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Proposed Models of Public-Private Partnership in Facility Investment in Vietnamese Public Universities

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Abstract: ***The process of decentralization in public higher education management in Vietnam today gives public universities the autonomy to be more proactive in matters of organization, personnel, academic to enhance the quality of training and scientific research in order to improve their position and competitiveness with domestic non-public universities and universities abroad. However, this process also poses significant challenges for public universities in mobilizing financial resources to compensate for the decreasing budget allocated by the Government. To ensure quality, the investment in modern facilities to meet the needs of learners is an important requirement. This study aims to survey the needs of public-private partnership and propose models of public-private partnership in public university facility investment that are suitable for the current Vietnamese context.***

Keywords: PPPs, public – private partnership, higher education, facility, public university

1. Introduction

Higher education provides high-quality human resources and knowledge resources for the development of the economy of each country. Universities are considered as the starting point of innovation, creation and the center of transfering of human knowledge. One of the indicators reflecting the development of higher education of a country is the number of universities and another is the number of new students enrolling each year. In Vietnam, these two numbers are 237 schools and 447, 483 students respectively [3].

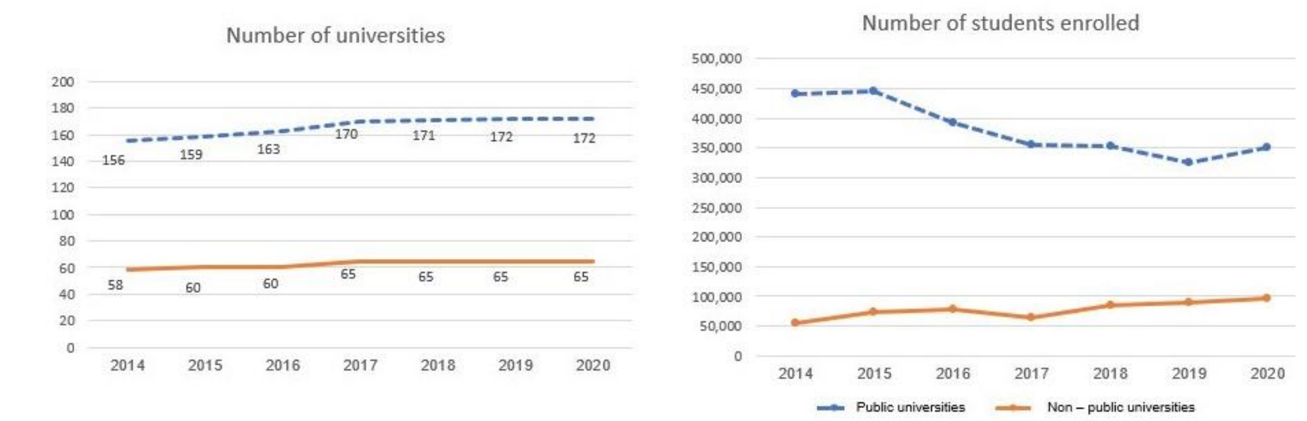

Figure 1: Number of universities and enrollments (2014-2020)
Source: Vietnam Ministry of Education and Training [3]

Regarding the new establishment of universities, the number of newly established public and non-public schools was 5 and 7 respectively in the period 2014-2017. From 2018 onwards the number of universities has stabilized and has not increased. It is noteworthy that the number of students enrolled in public schools has not only not increased, but also tended to decrease, in contrast to the steady increase of students enrolled in non-public schools. It is a fact that managers in the public university sector are also feeling the increasing competitive pressure from domestic non-public universities and universities abroad.

In order to improve their competitiveness and fulfill the training and scientific research tasks assigned by the State, public universities must make constant efforts to improve the quality of education. To achieve this goal, in addition to mechanism development and human development, public higher education universities need to focus on developing modern facilities. The basic facilities for higher education include: architectural works serving student study activities (lecture halls, classrooms, laboratories, libraries, workshops,. . .), architectural works serving scientific research activities (laboratory, hi-tech center, research facilities. . .), architectural works serving administrative

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activities (office buildings), serving student daily life (dorms, canteens, gymnasiums, stadiums). . ., and technological facilities (server system, network system, internet, waste treatment system,. . .). The common characteristics of the above works are to serve many people, have high requirements on quality and life cycle, so the investment rate ranges from large to very large. Also because the investment rate is very large, when there is a need for new investment or renovation, public universities often have difficulty in finding the necessary funding. In the context that the state budget for public higher education is increasingly limited today, finding resources from the private sector investing in facilities for public universities is posed as an important solution.

In this study, we will determine the suitability, current status and needs of the public-private partnership (PPP) in the development of university facilities. Some specific analysis of legal regulations and practical survey results closely related to the development of higher education facilities will be introduced as a basis for public-private partnership models proposed in this study.

