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-RESEARCH ARTICLE-

SOLUTIONS TO PROMOTE DIVERSIFICATION OF INVESTMENT CAPITAL FOR ROAD TRANSPORT DEVELOPMENT IN VIETNAM

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─Abstract─

In terms of the ensuring the growth and development of the national economy, road transport is seen as a key factor to consider. It also serves as a channel to develop other socio-economic sectors. During the recent years, the investment capital in Vietnam has increased and diversified in terms of both volume and form of mobilization. Besides the State capital, investment drive has been ensured through participation from the whole society. The annual capital, however, only meets more than 54% of the demand. There are several objective and subjective reasons for capital shortage: planning has not kept pace with economic development, management has shortcomings such as lack of a support policy in case of risks, loans from commercial banks are mainly short-term, policies to encourage investment in the form of BOT and BT, among others, are not attractive enough to the private sector and the whole society. The objective of this article is to examine the existing conditions of capital for road transport development. The authors use the questionnaire method with measurements done using the 5-point Likert scale and a 3-step survey process. Using SPSS and a sample size of 250, the authors explore the role of factors that strongly hinder or strongly influence the diversi-

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fication policies. This is the base for them to propose urgent solutions to promote diversification of investment capital for road transport development in Vietnam.

Keywords: investment capital; state capital; private capital; capital mobilization; road transport development; capital diversification.

1. INTRODUCTION

The rapid increase in industrialization across the globe coupled with technological innovation and the ensuing integration among individual economies requires and necessitates a well-developed road network. Countries lagging in road infrastructure are expected to lose not only in terms of economic benefit but also lag the rapid innovation that is happening across the world. Precisely, this is the reason that governments (center as well as the state level) are paying great attention to the development of road infrastructure. However, the lack of funding and the investment, especially for developing countries is a key concern. In that sense, Vietnam is no different and has been initiating and implementing several policies to attract capital investments in road transport sector.

The Resolution № 13-NQ/TW dated January 16th, 2012, on "Building comprehensive infrastructure to make Vietnam a modern and industrial country by 2020" show the drawbacks and weaknesses of the infrastructure system. There are several contributing or facilitating factors to consider in this regard. For instances, investment resources are still mainly based on the state budget. Moreover, non-state resources are not well-mobilized and there is a lack of meaningful support and shared responsibility from the whole society. To have enough investment capital, this Resolution defines a clear objective or goal: strongly mobilizing all social resources and ensure reasonable benefits to attract investors including foreign investors in infrastructure development (The XI Central Committee of the Communist Party of Vietnam 2012).

To implement the above tasks, the Prime Minister approved the "Planning for Vietnamese Road Transport Development by 2020 and Vision to 2030", which emphasized on attracting all economic sectors to participate in investment for road transport infrastructure development, maximizing capital mobilization from all resources, especially focusing on domestic resources in investment for road transport infrastructure development (Minister, 2013).

The government directions and policies have been abundantly clear about the need to promote investment capital; however, the status quo does not meet the demand yet. Currently, investment capital for road transport infrastructure mainly includes the following resources:

(1) Domestic capital, including:

i. State sector capital (state budget capital, bank credit capital, capital from the policy of traffic fees, capital from capital market such as government bonds);

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ii. Private sector capital (private enterprises capital, domestic investors' capital, private capital).

(2) Foreign capital: ODA capital, FDI capital, international commercial credit capital, in which ODA capital accounts for the major proportion.

From 2012 to 2017, investment capital for road transport infrastructure gradually increased in volume and capital structure. Total investment capital is VND 683,996 billion (Table 1), the average growth rate is 39.5%/year. Details as follows:

(a) Capital size:

i. The private sector capital has the fastest growth, from 8.005 billion in 2012 to 66,465 billion in 2017, with 62 projects in the BOT, BT contract form, completed and put into operation 55 projects (1,689 km length, equal 6.9% of the national highway length).

ii. The ODA capital volume increased nearly four times for 5 years, always constituting more than 25% of the total investment capital.

iii. The volume of state sector capital increased 2.3 times in 5 years, reaching an average of 38.7%/ year.

(b) Capital proportion

Capital proportion from the private sector has changed significantly, from accounting-for16.85% of total investment capital in 2012 to 33.1% in 2016 (Directorate for Roads of Vietnam, 2019) (N. T. T. Dung, 2018). Private investors have found motivation to share the burden with the state budget in road transport infrastructure investment. Although state sector capital increased (mainly from the State budget and Government bonds), the proportion gradually decreased. This can be considered a positive trend.

Table 1.1 shows that although the capital resource for infrastructure development has significantly increased, it is still unable to meet the demand, only reaching 54.4%.

