Project's cost-benefit analysis for social infrastucture in tertiary education sector with sharia financing and the interest of waqifs: an Indonesia perspective

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Abstract

Purpose - This research was conducted to analyze how CWLS can be promising sources of infrastructure financing by presenting the benefit through the calculation of Cost-Benefit Analysis to the prospective waqifs.

Method - This research used a mixed method: quantitative method using a Cost-Benefit Analysis (CBA) model by monetizing the costs and benefits of education infrastructure. CWLS is used as the source of financing to build it. Meanwhile, the qualitative method is conducted through focus group discussion to present and discuss the project benefit to the prospective waqifs.

Result - The project delivered greater benefits in terms of positive NPV (IDR 937.437.495.257) and IRR (15,60%). The calculation attracts prospective waqifs that consider the non-monetary return in their investment, to invest in CWLS.

Implication - The CWLS issuer should explain the greater benefits generated from the infrastructure financed by the CWLS to the prospective waqif. Cost-Benefit Analysis (CBA) is one of the tools to do it effectively.

Originality - This study is one of a few studies exploring the CWLS instrument to finance public infrastructure, with its originality lying in the examination of the attractiveness of the CWLS to the prospective waqifs given the fact that the instrument offers zero profit in terms of financial return, but the beneficial reward from Allah SWT.

Keywords: cost-benefit analysis; social infrastructure; non-monetary benefit; waqif's interest

Journal of Islamic Accounting and Finance Research

Introduction

Infrastructure services are critical to achieving sustainable and qualified economic growth for either developed or developing countries to improve the general welfare of a nation's population (Srinivasu & Islamia, 2013). Adequate infrastructure provision, both economic and social infrastructure, is needed to increase the economic strength and quality of life of the citizens. Those are essential to support the economic growth both of the central government (Kumari & Sharma, 2017) and the local government (Khaled Al Shawabkeh et al., 2022; Nakamura, 2013). Economic infrastructure encourages economic activities and has economic value, such as highways, roads, railroads, telecommunications, electricity, water supply, etc. Meanwhile, social infrastructure stimulates people's educational, health, and culture-related standards, such as schools, universities, colleges, hospitals, and museums (Kaur & Kaur, 2018). Both infrastructures complement each other to achieve sustainable growth. Economic infrastructure mainly provides physical assets as the main foundation of economic activities, while social infrastructure development is important to improve the quality and competitive human resources as non-physical aspects to support the growth (Gnade et al., 2017). In this regard, the government's best efforts should be made to extend and elevate the infrastructure development.

However, in most countries, financial issues hinder the government's effort to provide adequate infrastructure. Regarding social infrastructure, in the Asia-Pacific region, awareness of the need for more social infrastructure projects has been growing in recent years and the number is expected to grow to US$1 trillion in 2024 (Leo Tang, 2024). Its non-commercial nature makes it more difficult for social infrastructure projects to attract waqifs because they intend to get returns. The same issue also happened in Indonesia. To achieve the GDP target growth, the estimated need for infrastructure funds will reach IDR 6,421 trillion or an average of 6.08% of GDP. However, the available funds only 3.46% of the GDP, so there is a considerable gap in infrastructure development (Bappenas, 2019). Therefore, the government needs to innovate by formulating and offering creative

funding sources to implement infrastructure development, especially social infrastructure.

One potential alternative funding comes from the Islamic financial market in which one of the potential instruments is the Sovereign Sukuk (Sukuk Negara). Sovereign Sukuk is designed to finance infrastructure projects, either in the form of general financing of the budget deficit (non-earmarked) or in the form of an underlying project called project-based sukuk (earmarked) (Surachman et al., 2023). Sukuk has proven to be an important financial tool for Indonesia's infrastructure development with the amount of issuance has increased significantly over time and supported by the growth of the domestic Islamic financial market (Kurniawan & Rahman, 2019; Nopijantoro, 2017; Pratiwi et al., 2017). Recently, the total Sovereign Sukuk issuance for the 2013—2021 reached IDR 136.65 trillion, consisting of transportation and water infrastructure: IDR 113.69 trillion (83.20%) and education, science and technology and social infrastructure: IDR 22.96 trillion (16.80%). In addition, the sukuk project is also possibly combined with other schemes to form a creative financing scheme, such as a public-private partnership (PPP) blended with private equity (Inderst, 2016; Yescombe & Farquharson, 2018). In this regard, Sovereign Sukuk exists as a financing instrument and a solution to the lack of infrastructure funding.