2. Literature Review

Research on public-private partnership in investment in education in general and in higher education in particular has been carried out by a number of economists and international organizations such as the World Bank, ADB, UNESCO,. . . This study focuses on clarifying some theoretical issues and summarizing practice on public-private partnership in investment in education, specifically as follows:

Research on the nature of public-private partnership and the need for public-private partnership in education

Davies and Hentschke (2006) [4] research on the nature of cooperation in PPPs in the UK, finding four factors to consider in a strategic public-private partnership in education: necessary and sufficient conditions for the PPPs, changing the frame of reference (compared with purely public project), the organizational form of the PPPs, and the indicators of its success; These four factors are also shared in areas other than education.

Jones and Bird (2007) [11], when reviewing the pilot program PPPs Education Action Zones in the UK, pointed out that one of the most important conditions for a successful educational PPP project is that the government needs to make a clear distinction between PPP and traditional projects. Until 2000, Levin (2003) [14] acknowledged that PPPs was not widely used in education; He summarizes some forms of PPPs that have been implemented in the US: using the state budget for development purposes in private universities, investing of large corporations in public schools (to influence students-potential human resourcesof these corporations,. . .), and forms of financial contributions of families whose children attend public schools.

Latham (2009) [13] states the benefits of PPPs in education and points to note with the government when using this form of investment.

Many areas, notably infrastructure development, face many disadvantages in the current period. PPPs are believed to contribute to supporting the State and people to overcome these disadvantages (World Bank, 2017) [22].

World Bank (2017) defines forms of cooperation that can be considered as PPPs-applications in the field of infrastructure development, in order of increasing private participation, including: Design-build construction (completely implemented by the State); Management contract; Construction-operation contract; Design-construction-financial provision-maintenance contract (the state pays based on the level of operation); Design-construction-financial provision-operation-maintenance contract (the State owns the output product of the enterprise); Design-construction-financial provision-operation-maintenance contract (service users directly pay for enterprises); Full privatization (The state does not participate in all activities of enterprises) [22]

In Vietnam, "Public-private partnership is an investment method made on the basis of limited-term cooperation between the State and private investors through the signing and performance of PPP project contracts to attract private investors to participate in PPP projects" (Assembly of Vietnam, 2020) [18]

Bayo Oyewole (2009) [2] analyzed the need for PPPs in education investment, it is seen as a possible solution to the challenges in public education. He also pointed out that PPPs in education can help Governments: Build better and faster educational facilities; Maintain the quality of operation of equipment and facilities in a long-term and effective manner; Better school management; Reducing the financial burden on the government; Provide better quality educational services; Promote speed and admission rate; Providing public education through the operation of private entities, thereby ensuring that services are available to all without having to maintain a bulky, giant apparatus.

Contract of public-private partnership in investment in educational facilities

Worldbank (2006) indicates that contracting for the provision of facilities with the private sector is essential because it helps to reduce pressure on the government to provide funding in advance, once at the beginning. With the signing of a PPP contract, the Government can pay this investment in installments as scheduled and agreed in advance throughout the contract period. The scope and responsibilities of the private side vary from contract to contract. [19]

World Bank (2006) pointed out 6 characteristics of PPP contracts in the construction of educational facilities, including: (1) Private investors are selected based on competition through the bidding mechanism; (2) The private partner invests in facilities and provides related services (for example, maintenance); (3) The government holds the responsibility for providing key services such as teaching; (4) A government-private agreement made in the form of a long-term contract (25-30 years) that defines the services to be provided by the private investor and the standards they must meet; (5) In a service contract, the private sector often

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assumes some functions such as design, construction and maintenance, and hiring of staff (not lecturers); (6) Contractual payments are contingent on providing services of private investor that meet agreed performance standards [19]

Worldbank (2006) has pointed out 7 types of PPP contracts in the investment of educational facilities and the characteristics of each of these types of contracts are arranged in order of increasing participation of the private sector, include: (1) Traditional design and construction; (2) maintenance and operation; (3) construction – operation; (4) rent – buy; (5) rent or own – develop – operate; (6) build – operate – transfer; (7) build – own – operate. The benefits and difficulties of public-private partnership projects in educational facility investment have also been clearly analyzed [19]

Risk-sharing mechanism: Some studies have shown that for a PPP project, in addition to capital contribution, the risk-sharing mechanism is the second most important issue to be concerned with (Bayo Oyewole (2009) [2]; KPMG (2011) [12]). A PPP project contract should always state the potential risks and the mechanism to deal with them in case such risks become real. There are 10 groups of risks commonly encountered in public-private partnership projects drawn from studies of different socio-economic sectors, including education, as indicated in the company's report (KPMG, 2011) [12].

Some typical PPP projects in educational facility investment

The World Bank selects a number of typical projects for PPP in the field of education (WB, 2019) [23]. These projects are of reference value to regulators and investors in Vietnam as they have many similarities with the development investment environment in Vietnam.

