

# RELATIONSHIPS BETWEEN POST APPRAISAL CRITERIA AND PERFORMANCE OF OFFICIAL DEVELOPMENT ASSISTANCE INFRASTRUCTURE PROJECTS: THE CASE STUDIES OF VIETNAM

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## Abstract

Annual investment in infrastructure industry of Vietnam has expanded substantially since the adoption of reform and opening-up policy in 1986. Although this investment helps improving the capacity of infrastructure system, there are challenges in terms of project performance, which has been informed to be confronting with a number of critical problems, related to low competitiveness, poor quality, cost overruns, time delays, poor productivity, low efficiency and client dissatisfaction. Contributing to the massive investment, the Official Development Assistance (ODA) infrastructure projects (ODAIPs) has been played a vital role in the development for the last decades. The success of an ODAIP is determined by stakeholders' perspective who have diverse objectives and concerns. At the completion of any ODAIPs, a preparation of a post project completion report is required with verifying all aspects of the ODAIPs have been completed, authorizing the project budget and discussing the issues that had been encountered over the course of project, which is needed to implications for further ODAIPs. This study aims to analyze the users' perspectives in post appraisal of ODAIPs in regard to the functions of project management, including project conception, project planning, project directing and project controlling. The analyses were performed from users' related project-specific data that were collected from 27 completed ODAIPs in Vietnam. The findings of this study are expected to offer not only a useful tool for construction professionals delivering appropriately managerial functions contributing to ODAIPs success and sustainability, but also active feedbacks to further enhancing of the ODA's policies.

**Keywords:** official development assistance; post appraisal; project conception; project planning; project directing; project controlling.

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## 1. Introduction

Vietnam has been conserving a considerable growth rate of economics since the adoption of reform and opening-up policy, in 1986. An annually growing massive investment in construction industry has been implementing since 1986 (Fig. 1), which is expected for the objectives of an industrialization nation by 2020. According the record of General Statistic Office of Vietnam, the construction investment had significantly been improved during the period of twenty-eight fiscal years and expected to remain this uptrend forward.

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Infrastructure systems have been playing a significant role in the economy growth of Vietnam for years. In order to sustain the high development, a large amount of investment has been implemented within the infrastructure system, particularly, the public works such as road infrastructures which have been received much shared attention. However, the urged development of infrastructure systems has not been satisfied by those traditional resources. As noted, the investment of infrastructure works significantly accounted for the growth of construction industry and GDP as well. Although infrastructure investment in Vietnam annually has taken a part of 9% to 10% GDP [1], World Bank and Asian Development Bank have suggested an investment which should cover up 11% to 12% of GDP that helps to sustain the growth rate [2]. Obviously, it could argue that there is a significant relationship between the development of infrastructure systems and Vietnam's economic growth.

