Completing the planning and implementation of plans of public investment in road infrastructure construction in Vietnam

Quan Le1, Dung Nguyen Thi Tuyet1*, Thuan Do Van2, Hung Bui Manh1

1 Hanoi Architectural University, Hanoi, Vietnam
2 Institute of Transport Administration and Management Cadres, Co Nhue Ward, Tu Liem District, Hanoi, Vietnam

Abstract: In recent years, public investment has been crucial in promoting socioeconomic development. In the context of Vietnam's economic recession and difficulties due to the impact of the Covid-19 pandemic, public investment in road transport infrastructure construction has become an effective tool for macroeconomic management. Planning and implementation of plans have an essential function in ensuring investment efficiency. The article analyzed the current situation of public investment planning and implementation in road infrastructure construction, pointed out the shortcomings, and established 19 criteria to evaluate the planning function and organization of plan implementation. Also, in the article, quantitative analysis is performed through SPSS software to determine the level of achievement of the targets. That is the basis for the authors to propose some solutions to improve the planning and implementation of plans to enhance the efficiency of public investment in road infrastructure construction in Vietnam.

Keywords: Public investment, planning, implementation of plan, road infrastructure, public investment Law

1 Introduction

Road transport infrastructure plays a crucial role in socioeconomic infrastructure, one of the three strategic breakthroughs that must be prioritized for synchronous and modern investment. In recent years, the Vietnamese government has spent a lot of capital on transport infrastructure for development programs and projects (called public investment), averaging 5.7% of GDP, the highest in Southeast Asia [1]. The following year's investment capital is higher than the previous year (VND 43,401 billion in 2021, VND 52,310 billion in 2022, estimated at VND 94,161 billion in 2023, creating an essential change in infrastructure, vigorously promoting transformation economic restructuring, increasing

* Corresponding author: dungntt@hau.edu.vn

© The Authors, published by EDP Sciences. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).
production capacity, improving urban civilization and modernizing the country. In which, investment capital for road transport always accounts for the most significant proportion of total capital for the transport sector, from 67% to 98.7% [2]. However, the medium-term investment plan generally meets about 24% of demand [3]. Therefore, in addition, the capital of new construction projects have yet to be arranged, many priority tasks cannot be balanced and negotiated sufficiently (such as advance repayment of the plan, outstanding debts for capital construction, debts under budget obligations, and transitional projects); medium-term plans are delivered late. Especially in two crucial national projects (Long Thanh International Airport and North-South Expressway) in the second half of 2016-2020, the procedures for allocating capital have been completed; the list of projects has been completed. Many plans and transitions exist, so the investment is still spread out.

In addition, due to the limited ability to balance the annual budget, in the 2016-2020 period, the total actual allocated capital was 161,000 billion VND (the plan is 233,211), reaching 69% of the medium-term plan, so some of the planned targets has not been completed [3]. This situation is due to objective and subjective reasons, but subjective reasons are still the main ones, especially shortcomings in planning and implementing public investment plans. Therefore, it is necessary and urgent to study the actual situation of planning and implementing plans to improve the efficiency of state management in road infrastructure construction in Vietnam.

2 Study overview

2.1 Domestic studies

Governments and scientists have always been interested in state public investment management. Studies in this field are consistent with the comments that public investment in the past period has accounted for a large proportion of total social investment capital, playing an essential role in economic development in Vietnam. However, investment efficiency still needs to be higher.

Some studies use quantitative analysis methods to evaluate the efficiency of state management on public investment in construction in general: The doctoral thesis of Pham Minh Hoa (2017) considered the level of influence of public investment on economic growth with the help of SPSS 20 software. The article by To Trung Thanh (2012) uses the VECM (Vector Autoregressive Error Correction Model) model with three variables: public sector investment, private sector investment, and GDP, to evaluate the relationship between public investment and private investment. Using the survey and investigation method, Pham Thi Phuong Hoa (2020) - research analyzed some causes affecting the implementation of the public investment plan for 2016-2020 and the thesis of Bui Manh Cuong (2020). 2012) has developed a system of indicators and methods to evaluate the effectiveness of development investment from the state budget [6], [7]. Author Tran Nguyen Ngoc Anh Thu (2014) uses a multivariable model and a regression function to determine the efficiency of public investment [8].