Table 1: Some typical educational PPP projects in the world

Project, Country	Year	Scope	Project structure and model	Results, lessons learned
Bundled Schools, Ireland	2005-2011 (built)	27 primary and secondary schools are invested in renovation and new construction, gathered in 5 big projects.	-Component project 1: open bidding; The private carried out the design, construction, capital, warranty-maintenance of the new schools. The model is similar to the BOT model under the PPP Law 2020 of Vietnam and lasting 25 years. Profits come from tuition and services. When profits reach the expected level, the excess will be shared 50: 50 between the project company and the host school. -Component project 2: open bidding; The private performs the operation and maintenance of the existing school facilities. This cooperation model is similar to the OM model in the PPP 2020 law of Vietnam. -Project component 3: competitive negotiation (same as Article 38 of the PPP 2020 law of Vietnam).	Projects are evaluated as successful when completed at least 1 month ahead of schedule, created 2500 new jobs, won many awards
James F. Oyster Bilingual Elementary School, Hoa Kỳ	1993-1998 (built)	Demolished an old, damaged school. The land was divided in half, each half built a new school and an apartment building.	The government finds the area where the school was located had the potential to generate profits, and these profits could help build a new school. The private was responsible for design and construction through capital issued from bonds. This capital would be collected through cash flow from the apartment complex with a BOT contract lasting 35 years.	This case is an initiative from the government in commercial exploitation of public property.
Varaždin County School Program, Croatia	2006 – 2008 (built)	The project included building 01 new school, renovating 21 new schools, and building 10 new gymnasiums in the schools.	Through competitive negotiations, the government signed eight PPP contracts with three project companies. The project companies are responsible for the design, finance, construction and operation of 22 schools and 10 gymnasiums. In terms of finance, private investors used bank loans. During the operation, the government payed a fee to the private investor (similar to Clause 2, Article 45 of the PPP Law 2020 of Vietnam) under a PPP contract lasting 25 years. .	This is a model project in the development of educational facilities, later successfully applied in many countries. By combining multiple works into a PPP project and leveraging the capabilities of private investors, the projects got the capital they need, completed on time and with high quality.
Public Schools, Belo Horizonte, Minas Gerais, Brazil	2012 – 2014 (built)	Building 32 new kindergartens and 5 primary schools	Investor selection form: open bidding. The private investor was responsible for the financing and design, construction, and warranty and maintenance of the facilities. The government payed the private investor's services monthly based on the quality of this service, which was assessed by an independent third party (same as clause 2, Article 45 of the PPP Law 2020 of Vietnam).	The project was completed on schedule and with quality. After that, the project was expanded to 51 schools in Brazil. Without investing through PPP, those successes would not certainly be achieved.
Mafra and Ericeira Business	Since 2015	The project did not include the construction	The state has provided the facilities, the investor has provided knowledge and operated the	The project has provided a development environment for

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Factory, Portugal		of specific works but was a program of science and technology development, incubation of scientific projects, business ideas.	"incubator of scientific projects and business ideas". Project revenue was membership dues, office rent, and financing from local banks. .	many professionals and traders, of which 50% were women. This was a project that did not focus on developing tangible facilities, but creates a scientific and technological environment.
The North Toronto Collegiate Institute (NTCI), Toronto, Canada	2005 – 2010 (built)	Construction of a new college. The project was located in the center of the city, thus attracting private (in terms of profit) participation.	Selection form: open bidding. The government has sold land to investors (same form of BT contract under the PPP Law 2020 of Vietnam). From investing on this land, investors could arrange finance for further investment by building an apartment complex	The private investor has come up with a breakthrough design solution, which is rare for projects under the traditional public investment method.
Kenyatta University Hostels, Kenya	2015 (PPP contract), since 2018 (built)	The rapid development of higher education in Kenya makes the university system, especially the dormitories, overloaded. The Kenyan government decided to invest in the construction of dormitories through PPP.	Selection form: open bidding. The selected investor is an international investor from the United States. The contract form is a BOT with a term of 20 years. Investors seek financing through international organizations. The project's cash flow is collected from student fees. But to minimize risks for investors, the school supports collecting this amount along with tuition fees and then transferring it to investors.	This project provides affordable student accommodation. The form of “collecting fees on behalf of the university” and then paying it back to investors is a public-private risk-sharing initiative.

Nguồn: World Bank, 2019 [23]

3. Methodologies and Data

In order to outline the current situation of needs and the direction of developing public-private partnership in infrastructure investment for Vietnamese higher education institutions, the research team uses some research methods, including: documentary research and survey method. The questionnaire was sent to 3 groups, including: students-service and utility users; and administrators of 22 public universities and managers of 30 enterprises. We use a combination of closed questions with open questions in the questionnaire to collect the opinions of the survey subjects.

For the documentary method, we collect information about the current legal regulations of Vietnam related to public-private partnership in facility investment for public universities and actual data on the number of projects, total capital sources, types of public-private partnership contracts in the field of education facilities in general and public university facilities in particular.