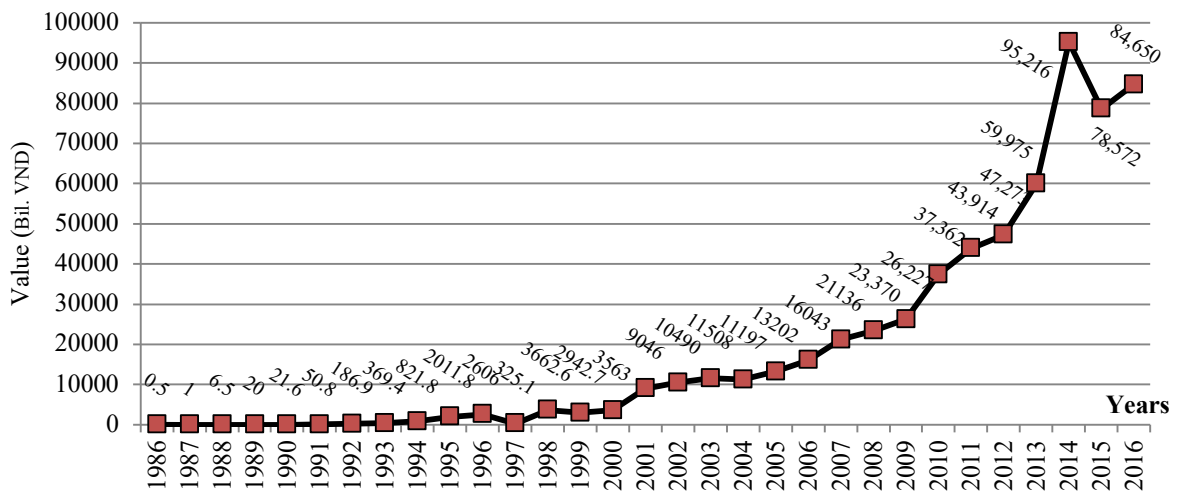


Figure 1. Annual construction investments in Vietnam [2, 3]

While various finance sources have been organized to maintain the infrastructure development for the last decades, ODA fund has been playing a crucial role in this development. Thus, it is essential to investigate this financial source consuming in regard to efficiency of the infrastructure development.

## 2. Infrastructures profile of Vietnam

Viet Nam has built and operated 256,000 km of road networks, including 17,000 km national highways and 23,000 km main roads. Local and paved roads account for around 85 percent of the network; to which, 47.6 percent and 23.5 percent were built in 2000s and the early 1990s, respectively [4]. Regarding the road network situation, 43 percent and 37 percent of the road network have been good and average performance, respectively; while 20 percent of those have been in a poor or very poor performance. It is also reported that local roads (e.g. provincial road) have been being narrow and unpaved, or easily vulnerable under adverse weather conditions (i.e., heavy rainfall, flood and landslide) [5].

While the national railway network has been significantly invested since 2000, those investments have been emphasized on improving, repairing and maintaining of permanent ways and rolling stocks. It is noted that the total of 3,142 route kilometers was diminished to 2,347 route kilometers within the decade of 2000s and there are no routes were launched in that period [4, 6]. According to Asian Development Bank's report, the Strategic Framework for Connecting Greater Mekong Sub-region

(GMS) Railways was endorsed at the GMS Ministerial Conference. The countries of the GMS including Cambodia, the People's Republic of China (PRC), the Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam have noted the need of looking into the development of the GMS railway network, enhancing the connectivity between the six countries [7]. A part of this plan, a new high-speed rail network in Vietnam has been expected an investment up to US\$64 billion [8], which will be covered by the joint-responsibility of government and multilateral agencies (e.g., private sectors).

As for the ports development, Viet Nam has approximately 3,400 km of coastline along one of the world's busiest sea cargo lanes, and has ambitions to compete with Singapore and Hong Kong on the provision of sea cargo services. There are more than 80 seaports servicing both trade and fishing industry, to which the larger ones have traditionally been developed by government and handed over to the state-owned company operator, Vinalines [5]. While, there are 135 airports/airstrips in Vietnam [5], and those were responsible for 6.9% of fuel consumed in the transport sector in 2005 [9]. Upgrading major airports plays a vital role in assisting the growth of international tourism and air-transport. Regarding the power pattern, it was reported that energy consumption of Vietnam sharply increased from 98 KWh to 1,035 KWh per capita in the period of 1990 to 2010. The main sources of power are natural gas (46%), hydropower (29%), coal (21%), and oil (4.2%) [4]. A significant capital has been disbursed in energy generation infrastructures, keeping up with the growth of energy consumption. It was noted that annual power sector investment has been covered over US\$3 billion within the period of 2005 to 2010 [10]. Although great efforts in attracting and encouraging private sectors had been made alongside the state expenditure into the energy investment, power blackouts and insufficient energy supply during periods of peak load have been remained as a result of the anticipated gap between demand and supply in 2015 and onwards [8]. Vietnamese government has established a concrete plan approaching massive capacity expansion, by which Sixth Power Master Development Plan has been implemented, covering from 2006 to 2015 with a vision to 2025 [10].