The thesis of Do Van Thuan (2019), Cu Thanh Thuy (2018), a ministerial project of Ngo Minh Tuan (2023), and articles by Nguyen Luong Hai (2019) studied further state management of public investment in road transport. The studies have established a system of factors affecting the effectiveness of this work. The main factors are: (1) Legal institutions on public investment. (2) Planning and planning work. (3) Inspection, control and supervision. (4) Staff quality, management capacity, leadership. In which, the authors
Do Van Thuan and Ngo Minh Tuan analyzed and pointed out the inadequacies in the planning and implementation of the public investment plan for the period 2016-2020 [1], [9]; Nguyen Luong Hai's article studies the influence between variables related to planning and the efficiency of state management in road infrastructure construction [10].

Regarding the organization and implementation of the plan, many studies have developed a unified system of criteria for allocating capital, determining budget priorities, monitoring and evaluating investment projects, and other procedures of public investment management. The thesis of Nguyen Quoc Toan (2019) has established a formula to calculate the influence of criteria on the supervision and evaluation of construction investment projects using state capital, including a group of legal standards: legislation, monitoring tools, ethics, and qualifications [18]. The doctoral thesis of Nguyen Thanh Tung (2021) has pointed out and analyzed the criteria affecting the supervision of public investment by the National Assembly [13]. With the same points of view, but going into the field of road traffic, Do Duc Tu (2012) has developed criteria reflecting the modernity and synchronization of road transport infrastructure, including ten solutions to develop transport infrastructure in the Red River Delta by 2030 in a modern direction, with emphasis on strengthening coordination among all levels and sectors [14].

### 2.2 Foreign studies

According to [15], it isn't easy to evaluate the performance of state management agencies. Therefore, one has to replace it with evaluation according to processes and procedures; or by developing quantitative and qualitative assessment criteria [16]. Research by Chakraborty and Dabra-Norris (2011) has shown the role of the public investment management system in the efficiency of investment capital and growth [17]. The article by Myers and Laursen [9] summarizes and evaluates the planning and implementation from the perspective of state budget management for public investment in the construction of road transport systems of countries that are new members of the EU [18].

Regarding implementing the public investment plan, Chau Ping Yang (2007) explores the factors affecting investment projects, on the role of state agencies and contractors. These two subjects have different views, and sometimes these differences are the leading causes affecting the progress and quality of the project [19]. Hiroshi Isohata (2009) studies the historical development of the bidding system to construct public works. The author has pointed out the characteristics of the growth in investment and modern construction systems, such as software technology for management, bidding and construction contracts in Japan [20].

Researchers in road transport have mainly focused on state management issues through public-private partnerships, solving capital problems and improving investment efficiency. Studies [21], [22] all make recommendations for successful investment projects: lack of appropriate legal framework, economic and political instability and consequent high perception of risks, and relatively low traffic volumes, management project contract.

The above studies show that state public investment management is very complex, includes many contents, and depends on many factors. However, the authors found some essential contents that are decisive to the effectiveness of this activity in road development investment in Vietnam that need to be studied further. These are the following tasks: (1) Making a plan for public investment, (2) Organizing the implementation of the public investment plan.
3 Study method

This paper uses the following research methods:

- **Data collection methods:**
  - Method of secondary data collection: The data serving in the research by the authors are collected from the annual summary reports of the Ministry of Transport, the legal regulations of the State, and the published or accepted scientific works related to the article. These data are used to analyze the current situation of the planning and implementation of the public investment plan and evaluate the overall research situation related to the article.
  - Method of primary data collection: Collected from surveys of individuals in the road traffic construction investment management field with five years of experience or more. To select the research sample, the authors choose the Method of Non-random sampling (also known as non-probability sampling). The sample size is determined by the formula: \( n \geq 50 + 8p \) (n is the sample size, and p is the data for the independent variables in the model). The total number of survey samples sent was 240, and the number received and confirmed was 234, which is higher than the number required for the data to be collected satisfactorily. Using a 5-point Likert scale, the rating scale increased from 1 to 5 (1-Strongly disagree; 2-Disagree; 3-Neutral; 4-Agree; 5-Strongly agree).
  - Data analysis methods: After collecting data, the authors selected, systematized, and used SPSS software for processing. The implementation steps are as follows:

![Image of procedure diagram](image)

**Figure 1. Procedure of survey and evaluation**

4 Status of public investment planning

Planning of public investment is a periodic work carried out according to investment cycles (short-term and medium-term plans) under the responsibility of the Ministry of Transport. The medium-term and annual plans are built based on capital plans of the project...
management boards under the Ministry and the provincial Departments of Transport [Investment Law]. The contents of the public investment plan include Objectives, orientations, a list of public investment programs and projects, a balance public investment capital, a capital allocation plan, resource mobilization solutions and implementation [3].

The public investment plan is made in 5 years to help the management work more closely and openly. However, the planning for 2016-2020 and 2021-2025 still needs some improvement: it is periodic work carried out according to investment cycles (short-term and medium-term plans) under the responsibility of the Ministry of Transport. The medium-term and annual plans are built based on capital plans of the project management boards under the Ministry and the provincial Departments of Transport [Law on]. The contents of the public investment plan include Objectives, orientations, a list of public investment programs and projects, a balance public investment capital, a capital allocation plan, resource mobilization solutions and implementation [3]. The public investment plan is made in 5 years to help the management more closely and openly. However, the planning for the period 2016-2020 and 2021-2025 still has some shortcomings:

- The document has unclear and incomplete frame characteristics, causing difficulties in planning, specifically:
  
  According to the Law on Public Investment No 39/2019/QH14 (herein after referred to as the Law on Public Investment for short), one of the conditions for a program or project to be allocated medium-term capital is that it "has been decided by the competent authority on investment policy clearly defines the capital source and the ability to balance capital", this is difficult to do because it is impossible to prepare and submit investment policies of all projects at the time of the first year of the 5-year plan. At the same time, the level of capital at the time of approval will be far different from that of the implementation years, especially the last years [23]

  Although the Law on Public Investment has regulations on criteria and principles for budget allocation in planning, there needs to be a clear policy on screening and prioritizing in selecting and approving public investment approval of projects, leading to indiscriminate investment, dispersion of resources.

- The legal system needs to be synchronous, complete and unified, so many transport sector projects are challenging to meet. Specifically:
  
  North-South expressway projects (critical national and group A projects) have significant scale and costs, requiring much time to complete investment and construction procedures. Plus, the slow approval of the investment policy so that the investment time will be in 2 phases of the medium-term plan: 2021-2025 and 2026-2030. According to the provisions of Article 89 of the Law on Public Investment, the Ministry of Transport must ensure that the allocation of capital for the following stage is, at most, 20% of the capital of the previous stage. But these projects account for a large proportion of capital in the investment plan, so it is difficult for the Ministry to meet this requirement.

  On the other hand, the regulations on developing a 5-year stabilization plan, the detailed arrangement of the project portfolio and the capital sources for each project are inconsistent with the regulations on the 3-year public debt repayment plan, also cause difficulties for the implementation process [23]

- Imbalance between the ability to meet capital sources and capital needs as planned:

  Table 1. Medium-term capital allocation plan for the transport sector [2]
Table 1 shows that the state capital allocated for public investment has yet to meet the demand, so regional investment must be balanced. Investment divergence needs to be more reasonable, making many projects delayed. The process of appraisal and approval of the plan requires coordination, exchange and unification of views among ministries and ministerial-level agencies on developing road transport infrastructure with socio-economic development. It is avoided that local decisions are affecting the common goal.