Literature Review

The government of Indonesia has issued various Sovereign Sukuk instruments and created innovations in financing such as Project Financing Sukuk, Online Retail Sukuk, Green Sukuk, and most recently, Cash Waqf Linked Sukuk (CWLS) or Sukuk Wakaf. Specifically, CWLS was first issued on 2020. CWLS is an innovation in public sector finance that integrates social investment and financial instruments. The return is delivered by nazir (waqf fund and activities manager) to finance social and community economic empowerment projects/programs (DJPPR, 2021). Waqifs (waqf donors or givers) give their cash waqf through *Lembaga Keuangan Syariah Penerima Wakaf Uang* (LKS PWU) or Islamic Financial Institution Receiving Cash Waqf

by signing a cash waqf pledge. Cash waqf will be delivered by LKS PWU to nazir and then invested by nazir in Sovereign Sukuk. Through the Ministry of Finance, the government issues CWLS and pays the return on investment to nazir in the form of a discount (that will be paid once at the beginning of CWLS issuance) or coupon (that will be paid periodically, such as monthly or quarterly). Nazir will deliver the CWLS investment return through various social institutions to finance social projects or programs that are not included in the projects funded by the state budget. At the maturity date of CWLS, the principal of CWLS will be paid by the government to nazir and then returned 100% to waqifs (for temporary CWLS) or managed further by nazir (for permanent/perpetual CWLS). Therefore, CWLS is an alternative financing instrument that has a promising opportunity to finance social infrastructure projects.

The potential for raising funds through the CWLS mechanism is based on the Indonesian people's behaviour in mutual cooperation *(gotong royong)*. *Gotong royong*, as an Indonesian national identity, is deeply rooted in Indonesian society life (Simarmata et al., 2020). *Gotong royong* maintains cohesiveness, mutual trust, mutual assistance, cooperation, and social inclusion among Indonesians from the old historic era up until this modern life. It reflects the idea of solidarity and unity and therefore, is adopted and maintained as the way of life for all Indonesians (Endro, 2016). The potential of CWLS is further strengthened by the fact that the majority of Indonesia's population is Moslem. According to the 2020 World Population Review, it counts for 87.18% of the total population. As a Moslem, the ultimate life goal is useful to humankind, as cited by the theory of usefulness taken from the Al-Qur'an and Hadith.

إِنْ أَحْسَنتُمْ أَحْسَنتُمْ لِأَنفُسِكُمْ ۖ وَإِنْ أَسَأْتُمْ فَلَهَا

[And said], "If you do good, you do good for yourselves; and if you do evil, [you do it] to yourselves."

The Holy Prophet Shallallahu'alaihi Wasallam says:

> *The best person is the one who benefits all human beings (Ahmad, Ath-Thabrani, Ad-Daruqutni, conceived by Al-Albani in Shahihul Jami' No: 3289).*

In the Al-Quran surah Ali Imran verse 92 it is stated that: "You will never get to the goodness (which is perfect) until you spend part of the wealth you love, and whatever you spend, then Allah knows it." While the argument from the Hadith is: "When Adam's son dies, his deeds will be cut off, except for three cases: ongoing charity, beneficial knowledge, or a righteous child who prays for their parents" (HR. Ahmad). In this regard, the concept of usefulness is closely related to the CWLS scheme.