According to The 2012 Global Competitiveness Report, Vietnam' infrastructure was poorly rated, particularly for the quality of road and port facilities [11]. Therefore, early priorities of Vietnamese government has been emphasizing on the improvement of road, port, and energy infrastructure services. In 2011, the government adopted a five-year Socio-Economic Development Plan to which the increase of infrastructure investment was a central emphasis. The strategies were designed based on expenditure for infrastructures including the transport, energy, irrigation, and information and communications technology services that helps to sustain future economic growth and accelerate Viet Nam's social and industrial development. Urban development, industrial and commercial infrastructure, and services in education, health and cultural activities are emphasized. It is noted that an estimation of around US\$16 billion annually is needed for these objectives, while only 55 percent of that requirement is available [8].

Particularly, Vietnamese government has approved the development of transport sector, which is critical in maintaining economic growth and development. Demand for freight and passenger is expected to annually increase by 7.3 percent and 12 percent, respectively during the period of 1990 to 2030 [6]. While, the investment for transport infrastructures requires 4.1% of GDP per year [1], the total current length of road networks in 2011 in Vietnam indicates the need for developing most of the road types. According to the report of Directorate for Roads of Vietnam, an amount budget of 1.619.226 billion VND (approximately US\$77 billion) is expected for a 10 years investment of 2010s, which is attributed to about annual amount of 202.308 billion VND (approximately US\$9.63 billion).

The data indicate that a great amount of budget for the national road networks investment such

as highway express has been expected during the decade of 2010s (Fig. 2). In addition, Vietnamese government has approved new highway projects with estimated 2,160 km, which is known as a part of the national Transport Master Plan that has been implemented in the period of 2008 to 2020 [2]. The plan also includes the construction of two subway systems in Hanoi and Ho Chi Minh City at a cost of US\$15 billion. So far, the state share has regularly covered a major role in financing these investments; and budget for transportation infrastructure development was reported accounting for 98% of the total capital expenditure in the last decades [1]. Therefore, the Vietnam government has a very strong commitment to develop and modernize the national transport infrastructure systems in order to support the economic growth.

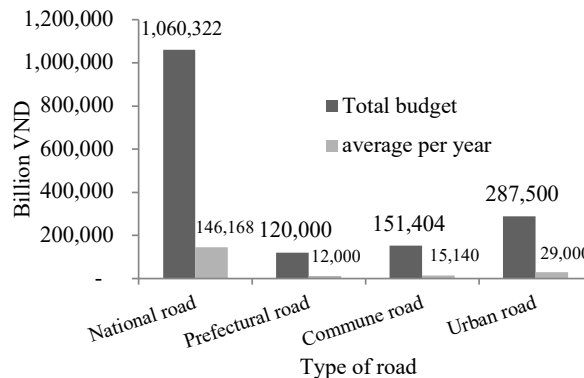


Figure 2. The capital demand for road networks development in Vietnam until 2020 [2]

### 3. Overview of ODA for infrastructure development in Vietnam

Over 20 years of partnership in socio-economic development, cooperation between Vietnam and donors has been continuously strengthened. At present, more than 50 bilateral and multilateral donors have been in the cooperations, who have been providing ODA and preferential loans to most of Vietnam's economic and social sectors. ODA has been provided in the form of non-refundable ODA and preferential ODA loans (interest rates range from less than 1% to maximum 2% per annum, repayment with a period of 30 to 40 years, of which 10 year of grace) or a mixture of these funds. However, unlike many other developing countries, from the early stages of the development cooperation, Vietnam has received preferential ODA loans. According to Ministry of Planning and Investment of Vietnam, the proportion of ODA loans in total ODA increased from 80% in the period of 1993 to 2000 to 93% in the period of 2006 to 2010 and recently reached 95.7% in the two years 2011 and 2012 (Table 1). This practice requires Vietnam to use the ODA capital efficiently, which ensures the capacity of borrowing and refunding the foreign debt sustainably.