- The public investment plan needs to be more suitable for the needs. When it is implemented, it still has to be adjusted. As a result, many important national projects still need more capital but cannot allocate resources for investment (because the capital has been allocated to other projects). Many ODA projects that have been arranged in the medium-term public investment plan have not been disbursed, while many projects that have had investment policies and can spend capital are not set in the medium-term plan [2].

The analysis shows that, although the public investment plan is made in accordance with the socio-economic development goals and the plans have been approved, but the investment is still scattered, wasteful and inefficient.

### 5 Status of the implementation of the public investment plan

Transport infrastructure, in general, and road transport, in particular have made many breakthroughs compared to other fields, taking on a key role in regional and international connectivity. Specifically, in the mid-term period 2016-2020, the construction of 468 km of expressways has been completed, bringing the total length of the expressway in operation to 969 km; upgrading 600 km of national highways, 31 large and medium bridges, bringing the whole length of the national road to 24,598 km; the ratio of asphalt concrete pavement was raised to 64%. Completing many large projects such as the Mai Dich - Nam Thang Long Viaduct, Tan Vu - Lach Huyen motorway, Lo Te - Rach Soi route, the road connecting Hanoi - Hai Phong highway with the Cau Gie - Ninh Binh phase section 1, 13 km urban railway Cat Linh - Ha Dong [3].

However, the implementation of investment projects on road construction in recent years still has many limitations and weaknesses, specifically as follows:

- In the current legal regulations, there is no independent and clear delineation between the agency making and appraising public investment projects. At the same time, more criteria for selecting investment projects must be met. Therefore, eliminating unprofitable projects rarely occurs during the appraisal and approval process. Appraisal agencies often ask investors to modify projects more consistent with current regulations. This leads to many projects adjusting the total investment size during implementation, changing the investment efficiency compared to the original plan, often in the direction of reducing investment efficiency or not achieving it. Effective than the original. For example, the project to build a road connecting Noi Bai airport to Nhat Tan bridge, adjusted from VND 4,956.2 billion to VND 6,742.3 billion (up 36%); the project of renovating and upgrading
National Highway 18, the section of Uong Bi town - Ha Long city, adjusted twice, from VND 1,318 billion to VND 2,838.8 billion (up 115.3%) [2].

● Most of the projects only focus on financial efficiency and ignore and do not quantify the socio-economic efficiency because the law does not require the assessment of socio-economic efficiency to be assessed quantifiably. So, comparing projects to see the urgency and prioritization is challenging.

● The implementation process goes through many cumbersome procedures, the disbursement rate is low, and many significant works and projects have been approved but have not been implemented for many years or are behind schedule, causing waste and loss. Regulations "The People's Councils at all levels adjust the medium-term and annual public investment plans" (Article 67 of the Law on Public Investment), adjusting annual capital plans between agencies and units to wait the Meeting of the People's Council, leading to a delay in disbursement [23].

● Law enforcement in public investment project management is not strict. Many projects did not conduct pre-qualification before making the investor selection plan or did not comply with the order, procedures and authority in planning, appraising and approving the plan to select contractors and contractors, investors.

● Decentralization and authorization in investment management still have many problems; many localities have taken advantage of the loopholes of the decentralization process, accompanied by the lack of supervision and lax management of the central government, along with Poor planning quality is the cause of rampant, overlapping and inefficient investment [2].

It can be seen that, besides the achievements, the organization and implementation of public investment plans in road construction still need to improve.

6 Evaluation of planning and implementation of plans

In the state management of public investment, planning and implementing plans are essential in ensuring efficiency. Analysis of the above situation shows that these two tasks still have many things that could be improved. To more objectively identify the actual status of public investment planning and implementation of plans, the authors have established 19 criteria to evaluate the function of public investment planning and implementation and conducted a survey using table-questions, in-depth interviews with experts, and using SPSS software to assess the criteria, proposing practical and reasonable suggestions and solutions to complete this work. The procedure is described in section 3.

