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Economic Benefits of National Express Public Transport: Civil Engineering Perspectives on Country Transport Governance for Vietnam

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Abstract - Vietnam is a developing country with a high per capita income. The country's geoeconomy includes 3260 km of coastline and 4510 km of land borders with Cambodia, Laos and China. The country is S-shaped with a length of more than 1650 km (North - South) and about 50 - 600 km (East - West) with many special terrains for roads, waterways and even air lanes. The study of the benefits of different modes of transport to devise an appropriate development strategy for Vietnam's traffic always brings positive impacts to the country's sustainable development, especially in the context of limited development resources. This study reviews transport patterns, policies and practices of Vietnam in the period 1999 - 2020 to make recommendations related to roads and high-speed rail, multimodal transport networks, and a smart choice in public investment to help Vietnam develop faster and stronger in the coming time.

Index Terms - Economic Management, Economic Policy, Public Transport, Expressway, Viet Nam

RESEARCH BACKGROUND

A national public transport system is often composed of the collective pool of buses, trains, taxis, boats and other types of vehicles that can be used for moving purposes of all of the people, regardless of sex, gender and race, in the society (Barry Ubbels et. al., 2001). The system can be built in both metropolitan areas and the rural ones with the support from a network of different kinds of roads in between. To be an express system, the mixture of public vehicles needs to be arranged and controlled in a smart way at the high quality of functioning (Feng Xie, David M.Levinson, 2011). Also, the highways that connect the systems in various areas of a nation should be built to help make the flow of people, products and services run much more smoothly. This, therefore, lays some possitive impacts on the changes in people's lifestyle and effectiveness of business activities. For instance, some foregoing benefits are reduction in congestion and travelling times, abandonment of the private vehicles for the public ones, improvement of air quality, and especially the decrease in logistics costs that the firms and the end-users have to pay for the products and services they consume. These all serve quite well the demands of the boom

in economic development process among developing countries (Solomon O.B., Srinath P., 2017), where the complete express infrastructure of roads has not been established.

This paper approaches the national express public transport system by focusing on the highway component of the mentioned express system. This can be considered the core part in resulting in the high-speed movement of people and goods from this region to another, leveraging the potential of national economic growth.

LITERATURE REVIEW

I.Economic benefits of express public transport methods

When it comes to the express public transport infrastructure choice, a nation can consider building or enlarging the new or existing airports, sea habours, inland river ports, aboveground or underground railways and highways respectively. This process must undergo budget constraints in almost anywhere in the world, so the governments have to make their clear decision on which types of express transport methods to be concentrated on within their policy-making process. Each has its own characteristics, in terms of the economic benefits it can bring about.

Airports

Fabio Carlucci et.al. (2018) have argued in their recent research that the regional airports provide good impacts on the decrease of congestion and the use of spare infrastructure for the larger airports. Apart from the hyperloop train, which is now being developed and tested by some countries in the world, the choice of using airplanes for transporting people and goods is undeniably the fastest way at the moment (Vinay Pandey, Shyam Sasi, 2017). However, the fees for using the aviation services are still high in comparison with the other means of transport that makes it inaccessible in some certain cases to the individual customers and the businesses. Noises and air pollution are often regarded as the negative impacts that the airport systems bring about in both economic and environmental terms (Fabio Carlucci et.al., 2018). These need to be solved with the adoption of new technology in aircraft, runway and airport building, which takes time and a huge a mount of money to be implemented successfully around the world, especially in developing countries.

Sea and River ports

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Ports and ships have been being the world's most popular method of mobilizing human beings and cargos for tens of centuries, especially the international trade which is benefited by the moving of around 6 billion tonnes of goods (45% liquid bulks, 23% dry bulks and 32% general products) (John Mangan et.al., 2008). Normally, the governments in the world care much more about building the international trade hub of sea ports while the country has its own geographical advantages. This makes the connection between domestic river ports and domestic or international sea ports to be of little effectiveness in transporting people and goods. Moreover, the notion of express shipping has not been a frequently discussed term in the martitime and river transportation. It can be explained by the fact that the costs of shipping is lower and the bulks of cargos are often bigger and larger than the other types of transport, so it is hard for the rennovation process of speeding up the vehicles in the field. However, we cannot deny that with the countries that have a long coastline, like Vietnam (more than 3,000 km), the express transport networks among different types of ports is worth considering in policy-making process (Vinh V.T., Devinder G., 2005).