Using survey method, we collect information on the current state of facility investment of public universities in Vietnam, the need for PPPs in public universities facility investment; and expert opinions on the 4 proposed models of PPPs in the field of investment in higher education facilities. The 4 proposed models of PPPs was built on the basis of the results of the exchange and discussion of 35 members at the scientific conference of the topic, including 20 university representatives, 5 business representatives and 10 members of the research team.

4. Results and Discussion

1) An overview of the legal framework for PPPs in facility investment for public universities in Vietnam today

In Vietnam, public-private partnership has been regulated as a form of project investment since 1997 by Decree No.77/CP dated June 18, 1997. The only form of contract is the BOT form. By 1998, Decree No.62/1998/ND-CP dated August 15, 1998 added other types of BTO and BT (continued to be guided by Decree No.78/2007/ND-CP). Until 2013, the legal basis for PPPs was developed through the following documents: Decree 108/2009/ND-CP and Decision No.71/2010/QD-TTg, however an important content-PPP project investor selection has not yet been specified [6].

From 2014 up to now, the legal basis for PPPs has been institutionalized through a series of legal documents such as the Law on Public Investment (49/2014/QH13) [16], the Law on Bidding (43/2013/QH13) [15], and Investment Law (67/2014/QH13) [17]. These laws more clearly stipulate public-private partnership activities, including principles, order, procedures, contents of decision on investment policies, regulations on investor selection, types of PPP contract, contract signing conditions… Decree No.15/2015/ND-CP was developed on the basis of absorbing international experience on project implementation process, contract type and supplement to be suitable to the conditions and circumstances of Vietnam. For example, expanding the sector from “hard” infrastructure in areas such as transportation, energy, water supply and drainage to areas such as providing public services in social areas such as medicine, economy, education, training, and other areas such as commercial infrastructure, industrial parks, and rural development. This Decree also clearly distinguishes between two ways investors approach PPP projects: established by the State and proposed by investors. Regarding investment capital: when a project for public purposes does not have enough revenue to ensure capital return, state capital will be mobilized for three purposes: (i) contribute capital to build the project, (ii) payment to investors, and (iii) support for construction of auxiliary works, site clearance, compensation and resettlement organization (Article 11) [6]

A unified legal document was finally born to regulate investment activities under the public-private partnership method: the Law on Investment under the public-private

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partnership method (No.64/2020/QH14), hereinafter called PPP Law 2020 for short [18]. This is a comprehensive development step, demonstrating the management experience and knowledge development of policy agencies, with the expectation of creating a full and correct legal environment to support strong participation of the private sector in investing in PPP projects, contributing to economic development. Some notable points of the PPP Law 2020 [18] that have decisive influence and guide PPP activities in higher education development are as follows:

- The law has a governing scope that covers all PPP investment activities, including investment principles, PPP project process, PPP project preparation steps, investor selection, establishment-activities of PPP project enterprises, PPP project contracts, implementation of PPP project contracts, capital sources for PPP project implementation, investment incentives and guarantees, inspection, audit and supervision of activities PPP investment.
- Identify 7 types of PPP contracts, including: (1) Build-Operate-Transfer, BOT; (2) Build-Transfer-Operate, BTO; (3) Build-Own-Operate, BOO; (4) Operate-Manage, OM; (5) Build-Transfer-Lease, BTL; (6) Build-Lease-Transfer, BLT; and (7) mixed contract
- Completely eliminate the form of Build-Transfer contract (BT), also known as "exchange land for infrastructure" because the implemention of this form in Vietnam has many shortcomings.
- In terms of investment, in addition to the traditional infrastructure fields, there are the fields of "health, education-training" and "information technology infrastructure".
- In terms of total investment, not less than 100 billion VND for projects in the field of health, education-training and there is no minimum for O&M projects.
- Distinguish two forms of investment: (i) investors bidding to participate in PPP projects initiated by the State and (ii) investors proposing PPP projects (foreigners called unsolicited projects)
- The project contract term is not specified, but there are some conditions that can change the project contract term (shorten or extend).

2) Data on PPP projects in the education sector of Vietnam

Since PPPs was applied in Vietnam until 2019, there have been a total of 336 PPPs projects with a total investment of about VND 1, 609, 335 billion [6]. The project allocation is as follows:

Table 2: Statistics of PPP projects in Vietnam

Sector	Transportation	Energy	Infrastructure of industrial zones, economic zones	Agriculture, Rural	Health, Education
Number of projects	220	18	5	23	17
Total investment (billion VND)	672, 345	857, 209	28, 023	11, 769	5, 918

Source: Government of Vietnam, 2019 [6]

Notably, although health, education-training. . . are areas encouraged by the Government to implement the socialization mechanism, the investment rate under PPP method is not high. In the field of education, there are only 6 projects implemented under BT contracts, with a total investment capital of 1, 284 billion VND; These projects include preschools, high schools and vocational schools. No investment projects have been made for universities yet. One of the main reasons pointed out is that the Ministry of Education and Training has not yet developed specific regulations and guidelines for the implementation of these PPP projects.