In the period of 1993 to 2013, the total amount of ODA disbursement has reached to 37.59 billion USD, accounting for 66.92% of the total amount ODA signed. It can be seen that the ODA disbursement has improved over the years but no breakthrough. In the past two years, with the high determination of Vietnamese Government and efforts of donors, the disbursement of some large donors (i.e., Japan and WB) have made a considerable progress, in which the disbursement rate of Japan has been globally ranked the second and the first in 2011 and 2012, respectively; while the rate of WB disbursement has increased from 13% to 19% within the same period. The commitment, signature and disbursement of ODA fund in the past are shown in Table 2.

Table 1. ODA signed classifying into fields of investment in the period of 1993 to 2012 [12]

Fields of investment	Total	Loans	No-refundable amount (Aid)	Total percentage (%)
1. Agriculture and Rural Development - Poverty alleviation	8,855.01	7,432.69	1,422.32	15.17
2. Energy and industry	11,553.08	11,360.09	192.99	19.80
3. Transportation and Post and Telecommunications	16,472.14	15,949.73	522.41	28.22
4. Environment (water supply, drainage, climate change, ...) and urban development	7,845.67	6,673.30	1,172.37	13.44
5. Education and training	2,446.73	1,793.78	652.95	4.19
6. Health - Society	2,578.26	1,335.80	1,242.46	4.42
7. Others (Science and technology, Institutional capacity building, etc.)	8,612.39	7,061.93	1,550.46	14.76
Total	58,363.28	51,607.32	6,755.96	100.00

Table 2. Commitment, signature and disbursement of ODA in the period of 1993 to 2012 [12] (unit: mil. USD)

Year	Amount of commitment	Amount of signature	Amount of Disbursement
1993	1,860.80	816.68	413
1994	1,958.70	2,597.86	725
1995	2,311.50	1,443.53	737
1996	2,430.90	1,597.42	900
1997	2,377.10	1,686.01	1,000
1998	2,192.00	2,444.30	1,242
1999	2,146.00	1,507.15	1,350
2000	2,400.50	1,773.12	1,650
2001	2,399.10	2,433.17	1,500
2002	2,462.00	1,813.56	1,528
2003	2,839.40	1,785.89	1,422
2004	3,440.70	2,598.14	1,650
2005	3,748.00	2,610.29	1,787
2006	4,445.60	2,945.69	1,785
2007	5,426.60	3,911.73	2,176
2008	5,914.67	4,359.55	2,253
2009	8,063.87	6,217.04	4,105
2010	7,905.51	3,207.38	3,541
2011	7,386.77	6,814.46	3,650
2012	6,486.00	5,869.36	4,183
Total	78,195.72	58,463.33	37,597.00

For example, the transport sector has received ODA since 1990. In the period of 1990 to 2015, transport sector has completed and implemented 132 projects with over 17 billion USD, of which 83 projects have been completed with 5 billion USD and 49 projects valued 12 billion USD have been ongoing.

The ODA Strategic Framework of 2011 to 2015 expanded the priority areas of ODA used in comparison with the program built in the framework of 2006 to 2010, in which the priority sectors and areas are including: (i) Agricultural and Rural Development Combined with hunger elimination and poverty reduction; (ii) Support for energy and industrial development; (iii) Support to the development of transportation and post & telecommunication; (iv) Support to education and training development; (v) Support to the development of health sector, (vi) Support for environmental protection and urban development, development of science and technology; (vii) Support to promote investment, trade and some production and business sectors; (viii) Territorial support.

Although ODA only has accounted for approximately 4% of GDP, reporting of a significant proportion of total state investment (about 15 to 17%). This contribution plays a significant role in developing of socio-economic infrastructure that supports to form the foundation for the rapid and sustainable development and ensure the welfare and social security. However, ODA programs are quite complicated in related to management principles. Apart from the state decree of ODA management and utilization, the use of ODA fund is subject to other relevant legal documents, as well as donors' regulations and procedures, such as procurement, relocation and resettlement, financial management, etc. In addition, along with the massive investment in infrastructures, Vietnam have also confronted with poor performance of ODAIPs with regard to time delay, cost overrun, and uncertain quality. It is necessary to examine the causes and effects of poor ODAIPs, which helps to enhance not only the ODAIPs' performance but also the effectiveness of using ODA fund in Vietnam.