Table 2. Criteria for evaluating the function of planning and organizing the implementation of public investment plans for road infrastructure construction
<table>
<thead>
<tr>
<th>Order</th>
<th>Code of criteria</th>
<th>Criteria for evaluating public investment planning function in road infrastructure construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
<td>The degree of conformity with development goals in socio-economic development strategies, socio-economic development plans of the country, sector, field, and locality</td>
</tr>
<tr>
<td></td>
<td>KH1</td>
<td>The level of conformity of the objectives in the medium-term and annual investment plan</td>
</tr>
<tr>
<td></td>
<td>KH2</td>
<td>The level of assurance of the principles, criteria, and norms for allocation of public investment capital in each period</td>
</tr>
<tr>
<td></td>
<td>KH3</td>
<td>The level of compatibility with the ability to balance public investment capital</td>
</tr>
<tr>
<td></td>
<td>KH4</td>
<td>The level of assurance of the principles, criteria, and norms for allocation of public investment capital in each period</td>
</tr>
<tr>
<td></td>
<td>KH5</td>
<td>The level of compatibility with the ability to balance public investment capital</td>
</tr>
<tr>
<td></td>
<td>KH6</td>
<td>The level of specificity, clarity of action plans</td>
</tr>
<tr>
<td></td>
<td>KH7</td>
<td>The level of publicity, transparency and fairness of the plan</td>
</tr>
<tr>
<td></td>
<td>KH8</td>
<td>The level of publicity, transparency and fairness of the plan</td>
</tr>
<tr>
<td></td>
<td>KH9</td>
<td>The level of assurance of the principles, criteria, and norms for allocation of public investment capital in each period</td>
</tr>
<tr>
<td></td>
<td>KH10</td>
<td>The level of assurance of the principles, criteria, and norms for allocation of public investment capital in each period</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II</th>
<th></th>
<th>Criteria for evaluating the function of organizing the implementation of public investment plans for road infrastructure construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TH1</td>
<td>The level of conformity the system for implementing the plan for public investment in the construction of road infrastructure</td>
</tr>
<tr>
<td></td>
<td>TH2</td>
<td>The level of clarity in the management hierarchy, division of work to implement the investment plan</td>
</tr>
<tr>
<td></td>
<td>TH3</td>
<td>The level of conformity in the planning, appraisal and evaluation of investment projects</td>
</tr>
<tr>
<td></td>
<td>TH4</td>
<td>The level of compliance with the law in the management and implementation of investment plans</td>
</tr>
<tr>
<td></td>
<td>TH5</td>
<td>The level of capital mobilization fully meets the needs according to the built investment plan</td>
</tr>
<tr>
<td></td>
<td>TH6</td>
<td>The level of ensuring the progress of capital allocation to projects according to the plan and investment objectives</td>
</tr>
<tr>
<td></td>
<td>TH7</td>
<td>The level of clarity and effectiveness of responsibilities during the implementation of the plan</td>
</tr>
</tbody>
</table>

The results of the analysis of the measurement indicators of the formulation and implementation of the public investment plan for the construction of road transport infrastructure are shown in Table 3.
Table 3. Descriptive statistical analysis of indicators related to investment planning