Railways

From the early day of drafting their railway regulations in 1845, the German legislators have admitted that the railways are the weapons of peace, which help develop the various fields of the economy from arts to sciences and commerce to industry. The same things have happened in the case of France while economics plays the crucial role in the formation and development of the railways (Micheline Nilsen, 2008). Railway is often operated under the public sector monopoly (Sajeev A.G., Narayan R., 2008) because of the huge investment that it should incur, so the innovations on the speed of the traffic to be express from a normal one would be slow in the process, especially in developing countries. Nonetheless, the outcome that the express railways (if they can be) can bring to the national economy can be very high, even much more than the current traffic of passengers and freight (Russell Haywood, 2009), in combination with other transportation modes like trucks, cars, motorbikes and boats, while the trains run on the reserved tracks and can host a an incomparable number of people and goods inland.

Highways

The highway is different from the foregoing platforms of transport where the owners of the vehicles can be individual citizens. There is no need to have a million-USD vehicles like the planes, ships and trains to get the people and goods to be transferred from the point-of-origin to the point-of-destination. On the highways, people use cars and lorries of relevant standards to run on a road of highly guaranteed quality to be the fastest they can be in comparison with the normal standards of roads, just through paying fees at the toll booths. The construction, maintenance and management requirements help the highways keep their good shape for the public transportation while meeting the performance specifications (pavement surface, response to load), performance-based specifications (resilient modulus, fatigue properties), and performance-related specifications (required levels of materials and construction factors) (Mireille G. Battikha, 2003). The highways, with their own advantages, can be the backbone of the national inland transportation system, connecting the hubs of different modes of transport effectively and efficiently. Therefore, in economic perspectives, the highways come with few money to be invested in vehicles for the governments (Wichan Pewdum et.al., 2009) and faster speed of transporting with well regulated and monitored fees for cars of all ownership types.

However, building and operating the highways incurs a lot of expenses regarding the environmental issues that the highways may cost to the whole society. They can be the damages to natural habitats of animals, forests, soil, landscapes, buildings, water sources, and the dust and air pollution, and all kinds of negative effects on the human health (Debolina Basu et.al., 2008). The widely stretching areas that highways may span make it hard for the operation and maintenance activities to the countries. This is also what the highways differ from the other express modes of public transport mentioned. Only with well-designed policies and well-managed implementation action plans, these costs can be reduced to make the economic benefits prosper.

II. Global highway infrastructure development

In the US, the highway infrastructure building and operating have been mostly funded by the federal state of the local governments with the remarkable contribution of the gas taxes to the highway trust fund (Juita-Elena Y., Lenahan O., 2013). However, the increasing uses of public-private partnerships (PPP) mechanism in implementing those projects show its gradual popularity in the State (Nobuhiko D., Jonathan L.G., 2014), replenishing the federal and local fiscal deficits in meeting the infrastructure demands in the economic growing process. Nearby, the Canadian highways are believed to open the chances for establishing new industrial regions with giant malls to develop the businesses on the outskirts of the cities, but they still have great concerns on the negative impacts on the air quality and the quality of life along the highways (Ruth B.McKay, 2000). These situations are quite comprehensible because the development of highways is a good choice for the countries to level up the economic growth rates among the regions by finding the suitable sources of finance under the laws.

To ameliorate the impacts of highways, the Brazilian researchers have addressed the Environmental Impact Assessment (EIA) method as one of the possible solutions to the circumstances, though it has not been legally regulated for being the official step that should be taken to mitigate the negative influences of the highways (Amarilis Lucia C.F.G. et. al., 2015). This, has been discussed previously to help the countries save the money spent on the side effects of the development process to grow the number of projects instead. In India, for instance, the API (air pollution index) has been introduced to help assess the vulnerability of the environment of the regions that are located on the constructed highways (Debolina Basu et.al., 2008). These show the necessity in adopting a legal gauging framework that helps the authorities in especially developing countries control the related costs of the highway projects.

