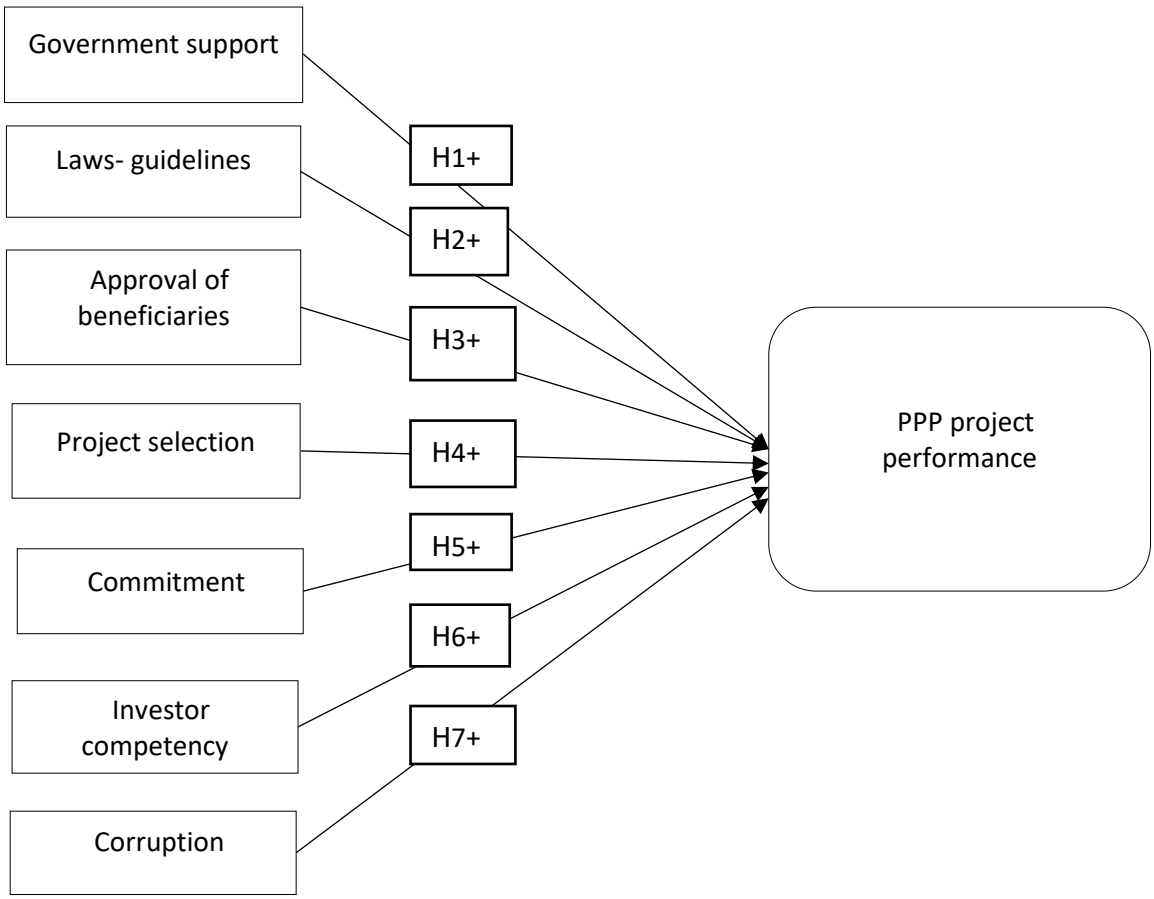
Nguyen (2020) concludes that in Vietnam, there isn't a severe impact of corruption on the activities of enterprises. However, there is another survey of USAID and VCCI about the negative effect on private projects; this event can discourage investment in PPP projects. Bonny and Zwelinzima (2023) find out that in Uganda, a developing country, government corruption is one of the risks of PPP investments. Madeleine (2013) proves that corruption is a handicap to PPP projects and determines it as monopoly plus discretion minus accountability, integrity, and transparency. Regarding the impact of corruption, AbdulGaniyu Otairua et al. (2014) conclude that in Nigeria, government corruption is the major problem of the slow adoption of PPP projects. Besides the impact of corruption, some researchers discover corruption in developing countries positively impacts the number of PPP arrangements and the number of investment commitments. They prove a positive link between corruption and PPP projects (Beatriz Cuadrado Ballesteros and Noemi Pena Miguel, 2022).