<table>
<thead>
<tr>
<th>Order (ID)</th>
<th>(Criteria)</th>
<th>Number of sample (N)</th>
<th>Minimum value (Minimum)</th>
<th>(Maximum)</th>
<th>(Mean)</th>
<th>(Std. Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Criteria for evaluating public investment planning function in road infrastructure construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>KH1</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6045</td>
<td>.81359</td>
</tr>
<tr>
<td>2</td>
<td>KH2</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.4582</td>
<td>.86192</td>
</tr>
<tr>
<td>3</td>
<td>KH3</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.4433</td>
<td>.86802</td>
</tr>
<tr>
<td>4</td>
<td>KH4</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.0761</td>
<td>.79842</td>
</tr>
<tr>
<td>5</td>
<td>KH5</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.4284</td>
<td>.81135</td>
</tr>
<tr>
<td>6</td>
<td>KH6</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.4134</td>
<td>.78919</td>
</tr>
<tr>
<td>7</td>
<td>KH7</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7582</td>
<td>.82629</td>
</tr>
<tr>
<td>8</td>
<td>KH8</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.5149</td>
<td>.84946</td>
</tr>
<tr>
<td>9</td>
<td>KH9</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.2143</td>
<td>.80100</td>
</tr>
<tr>
<td>10</td>
<td>KH10</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.1714</td>
<td>.76000</td>
</tr>
<tr>
<td>II</td>
<td>Criteria for evaluating the function of organizing the implementation of public investment plans for road infrastructure construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>TH1</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7175</td>
<td>.97635</td>
</tr>
<tr>
<td>2</td>
<td>TH2</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.3552</td>
<td>.81218</td>
</tr>
<tr>
<td>3</td>
<td>TH3</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.1299</td>
<td>.82207</td>
</tr>
<tr>
<td>4</td>
<td>TH4</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.0799</td>
<td>.75183</td>
</tr>
<tr>
<td>5</td>
<td>TH5</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.0552</td>
<td>.76214</td>
</tr>
<tr>
<td>6</td>
<td>TH6</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.2313</td>
<td>.83319</td>
</tr>
<tr>
<td>7</td>
<td>TH7</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7046</td>
<td>.79812</td>
</tr>
<tr>
<td>8</td>
<td>TH8</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.6714</td>
<td>.73105</td>
</tr>
<tr>
<td>9</td>
<td>TH9</td>
<td>234</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7286</td>
<td>.88218</td>
</tr>
</tbody>
</table>

Reliability statistics and correlation statistics between each factor and all factors in the group, the factors are satisfactory (>0.3), and the reliability coefficient Cronbach's Alpha is also satisfactory (>0.6).

- General evaluation:
  - Table 3 shows that all 19 factors have a certain level of influence on the planning and implementation of public investment plans in road construction, the most considerable average value is 3.9045, and the smallest is 3.0552. The factors are asymptotically close to the average value, showing that many factors affect the planning and implementation of the plan and are not too biased towards any one factor.
  - Each factor has a different response level. It is necessary to carefully consider the factors with small average values to proactively give directions and solutions to overcome because they reflect problems with many shortcomings.
• Evaluate the planning function:
  + The level of evaluation of this activity is above the average threshold and converges around 3.0 points on the scale. This result shows that public investment planning in recent years has just stopped at the level of completing tasks and needs to be improved with more criteria to enhance planning quality in the following investment stages. According to the KH4 indicator has the lowest value, proving that investment capital is still a hot issue when the state capital allocated for public investment is much lower than the demand (24% in the 2016-2020 period and 24% in the 2016-2020 period, respectively. period 2021-2025 is 33%).
  Indicators KH9 and KH10 have lower values than other indicators, reflecting the current status of the legal system on construction investment in Vietnam, which needs to be completed, with many shortcomings and contradictions between legal documents.

• Evaluate the function of implementing the plan:
  The measurement indicators are all above the average threshold, showing that these activities are assessed as completing the task. This result is consistent with the actual situation of the organization implementing the investment plan that has taken place in the past time. This result also shows that the authorities involved in public investment in road infrastructure construction in Vietnam need to make further efforts to improve, ensure the plan is implemented and achieve the set objectives.
  Indicators TH3, TH4, TH5, and TH6 have a low average value, showing that these activities could be more highly appreciated and have many limitations.
  The above analysis and evaluation results are the basis for the author to offer practical solutions to improve the formulation and implementation of public investment plans in road construction.