In addition, the instrument also ensures prudential principles that are needed in determining infrastructure projects to be financed with waqf, so that the waqf funds can provide sustainable benefits because the waqf funds belong to the general public managed by the waqf board (Syafiq, 2018). The result of research conducted by Faiza (2019) shows that CWLS could cover all financing for damage and losses to the public sector by simulating the implementation of CWLS in the Yogyakarta-Central Java earthquake recovery financing program. To be prudent, infrastructure projects that potentially will be financed by CWLS must go through due diligence to ensure the project benefits to the society. One of the critical assessments is by conducting Cost-Benefit Analysis (CBA) study. It is conducted by quantifying the social costs and social benefits (local denomination term) of infrastructure projects financed by CWLS. The framework for social CBA answers the fundamental question of whether society is better off after investing in the infrastructure project. In contrast to the market economy, project completion is expected to generate profit and offer the additional market value of inputs and outputs that have been used (Petohleb Černeha et al., 2013). It is aligned with CWLS waqifs' perspective which they do not consider the financial returns from their investment, yet they expect the project to bring greater benefit to society. It is different from the conventional investment which uses the returns as a parameter to make the investment decision. In this case, the potential of CWLS for infrastructure financing needs to be evaluated to

provide objective evidence. Therefore, it is interesting to know how CWLS waqifs decide their investment. How do they ensure that they get the "return" in the form of societal benefit? Therefore, the first part of this study tries to form a Cost-Benefit Analysis of a project, while the second part explores how the effect of the project's social Cost-Benefit Analysis, which gives a social benefit calculation of the project, can affect the potential waqifs. The study case used in this research is the education infrastructure in Indonesia. Some global experience of sukuk-waqf issuance in Singapore, Saudi Arabia, and New Zealand can be a benchmark for Indonesia (Soleh, 2019).

Research Methods

This section contains data collection, data sources and ways of data analysis. This research used a mixed research design that combines quantitative and qualitative research to resolve the research problem. It is beneficial to integrate post-positivism as well as interpretivism frameworks (Dawadi et al., 2021). Furthermore, Lofgreen (2006) in (Yusuf, 2017) suggested that the combination of qualitative and quantitative approaches is carried out at different phases in the research process. Firstly, the authors conduct the calculation of the Cost-Benefit Analysis (CBA) of the dormitory project by forming a financial model. In this study, the researchers adapted a CBA framework from the European Commission (Petohleb Černeha et al., 2013; Sidhu et al., 2018) and key features that are usually used in CBA studies for infrastructure projects (Valenza & Vignetti, 2009). The steps used in carrying out a social CBA are as follows:

- Project identification.
- Identification of affected parties (costs and benefits) of the project.
- Identification of the project's social costs.
- Identification of the project's social benefits.
- Forecast of the primary variables (investment costs, operation costs, social benefits, etc.) throughout 30 years.

- Calculation, quantification, and monetization of social costs and benefits.

- Use of a suitable social discount rate (SDR).

- Use of the discounted cash flow method.

- Calculation of economic net present value (e-NPV) and economic internal rate of return (e-IRR).

On the quantitative side, the authors distributed questionnaires form to the respondents to identify the benefits and costs (both direct and indirect) of a tertiary education infrastructure-dormitory of public university. Furthermore, the authors monetized the benefits and costs into nominal terms, enumerated the social discount rate, and calculated the financial parameter of economic net present value (e-NPV) and economic internal rate of return (e-IRR) using the discounted cash flow financial model. Whilst, on the qualitative side, the authors also interviewed the university management to grab their perspective on the dormitory development and take raw data on development costs, so that the input of the model is unbiased. The results of the questionnaire and interview were analyzed using quantitative data analysis in a Cost- Benefit Analysis Model.

The dormitory is chosen as this will be used to educate and train the behaviour of students in the long term to form good character. Related to this discussion, Einolander et al. (2021), Schuster & King (2022), and Sheffield (2016) investigated key theories connected to institution persistence and student involvement in their research—two variables that construct the character and mentality of students. These two theories, called Tinto's Theory of Institutional Departure and Astin's Theory of Student Involvement, are the most popular theories in higher education today. In this study, these two theories are used as the basis for identifying the benefits of dormitory infrastructure for college students.

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Cost-Benefit Analysis

$$\Delta SW_t = \sum_{t=0}^{n} (\lambda_{t,j} - C_{t,k}) \ (1)$$

ΔSW_t = the annual change in the social welfare before and after the investment in the dormitory building (net social benefit)

λ_t = the annual social benefits
C_t = the annual social costs
j = jth annual social benefits
k = kth annual social costs

Because the time dimension for the benefit and cost streams extends across the useful life of the dormitory building, the use of the sigma notation is important to the social Cost-Benefit Analysis. The useful life of a project is defined as the time from the start of construction to the end of decommissioning. This item makes it possible to combine a social cost-benefit analysis with a usable lifecycle evaluation to measure the building's economic performance.