3) Actual situation of facility investment in Vietnamese public universities and the needs of PPPs

The survey results showed that 67.8% of the university administrators participating in the survey said that many items of the public university facilities have not met the requirements of scale and quality compared to the development goals of the universities; 77.6% of them think that the university still lacks some facility items to carry out training and R&D activities to meet the set goals; Meanwhile, the State budget for public facility investment has not met the needs of university development (81.1% expressed agreement with this statement) and the mobilization of financial sources outside the State budget to invest in university facilities is difficult (84.6% of the respondents agree); 49.7% of them said that the university still lacks personnel to carry out the operation and management of the facilities and the university's effectiveness in the management and using of the facilities is still low; 49.7% of them think that the university facilities have not been maintained well and regularly, and the university facility investment is somewhere still wasteful and slow in implementation (37.8% of the respondents agree)

The results of the poll of management staff, students and enterprises about the needs for PPPs in facility investment for public universities are as follows:

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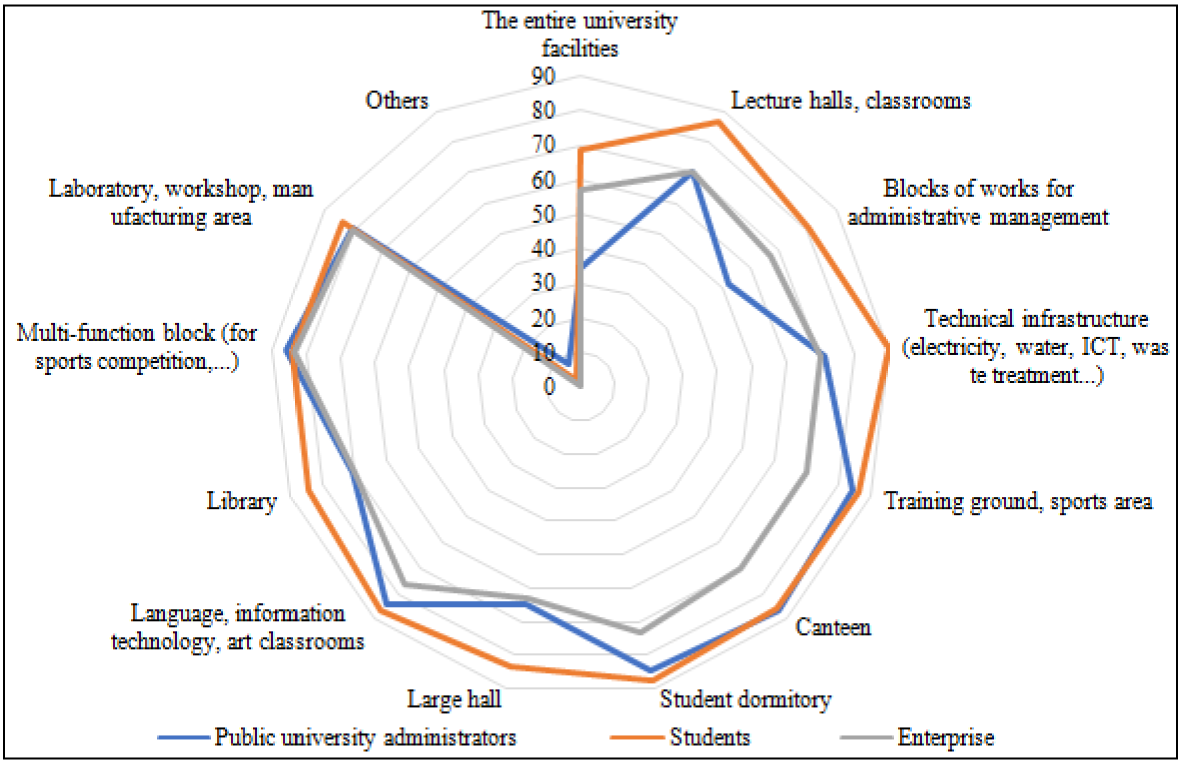

Figure 2: The needs for investment in Vietnamese public university facilities in the form of PPPs (%)

Source: Survey results and authors' calculations

The figure above shows a difference in the needs for facility investment in Vietnamese public universities in the form of public-private partnerships. Students are the direct beneficiaries of the better and more modern investment in university facilities, so the percentage of students who agree with the public-private partnership in investment in most items of facilities are higher than that of university administrators and enterprise managers. Meanwhile, enterprise managers expressed a rather reserved attitude with the approval rate ranging from 56.7% to 83.3% and the most common being around 70% in most of the categories. Facilities that are more attractive to enterprise investment include multi-function block (83.3%), laboratories, workshops, manufacturing areas (80%); language, information technology and art classrooms (76.7%). For public university administrators, the investment need is highest in the canteen (86.7%); multi-function block (86%); sports areas, training ground; dormitory; foreign language, information technology and art classrooms (84.6%); laboratories, production workshops, manufacturing areas (80.4%). Among the three groups of subjects surveyed, the percentage of university administrators who agreed with the investment in the entire university's facilities in the form of PPPs was the lowest, only 34.3%.