7 Solutions to complete the planning and implementation of plans to improve the efficiency of state management of public investment in road infrastructure construction in Vietnam

7.1 Solutions to improve public investment planning capacity in road transport infrastructure construction

• The public investment plan should follow the general principles of the Law on Public Investment and must comply with the following contents:
  Firstly, investment planning needs to focus, mainly, resolutely overcoming the situation of investment in road traffic infrastructure, which needs to be synchronized, lack of vision (does not stick to the planning), spread, and disperse resources and group interests.
  Secondly, it must be based on a practical and scientific basis, absolutely not from the leaders' will, necessarily calculated based on quantification of costs and effectiveness.
  Third, when planning, it is about investment in new construction, maintenance, maintenance and operation. Good maintenance, exploitation and operation quality will help increase the road work life and investment efficiency.
  Fourth, the plan needs to be explicitly developed, in line with the goals in the annual plan, and at the same time, it must balance actual needs and resources.
• In addition to improving the quality of planning work, it is necessary to improve the legal framework for public investment in road construction. In particular, it is necessary to amend the Law on Public Investment and the Law on Investment concerning competence powers in the following directions: (1) Strong
decentralization, assigning the right to decide on investment in programs and projects according to sectors and fields to the heads of ministries, ministerial-level agencies and localities. (2) The current Public Investment Law offers a reverse process: Divide capital first, and choose projects later. At the same time, it is advisable to do the opposite and change the regulations on capital recording (because capital recording only has money for project preparation, then appraisal, approval and implementation). (3) The documents guiding the implementation of the Law must also cover and create a corridor for the inspection and supervision of public investment activities.

7.2 Solutions to strengthen the capacity of organizing the implementation of public investment plans in the construction of road transport infrastructure

Strengthening the capacity to organize the implementation of public investment plans should focus on the following groups of specific solutions:

- Completing the organizational apparatus of state management agencies on investment in road transport infrastructure construction in the direction: Reviewing the functions and tasks of agencies involved in this work, consolidating organize the apparatus, reducing the management focal points to avoid overlapping functions and duties, save costs and improve management efficiency.

- Develop strict regulations so that the parties involved in the project must be genuinely responsible in each working position, attaching the responsibility of the competent person to the commitment of implementing the project on schedule; specify the form and level of handling for violating individuals and organizations. This helps ministries and branches properly assess the implementation of road construction investment and have timely and appropriate direction plans.

- Modifying and perfecting the mechanism of decentralization of public investment in road construction to strengthen the responsibility of all levels and individuals and inspecting and supervising investment decisions and capital use decisions to avoid overlapping, spreading and lack of synchronization.

- Promote forms of capital mobilization from socialization or investment in PPP, reducing the burden on the state budget.

8 Conclusions

The role of public investment is increasingly important in maintaining and developing socio-economic infrastructure to support economic growth. Therefore, the objective of this article is to analyze and evaluate the current situation of planning and implementation, to point out limitations to propose remedial measures and improve the effectiveness of State management of public investment in road transport. The authors use qualitative analysis methods based on collected secondary data and quantitative analysis based on actual survey primary data. At the same time, the authors have established criteria to evaluate the function of formulating and organizing the implementation of public investment plans, conducting interviews, consult experts; SPSS software was applied to quantify the response. From there, propose solutions to complete these two works.

References
1. N. A. Tuan, Ministry-level scientific project Research and propose solutions to strengthen the management capacity of the Ministry of Transport in public investment in road transport infrastructure, Ministry of Transport (2023).
6. P.T.P.Hoa, Ministerial-level scientific project, Ministry of Finance (2020)
7. B.M.Cuong, Doctoral thesis Improving the efficiency of development investment from the Vietnamese state budget, University of Economics, Vietnam National University, Hanoi (2012)

20. H. Isohata, Research on development history for construction management of procurement system in Japan, Nihon University, Chiba Japan (2009)