Economic Net Present Value (e-NPV)

$$e - NPV = \sum_{t=0}^{n} \left(\frac{1}{(1+r_t)^t} x \ \Delta SW_t \right) \ (2)$$

e-NPV = the economic net present value of the project
r_t = the social discount rate (SDR)
t = the number of years

The social discount rate was determined by the weighted average of the social rate of time preference (SRTP) and the social opportunity cost of capital (SOC) (Tajani et al., 2023). The SRTP in this analysis is a 5-year Treasury-Bond Yield after tax and inflation. Meanwhile, the SOC is CWLS Yield to Maturity derived from the outstanding CWLS coupon. Using the Kaldor-Hicks compensation concept (Koopmans & Mouter, 2020), the dormitory building

project will be regarded as worthwhile to society if the economic net present value (e-NPV) is more than zero. Such result will indicate that the investment is beneficial to society in the long run. If, on the other hand, the e-NPV is less than zero, the investment is net-costly to society.

Economic Internal Rate of Return (e-IRR)

$$\sum_{t=0}^{n} \frac{\Delta SW_t}{(1+p)^t} = 0 \ (3)$$

P = economic internal rate of return

The economic internal rate of return (p) is expected to be higher than the financial rate of return (r) in the project evaluation. Otherwise, the project is more suitable for a private investor than for the government. On the other hand, if a project has significant non-monetizable social advantages, the project is more convenient for the public sector (Petohleb Černeha et al., 2013). Financial rates of return in this analysis are CWLS Retail coupon rate and the government bond yield with the same tenor as CWLS Retail.

Secondly, the CBA results are then distributed to the potential waqifs to know their interest and perspective on the dorm project will be financed by using CWLS. The uniqueness of the respondents in this research is that they are alumni who graduated from the university. It is because they already recognized the thorough education system, both in positive (benefits) terms and negative (costs) terms. Moreover, from a comprehensive understanding, they will objectively decide whether they earn an advantage in the workplace after they graduate from the university. By having this experience, they will also objectively decide whether they invest or not in CWLS to build an education infrastructure dormitory in the university, as they will not get financial returns from their investment, yet the usefulness of the investment to the greater beneficiary. This will bring a unique perspective on the usefulness and common benefit concept which the concepts are the substance of the Waqf Sukuk scheme. A Focus Group Discussion is held to

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discuss the interest of these potential waqifs to invest in the CWLS instrument that will be used to finance the dorm building.

Results and Discussion

Cost-Benefit Analysis Result

The social Cost-Benefit Analysis was conducted to examine the feasibility of CWLS as alternative funding to finance the Dormitory Project. According to the development plan, the dormitory will consist of two towers with a total of 1,000 rooms that can accommodate 4,000 students. The dormitory is planned to be built for 2 years and will operate for 30 years.

Assumptions

The assumptions used in building the CBA model are as follows.

- Project General Information

Based on the preliminary study project, the dormitory is planned to be built within 2 years with an operating period of 30 years. The dormitory can accommodate 4000 students. This study uses assumptions that the dormitory will be built in 20X2 and start being used in 20X4 (see Table 1).

Table 1. Project General Information

Project General Information	Value	Unit	Ref.
Dormitory Capacity	1000	students	Project Preliminary Study
Construction period	2	years	Project Preliminary Study
Concession period	30	years	Project Preliminary Study
Construction Start	20X2		Assumption
Concession Start	20X4		Assumption

Source: processed by the authors

- Economic Assumptions

In conducting the CBA, the authors assumed the inflation rate from the US Consumer Price Index (2.98%). To allocate the depreciation expense of the dormitory building and equipment in the dormitory during the operating period, which is 30 years, the straight-line method assumption is used, so the depreciation rate is 3.33% per year. In CBA, there is no tax because tax is a form of transfer payment. So, there is no tax in this analysis (see Table 2). As stated by Sidhu et al. (2018), "…Because their mechanisms may simply involve the movement of resources from one agent to another within society, transfer payments are needed to be removed" and Petohleb Černeha et al. (2013), "All market prices in the analysis are net of VAT and other indirect taxes. This is because they are neither a societal benefit nor a cost."