In the current situations, when ODA capital tends to decrease, and State budget capital is limited, the diversification of capital resources is a potentially good direction for road transport development. *To diversify investment capital, it is necessary to mobilize all domestic and foreign resources, from all economic sectors, in various forms such as investment - exploitation - transfer (BOT), investment - transfer. - exploitation (BTO), investment - transfer (BT), public and private investment (PPP) coordination; continuous investments in several urgent important projects with capital from Government bonds.*

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Table 1: Total Investment Capital for National Highway Construction in Vietnam, 2012 – 2017 (In Billion Vietnam Dong)

Year	Total investment capital	Investment capital from the private		ODA		Investment capital from the State		Average capital demand/ year
		Volume	Proportion (%)	Volume	Proportion (%)	Volume	Proportion (%)	
2012	47,500	8,005	16.85	15,344	32.3	24,151	50.8	
2013	66,337	21,761	32.80	16,630	25.1	27,946	42.1	
2014	110,797	41,370	37.34	30,000	27.1	39,496	35.6	158,287
2015	120,796	41,980	34.75	33,000	27.3	45,818	37.9	
2016	137,581	44,301	32.30	44,301	32.2	55,720	40.5	
2017	200,922	66,465	33.1	62,021	30.1	72,436	36.8	
Total	**683,996**	**223,882**	**32.5**	**201,296**	**28.8**	**265,477**	**38.7**	

Source (Dung, Trang, Hung, Tuyet, 2020)

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Given the importance of development of road transportation networks or infrastructure, it is imperative to examine the factors that can be detrimental to the efforts or process of attracting the capital. The current study analysis highlights the key issues and challenges in this regard, and based on this, propose possible practical solutions.

The rest of the paper is organized as follows. The next section provides a review of the literature for both, the international context, and the Vietnamese context. This is followed by the survey design and the factors affecting the capital inflows. In Section 4, proposed solutions and the policy measures are presented based on the insights from Section 3. Finally, the paper concludes with Section 5.

2. OVERVIEW

Research on solutions of capital mobilization for road traffic development has always received significant attention by governments, academicians, and the industry players. The extant literature on the issue is abundant and various solutions have been proposed to overcome the issue. Some of the common solutions proposed across these papers are: diversification of investment forms, attraction of resources from all economic sectors, improvement of the investment environment with the core issue of perfecting policies and laws, administrative reforms and the promotion of science and technology application.

2.1 International Context

In this subsection, the objective is to outline findings from related studies in the international context. The section provides insights on the factors that other countries have faced. More importantly, the studies also highlight the policies that have been implemented to overcome these issues. Furthermore, the studies provide the overview of what kind of solutions work for those countries and what has not. The extant literature have confirmed the trend of privatization in the road transport sector through public-private partnership (PPP), which is one of the key strategies to reduce the imbalance between the need for capital investment and the limited funding sources that are available. This trend evidently helps road traffic develop at a more rapid pace (Brushett, 2005; Garvin, 2010; Lavrentiev, 2016; Queiroz, 2005; Savankova, 2009; Stephen Lockwood, 1999).

When factors affecting the success of PPP in capital mobilization for road traffic are analyzed, researches have found that there is no difference in these factors in the case of developed or developing countries. The specific factors to consider in this regard are: adequate and transparent legal framework, selection of capable partners, maximization of benefits for partners, stabilization of the macro environment, and effective distribution of risks. However, the difference in the level of impact of these factors on the success of PPP depends on the economic, political and social

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characteristics of each country (Akintoye et al., 2003; Garvin, 2010; Hai, 2014; Mavraki et al., 2020; Queiroz, 2005; Zakrzewski et al., 2021).

Queiroz (2005) has given a detailed analysis of the conditions for the success of PPP programs for road infrastructure in transition economies: lack of appropriate legal framework, economic and political instability, a consequently high perception of risks, and relatively low traffic volumes (Queiroz, 2005).

In his PhD dissertation, Lavrentiev (2016) has identified the challenges vis-a-vis evaluating the effectiveness of PPP projects and inspecting in the toll road construction project, in which the author emphasized improving investment conditions by applying new financial means, developing financial markets, simplifying the loan process, and enhancing information disclosure during the implementation of PPP projects. Similarly, the PhD thesis of Litviakov. propose financial investment source from the Pension Fund as the basis for selecting PPP projects for road repair and maintenance to receive off-budget financial investments.

The article by Postigo (2008) has pointed out lessons on resource mobilization in the context of China and India's road infrastructure, which are: Favorable investment environment for the private sector; guarantee mechanism and clear credit enhancement mechanism; independent assessment of traffic volume and price structure; developments in the domestic financial market (that is, reduction of Government intervention in the banking system and expansion of the bond market). Along similar lines, Adu (2009) has proposed considering the possibility of issuing bonds on the stock market. Bonds must be issued for a long enough period to allow the government to accumulate enough revenue from road tolls.