## 4. Materials and Methods

### 4.1. Assessment criteria for post appraisal of ODAIPs

Before the construction project delivered, the completion report is expected to assess the all aspects of the project management related to the success of project. To assess the project management practices, the focuses need to cover based on its functions, which are project planning, organizing, directing and controlling. Therefore, criteria in terms of project conception, project planning, project directing and project controlling are to build for the detail assessment.

A focus group studies (FGS), interviews, and literature review were the key approaches used to develop the criteria for post appraisal of ODAIPs. FGSs are considered a good approach to studying specific behaviors or beliefs, the circumstances in which they occur, and the diversity of experiences and perspectives on specific issues [13]. In the first step of criteria development, a FGS was conducted in Hanoi, the capital of Vietnam, with 8 participants in the FGS. The participants in the FGS were selected among industry professionals within 2 private and 2 public clients, 2 contractors and 2 consultants in the city. The selected participants' backgrounds included project managers, supervisory officers and senior engineers who have ever involved in ODAIPs. This step ensured the customization of the initial list of identified criteria in literature. Targeted professional interviewees with satisfactory experience in managing construction projects were invited. Overall, 11 experts were invited to participate in the interviews: 3 from clients, 5 from contractors and 3 from consultant firms. All 11 interviews resulted in a consistent verification of the results obtained from the FGS.

The purpose of the FGS and interviews was to discuss common problems that occur within a management process of ODAIPs and to clarify the specific criteria over the course of an ODAIP.



Discussions and interviews were semi-structured following the sequent components: the introduction, the opening questions, the introductory questions, the transition questions, and the closing questions [13]. After the participants provided a short description of their experiences, the primary topics and associated inquiries were raised, and additional requests were then added as necessary. In addition, the participants and interviewees were initially provided with the current literature on the criteria in terms of post appraisal assessment to help clarify the notion of project post appraisal assessment. They were then asked related questions about the study attentions. A selection of primary questions is listed below: (1) How do you understand the function of project management? (2) What common problems in terms of project management functions occur over the course of the ODAIP? (3) Can you provide a detailed description of how project teams address those problems? (4) What do you understand about the post appraisal assessment criteria within ODAIPs? (5) How would you describe the post appraisal assessment criteria? (6) What criteria should be measured in terms of the post appraisal assessment for ODAIPs? (7) In your experience, what criteria related to post appraisal assessment of an ODAIP which represent the antecedences for good or poor project performance? (8) How would you describe the effectiveness with a complete ODAIP?

The interviews and FGS with participants recommended that the aspects should measure criteria that reflect project participants' efforts to management function practices with regard to project planning, project organizing, project leading and project controlling. Hence, the criteria should first measure the delivery of the project planning function, which covers describing an ODAIP's objectives, forming a comprehensive strategy for accomplishing those objectives, and developing a comprehensive set of plans to integrate and coordinate activities [14]. Second, the criteria assessment should cover to the delivery of project organizing function, which includes defining project tasks, clarifying responsible stakeholders for those project tasks, establishing a communication mechanism over the course of the project, and determining the roles and duties of decision makers. Third, the criteria also involve in assessing the delivery of project leading function, which covers the project leaders' function of directing project teams' activities, motivating the project team and team members and coordinating all project teams and contributors and/or resolving risks and conflicts during the project implementation [15]. Finally, the criteria should evaluate the competences of the project controller, which ensures that project activities are proceeding as planned; project management must monitor task performance and compare it with the baseline to detect any significant deviations or problems and to take corrective action to get the project back on track [16]. In addition, the issues related to project design, bidding related factor and contractor's capability were recommended in the assessment. As a result, 30 criteria grouped into 9 clusters of antecedences and 6 consequent criteria (i.e., client satisfaction and lesson learn assessment) were compiled and suggested for the post appraisal assessment of ODAIPs (Table 3).