3. Methodology

3.1 Study model

Based on the literature review, previous studies results, and experiences, authors propose seven impact- factors related to Vietnamese PPP projects. The study model has 26 independent observed factors and three dependent observed factors (Table 3). The surveyed specialists accepted the model and proposed other observed factors of law regulations (equal competition) and project selection (win-win project). The authors recept the proposal; finally, the model has seven independent factors, one dependent factor, and 29 observed factors (see Fig. 1 and Table 3).

Figure 1: Study model



3.2 Hypotheses

Through this model, the authors choose the following variables and hypotheses

3.2.1. PPP project performance (Pp, dependent variable)

This factor is the dependent variable that consists of performance in the proposal, implementation, exploitation, and finishing phases of the project. The proposal phase confronts many difficulties; Vietnamese law permits the investors to propose PPP projects or the proposal of governmental organizations; In this phase, the contractor's selection and the project appraisal are duties for success. In the implementation, the construction bidding and land clearance are the principal works. In the operation and exploitation, there are management problems such as taxes, import-export procedures, assurance, and market approach. The authors examine the project performance in phases of proposal, implementation, and operation (Pp1-Pp3).

3.2.2. Government support (Gs)

Some specialists record the helpful support of the government to the success of PPP investment as financing, market participation… (Vladimir and Evgina, 2020); however, others determine that some supports have limited impact on PPP projects: guarantee subsidies, financing policies… (Huanming and Juhai Liu, 2019; Wang Xiao Xiao, 2022). Many Vietnamese projects are successful with the help of central and local government (Van Don airport, electric power stations).

In Vietnam, it seems there is no direct financing support for PPP projects (except few highway projects, the government spends the land fees compensation). The Vietnamese government's supports consist of the consistency of policies, solving problems of projects, and sharing risks. The law system in Vietnam is incomplete, so the governmental regulations (under laws) help solve the problems of PPP projects. Recently, because of difficulties of the PPP highway projects, the government issued policies to share the risks of projects when their income is lower than project planning. In some projects, the government can spend the land fees compensation. The government does not implement yet these policies. Investors can consider that the tax and land renting reduction-deduction for enterprises are governmental support. Based on experiences, the

government support in this study consists of consistency of policies (Gs1), sharing risks (Gs2), matters arising (Gs3), market approach (Gs4), and tax reduction- deduction (Gs5).

Hypothesis 1: Government supports impacts (+) on the PPP project's performance.

3.2.3. Laws and guidelines (Lw)

Laws and regulations impact PPP investment; an incomplete laws system hinders attracting private capital and the implementation of PPP projects (Wahyu Kurniawan et al., 2021; H. Hashim, 2017; Jamali, 2004)

The Vietnamese law systems regarding the PPP investment developed from decree 62/1988 to the investment law of public-private partnership (No 64/2020/QH 14). However, this system is not enough to solve the problems of PPP projects from the initial to the operation phase. Legally, the law systems and other regulations handle the risks, procedures, matters arising, assurance, and management. However, there are still complaints from investors because of incomplete laws and their contradictions.

Besides laws and regulations, governmental guidelines impact projects, especially the procedures, finance, construction, and project management. In this study, the laws and guidelines assure the ownership of investors (Lw1), investment environment (Lw2), perfect competition (Lw3), and the laws and guidelines consistency (Lw4).

Hypothesis 2: Laws and guidelines impact (+) PPP project performance.

3.2.4. Approval of beneficiaries (Ab)

In Vietnam, the land law defines land ownership belongs to the state, the government assigns land use rights for people, and the state has the right to land recovery. But when the state needs the land for public projects (metro, highways), the investors face the difficulties of land clearance because of the inhabitant opposition. In reality, some projects are delayed for many years because of this reason. Besides, the land loss of people can cause insecurity in the project. In Vietnam, there are highway projects that people boycott the

using. To solve the problem, the government has to organize propaganda to people about the project's benefits and correct project mistakes. The authors propose three observed factors about the approval of beneficiaries: land clearance (Ab1), security of project (Ab2), and approval of use (Ab3).