In addition to the above-mentioned facilities, a number of suggested items belonging to the Other group include hospitals; international research institutes, technical service centers for training and scientific research; landscape, school campus,. . .

4) Proposing a model of public-private partnership in facility investment for Vietnamese public universities

On the basis of theoretical research and actual situation survey, the research team proposes some of the most common investment scenarios, or in other words models of PPP and corresponding contract types. This proposal is built and developed based on the results of a survey of experts who are public university administrators and enterprise managers and discussions at seminars.

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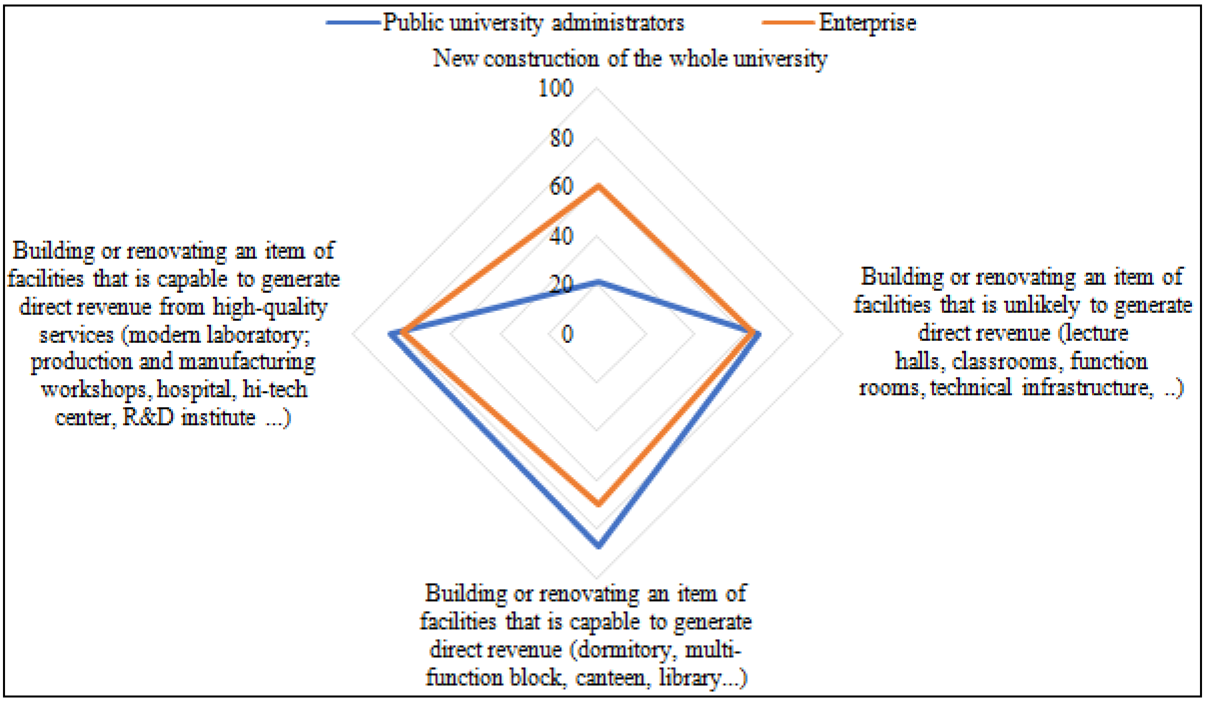

Figure 3: Expert opinions on PPP models in public university facility investment (%)

Source: Survey results and authors' calculations

a) Model 1: New construction of an entire university according to the policy of the Government/local government or private investor's proposal

With this investment need, the Government/local government needs to conduct open bidding. The contract should be signed in the form of BOT with a large contract term (50 years or more). Only such a long contract period is enough for the private investor to break even and make a profit. Through research, if the expected profit of the project is not high but the social effect of the project is large, the government needs to provide a budget for the private investor through assessing the quality of services that the project brings. If the expected return of the project is high, the government may choose to let investors do their own business and collect fees.

However, through statistics on the number of new universities in Vietnam in recent years, we find that the number of universities has stabilized, and it is unlikely that there will be a project to build a new public university in the coming years. The investment in building new universities, if any, will take place mainly in the non-public sector. Existing public universities have basically been invested in facilities to a certain extent and these facilities are also being used and exploited by the universities, so it is not necessary to remove to build new ones. Moving to another location for new construction is also very unlikely. That may be the reason why this model is proposed by only 21% of administrators at public universities; while 60% of enterprise managers proposed this model.