Correspondingly Akintoye et al. (2003) who studied PPP projects in the UK, not only highlights the factors leading to the success of PPP that are mentioned above but also pointed out other factors such as high investment preparation costs, complicated and lengthy negotiation process, difficulty in assessing the benefits-costs and potential conflicts between involved parties. Moreover, Hardcastle et al. (2005) presented similar arguments by focusing on an analysis of the factors affecting project feasibility, bidding process, government guarantee, and financial market. On the other hand, Handy (2005) argued that in a smart growth strategy, there must be a connection between traffic and the land use. The private sector can cooperate with the state to invest by finding a use for the available land fund for road construction.

Similarly, Ward et al. (2006) using the CLIOS model (Complex, Large-Scale, Interconnected, Open, and Socio-technical) explored the role of five factors leading to the failure of PPP in road traffic in Malaysia and these are: (1) lack of transparency in the investor selection process, (2) low fee rates, (3) limited government support capacity, (4) inconsistent policies, (5) political instability.

Yescombe (2007) identified the actions that the private sector needs to take to increase the value of money in participating in PPP investments, thereby confirming that the

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support and political commitment of the government are critical to ensure the success of this model.

Garvin (2010) studied the development of the PPP market in the transport sector in the USA using the project's key performance indicators (KPIs) and to this end, analyzed the role and impact of fees, profits, risk allocations, support policies, bidding, and competition structures.

Alinaitwe (2011) highlighted the opportunities and challenges in participating in investment in road development of the Pension Fund. Based on the findings, it was shown that this is a long-term, stable profit guaranteed investment and can generate more income to support the fund.

More recently, it has been argued that the decision to develop infrastructure in a particular region should not just rely on population density. It should also consider other parameters such as the presence of natural resources, demography and the geomorphology see for instance (Mavraki et al., 2020; Zakrzewski et al., 2021).

2.2 Vietnamese Context

Several studies have confirmed the necessity of adding resources from non-state sectors; road traffic develops quickly and sustainably only with implementing a policy of diversifying capital sources, attracting domestic and foreign economic sectors to invest in road traffic development in different forms (Huu et al., 2021; Lien, 2004; Phuong, 2012; H. T. Thai, Rementsov, A., Nguyen, K. M., & Le, A, 2020, April; Tuan, 2009)

Others have mentioned that the State has been gradually shifting its role to support and regulate competition for road traffic services, gradually narrowing the State's subsidy and gradually moving towards marketization of this type of public service (N. T. T. Dung, 2018; Hai, 2014; Nguyen Quang Bau, 1999; Tuan, 2009).

In his work, L. V. Dung (2011) has identified direct, indirect, and external revenue sources from road users and proposed three new sources of revenue, which are axle load charges, revenue from road infrastructure users and the revenue from indirect road users (L. V. Dung, 2011). Similarly, a common view is emerging that the success of capital mobilization in the form of PPP depends on: project selection, consistency in investment planning, level of State participation and the harmonization of benefits and risk-sharing mechanism among the parties (Nguyet, 2012; N. H. Thai, 2010)

On the other hand,Giang (2012) has proposed solutions for attracting capital from the private sector which are: there must be an optimal risk management and allocation mechanism; and transition from private to public risk reallocation to “purchasing” risk from private through financial aid measures. Along similar lines, Tuyet (2017) has

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developed a procedure for attracting investment capital in the form of PPP for road traffic development.

In addition, others have proposed solutions for diversification of investment forms in transport development such as: allowing economic sectors to invest in projects with payback capacity in the form of BOT, BT. (Hung, 2016; Phuong, 2012)

Correspondingly, the extant literature and several policy reports have pointed out that the investment environment needs to be improved, specifically to completion of legal corridors, expansion of financial support range for PPP projects on road transport in Vietnam (Chung, 2016; Hanh, 2008; Transport, 2016)

Correspondingly, Cuong (2017) has proposed solutions for promotion of diversification of funds for the national highway system. However, this research stops at the level of proposing recommendations and was not supported by the overall data and analysis, nor did it show how to perform it.

On the other hand, Vinh (2015) has studied the application of PPP method in investment management and construction of urban transport works, which aims to attract and effectively use investment resources of the private economic sector, and improve quality management of urban traffic works in the area of Hanoi city.

There have been a number of studies on capital mobilization for road transport development, which has identified different aspects of funding diversity and capital mobilization types. However, some researches who have identified the problem, have not given specific application methods, and have not updated according to the latest regulations. Some specific researches are found to be no longer relevant to the current economic environment in Vietnam.

The above researches offer valuable suggestions for the author to continue develop the current research design with a view to developing solutions for promoting the diversification of investment capital for road traffic development in Vietnam in the period of 2021-2025.