Table 2. Economic Assumptions

Economic Assumptions	Value	Unit	Ref.	Comment
Inflation	2.98%	per year	US CPI	
Depreciation rate	3.33%	per year	Assumption	Straight Line Method
Income tax rate	-	per year		1. No tax in CBA 2. BLU is not a tax subject

Source: processed by the authors

- Financing Assumption

In conducting the CBA in this study, the dormitory project was simulated to be financed using Retail CWLS with a 2-year tenor using a project financing scheme. The net social benefit value is discounted using a social discount rate (SDR). The social discount rate used in this analysis is 3.45% which is the weighted average of the Social Rate of Time Preference (SRTP) and Social Opportunity Cost of Capital (SOC). The SRTP in this analysis is a 5Y T-Bond Yield after tax and inflation. Meanwhile, the SOC is CWLS YTM. The CWLS coupon rate is taken from the CWLS coupon series SWR002 (see Table 3).

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Table 2. Financing Assumptions

Financing Assumptions	Value	Unit
Type of transaction: project financing sukuk (CWLS)		
Tenor	2	years
CWLS Yield To Maturity (SOC)	4.04%	per year
5Y T-Bond Yield	5.18%	per year
Tax (income tax of bond coupon)	10.00%	per year
Inflation	2.98%	per year
Social Rate of Time Preference (SRTP)	1.68%	per year
Social Discount Rate (SDR)	3.45%	per year
CWLS Coupon	5.57%	per year

Source: processed by the authors

Costs Aspect of CBA

Sidhu et al. (2018) identified three kinds of costs in their study, which were capital expenditures, operating expenditures, and degradation costs. The social costs of the system of public sewerage and water protection in Černeha et al. (2013) study included investment and operating costs. Investment costs included project development costs, building costs, and project management costs. Meanwhile, operating costs included costs of employees, costs of electric power consumption, costs of sludge disposal, maintenance costs, and depreciation costs. Therefore, costs that are used as social costs for input in CBA in this study and derived from the budget planning of the project, are capital expenditure, operating expenditure, and depreciation expense.

- Capital expenditure

Based on the preliminary study, the estimated capital expenditure for the dormitory project consists of building costs of IDR 128,187,790,080 and non-building costs of IDR 141,06,569,088, so the total capital expenditure is IDR 269,194,359,168. The dormitory is planned to be built for 2 years. The building project cost is disbursed 50% in the first year and 50% in the second

year. Meanwhile, the disbursement of non-building costs is 0% for the first year and 100% for the second year (see Table 4).

Table 3. Assumption of Capital Expenditure

Capex	Value	Unit	Proportion Cost		Ref.
			1	2	
Building	128,187,790,080	IDR	50%	50%	Project preliminary study
Non-building	141,006,569,088	IDR	0%	100%	Project preliminary study
Total	269,194,359,168	IDR			

Source: Processed by the Authors from Preliminary Study

- Operating expenditure

Operating expenditure is calculated with the basic assumption of historical operational and maintenance costs of existing buildings in the last five years. The result is an operating expenditure of 109% of capital expenditure. Using this assumption, the operating expenditure of the dormitory for 30 years of operation is IDR 293,421,851,493.12 obtained from 109% multiplied by IDR 269,194,359,168. The breakdown of the costs consists of employee costs, electricity costs, daily operations, utility costs, repair costs, and maintenance.

- Depreciation expense

The depreciation expense for the dormitory building and the equipment is allocated annually throughout the operation, 30 years, using the straight-line method.

Benefits Aspect of CBA

Many parties benefit from the existence of a dormitory, including students, campus, and the public. However, in this study, the authors limit the scope of benefit recipients by simply reviewing the students. A literature

study of related theories (Tinto's Institutional Departure Theory and Astin's Student Involvement Theory) and previous studies was conducted to derive the social benefits of campus living. There are so many social benefits that students can get from living in a college dormitory. The authors group these benefits into four variables, namely academic performance, time-saving, mental health, and interpersonal skills. To find out the value of the four benefits and their monetization, the authors conducted a survey by distributing questionnaires to regular students.