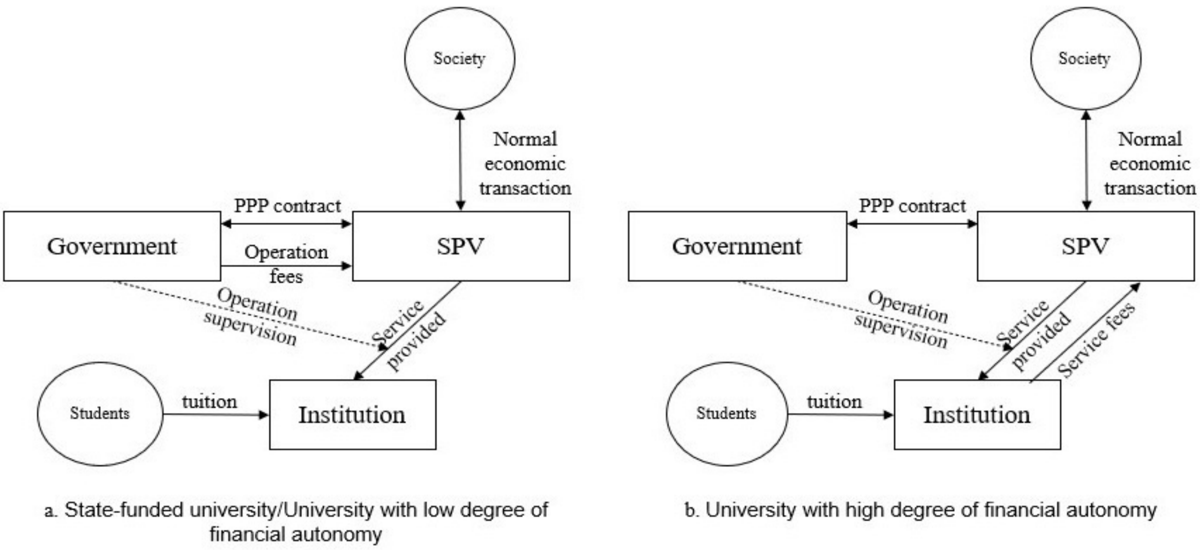

Figure 4: PPP model of building a new university

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*b) **Build – renovate an item that is unlikely to generate direct revenue (lecture halls, classrooms, administrative management areas …)***

It can be seen that with these facilities of a university, investment costs are a big burden for that university. In addition, the level of attractiveness for private investors to participate in PPP projects is not high. Therefore, we propose the following project model:

- The government should provide the investor with a financial amount to build, or allow the investor to lease land or grant the right to use nearby infrastructure or facilities to build a building capable of creating out revenue.
- Contract term should be from 20 to 30 years.
- During the operation, the government pays an annual/monthly fee to the investor and the investor has revenue from the business of neighboring facilities.
- Types of contract: BTO or BTL contract.

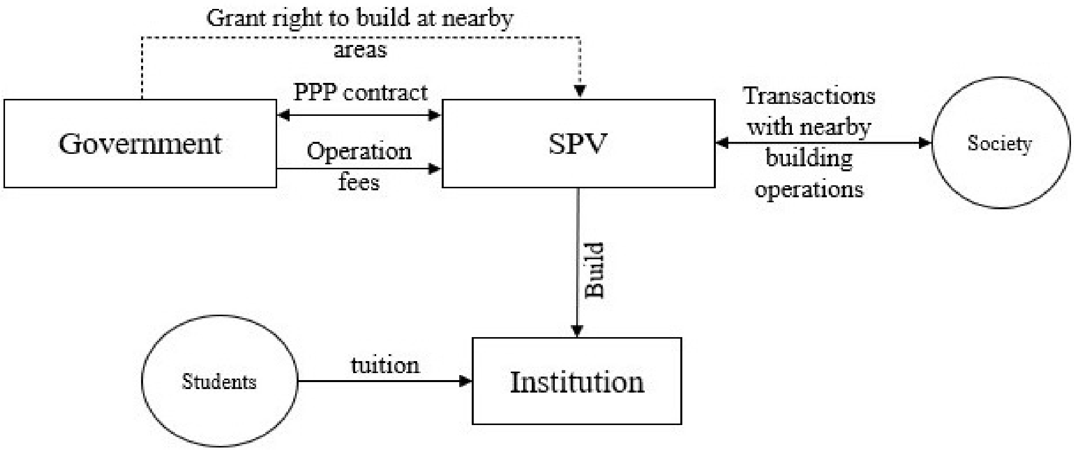

Figure 5: PPP model of one facility with low revenue expectations

*c) **Build – renovate an item that has the potential to generate direct revenue (dormitation, sports ares, canteen,. . .)***