Hypothesis 3: Support of beneficiaries impacts (+) PPP project performance.

3.2.5. Project selection (Ps)

According to governmental and Ministry of Transportation reports, many highway and power PPP projects are failing (45 BOT highways, Hiep Phuoc power station, solar power stations, and biogasoline factories…). The reason is that these PPP projects are not profitable; the government project management units and investors have made mistakes in project selection and appraisal. Besides, investors did not study the investment environment of Vietnam. The carefulness in the proposal, appraising, choosing, and bidding decides the success of the PPP project (Ps1-Ps4).

Hypothesis 4: Good selection of project impacts (+) PPP project performance.

3.2.6. Commitment (Cm)

In transition countries, especially China and Vietnam, where the political system is socialist, investors need commitment when they spend money on PPP projects. Besides the assurance of their property, the investors need stable policy commitment when the government changes and solves the difficulties of PPP projects (ADB and AFD, 2012; Jamali, 2004). The most considered commitment consists of the consistency of laws, policies, risk sharing, assurance of ownership and profit, and solving difficulties. In developing countries, when the law and policies change, PPP projects have problems(e,g. the change of purchase tariff of solar power projects). Vietnamese issued regulations to share the risks and difficulties of highway BOT projects, but they are not applied yet in practice. The central government commitment (Cm1) is most important for investors. The

local and partner faithfulness (Cm2, Cm3) have significance in the implementation and operation phases.

Hypothesis 5: Government commitment impacts (+) PPP project performance.

3.2.7. Investor competency (Ic)

Along with a good project management unit of government, the competency of PPP investors decides the project success of the project. The experience in Vietnam shows that the failure of many projects comes from the weak competency of investors (especially domestic investors). These are the weaknesses of finance (Ic1), management (Ic2), technology (Ic3), and relationship (Ic4). Because most PPP project capital comes from the private sector, investors should prepare enough budgets. The level of management and technology are always the main qualities of investors. Because PPP projects are public, the relationship with the government, partners, and people decides the smoothness of the project.

Hypothesis 6: Investor competency impacts (+) PPP project performance.

3.2.8. Corruption (Cr)

According to Nguyen (2019), corruption in Vietnam impacts insignificantly to activities of enterprises. However, the public sector is the land for this event, and there are reports of corruption in PPP projects. The evils appear in many phases of the project: selection and establishment (Cr1), bidding (Cr2), and management-exploitation (Cr3)

Hypothesis 7: corruption impacts (+) PPP project performance.

3.3. Research design of variables

There are seven hypotheses with one dependent variable (PPP project performance) and seven independent variables. Each variable has observed variables that show the meaning or explanation of variables. Most of the observed variables come from experiences in the PPP investment environment in Vietnam.

Table 3: Variables design

Sign	Variables	Observed variables	Proposal Source
Pp	PPP project performance (Pp)	Performance in the phase of: -Proposal (Pp1) -Implementation (Pp2) -Operation (Pp3)	Authors
Gs	Government support (Gs)	Support from: -Policies consistency (Gs1) -Risk sharing (Gs2) -Matters arising (Gs3) -Market approach (Gs4) -Tax reduction-deduction (Gs5)	Vladimir and Evgina, Authors
Lw	Laws and guidelines (Lw)	Laws-guidelines assure: -Ownership assurance (Lw1) -Investment environment (Lw2) -Equal competition (Lw3) -Laws consistency (Lw4)	Wahyu, Hashim, Jamali, Authors
Ab	Approval of beneficiaries (Ab)	People approve : -Land clearance (Ab1) -Security in project activities (Ab2) -Approval for using (Ab3)	Authors
Ps	Project selection (Ps)	Good selection in: -Project proposal (Ps1) -Project appraisal (Ps2) -Win-win project kind (Ps3) -Project investor bidding (Ps4)	Authors
Cm	Commitment (Cm)	Commitment of: -Central government (Cm1) -Local government (Cm2) -Partner (Cm3)	Jamali, ADB-AFD, Authors
Ic	Investor competence (Ic)	Investor competence of: -Finance (Ic1) -Management (Ic2) -Technology (Ic3) -Relationship (Ic4)	Authors
Cr	Corruption (Cr)	Corruption in phases:	Nguyen, Authors