Moreover, the Palestinian case, which has been investigated by a research on 169 road construction projects over 2004-2008, has concluded that 100% of them have undergone delays and cost overruns (Ibrahim Mahamid, 2017). These are called schedule delay risks in Vietnam highway construction projects (Hong Anh Vu et.al., 2017), which are believed to be the common risks that the developing countries have to encounter because of lacking management experiences in the development projects. Thus, it can be seen that the delays have a fundamental connection with the overrun in costs spent. In the similar case, Thai researchers have pointed out some factors to be noted

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while managing a highway constructing project, such as resource management, budget controlling, construction professional methods, communication and reporting scheme (S Meeampol, S.O.Ogulana, 2006).

METHODOLOGY

This paper mainly employs the qualitative approach that relies extensively on the study of the relevant documents (John W. Creswell, 2014), especially on the cases of Vietnam, to reveal the similarities and differences in the development processes of the country. The authors choose to adopt the inductive data analysis, while the collected information is processed and explored to get the best view of Vietnam government's policies in building the express public transport system in the growing paces of the economies. The view on policy is supplemented by the descriptions on the implementation activities that the country have done in to provide good source of clues for findings and conclusions. Therefore, all of the data sources here are the secondary data (Mark Saunders et.al., 2009), mostly in the written forms of organisational documents, researching articles, reports and news of various kinds. The sources are kept diverse, so the practical situations of the nation should be looked upon with objective engineering point-of-view. To be exactly inferred for the circumstances in reality, the information has been carefully selected from trusted issuers within the period of 1999 - 2021.

VIETNAM'S POLICY AND PRACTICE IN EXPRESS PUBLIC TRANSPORT SYSTEM

I.Economic benefits of express public transport methods

Table 1 shows the allocation of resources that Vietnam Ministry of Transport (MT) has invested in the transport system of the country in the period of 1999 - 2007. Moreover, in 2011 - 2016, the total executed investment has reached 369,231 billion VND (Nguyen Van Binh, 2017) and is expected to be of 35,300 billion in 2020 (Thanh Le, 2020). Those figures bring about the policy orientations of the government on public transport to some extent that can be statistically useful for the research.

Table 1. Vietnam investments in transport (1999 – 2007)

				Ur	ıit: billi	on VND	
Types of	Planned			Executed			
transport	Investm	Other	Total	Investmen	Other	Total	
	ents			ts			
Road	121,684	71,78	193,46	72,566	28,20	90,774	
		3	8		7		
Railway	7,440	4,782	12,222	1,428	902	2,329	
Domestic	2,009	184	2,192	2,004	184	2,187	
waterway							
Maritime	20,234	8,111	28,346	9,370	803	10,173	
way							
Aviation	10,155	-	10,155	8,264	-	8,264	
Total	161,524	84,86	246,38	93,632	20,09	113,72	
		0	3		6	9	

N.B: These figures were from available sources The invested capital cited includes government investments, local investments and the FDI. Other investments are the MT's internal projects, which are not compiled by the research team.

Source: (JICA, 2010)

Each year in the period, Vietnam spent approximately 79.8% of the country investments on the building of roads, including highways from 2002 onwards (Hong Anh Vu et.al., 2017). This