#### 4.2. Measures

The survey items were structured into two parts. First, respondents were asked to clarify their demographic characteristics and describe the features of their projects, whereas the second part aimed to collect data on criteria assessment for the post appraisal of ODAIPs. The respondents were requested to specify their experience with recently completed ODAIPs on a five-point Likert scale of 1 (strongly disagree/not at all satisfied) to 5 (strongly agree/extremely satisfied).

Due to the small sample size of data collected, the correlation coefficient analysis (CCA) method is appropriately employed to examine the strength of relationships between variables [17]. Additionally, Cronbach's  $\alpha$  was analyzed as an integrated test to evaluate the internal consistency [18] within

Table 3. Criteria for post appraisal assessment

Criteria	Code	Descriptions
- Technical design quality	Design1	- Technical design quality is assured without any considerable defects
- Construction plan quality	Design2	- Construction plan has described feasibly details for execution phase
- Bidding process	Bid-se13	- Bidding process has been performed fairly and transparently
- Prime contractor's past performance	Bid-pa.4	- Main contractor' past performance is recognized and reliable
- Main contractor capability	C.Cap5	- Main contractor is well capable on site
- Project planning setting	PL61	- Project planning is clearly established before executing
- Project goals and objectives clarification	PL62	- Project goals and objectives are clearly explained in the plan
- Project scope and responsibility clarification	PL63	- The project teams are clearly clarified their required duties and project scope on the project plan
- Coordination scheme	PL64	- The coordination plan is clearly defined in the project plan
- Project activities definition	OR71	- Project activities are defined and described clearly
- Communicates mechanism	OR72	- Communication between project teams is well organized over the course of project
- Responsibility of project decision makers	OR73	- Project decision makers are always clarified their accountability over the course of project
- Project finance availability	OR74	- Project finance is always available alongside the project schedule
- Project resource availability	OR75	- Project resources are always provide on time with the project schedule
- Procedures of received country	OR76	- Procedures from received country are well prepared and available
- Project leaders' role	DR81	- Project leaders have showed up their vital role over the course of project
- Decision transferred	DR82	- Project managers always ensure their subordinates clear of their own requirements
- Project leaders' management	DR83	- Project managers always ensure their subordinates clear of their own accountabilities
- Coordination ability	DR84	- Project managers play the central role in well coordinating all project teams
- Conflicts resolution	DR85	- Project managers well control and resolve conflicts occurring over the course of project
- Control of project quality	CTR91	- The contractors emphasize the monitoring and comparing plan for project quality
- Control of project schedule	CTR92	- The contractors emphasize the monitoring and comparing plan for project schedule
- Control of project budget	CTR93	- The contractors emphasize the monitoring and comparing plan for contract costs
- Resolution making	CTR94	- Resolutions are always applied on time when things going wrong
- Client satisfaction with project quality	Client_Sat Q	- The extent to which the client was satisfied with the project quality
- Client satisfaction with project time	Client_Sat T	- The extent to which the client was satisfied with the project time
- Client satisfaction with project cost	Client_Sat C	- The extent to which the client was satisfied with the project cost
- Client satisfaction with project safety	Client_Sat S	- The extent to which the client was satisfied with the project safety during the construction
- Client satisfaction with project fund availability	Client_Sat F	- The extent to which the client was satisfied with the availability of project finance from the donor country
- Lesson learn	Learn	- Project members of host country have gained useful knowledge and experiences from participating the project

project management functions. The  $\alpha$  value ranged between 0.7 to 0.9, which are greater than 0.7 to be considered acceptable in internal consistency testing [18–20].