3. SURVEY AND EVALUATION OF HINDRANCE FACTORS ON INVESTMENT CAPITAL DIVERSIFICATION FOR ROAD TRANSPORT DEVELOPMENT

This section has two purposes. First, it shall explore the status quo of capital diversification for road transport development. Second, it shall identify the elements that considerably affect the diversification and at the same time have remaining shortcomings that hinder the process.

The research process has three steps: (1) Questionnaire design, (2) Experimental research with 50 respondents, (3) Official research with a sample size of 250 and the usage of SPSS. The authors built 5 groups of impact factors including: (1) Macroeco-

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nomic environment, politics, culture, society; (2) Legal framework and policy system to encourage diversification of capital resources; (3) State management of construction investment; (4) Planning of road transport development and investment capital diversification; (5) Other factors. The researchers conducted a survey to evaluate the hindrance level and the impact level of the above-mentioned factors. The SPPS software is used to rank the hindrance level and the impact level in a certain order. The resulting findings form the basis for a proposal including practical and appropriate solutions aimed at diversifying investment capital for road transport development.

* *Step 1: Questionnaire design.* Through domestic and foreign studies, the authors have developed the Test Questionnaire as follows.

Test Questionnaire:

QUESTIONNAIRE

1/ In your opinion, to what extent the following factors *have caused hindrance* to the investment capital diversification for road transport development in Vietnam

1 = Absolutely not hinder;

2 = Almost not hinder;

3 = Weakly hinder;

4 = Strongly hinder;

5 = Extremely hinder (requires decisive change).

2/ In your opinion, how do the following factors *impact* the diversification of road transport development capital in Vietnam.

1 = Absolutely not impact;

2 = Weakly impact;

3 = Impact but almost insignificant;

4 = Strongly impact;

5 = Extremely impact (decisive).

Please share your opinions by marking “x” in the selected column.

* *Step 2: Experimental research*

Before implementing the mass survey, the authors surveyed the test questionnaire with a group of experts, evaluating and checking whether the questionnaire is adequate, clear, and logical for adjustment in time. Selected subjects for investigation and survey are those who work for a long time, have experience in state management agencies, research institutes or investors, or as business owners in the road transport sector.

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Table 2. Hindrance Factors and Impact Factors on The Diversification of Road Transport Development Capital in Vietnam

No.	Factors	Hindrance level					Impact level				
		1	2	3	4	5	1	2	3	4	5
I	**Macroeconomic environment, politics, culture, society**										
B1.1	Macroeconomic environment										
B1.2	Political, cultural and social environment										
B1.3	Stability of the financial system (exchange rates of VND and foreign currencies)										
II	**The legal framework and policy system for encouragement of capital resources diversification**										
B1.4	Policies for investment encouragement of economic sectors in the PPP form										
B1.5	Policy for support of diversification project										
B1.6	The strategy of attracting macro investment capital into the road transport development in Vietnam										
B1.7	State management regulations on construction investment										
B1.8	Policies and laws on capital mobilization from ODA loans										
III	**State management of construction investment**										
B1.9	The procedure for attracting investment capital into the development of road transport projects										
B1.10	Investment order and procedures										
B1.11	Legal system for the management, use and exploitation of road transport projects										
IV	**Planning on road transport development and investment capital diversification**										
B1.12	Planning on road transport development										
B1.13	Planning on road construction investment capital diversification										
V	**Other factors**										
B1.13	Level of construction technology of road transport in Vietnam (machinery, equipment, technology)										
B1.15	Support of society for the road transport project development										
Other factors (if other, please specify): ...											

Source (Nguyen, 2018)

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According to the number of years of experience: 6% - less than 10 years, 44% - from 10-20 years, 50% - over 20 years. According to working place: 45% - State management agencies on roads, 22% - Research institutes, 33% - investors and business owners. According to educational level: 40% - university level, 60% - postgraduate level.

The number of distributed questionnaires is 50. The authors obtained 42 valid responses. The SPSS software has been used for reliability statistics and correlation statistics between each criterion with all criteria in the group (Item-Total Statistics) to verify the reliability of Test Questionnaire.

The auditing results of the Test questionnaire on the correlation statistics between each criterion with all criteria in the group (Item-Total Statistics) and the Reliability Statistics are satisfied, with Cronbach's Alpha index > 0.700 and all Corrected Item-Total Correlation > 0.300.

** Step 3: Official research.*

Conducting a mass survey using a sampling survey method, with the number of samples to be investigated being 250. Subsequently, the SPSS software is used to evaluate the Hindrance level and the Impact level of the factors understudy.