		-Project establishment (Cr1) -Bidding project (Cr2) -Project management-exploitation (Cr3)	

Based on observed variables, authors establish questionnaires that ask how the interviewee evaluates the factors that impact PPP project activities in Vietnam. The authors use a five-point Likert scale (5 points); a score of 1 means so bad; 3 means neutral, and 5 means so good. Except for observed variables of corruption, the score 1 means very corrupt, and 5 means less corrupt.

3.4. Participants and sampling procedure

3.4.1. Sample selection

The authors determine the importance of sample selection that can impact to study result. They choose interviewees who have knowledge and experience with PPP projects. These specialists have participated in many phases, from initiation to implementation projects. Besides, their experiences can be successful or fail. Therefore, the study uses a selective sample. The participants are project specialists who work in investment enterprises, management organizations, advisory services companies… All of them have graduated from universities or higher levels. They are managers, specialists, and officials of governmental organizations related to PPP projects. The authors decide study sample size by empirical formula N>50+5n with n are the corresponding questions to the independent observed variables (n=26); the selected interviewees are 250>50+5*26=180. In the pilot survey, authors interviewed 30 specialists, and most of the surveyees agreed with the logic study and variables of the questionnaires. The authors proceeded with the survey of 250 specialists as in the selected sample.

3.4.2. Questionnaires design

The questionnaire table consists of 29 main questions related to evaluating independent and dependent variables. Based on observed variables, the authors establish questionnaires to know the interviewees' evaluation of the

factors that impact PPP project activities in Vietnam. The authors use a five-point Likert scale (5 points); one score means very bad; three means neutral, and five means very good. Except for observed variables of corruption, score one means very corrupt, and five scores means less corrupt.

3.4.3. Questionnaires collection method

The authors ask the investment planning departments to send the paper questionnaires to interviewees. The surveyed area is the South of Vietnam economic region that comprises HCM City, Binh Duong, and Long An province with many investment companies. The investment planning departments propose the list of surveyees with the author's agreement. The reason is that these departments are investment state management agencies, so they can call for cooperation to answer the survey questionnaires and have a good relationship with investment specialists.

3.4.4. Building- Coding the scale

-The dependent variable is PPP project performance which consists of three observed variables, and they relate to three questions about the project performance in three phases: proposal, implementation, and operation of a project.

-The seven independent variables comprise 26 observed variables, and the choice of variables is based on the Vietnamese environment. The authors calculate variable values based on observed variables values (Table 3).

3.5.5. Data analysis method

The study analyzes data by SPSS 26.0 with the steps statistic, reliability (Cronchbach's Alpha), discovery factors (EFA), correlation (Pearson), and regression.

4. Anaysis and result

The three departments have sent 250 questionnaires to specialists and received 235 valid responses. The characteristics of the study sample are shown in Table 4. The statistic shows most of the interviewees are experienced project specialists who are suitable for quality research.

Table 4: Sample data

Interviewees' level		Interviewees' job		Experience years	
Bachelor	142 (60.4%)	Manager	42 (17.9%)	3-5 years	137 (58.3%)
Master	81 (34.5%)	Project Specialist	71 (30.2%)	5-10 years	72 (30.6%)
Doctor	12 (5.1%)	Official of PMU	47 (20%)	10-15 years	15 (6.4%)
		Official of the Planning department	37 (15.7%)	>15 years	11 (4.7%)
		Official of industrial zones authority office	38 (16.2%)		
Total	235 (100%)	Total	235 (100%)	Total	235 (100%)

4.1. Data tests

Before the regression analysis, the authors tested the scale reliability by Cronbach's Alpha for eight variables. The result shows that their value varies from (0.768 -0.921). The test of EFA for dependent variables proves that KMO=0.755 and sig=0.000 are suitable for factor analysis. For independent variables, (KMO=0.798, sig=0.000) shows that the analysis factor is consistent with the data. In the test of the factors rotation matrix, the variables have factors loading> 0.5.