The social benefits are increased academic performance, time-saving, mental health, and the improvement of interpersonal skills. The benefits of increasing academic performance dominate the benefits of the CBA of this dormitory project. This means that for students who have lived in dormitories, the dormitory is a conducive place and very suitable for learning and increasing motivation to learn. It boosts their motivation to study and eventually drives them to get better academic performance.

Table 5. Monetization of Academic Performance

Total value (in IDR) of the increase in study time based on the survei	IDR 100,075,000
The number of respondents	381
Value (in IDR) of the increase in study time per college student per day	IDR 262,664
Number of effective days of study in one year	180
Value (in IDR) of the increase in study time per college student per year	IDR 47,279,528
Value (in IDR) of the increase of study time for 1000 college students for one year	IDR 47,279,528,000
Escalator	GDP per capita growth

Source: Processed by the Authors

In addition, when students live in a campus dormitory, there will be savings in travel time to and from campus. Based on the survey, the total saving time per college student per day is 19.94 minutes (see Table 6).

Table 6. Monetization of Time Savings

Total saving time (in minutes) based on the survey	3,799.50
Total saving time (in minutes) based on the survey in one day (commute)	7,599.00
The number of respondents	381
Total saving time (in minutes) per college student per day	19.94
Number of effective days of study in one year	180
Total saving time (in minutes) per college student per year	3,590.08
Saving time (in hours) per college student per year	59.83
Monetization base	GDP per capita per hour (constant LCU)
Escalator	GDP per capita growth

Source: Processed by the Authors

Moreover, living in campus dormitories can reduce the potential for mental health problems for students because there are friends to share stories, strengthen each other, and provide solutions to each other's problems. Some friends can help if there are problems, such as difficulty in understanding the material of any course. Of the 381 respondents, 218 or 57.22% agree that living in a dormitory can reduce the potential for mental illness. Based on the survey, the average value of mental health insurance per student per year is IDR 2,543,307 or IDR 2,543,307,000 (for 1000 students).

Meanwhile, the social benefits of improving interpersonal skills begin to emerge in the 17th year of the project's operation period. It is because starting at year 17th, there is a difference in job positions among employees who graduate from the university. This is due to the benefits of living in a dormitory in the form of increasing interpersonal skills so that students whose interpersonal skills are at higher levels will get faster promotion.

Table 7. Results of Monetization of Interpersonal Skill Improvement

Year	Period	Value (IDR)
20X4 + 16 yrs	19	5,604,331,200
20X4 + 17 yrs	20	11,208,662,400
20X4 + 18 yrs	21	16,913,336,400
20X4 + 19 yrs	22	22,618,010,400
20X4 + 20 yrs	23	28,504,788,000
20X4 + 21 yrs	24	34,391,565,600
20X4 + 22 yrs	25	40,464,163,200
20X4 + 23 yrs	26	46,536,760,800
20X4 + 24 yrs	27	52,798,894,800
20X4 + 25 yrs	28	59,061,028,800
20X4 + 26 yrs	29	65,516,415,600
20X4 + 27 yrs	30	71,971,802,400
20X4 + 28 yrs	31	78,631,591,200
20X4 + 29 yrs	32	85,291,380,000

Source: Processed by the Authors

The CBA model is built from the assumptions and the data described in the previous section. In the cost part, the authors sum up the capital expenditure (IDR 269,194,359,168) and operating expenditure of the project (IDR 293,421,851,493) minus the depreciation expense. The values are then adjusted to the inflation rate, bringing the total value to IDR 491,872,917,358. Meanwhile, in the benefit part, the authors sum up the benefits increasing of academic performance, time-saving, mental health, and the improvement of interpersonal skills.