This investment case attracts private investors to participate in PPP and the government has more options in project formulation. Suggestions for this case are as follows:

- Selection method: open bidding
- Type of contract: BOT, BTO, BTL, BLT
- Contract term: 20-30 years

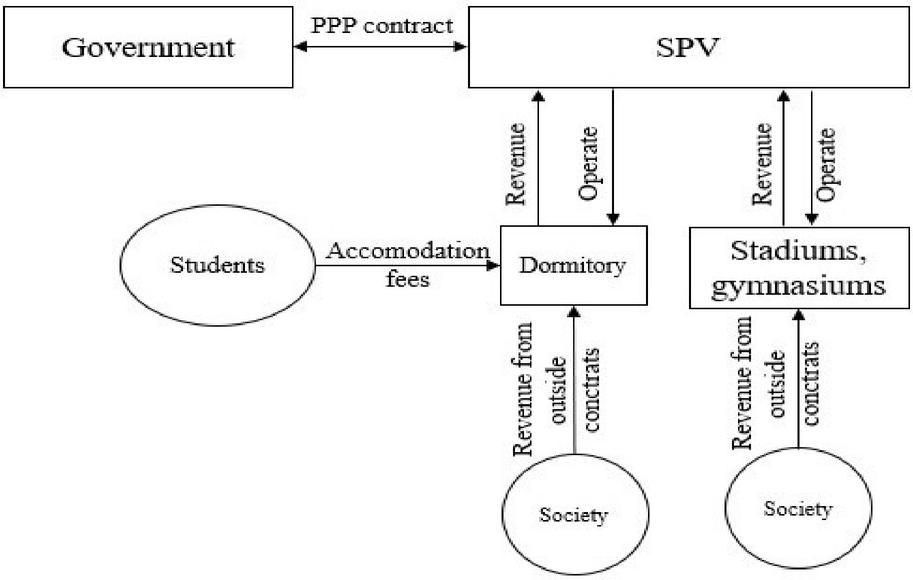

Figure 6: PPP model of a facility item expected to generate direct revenue

*d) **Build – renovate an item capable of generating direct revenue from high-quality services for society (hi-tech centers, modern laboratories, production and manufacturing areas, hospitals,. . .)***

An example of this type of investment is a modern laboratory, hospital, hi-tech center or a server system. . . that the university can lease to businesses to generate revenue. This is also the form of investment that requires the least capital as well as the least risk during operation. Recommendations for this type of investment:

- Investor selection: open bidding or competitive bidding
- Contract type: BTL or OM
- Contract term: 10-20 years

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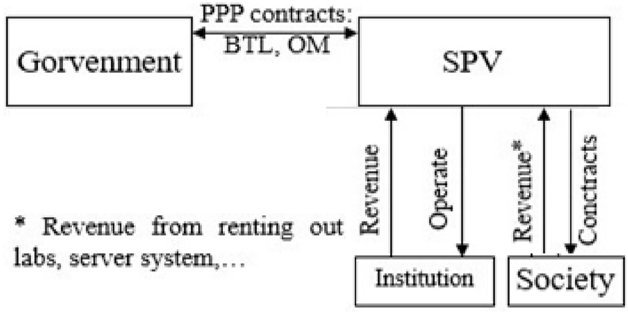

Figure 7: Facility category PPP model with potential for direct revenue generation from high quality services

5. Conclusion and Recommendation

In short, Vietnamese public universities are now in the process of being given greater autonomy in the management of their activities. The degree to which autonomy is granted and the path to full autonomy vary from university to university. However, in parallel with that process, public universities will have to make efforts to find resources outside the State budget to meet the development needs in general, and to develop the university facilities in particular to meet the needs of development towards building a good quality educational environment. Therefore, PPP in facility investment is an indispensable need of universities.

The research results show that the general legal framework for the implementation of public-private partnership in Vietnam has been built, but the specific characteristics of the education sector have not been researched and promulgated into main documents. Therefore, although the survey results show that both public universities and enterprises have needs for PPP in university facility investment, in fact, there has been no project (with an investment capital of over 100 billion VND as prescribed in the Vietnamese PPP Law 2020 [18]) implemented.

Given the current context of public higher education in Vietnam, four models of public-private partnership in facility investment in public universities have been proposed, with specific descriptions of mechanisms to ensure guarantee of revenue, project duration, types of project contract,. . . However, in order to promote this investment form in Vietnam, further studies on the prospects of each model need to be conducted in order to identify the wishes and problems and concerns of enterprises and public universities in order to have supportive policies. A number of issues need to be focused on research, including: establishing aspecific revenue machanism for private investors (the government pay or collect fees from end users); policy supports for private investors in raising capital; the basis for determining the project life cycle to ensure reasonable profits for investors; assess the socio-economic efficiency of the project; and the quality control of the works before being handed over to the government and public universities by the private sector.

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