### 4.3. Data collection

Based on the literature and discussions with key project stakeholders, case-specific data were collected by practitioners involved in ODAIPs in Vietnam who served as project managers for clients and main contractors. As a result, official questionnaires were distributed to 27 targeted participants who were asked to answer specific survey inquiries based on the participants' experiences with the most recently completed ODAIPs. Regarding respondents' backgrounds, 100% of the respondents held the position of project managers during the project delivery, and 63% of them had worked in the construction industry for over 15 years. For the construction project categories, 26 of the projects surveyed were transport infrastructure facilities, including roads, bridges and 01 water supply structures. Table 4 describes the project-surveyed.

Table 4. Description of ODAIPs surveyed

No	Donors	Project Name	Main contractor nationality	Name of contractors
1	Japan	Da Nang-Quang Ngai HW	Vietnam	Cienco1-Cienco5
2	ADB	A3-Noi Bai-Lao Cai HW	Korea	Posco E&C
3	Japan	J2 Ben Luc-Long Thanh HW	Japan-Vietnam	Sumitomo Mitsui-Cienco4
4	WB-Japan	Missing	Missing	Missing
5	WB-Japan	BRT1 Ho Chi Minh	JP-France-Hong Kong	Obayashi
6	Japan	Water Improvement	Japan	Shimizu,...
7	Korea	ITS	Korea	Samsung
8	ADB	Feasible Study	Korea-Vietnam	NA
9	Japan	Can Tho Bridge	Japan	Taisei
10	ADB-EDCF	HL Coastal South	Korea-Vietnam	
11	ADB	Mekong Connect	China-Korea	Giang To-Hansin
12	Korea	HL Coastal South (P2,3)	Korea	Hansin
13	WB	Wastewater treatment, Nhieu Loc-Thi Nghe	NA	NA
14	Korea-Australia	Vam Cong Bridge	Korea	Hansin
15	OFID	Countryside road	Vietnam	Kim Phat
16	Japan	Ho Chi Minh-Dau Giay HW	Vietnam_Korea	Missing
17	Japan	Rail way Safety	Japan-Vietnam	Rinkai,Taisai,...
18	Japan	Cai Mep-Thi Vai Port	Japan	YOYO
19	Japan	Hanoi- Thai Nguyen HW	Vietnam	CIENCO
20	Japan	T2- NOIBAI	Japan-Vietnam	Taisei-Vinaconex
21	Japan	Tan Vu-Lach Huyen Bridge	Japan-Vietnam	Sumitomo Mitsui-Cienco4
22	WB-VN	A3-Da Nang-Quang Ngai HW	China	Jangsu
23	ADB	A7-Noi Bai-Lao Cai HW	China	GRBCC
24	Japan	Hai Van Tube	Japan-Vietnam	Hazama
25	Japan	Nhat Tan-Noi Bai	Vietnam	CIENCO4
26	ADB	Package 28-Improvement of Countryside road	Vietnam	Thai Bac Ha
27	KUWAIT	Package 9-Improvement of Countryside road	Vietnam	NA

## 5. Result and discussions

The correlation coefficients between variables are described in table 5. In general, there are evidences in positive relationships between antecedences and consequent criteria of ODAIPs' post appraisal assessment. Firstly, quality of technical design (Design1) and construction plan (Design2) show strong relationships with coefficients over 0.7 (Table 5) to project performance in terms of

client's satisfaction with construction safety. This finding is in agreement with previous work of Terwel and Jansen [21], who concurred that primary sources of failure were design and construction errors within the building process.

Secondly, a more fair and transparent bidding process results in higher satisfaction of the client with respect to project quality, time and cost. This is crucial, not only for domestic procurements, but also especially necessary within ODAIPs as well, which are usually undertaken by the donor's intervention (e.g., prime contractors are typically asked to be awarded by the donor countries). The competitive bidding offers greater opportunity to both domestic and foreign bidders, who are willing to provide innovative and professional services for construction works. As a result, project performances are likely to be assured in regard to quality, time and budget.