Total social benefits minus operating expenditure result in the value of EBITDA. EBITDA minus depreciation expense results in EBIT value. EBIT plus loan drawdown, minus loan repayments, reduced coupon payments, minus increase in Capex produces a net social benefit value. The net social benefit value is discounted using a social discount rate (SDR). The social discount rate that is used in this analysis is 3.45%, which is the weighted average of the social rate of time preference (SRTP) and social opportunity cost of capital

(SOC). The SRTP in this analysis is a 5Y T-Bond Yield after-tax and inflation. Meanwhile, the SOC is CWLS YTM. The result of the discounted cash flow is the e-NPV value of IDR 937.437.495.257 and e-IRR of 15.60%.

Table 8. e-NPV and e-IRR

e-NPV	IDR937.437.495.257
e-IRR	15.60%

Source: Processed by the Authors

The economic NPV is positive, meaning that the project is regarded as worthwhile to society. The social benefits analyzed in this study are only benefits to students and the economic NPV value is already far above 0. Moreover, the project feasibility considerably shows strong results with an economic IRR of 15.60 %. Meanwhile, the government bond yield with the longest tenor as of June 2023 is 6.78% (see Table 6). The economic IRR of the project is much larger than the government bond yield. This shows that the dormitory project is financially viable to get funding from CWLS issuance. The project's e-IRR which reaches 15.60 % indicates that the proposed CWLS YTM exceeds the Yield to Maturity (YTM) of the government bond with the corresponding tenor. It indicates that the CWLS with the underlying dormitory project will be easily absorbed by the market, as the social return offered by the project is above the bond market's perceived rate of return.

Table 9. IRR and Government Bond Yield

IRR	15.60%	Discounted Cash Flow of CBA
Gov. Bond Yield 30 Yrs	6.78%	June 27, 2023

Source: Processed and Compiled by the Authors

Effect of CBA Expose to Interest of Cash Waqf Linked Sukuk Waqif

The authors conducted a public expose of the CBA result to the prospective waqifs. Twenty-two (22) respondents were invited and actively

involved in the event. All of them are alumni of the school in which the infrastructure is proposed to be built and financed by CWLS. The waqifs were mostly familiar with the popular investment product of government bonds (86,36%); however, most of them did not know yet about the CWLS as an investment alternative (86,36%). Their investment purposes were earning profit in terms of monetary value (18,2%), inflation protection (18,2%), earning return both in monetary value and non-monetary value (59,1%), and earning return in terms of non-monetary value (4,5%). After the CBA study had been presented to them, the authors asked about the possibility of the waqifs investing in CWLS. The results were 77,27% of them were interested to invest in CWLS, while 22,73% were not interested. Interestingly, when the prospective waqifs were asked whether their status of alumni influenced them to invest in CWLS to build the dormitory, 27,27% of them stated that the status did not influence their investment decision, while 72,73% of them stated so. It can be seen that most waqifs are interested to invest in the CWLS instrument to build social infrastructure even though they do not know the detail of the instrument before.

Conclusion

Financial availability is one of the obstacles to infrastructure development in Indonesia, especially social infrastructure. Its non-commercial nature makes it more difficult for social infrastructure projects to attract waqifs because they intend to get returns. CWLS is a financing instrument alternative that has excellent potential in financing social infrastructure projects because the cost of funds is practically zero as the waqif return will be given back to the government. It means that the waqifs should have a unique perspective on the expected return. They do not require a direct financial return but an indirect return in the form of reward of worship.

Therefore, in order to grab the interest of waqifs, CWLS should explain what benefit is generated from the infrastructure financed by the instrument for the people and the improvement of the community's economy. Cost-Benefit Analysis (CBA) is used to give the benefit calculation of the project.

This research was conducted to examine the CBA calculation of infrastructure education and simulate how the prospective waqifs get interested in the instrument by knowing the benefit presented by the CBA. The study explained that the project benefit outweighs the cost equal present value of IDR 937 billion with an internal return of 15,60%. The figures resulted from direct and indirect benefits and costs from the development of infrastructure education-dormitory. To conclude, by knowing the benefits and understanding the concept and mechanism, most prospective waqifs are interested in investing their money in the CWLS instrument, even if they do not know the details of the instrument before. Moreover, it is suggested that the government build a comprehensive prospectus of CWLS that explains the benefit of the infrastructure financed by the instrument to the prospective waqifs to boost their interest in investing.

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