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shows a consistent tendency in transport infrastructure investment of Vietnam government and the partnered entitites under the instructions of the MT. Therefore, it can be inferred from the fact that the highway is of high priority of the transport authorities in their policy-making process. Being the second tier in the list of priorities, the maritime transport infrastructure accounted for 8.9% of the total investments, ahead of airports, railways and domestic waterways respectively. Right in 2008, the Prime Minister of Vietnam has promulgated the Decision 1686/QD-TTg on development strategy for railway transportation up to 2020 with the vision of 2050. In which, the North-South express rail is expected to have been set up for partial operation by 2020, while the semi-express railways are to be established for Lao Cai – Ha Noi – Hai Phong and Ha Noi - Dong Dang routes. Later, in 2012, the Central Party has issued the Resolution No.13-NQ/TW that directs the whole nation towards building comprehensive infrastructure systems, especially in transportation field, by 2020. The priorities have been set therein for the national express transportation choices. First, the highway system that connects Ha Noi and Ho Chi Minh city should be partially invested in the parts that link to the critical terminals and gateways, aiming at 600km by 2015 and 2,000km by 2020. Second, the feasibility study for a North-South railway of high velocity should be undertaken. Third, 5 following international airports are prioritised in governmental investing decisions: Noi Bai (Ha Noi), Tan Son Nhat - Long Thanh (Ho Chi Minh city and Dong Nai), Da Nang, Can Tho, and Cam Ranh (Khanh Hoa). These, on the other side, have shown no development policy for express transportation on marine and in-land waterways.

Below, the authors focus on explaining the current situations of highways instead of general roads, and of seaports without addressing the domestic river-port system.

Airports

Decision No.2985/QD-BGTVT of the MT on the ratification of the Project of "Improving effectiveness and aviation infrastructure managing, exploiting quality" has been issued on 30th September 2013 with several solutions to the uses of the airports in the country, heading for 2020. The aiports will be divided into two groups of first and second classes to be invested in. The first include big aports with the significance in connecting Vietnam and the world or in the national defence, such as Noi Bai, Da Nang, Tan Son Nhat, Long Thanh, Cam Ranh (international), Na San and Tho Xuan (domestic). These will be the targeted airports that the government need to hold the control of, while the second-class ones are open for the private investment of qualified companies. This is also the privatisation process that is going to take place in the aviation industry in Vietnam to help the government alleviate the burden of national budget spent. In general, Vietnam currently has 21 civil airports (World Bank, 2011) in use, including 9 international airports and 12 domestic ones. However, the costs for airport upgrading and airplane buying will be, certainly, very huge to the budget of the government, so inviting the private investors to cooperate in the projects should lessen the burden of expenses that the country has to encounter.

Seaports

The seaports play a very crucial role in the development of country's import and export activities in helping a nation ideally bring in the cheapest sources of raw materials for manufacturing industries and sell the finished products to the other nations with high margin of profits (JICA, 2010). That is why Vietnam, an labour-intensive export-led economy, have chosen to invest in

the seaport system only less than in road system, especially highways. As for this, Decision No. 2190/OD-TTg of Vietnam Prime Minister on ratification of the master development plan of Vietnam seaport system to 2020 with the vision of 2030 has been issued on 24th December 2009. According to the Decision, the national seaports can be classified into 3 big groups of international hub (Van Phong), international ports (Hai Phong and Ba Ria-Vung Tau), regional main ports (Hon Gai, Nghi Son, Cua Lo, Son Duong - Vung Ang, Dung Quat, Quy Nhon, Nha Trang, Ba Ngoi, Sai Gon and Can Tho). About the port connection in terms of shipping, the normal average speed of an 'express' cargo vessel is only 30 knot or more, approximately 55.56 km/h (Jouni T. L., Ari P.J.V., 1994), which cannot be considered high compared to the average speed of the airplanes (around 800 - 1,000 km/h) and even the other rapid transportation vehicles presented in this paper. This, obviously, is not a good choice of policy for the express system of transport.

High-speed rail networks

The railways in Vietnam cannot be called a high-speed network yet because of the low speed they are at the moment (approximately 70km/h in average). Thus, the railway system is being proposed to be rebuilt or newly built in the near future to create a much more rapid service of around 120 - 350 km/h by the government to get the national assembly's approval (JICA, 2010). The normal-speed networks now have been divided into major 6 lines: Hanoi – Sai Gon (the longest of 1,726.2 km from the capital city in the North to the heart of the South), Hanoi -Hai Phong (101.75 km), Hanoi - Lao Cai (293.5 km), Hanoi -Dong Dang (162.5 km), Dong Anh – Quan Trieu (21.4 km), and Luu Xa - Kep - Ha Long (68.6 km). The new express Hanoi -Sai Gon line, on the other side, also named high-speed railway (HSR), is expected to be built with the route plan of 1,556.0 km, including 1,273.0 straight km and 283.0 curved km in the period of 2020 - 2035. On the HSR, the trains can speed up to maximum design speed of 350 km/h, which is equal to the Japanese Shinkanshen, through 27 stations along the country. This is very important to the economic development of Vietnam because the railways are annually responsible for transporting tens of millions of passengers and freight. However, this proposal demands more than 45 billion USD to be successfully executed (JICA, 2010).