4.2. Survey result of dependent and independent factors

The survey has 29 observed variables (3 dependent observed variables, 26 independent observed variables), and the mean of 8 factors shows in the below table. Most variables mean are good (>3.5). The lowest is corruption (3.6322). The highest is government support (4.2933).

Table 5: surveyed mean data of factors (variables)

Factors	**Minimum**	**Maximum**	**Medium**	**Standard deviation**
Government support (Gs)	3.00	5.00	**4.2933**	**0.74225**

Laws and guidelines (Lw)	3.00	5.00	3.7560	0.48857
Approval of beneficiaries (Ab)	3.00	4.67	4.2685	0.47234
Project selection (Ps)	3.00	4.69	3.9081	0.45412
Commitment (Cm)	3.00	5.00	3.8312	0.52693
Investor competence (Ic)	3.00	4.65	3.6592	0.47356
Corruption (Cr)	3.00	4.60	**3.6322**	0.47168
Project performance (Pf)	3.00	5.00	3.8695	0.47939

4.2. Regression analysis

4.2.1. Correlation analysis of factors

The analysis shows correlations between seven factors (independent variables) and dependent factors. Pearson coefficients vary from 0.192 to 0.794 with a statistically significant coefficient of 1% and 5%. There are correlations with the lowest Pearson coefficient of 0.032 (between Government support Gs and corruption Cr) and the highest of 0.768 (between corruption and investor competence Ic). However, there is no correlation between Ab (approval of beneficiaries) with Lw (law), Ic (Investor competence), and Cr (corruption). All of Pearson's coefficients are smaller than 0.9.

Table 6: Pearson correlation of factors

	Pf	Gs	Lw	Ab	Ps	Cm	Ic	Cr
Pf	1	0.233**	0.574**	**0.192****	**0.749****	0.745**	0.654**	0.528**
Gs		1	0.034*	0.426**	0.307**	0.227**	0.090*	**0.032***
Lw			1	0.106	0.424**	0.508**	0.415**	0.356**
Ab				1	0.297**	0.274**	0.076	0.036
Ps					1	0.626**	0.493**	0.398**
Cm						1	0.402**	0.335**
Ic							1	**0.768****
Cr								1

(Source: analysis from SPSS 26.0); ** sig. 1%; * Sig. 5%

4.2.2. Regression analysis

The authors use regression analysis and discover that seven independent variables: government support (Gs), law and guidelines (Lw), approval of beneficiaries (Ab), project selection (Ps), commitment (Cm), investor competence (Ic), and corruption (Cr) have a relation with dependant variable performance of PPP project (Pp); beta (β) coefficients vary from 0.033 to 0.362 with sig.<5%. The coefficient of determination R^2 = 77.3% proves that the study can explain most factors that impact the performance of PPP projects. The result shows that two factors (government support and approval of beneficiaries) have a weak relationship with the activities of the PPP project (β= 0.033, 0.057). The rest factors have a medium relationship with it. In this study, the result proves the commitment of government and partner (Cm), project selection (Ps), and investor competence (Ic) are the most impact factors in the performance of PPP projects (β= 0.362, 0.325, 0.284).

Table 7: Result of regression analysis

Variables	**Standardized Beta**	**Stand. error**	**VIF**
Government support (Gs)	0.033*	0.023	1.302
Laws and guidelines (Lw)	0.145**	0.037	1.486
Approval of beneficiaries (Ab)	0.057*	0.036	1.294
Project selection (Ps)	0.325**	0.048	2.007
Commitment (Cm)	0.362**	0.039	1.912
Investor competence (Ic)	0.284**	0.052	2.769
Corruption (Cr)	0.120*	0.011	2.452
Adjusted R^2	0.773		
Statistic significant (Sig.in ANOVA)	**0.000**		
F (F in ANOVA)	113.857		

Durbin-Watson coefficient 1.793

Note: **sig. 1%, *sig. 5%, Dependent variable: Performance of PPP project (Pf), SPSS 26.0

The result can express by function:

Pf=0.033Gs + 0.145Lw + 0.057Ab + **0.325Ps + 0.362Cm + 0.284Ic** + 0.120Cr + c

The result of the analysis can support the hypotheses of the study (Table 8).