The authors used the non-random, non-probability sampling method. Targeted respondents were selected according to certain criteria to ensure the representativeness of the sample: including, authorities from the government (Ministry of Transportation, Directorate for Roads of Viet Nam, Road Maintenance Fund, Regional Road Administrations, Project Management Boards, Departments of Transport), officials from research institutes and universities, and practitioners from consulting and construction firms in all three regions - the North, the Central and the South of Vietnam.

Based on experiences of previous studies and de facto conditions of the survey, the sample size should be at least 200 to ensure accuracy. This size is large enough to accurately predict parameters of the general population yet not too resource-consuming. As a result, the sample size of this research is set at 250.

The auditing results of the official questionnaire on the correlation statistics between each criterion with all criteria in the group and the reliability statistics are satisfied. This is entirely consistent with step 2.

The results of evaluating the hindrance level and the impact level of the factors are presented in Table 3. In Table 3, *the authors also ranked the order of hindrance level and impact level of factors (in column (4) and column (7))*, from there the comment can be made.

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Table 3. Hindrance Level and Impact Level of Factors to The Investment Capital Diversification for Road Transport Development in Vietnam

No.	Factors	Hindrance level			Impact level			Correlation level	
		Average	Hindrance order	SD	Average	Impact order	SD	R	Sig
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
I	**Macroeconomic environment, politics, culture, society**								
B1.1	Macroeconomic environment	3.20	10	1.12	3.94	3	1.11	0.29	.000
B1.2	Political, cultural and social environment	3.09	13	0.93	3.79	8	0.84	0.24	.002
B1.3	Stability of the financial system (exchange rates of VND and foreign currencies)	3.05	14	1.09	3.35	15	1.00	0.38	.000
II	**The legal framework and policy system pertaining to encouragement of capital resources diversification**								
B1.4	*Policies for investment encouragement of economic sectors in the PPP form*	3.38	**2**	0.98	3.80	**7**	0.99	0.31	.000
B1.5	*Policy for support of diversification project*	3.37	**3**	1.00	3.83	**5**	0.94	0.21	.001
B1.6	The strategy of attracting macro investment capital into the road transport development in Vietnam	3.13	11	1.10	3.59	11	1.00	0.21	.001
B1.7	*State management regulations on construction investment*	3.34	**5**	1.09	3.95	**2**	0.93	0.09	.015
B1.8	*Policies and laws on capital mobilization from ODA loans*	3.33	**6**	1.10	3.90	**4**	0.90	0.26	.000
III	**State management of construction investment**								
B1.9	The procedure of attracting investment capital into the development of road transport projects	3.28	8	0.98	3.54	12	1.00	0.21	.000
B1.10	Investment order and procedures	3.01	15	1.02	3.50	14	0.92	0.41	.000
B1.11	Legal system for the management, use and exploitation of road transport projects	3.25	9	1.00	3.65	10	0.91	0.23	.000
IV	**Planning on road transport development and investment capital diversification**								
B1.12	*Planning on road transport development*	3.35	**4**	1.02	4.04	**1**	0.94	0.29	.000
B1.13	*Planning on road construction investment capital diversification*	3.47	**1**	0.96	3.82	**6**	0.98	0.20	.001
V	**Other factors**								
B1.13	Level/construction technology of road transport in Vietnam (machinery, equipment, technology ...)	3.12	12	1.02	3.51	13	0.95	0.36	.000
B1.15	Support of society for the road transport project development…	3.32	7	1.10	3.74	9	0.92	0.28	.000
	Average	**3.25**			**3.73**				

Source (Nguyen, 2018)

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Several comments can be made on the basis of Table 3:

- *The correlation between the hindrance level and the impact level:* The "Hindrance level" of the factors is positively correlated with "Impact level" (r> 0). In other words, there is a positive correlation between Hindrance and Impact. This correlation is statistically significant with p <0.05 (sig).

- *The hindrance level of the factors:* All 15 factors identified by the authors have a certain Hindrance level, with the average value from 3.01 to 3.47, all asymptotic to the average value of 3.25. Thus, all factors have hindered and are hindering, but the hindrance level is not high. It can be proved that the capital resources diversification still has many shortcomings, but it can still be carried out. Each factor has a different hindrance level, and it is necessary to pay attention to and carefully consider factors with a higher hindrance level (according to the ranking in column (4)) to more effectively give directions and solutions to overcome.

- *Impact level of factors:* All 15 factors have a certain impact level on capital diversification, of which the factor with the highest impact level is "Road transport development planning", with the average value is 4.04. This result reflects the nature of capital mobilization, as planning is the first and most decisive factor in the long-term investment strategies of investors. All factors are asymptotic to the average value of 3.73, therefore, it is proved that there are multiple factors that impact on the investment capital diversification and not a single factor. In management, it is necessary to pay attention to factors with high impact level and many impacts on investors (according to ranking in column (7)).