Highways

The 2008 Decision No.1734/OD-TTg of the Prime Minister regarding ratification of development master plan of Vietnam highway system to 2020 with the vision of 2020 onwards has stated that the country would need to newly build 5,873 km of express roads, consisting of 24 major routes and 22 sub-routes. This structure is drawn into 2 big lines of highways from the North to the South of Vietnam, with the East line of 1,941 km and the West one of 1.321 km. More than 99% of the lines are 4-or-6-lane highways, and the trivial rest are of less than 1% only (JICA, 2010). Some foreseen possitive impacts of the new highway system are creating a unique, safe and fast route of transport for long-haul vehicles, reducing on-the-road expenses for more competitive logistics services, connecting economic regions, and being the core of the national inland transport map. In total, this plan requires an investment of about 19 billion USD.

II. The construction and economic benefits of highways

The construction of qualified highway projects was offically commenced in 2008 only after the mentioned Decision

No.1734/QD-TTg, because the previously built ones had not been of the international standards for modern expressways yet. To release the stresses which have been laid on the developing country's government budget, Vietnam have decided to pave the way for PPP adoption in the faciliation of the highway infrastructure beside the investments of official development assistance (ODA) and other frequently used sources of funds (Chandan Sharma, 2012).

Table	2. Highway	projects in	Vietnam

Table 2. Highway projects in Vietnam							
No	Routes	Lengt	Estima	L	Progress		
•		h (<i>km</i>)	ted	а			
			costs	n			
			(millio	e			
			п	s			
			USD)				
	The main-route networks						
1. No	orth - South line						
	Lang Son -				Operated		
1	Bac Giang -	130	1,176.2	4			
	Bac Ninh						
2	Phap Van -	30	-	4	Operated		
	Cau Gie	50		-			
3	Cau Gie -	50	452.4	4	Operated		
	Ninh Binh			Ľ			
4	Ninh Binh -	75	827.6	6	Being built		
	Thanh Hoa			Ĺ			
5	Thanh Hoa -	140	2,128.0	6	Feasibility study		
-	Vinh		,	Ľ.			
6	Vinh - Ha	20	201.5	4	Feasibility study		
	Tinh						
7	Ha Tinh -	277	2,641.2	4	Feasibility study		
	Quang Tri						
8	Quang Tri -	73	711.9	4	Being built		
	Hue				D 1 1		
9	Hue - Da	105	1,778.0	4	Being built		
	Nang				0 (1		
10	Da Nang -	131	1,048.2	4	Operated		
	Quang Ngai Quang Ngai				Fogsibility study		
11	- Quang Ngai	150	1,787.8	4	Feasibility study		
	Quy Nhon -				Feasibility study		
12	Nha Trang	240	3,390.1	4	i cusionny sinay		
	Nha Trang -				Being built		
13	Phan Thiet	280	2,890.2	4	Boing built		
	Phan Thiet -				Feasibility study		
14	Dau Giay	100	1,003.8	6	- casto tity study		
	HCM city -				Operated		
15	Long Thanh	55	1,110.8	6	operated		
	- Dau Giay		,				
	Long Thanh				Being built		
1.0	- Nhon	FT 0	720 6	-	Ũ		
16	Trach - Ben	57.8	738.6	6			
	Luc						
	Ho Chi				Operated		
17	Minh city -	40	776 5	6			
1/	Trung	40	776.5	6			
	Luong						
18	Trung	92	1,510.0	6	Being built		
10	Luong - My	12	1,510.0	0			