Correlation coefficients are above 0.40 indicating a positive correlation between project management principles and project performances in terms of quality, time and lesson learn. By this metric, it implies that when one variable changes the other variable also positively changes. The data also strongly suggest that the project management functions are critical factors of the ODAIPs' success. However, there was no significant difference observed between management principles and client satisfaction of project cost and fund availability. This implies that client satisfaction of cost and fund availability is more likely in variation with other critical factors.

Table 5. Correlation coefficient between antecedent criteria and consequent criteria of ODAIPs

Project performances	Design1	Design2	Bid-select (Bid-se13)	Bid-past. (Bid-pa4)	Con. Cap (C.Cap5)	PL	OR	DR	CTR
Client_Sat Q	0.19	0.17	0.52**	0.19	0.26	0.57**	0.53**	0.70***	0.47*
Client_Sat T	0.09	0.06	0.38*	0.57**	0.39*	0.53**	0.59**	0.57**	0.57**
Client_Sat C	0.06	0.05	0.48*	0.46*	0.28	0.28	0.40*	0.28	0.45*
Client_Sat S	0.70***	0.73***	-0.02	0.11	0.21	0.52**	0.26	0.24	0.21
Client_Sat F	0.00	0.05	0.01	0.48*	0.21	0.13	0.39*	0.08	0.38
Lesson learn	0.34	0.36	0.24	0.16	0.14	0.65***	0.48*	0.48*	0.25

\*\*\*, \*\*, \*: Correlation is significant at the 0.001, 0.01, 0.05 level (2-tailed), respectively.

In Vietnam, project related finance of ODAIPs have been greatly criticized. For example, according to the Vietnamese Ministry of Finance's recent report published in August 2018, although the preferential loans provided have been easing, the Japanese side has set relatively high conditions for those lending sources. In addition, during the loan appraisal process, the Japanese side has introduced regulations that lead to the increasing of project costs and loan size, such as high international consultant salaries, lower reserve prices, etc., ODAIPs funded by China have also received much criticism in Vietnam. Most of ODAIPs projects funded by China have been experienced severe problems, such as cost overrun and time delay with poor or unreliable quality.

One interviewee concluded that, *"ODA loan in the form of Special Terms for Economic Partnership (STEP) applied to projects that need to use Japanese technology and know-how. ODA loans in the form of STEP are provided on the request of the recipient country for the use and transfer of outstanding technology from Japan. However, those are not true with many infrastructure projects without high technologies. In practice, each bidding projects were applied by one or two bidders, which lead to high bid prices or exceeded packages' price; as a result, leading into new situations of project adjustment with regard to increasing project cost and schedule"*. In addition, a state auditor interviewed concludes that, *"the China's ODA loan seems to be cheap at the beginning, but much more expensive at the end in comparison with other countries' loan. It is much better to use other*

*countries' ODA loan such as Japan's ODA with a little more expensive at the beginning but quality is assured and settlement finance is less fluctuated*". Recently, these practices have been consistent with other practitioner's opinions in both formal and informal discussions in Vietnam. Another interviewee's comment was that, "*Currently, due to high public debt, it is necessary to attract socialization of investment in the form of PPP*". In fact, the PPP contract is encouraged as a new approach for attracting private sector participation into infrastructure development along with the limited traditional financial sources.

## 6. Conclusions

The study has employed FGS and interviews approach to clarify CSFs of ODAIPs. The findings indicate that there is evidence of relationships between technical design, construction plan, bidding criteria, project management functions and project performance within ODAIPs. These revelations help to propose strategies to enhance ODAIPs' performance in Vietnam in the future.

In practice, ODAIPs have been playing a vital role in economic development in Vietnam for last two decades. Vietnam is still considered as a low-income country; thus, expending ODA funding is becoming more expensive for Vietnam because of the higher interest rates of loans. At the same time, Vietnamese people are seriously concerned with the matter of using the ODA fund efficiently, which is able to not only facilitate the current demand for economic development, but also decrease loan burdens for the future. This investigation helps practitioners, government, and donors to collaborate efficiently and to have mutual understandings, create sustainability of the ODA fund and build confident relationships between countries in further global missions.

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