- *The authors considered that:* Factors of the group *"Legal framework and policy system to encourage diversification of capital resources"* play an important role. It is important to pay special attention to the diversification process in the case of the4 factors that show high hindrance and impact levels. This result reflects the actual situation of the legal system on construction investment in Vietnam as being incomplete, having multiple shortcomings as well as having contradictions within legal documents or instruments.

- **All 15 elements have a critical role in capital mobilization and at the same time can hinder the diversification of capital resources.** In Table 3, six factors with *the highest "Hindrance level"*, (ranked from 1 to 6 in the column (4)), all of them have a *high "Impact level"*, which are the factors:

(1) Planning on investment capital diversification for road construction.

(2) Policies for investment encouragement of economic sectors in the PPP form

Policies to encourage all economic sectors to invest in the PPP form.

(3) Policy to support project diversification.

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(4) Road transport development planning.

(5) Legal system related to investment diversification.

(6) Policies and laws on capital mobilization from ODA loans.

The above mentioned six factors not only have a high hindrance level, reflecting the most challenging issues that need to be adjusted and completed to diversify capital resources, but they also have a high impact level. *Based on this, the authors recommended several practical solutions to promote the diversification of capital resources.*

4. SOLUTIONS TO PROMOTE THE INVESTMENT CAPITAL DIVERSIFICATION FOR ROAD TRANSPORT DEVELOPMENT

4.1 Improvement of Road Transport Development Planning, Planning Formulation of Investment Capital Diversification for Road Construction

Road transport development planning is considered the first condition for investment in building or developing an appropriate and unified transport network, as well as a basis for determining capital needs and building a capital mobilization plan. Currently, the planning policies and strategies for road transport development in Vietnam have not been timely formulated, are approved slowly, and only the planning at the Central and provincial level are available.

To improve the planning process, it is necessary to enhance awareness of the role of planning management and planning of the management staff at all levels. It is also important to improve the professional qualifications and skills of planning officials such as opening training courses or sending officials to study in foreign countries with high development levels. Within the planning process, it is necessary to balance the requirement for development investment with the ability of capital arrangement, to comply with the focus and key principle for each period, and to pay attention to transport requirement forecasting.

From the perspective of road transport development planning, it is necessary *to build a master plan for road construction projects in the form of diversification.* Although there is a policy of investment capital diversification for road construction, there is currently no diversification plan for investment capital. This is a noticeable need to identify the investment sector, the diversification requirement for investment capital, and ensure the connection between PPP investment projects and the country's socio-economic development strategies. Simultaneously, it is also the basis for directing private resources for investment in areas that immediately needs to be diversified (Nguyet, 2012).

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Development of investment diversification planning should consider the following directions:

i. Determining clear plans to mobilize diversified capital resources, dividing the investment sector belonging to the State capital portion (including the State budget capital and other capital resources).

ii. Develop a list of PPP projects for road transport development in the BOT, BTO, BT forms, as a basis for investment invitation and inviting bids. List of projects must follow the implementation progress of the planning stage and must be widely posted through mass media channels.

iii. It is necessary to openly decentralize between the Center and the provinces in terms of management of investment process, avoiding overlapping or vacating planning.

iv. Actively organize conferences to introduce and popularize the projects among domestic and foreign investors. Proactively invite experienced investors with ability of investment.

v. Promote the attraction of investment capital from foreign investors. Currently, PPP projects on road transports are mostly domestic investors. The main mobilization form is BOT, BT, the BTO form have not been developed, which has been applied successfully in Korea and Japan. It is therefore necessary to study and learn from the investment experiences of developed countries.

4.2 Improvement of Policies for Investment Encouragement of All Economic Sectors in the PPP form

Investment in public-private partnership form (PPP) is a form of investment made based on a project contract between a competent state agency and an investor. Such a a project enterprise provides for the construction and renovation, operation, trading, management the infrastructure works, and public service delivery.

To implement this policy, it is necessary to build policies in the following direction:

Transparency in determining investment projects in the form of PPP, according to the plan or at the requirement of the locality or at the proposal stage vis-a-vis the investor. Transparency in project formulation, appraisal, and approval, especially for road work expansion and improvement projects. Transparency in investor selection requires identifying the basis for investor selection and organizing a public bidding. In the period of 2011-2016, 100% of the northern road transport BOT projects were bid appointed, and there was only one tender in the whole country, while investment in this form was a public investment which must follow or comply with the principles of public investment. Transparency in discussing project contracts with investors and has a mechanism

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for assigning responsibilities of the inter-sector working group in the time of contract negotiation.

It is essential to complete the basis for determining the toll level and the basis of calculation of the toll level in particular, a specified determination of location of toll stations. This process requires toll station planning and criteria for the establishment of a toll station to ensure the harmonization of interests of all parties.