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-	1						
	Thuan - Can Tho						
19	Can Tho - Ca Mau	150	1,755.7	4	Feasibility study		
2. International gateway							
2.111	Ha Noi - Hai	vay			Operated		
20	Phong	105	1,441.2	6	operated		
21	Bien Hoa - Vung Tau	76	696.5	6	Feasibility study		
3. M	3. Metropolitan boundary highways						
	Belt road				Being built		
22	No.4 in Ha	90	1,350.5	6			
	Noi						
22	Belt road No.5 in Ha	220	2 592 2	6	Feasibility study		
23	Noi Noi	320	2,583.2	0			
	Belt road				Feasibility study		
24	No.3 in	83	1,226.9	6	1 casto titty statey		
	HCM city						
	The sub-route	networks					
25	Ha Noi -	264	1,218.7	4	Operated		
23	Lao Cai	204	1,210.7	4			
26	Ha Noi - Thei Neuven	62	248.2	4	Operated		
	Thai Nguyen Lang - Hoa				Operated		
27	Lang - Hoa	30	450.0	6	Operated		
	Doan Hung -				Being built		
28	Hoa Lac -	457	4,813.1	4	-		
	Pho Chau						
	Ngoc Hoi -				Feasibility study		
29	Chon Thanh	864	7,974.4	4			
	- Rach Gia Thai Nguyen				Operated		
30	- Cho Moi	28	256.9	4	Operated		
31	Hoa Lac -	26	214.0	6	Operated		
51	Hoa Binh	20	214.0	0			
32	Bac Ninh -	136	1,618.8	6	Being built		
	Ha Long Ha Long -				Being built		
33	Mong Cai	128	1,254.7	4	Dellig built		
	Ninh Binh -				Being built		
34	Hai Phong -	160	1,189.4	4	-		
	Quang Ninh						
35	Hong Linh -	34	302.0	4	Feasibility study		
-	Huong Son	-			D-: 1 %		
36	Cam Lo - Lao Bao	70	699.1	4	Being built		
	Quy Nhon -				Feasibility study		
37	Pleiku	160	1,615.1	4			
38	Dau Giay -	189	1,871.0	4	Being built		
	Da Lat	,	1,071.0	<u> </u>			
	HCM city -				Feasibility study		
39	Thu Dau Mot - Chon	69	996.3	6			
	Thanh						
	HCM city -				Feasibility study		
40	Moc Bai	55	410.5	4	JJ		
41	Soc Trang -	200	1,439.6	4	Feasibility study		
	Can Tho -	-00	-,				

	Chau Doc				
42	Ha Tien - Rach Gia - Bac Lieu	225	1,619.5	4	Feasibility study
43	Quang Ngai - Dak To	170	2,073.6	4	Feasibility study
44	Nha Trang - Da Lat	80	1,062.5	4	Feasibility study
45	Binh So - Gia Ray	30	249.7	4	Feasibility study
46	Da Nang - Ngoc Hoi	250	3,094.2	4	Feasibility study

Source: (JICA, 2010) and authors' compilation (2021)