Table 8: Result of the study

Hypothesis	**Content**	**Conclusion**
H_1	Governmental supports impact PPP project performance	Agreed
H_2	The laws and guidelines impact PPP project performance	Agreed
H_3	The approval of beneficiaries impacts PPP project performance	Agreed
H_4	Good project selection impacts PPP project performance	Agreed
H_5	The Government commitment impacts PPP project performance	Agreed
H_6	Investor competence impacts PPP project performance	Agreed
H_7	Less corruption impacts PPP project performance	Agreed

5. Discussion, proposal, and conclusion

5.1. Discussion

- The evaluation of interviewees shows high scores about their PPP project performance in Vietnam (3.87) though there are complaints about the investment environment. This can be explained by the policy improvement of the government in recent years. The highest score factor is government support (4.29): the Vietnamese government has not supported more project finance and subsidies, but authorities maintain consistency in policies, solving matters arising, and taxation. The lowest evaluation is corruption (3.6) which shows that the event is still a barrier to PPP investment.

- The correlation between beneficiaries' approval and some factors (laws, investor competency, corruption) has no

statistical significance because there is no interaction between these factors to people's reactions to PPP projects.

The study agrees that three factors, good project selection, the commitment of the government, and investor competence are the most impact on the performance of PPP projects. This result supports the experiences of Vietnam.

-The project selection determines the project's success; the carelessness in project decisions in phases from proposal to exploitation causes the failure of many PPP projects in Vietnam (highways in North, Hiep Phuoc thermal electric project, Phu Tho biofuel…).

The important thing is that the investors need to get profit, and the government solves the socioeconomic problem with private capital. The governmental agencies should issue win-win PPP projects so that the private sector can participate and get success in their investment. When there are projects with a low profit, the state should invest. Besides, PPP investors need wise decisions; so that they can avoid mistakes in choosing a project.

-There is one reality in many countries that when the government changes, the PPP project **commitment** can be unstable, which affects the project result. Though there is a contract between PPP investors and the government, they always need an authorities commitment. In reality, PPP contracts are sometimes not obeyed. The investors call for consistent policies because, in new terms, the newcomers can change policies. The change leaders problem appears in central and local government after five years (term times).

-Investors, especially domestic companies, **their competence** decides the PPP project's success. In Vietnam, the government does not subsidy project finance. The investors arrange project capital themselves, their financial capability is one crucial competence. Besides, management and technology abilities are needed for phases of the project. Investors need relationship capacity, especially with partners, the government, and local people. The lack of relationships causes difficulties when there are risks during project management, especially problems related to inhabitants and regulations.

-The Vietnamese government is trying to build a complete **law system** to call for private capital. The laws assure the investors' confidence in ownership, investment environment, equal competition, and law harmony. Vietnam has issued many laws and amendment laws to solve the contradiction of PPP investment law and others. However, they haven't created a perfect investment environment and equal competition for domestic and foreign companies. Besides, the guidelines are helpful because of incomplete laws (tariffs, matters arising), and these problems can cause difficulty for PPP projects.

- There is progress in anti-**corruption** in Vietnam, but this evil is still a barrier to the PPP project. To pass the project phases, investors face many procedures. The problem mainly comes from bureaucratic and corrupt practices of central organizations (most PPP projects belong to the central government). Although the impact of this factor is weak, the PPP projects become less attractive to investors. Many authors say that corruption is not severe, but in public investment, it is a headache problem in the Vietnamese environment.

-Two factors of **government support** and **approval of beneficiaries** have rather a weak impact that can be explainable. Although by definition, PPP projects have the participation of the government but in Vietnam, the approval is only by law and regulation, there are few direct financial subsidies (only by tax subsidies), and there isn't governmental equity participation; this situation explains the weak impact to PPP project of government support. The people's approval (beneficiaries) is mainly in the phase of project land acquisition. In the exploitation phase, there are protestors because of unreasonable tariffs (highway traffic fees) or pollution. This relationship proves that the beneficiary’s approval appears in some projects, especially transport projects.