In order to ensure quality management and cost of works, the competent State agencies need to carry out the construction quality control as for projects using State capital, or specify authorized state agencies to organize selection and sign contracts with Design Consultants, Supervision Consultants and Inspection Consultants in order to reduce risks to the State after handing-over the works; simultaneously, to organize the approval of the design and cost estimates of the works for bidding projects during selection of domestic investors.

4.3 Improvement of Policies and Regulations for Support of Diversification Projects

There are many types of risks in the road construction investment process, starting from the Government's policies in the management and operation process of one country such as exchange rate, adjusting the social economic development plan or policy mechanisms that affect vehicle traffic and toll turnover These are key concerns of investors, especially foreign investors, and credit organizations. The Government needs to build a specific legal corridor to reduce and share risks and ensure profits for investors. It is not necessary to generate immediate profits, but it is important to ensure that investors avoid subjective risks in the future such as risks in planning, mechanisms, and policies.

It is important to improve policies to support and share the risks with investors for diversification projects in the following ways:

i. Studying how to guarantee minimum revenue: In South Korea, when revenue falls below a certain level against computed value, the State will provide support to ensure that the minimum revenue, in accordance with the characteristics of the projects on road has high investment cost, long payback period, and many potential risks.

ii. Guaranteeing the foreign currency conversion to pay debts and transfer the profits of investors abroad: In exchange rate guarantee, the Government may provide exchange rate guarantee when there is a fluctuation of the exchange rate beyond the margin, or the Government allows the enterprise to convert the annual exchange rate into the fees of vehicles in addition to the basic rate increase, based on the CPI.

iii. Supporting the term of bank loans in the direction of forming long-term credit packages. This is because if the bank lends money to a project within a shorter period than the duration of the project contract, the enterprise will face the risk of debt payment and will not actively invest in this area.

4.4 Improvements of Policies and Laws on Capital Mobilization from ODA loans

In the situation of gradually narrowing ODA loans, to mobilize this capital to invest in road transport construction, it is necessary to have appropriate awareness and understanding of ODA loans, and to simultaneously have appropriate mobilization solutions in the following direction:

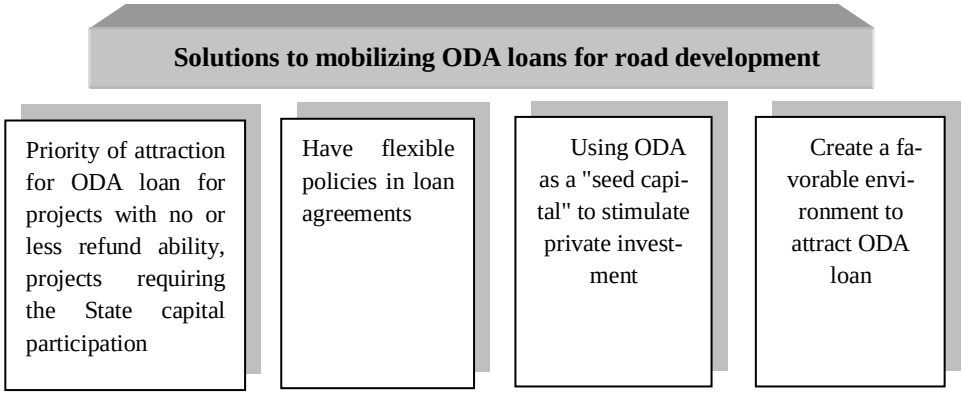

Figure 1. Solutions to mobilize ODA Fund for Road Maintenance (N. T. T. Dung, 2018)

(1) Priority should be given to attracting the ODA fund for projects with little or no refund ability, such as projects requiring State capital participation such as road projects in mountainous and disadvantaged areas and used as the State's contribution to PPP projects. Priority should be given to areas such as: strengthening the institutional capacity and management of the State; capacity in scientific activities, technology, and training activities (such as projects on road information systems, databases for road infrastructure management).

(2) Having flexible policies in foreign loan agreements: During the negotiation process of an ODA loan agreement for development investment of special transport infrastructure, it is necessary to have a provision to arrange about 10-20% of capital to serving the maintenance work after putting the project into operation, ensuring long-term investment efficiency.

(3) Using ODA as a “seed fund” to stimulate private investment in road construction, operation, operation and road maintenance. Allow private enterprises to re-borrow

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ODA and concessional loans as an additional amount to encourage investment in road transport development through different models and modalities. To study and expand the application of re-lending form of ODA loan under the model of re-lending to credit organizations and taking credit risks to reduce pressure on domestic reciprocal capital as well as the pressure on the government's public debt, while still meeting the capital needs for road construction and maintenance.