Table 2 lists the routes that need to be built around the country till 2021. The main routes lie along the length of the country from Lang Son province up north to Ca Mau province down south, while the subroutes play the role of regional connection between the main-route cities and provinces with the surrounding strategic destinations. However, only 745 km of highways have been built and being transferred for operation up to 2018 (Vietnam MOIT, 2017). This figure is still very humble while mentioning the population of more than 93 million people of Viet Nam. More than a half of the number of the planned highways have been being built and operated; the rest are still in the process of feasibility study for commencement after 2020. Nevertheless, the operated expressways have brought about a lot of socio-economic benefits to Vietnam development process. First of all, the highways have shortened the travelling time between the strategic economic regions in the country that enables the better regional connection and the savings of transporting costs of human beings and cargos for stronger business ties and more competitive prices of goods sold corresspondingly. Being the backbone of the national routes, the highways also have become the central hubs for all the other types of roads in the cities/provinces. This makes moving on the highways be flexible enough for all types of qualified vehicles to reach whatever final destinations they want to. Second, the highway system has brought about the business chances for the cities/provinces, especially the remote areas, to reduce the poverty rate in some certain areas of Vietnam. For instance, the Ha Noi - Lao Cai expressway, which has been opened for traffic since September 2014, has reduced the time gap between Ha Noi and Phu Tho, Yen Bai or Lao Cai provinces dramatically by more than a half. This, in turn, helped increase the number of tourists to Lao Cai and Sa Pa from 2 million in 2015 to 2.66 million in 2016 and 3.5 million in 2017 (Vu Han, 2018), generating remarkable revenues to the local business community. Third, in the international business perspectives, the highways play as significant role in attracting more foreign direct investment (FDI) from the outside world (Mark Goh, Argus Ang, 2000). This is comprehensible because of the fact that the foreign investors should be much more confident in giving their final investing decision while the transport networks are stable and fast enough to help the products move in and out of the country. Needless to mention, FDI-typed capital has been always considered one of the catalysts to the economic development of Vietnam. Lastly, the building of highways, as the other infrastructure development process, has the involvement of a variety of investors, including the private ones in PPP method (Chandan Sharma, 2012). Macro-economically, the private and governmental procurement has become the motivators to the national economy development and the GDP annual growth rates. Moreover, the modern techniques and stateof-the-art management skills of the private sector will be deployed. This, certainly, shall affect the country governance positively.

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RECOMMENDATIONS ON CIVIL ENGINEERING PERSPECTIVES

Given the context of Vietnam's transport infrastructure and the forementioned considerations of the benefits that different types of transport, especially express ones, bring to the country, managers and policy makers need to pay attention to the following specific things:

- Develop transport infrastructure in a synchronous manner, with a key focus, both taking appropriate steps and making a breakthrough in the direction of modernization, creating a complete, continuous and interconnected network of transport modes between territories, between urban and rural areas nationwide. The Government should also take good care of the maintenance, application of advanced technology, and improvement of labor productivity to ensure efficiency and sustainability in exploiting existing transport infrastructure.
- Rapidly establish a network of fast, high-volume modes of transport for large cities (especially for Hanoi and Ho Chi Minh City to increase the rate of passengers using public transport to about 20% 25%); and to develop urban transport towards civilization, modernity, and environmental friendliness, taking public transport as the foundation.
- Focus on promoting the construction progress of important traffic projects: the North-South Expressway Project in the East of the country, the Ben Luc Long Thanh Expressway, the Project to enhance traffic connectivity in the Central Highlands, traffic connection Projects in the northern mountainous provinces, including important and urgent road and railway projects; transitional ODA Projects; speeding up the implementation procedures for new additional ODA Projects, which use sources of increase from the state budget and the ones with medium-term reserve capital.
- Promote the socialization of investment and development of transport infrastructure, maximizing all resources to invest in the development. In which, the users of traffic infrastructure are responsible for contributing user fees for maintenance and reinvestment in traffic infrastructure construction.
- Continue to restructure the transport market share in the direction of reducing the proportion of road transport, increasing the ones of inland waterway and rail transport modes, focusing on developing multimodal transport and logistics services on the basis of application of science and technology to improve capacity, efficiency and quality of transport and to reduce logistics costs. It is also critical to build inland port system according to approved planning documents of the Government to support the seaport system and logistics services, especially in the southern and northern economic hubs.

CONCLUSIONS

Transport is an important part of socio-economic infrastructure of Vietnam, which is considered one of the three breakthroughs of the economy. It is necessary to prioritize investment in development, one step ahead at a fast and sustainable pace in order to create a premise for socio-economic development, ensuring national defense and security and fostering the industrialization and modernization of the country. The Prime Minister's Transport Development Strategy to 2020 with the vision towards 2030 has also mentioned this direction. Therefore, many key and urgent tasks such as perfecting institutions and policies in the fields of transportation, preparation for investment and implementation of national important works and projects, deployment of connecting modes of transport, improving the quality of transport services, ensuring the growth goals of each field and the entire transportation industry are the critical parts in forming the fast traffic network to help the country's economy move forward more strongly than ever before.

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