These study results show the rationality of the study model in the Vietnamese environment, a transitional country.

5.2. Managing policy implication

*Project selection

The 14th Articles of Law on public-private partnership stipulates project selection. However, the central and local organizations propose unsuitable PPP project lists. Most of the failed projects are not carefully considered. The government should establish PPP project management organizations with talented specialists who help to propose and appraise good PPP projects. The PPP projects are win-win; instead of the government having to invest and manage, the private investors undertake, and they profit. Besides, the investor selection bidding should be equal. The government reserves the profit projects for PPP investment; the investor of low-profit or non-profit projects are the government (waste treatment, social housing).

*Government commitment

In Vietnam, the Government elections take place every five years. When there are new leaders, the commitment to the PPP project can be changed. The investors are worried about the authority's alternation, although there is the assurance of contracts and laws. There is a reality that, in some cases, the new leaders have different viewpoints about PPP projects. The government needs to pledge its support for the project duration despite a change in leadership. The consistent commitments are expressed through contract compliance and maintaining previous policies. The government must be careful when making commitments to investors, avoiding withdrawing commitments to their detriment.

*Investors competence

The selection of PPP investors is one of the problems for PPP investment. The bidding committee must be objective and select the right contractors with competence in management, finance, relationship, and experience to implement successfully. The Vietnamese government should eject 'backyardism' and attract more foreign investors so that the internal contractors can raise their capacity and qualifications.

*Laws and guidelines

It is necessary to adjust inappropriate provisions in the investment law in the form of PPP, such as the state's capital participation rate (which is controlled by no more than 50%), the risk-sharing mechanism when project revenue declines, determining the project's loan interest rate, the management agency's intervention on the project's financial indicators (IRR, PI, NPV). The law also needs to review the forms of PPP investment. For example, the law determines about BOO or BOOT. The BT form should not be abandoned because of the state's bad management. The government should imply decentralization so locals can encourage capacity building and project implementation that is often more effective than at the central. The project guidelines should be carefully studied to avoid changes that make the project difficult and damaging.

*Anti-corruption

Similar to other countries, Vietnam is actively fighting corruption. However, the evils have not decreased in public investment, especially at the central level. In addition to the current anti-corruption policies, this study suggests that the state needs to strongly decentralize the local government and quickly improve public sector wages. The government should apply more effective measures to prevent and handle corruption; focus on dealing with this evil at the central level because the situation is a problem.

*Government support and approval of beneficiaries

The government needs to enact supportive and assurance policies to encourage PPP investment. According to surveys, domestic investors need financial support such as access to loans and government participation in the project. Foreign investors need a fair investment environment, so the government creates an environment for equal access to projects and bidding. Currently, the law has regulations on risk sharing in PPP investment. However, they have not yet been applied, so the government needs to enforce this policy into practice, as it will promote many investors' participation. The government also needs to immediately remove the questions of PPP projects such as 85 wind and

solar power projects that are entangled in the electricity selling price, or highway PPP projects on toll collection to help solve the investor deadlock and may attract other investors.

To call for the approval of people related to the project, the authority should issue a reasonable land compensation price and better relocation for loss-land inhabitants. The project tariff should be acceptable so the user can accept it (highway toll fees). Besides, the government should organize widespread propaganda about the utility of the PPP project to attract the beneficiary's approval.

5.3. Conclusion

This study is conducted in the southern economic region of Vietnam, where the investment environment is different from the North because the market mechanism here used to be developed. Therefore, the research results in the North can be different, where there was a planned economy in the past. However, the PPP investment environment in Vietnam is a typical example of a developing country with a transitional economy. The research results may be similar in other developing countries and also differ. Major similarity factors are incomplete legislation, project management qualifications, and the impact of corruption in the investment environment. The difference in Vietnam is that localities have ambitions to develop, attract investment, and quickly overcome stagnation affecting PPP project activities. The authors hope that this study will be helpful to PPP investors and as an experience for developing countries that wish to attract more PPP investment for socio-economic development.

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