(4) Creating a favorable environment to attract ODA loans, specifically strengthening inspection and adequate management of ODA-funded projects. There is a plan to re-cruit and train staff with foreign economic skills, who can meet the professional re-quirements of management, administration and implementation of-* ODA projects. Arrange adequately reciprocal capital and promptly at the request of donors (N. T. T. Dung, 2018)

4.5 Improvement of the Legal System Related to Investment Diversification

Although the diversification process of investment capital seeks to ensure the attraction of non-state budget capital for road transport development, it still needs a strict proto-col for management as follows:

i. Have clear criteria for selecting investors: The Investors must have prior experi-ence in investment of projects on road transport infrastructure; have finance abil-ity; experience operating and exploiting the expressway projects. They may be domestic or foreign investors.

ii. Improve capacity for forecasting traffic demands: Regulations on analyzing and forecasting transport demands are already available. However, still without care, input data and unstandardized methods, investors and consultants are free to per-form in a variety of ways, making it difficult to verify and evaluate the real effec-tiveness of the project (except for some projects prepared by foreign consultants). Thus, it should be clear in the project preparation and public announcement, that analyzing and forecasting the transport demands should be done in detail; showing the scientific and didactic nature of specific projects and proving that independent testing of the results of analysis and forecasting is a mandatory requirement.

iii. Have clear financial framework.

iv. Increasing transparency in the calculation of investment costs is imperative and an urgent requirement. This is because the investment rate in expressways in Vietnam is unusually high compared to many other countries. There are various factors that make high investment rate such as obstacles in site clearance, unclear financial mechanisms, especially in terms of geology and material resources. The average investment rate of the four-lane expressways in Vietnam is about $12 million (ex-cluding bridge construction and site clearance compensation). While China has similarities with Vietnam, the cost of doing the expressways is only $5 million in

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China, and about $3-4 million per kilometer in US and European countries (Garvin, 2010)

v. There should be clear fee control mechanisms, and immediate deployment of Non-stop Electronic Toll Collection on BOT, to precisely know traffic flow through the toll stations, avoid fraud, and avoid causing dissatisfaction such as the toll collection on Phap Van - Cau Gie Expressway.

The above-mentioned solutions have been proposed with a view to promoting the diversification of investment capital, to sustainably develop road transport in Vietnam, meeting the demands of the industrialization and modernization process of the country.

5. CONCLUSIONS

Within the context of globalization and the integration of world economies, road infrastructure plays a key role. Therefore, investments made to improve the road infrastructure are not merely to improve the socio-economic condition of that particular country, but it is also a strategic investment to attract good market players in the country. A good road infrastructure provides the necessary competitive edge to a country to attract investments, especially in the form of Foreign Direct Investments (FDIs). These investments in the form of FDIs will not only usher in technological innovation but also provide employment to the local population. More importantly, these investments prepare the local population to compete globally and drive the economic performance of a country. However, as mentioned above, good infrastructure, especially in terms of road networks, is a necessary condition to attract foreign investors.

The Vietnamese government has undertaken and implemented several policy reforms over the past several years to improve road infrastructure. For instance, the Vietnamese government, through the Ministry of Transport has proposed a Vision 2030 that outlines the blueprint to enhance road infrastructure. This has resulted in several projects related to transport sector.

As it is so important to understand the dynamics of this sector to bring reforms, the objective of this paper is to understand the hindrances and the obstacles associated with the funding of road infrastructure projects. The analysis and the evaluation of the current situation in terms of capital for road system development in Vietnam highlight serious shortcomings with regards to capital mobilization. There have been a large number of international and domestic studies which propose solutions focusing on: privatization in transportation through PPP, calling for resources from all economic sectors; improving investment environment, building sufficient and transparent legal framework, enhancing administrative reform, and fostering applied sciences and technology. The analysis presented in this paper highlights a range of factors that hinder this dynamic process.

There are a total of 15 factors that impact and hinder the diversification process. These insights are based on consultation with experts as well as investigations and surveys.

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On the basis of the above mentioned exercises, the paper proposes five practical and highly feasible solutions to promote investment capital diversification for sustainable road transport development in Vietnam: (1) improvement of road transport development planning, planning formulation of investment capital diversification for road construction, (2) improvement of policies for investment encouragement of all economic sectors in the PPP form; (3) improvement of policies and regulations for support of diversification projects; (4) improvement of policies and laws on capital mobilization from ODA loans; (5) improvement of the legal system related to investment diversification.

The successful implementation of the above-mentioned policies and solutions is expected to provide valuable practical insights and can potentially prove to be a game changer for the road network in Vietnam. However, the implementation of these policy-based solutions requires strong political will as well as participation from the private sector. The participation of the private sector is key as it will reduce the capital and the investment pressure from the State. Hence, private participation would ensure that the State budgets can be utilized for other projects.

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