Analysis Of Benefit Cost Car Ownership Program For Employee In The General Services Agency

Budi Wahyu Mahardhika\textsuperscript{1}, Amandus Jong Tallo\textsuperscript{2*}, Dwi Ernawati Susilo\textsuperscript{3} and Wisnu Mahendri Bahri\textsuperscript{4}

\textsuperscript{1}Department of Management, University of Muhammadiyah Surabaya, Indonesia
\textsuperscript{2}Department of Urban and Regional Planning, Podomoro University, Jakarta, Indonesia
\textsuperscript{3}STIE PGRI Dewantara Jombang, Indonesia
\textsuperscript{4}Students in Magister Management Program, Universitas Merdeka Malang, Indonesia

* amandus.tallo@podomorouniversity.ac.id

Abstract. Welfare is a person’s primary interest in working. Ownership of vehicles is one indicator of the achievement of one’s welfare. Organizations that are able to assist their employees to achieve these welfare indicators have the potential to have a positive impact on both employees and management teams as well as for the organization. Car ownership program (COP) is an effort to strengthen the slice of goals and interests between organizations in this case BLU with all the management and employees. Employees and management are expected to be more prosperous. Together, the organization will also benefit from better employees and management performance. The results of the data analysis found the ratio of benefits to the cost of 1.20 and NPV of Rp 1 779 550 563. While the survey showed that 93.3\% of respondents interested in following the COP, 80\% of respondents strongly agree that the COP is very profitable employees, and 80\% respondents strongly agree that the COP shows the BLU’s attention to its employees. Analysis of the data indicates that the use of COP programs is feasible and effective enough and is viewed positively by employees of official car users.

1. Introduction
Welfare is one's main purpose and importance in working. Similarly, the employees and management of the Public Service Agency (BLU) in Indonesia. Ownership of vehicles is one indicator of the achievement of one's welfare. The organizations that are able to help their employees to achieve these welfare indicators have the potential to generate positive impacts for employees / team management / organization. Growing evidence demonstrates the importance of transportation in improving family economic well being[1].

The car ownership program, further called COP, is an effort to strengthen objective slices and interests between organizations, in this case BLU with all the management and employees. Employees and management are increasingly able to achieve the expected welfare objectives, as well as with organizations will benefit from increased employee and management performance. The research on the effects of car ownership on work has created a positive correlation between the two[2]. COP is a reward or facility to a company employee in the form of soft loans which is generally a private car
ownership with a long loan term (5 years or more). Car ownership program is generally without down payment. Typically, some mortgages are borne by the company and some are borne by employees with a composition of 70:30 or 60:40. As a COP program it certainly has both financial and nonfinancial consequences. During this time, BLU uses lease scheme for operational vehicle needs. Therefore, BLU needs to make a review to decide whether COP can be implemented or not.

2. Methodology

In this study, the problem to be studied is in the form of open-ended questions and thus will use descriptive qualitative research method (non statistics) that is case study research. The calculation and data analysis is done by cost-benefit method, where cost-benefit simulation is done for 5 years. Then, calculation of sensitivity analysis done to obtain net present benefit (NPV) and Profitability Index (PI). When the simulation results produce output where the eligibility requirements if PI > 1, then COP is feasible to do. After the analysis and calculation is done, a descriptive study was conducted on the result of the popular consultation. This is necessary because cost benefit analysis can be complicated by human factors affecting cost and benefit assessments[3]. The results of research are poured in some conclusions that answer the research question.

2.1. Net Present Value Method

Net present value (NPV) is another common way of conducting CBA[4]. Net present value (NPV) is the net value of a project representing all the value of the project benefits deducted by the project cost in the year and calculated by the applicable discount rate. If the NPV < 0 then the investment made can cause losses, and if NPV = 0 then the investment made will not cause the company to be a profit or loss. The Calculations are:

\[ NPV = C_0 - \sum_{i=1}^{T} \frac{C_i}{(1+r)^i} \]

with:

NPV = Net Present Value
C0 = Initial cost
C = Cash flow value of the year to-
T = Year 0,1,2 ..... T
r = Value discount

2.2. Profitability Index Method

The Profitability Index (PI) method, often used in evaluating an investment or in addition to validating the evaluation results that have been done with other methods. This method is very well used for an investment in government projects that have a direct impact on the wider community. The profitability index (PI), which is occasionally called benefit-cost ratio, provides the relative profitability of a project. If the PI is greater than 1.0 it is acceptable, and the higher the PI, the higher the project should be ranked when compared to other possible investments[4]. This is the PI formula:

\[ PI = \frac{NPV \; B}{NPV \; C} \]

With:

PI = Profitability Index
NPV B = Net Present Value - Benefit
NPV C = Net Present Value - Cost

2.3. Cost Benefit Analysis

The cost-benefit comparison method, also called Cost Benefit Analysis (CBA). The CBA methodology is the most commonly used approach for economic appraisal of public decision-making in transport infrastructure appraisal [5] and this method is also used in addition to validating the
results of evaluations that have been made with other methods. Cost-benefit analysis (CBA) is used to explain an individual’s behavioral decision. Before an individual makes a choice, he/she compares and weighs anticipated costs and benefits involving the alternative. If perceived costs are balanced by perceived benefits, the individual will be likely to engage in the alternative [6].

The steps taken in analyzing the efficiency of a program through CBA is to determine all the benefits and costs of the program to be implemented. The next stage calculates the benefits and costs in the value of money, and is continued by calculating each of the benefits and costs in the present value of money. The output of this method can be taken into consideration to be chosen or not in a decision making.

3. Result and Discussion

3.1. Cost-Benefit Analysis results

The results of data collection are made projected cost savings of vehicle rental, projection of car maintenance cost savings, projected savings on employee installment contribution and cost savings on risk management for 5 years starting from 2018 until 2022. Then for the projection and calculation of margin benefit from the cost aspect of COP installment, the vehicle registration certificate (STNK) renewal tax and risk management fee are shown as fees incurred from the COP program.

Table 1. Project Saving From COP

| Discussion | 2018 | 2019 | 2020 | 2021 | 2022 |
|------------|------|------|------|------|------|
| **Income** |      |      |      |      |      |
| Car Rental Cost Savings |      |      |      |      |      |
| a. Honda City All New E CVT | 138 | 138 | 138 | 138 | 138 |
| b. Toyota All New Kijang Innova V A/T Diesel | 410 | 410 | 410 | 410 | 410 |
| c. Toyota All New Kijang Innova V M/T Diesel | 129 | 129 | 129 | 129 | 129 |
| d. Honda New CR-V 2.0 AT | 774 | 774 | 774 | 774 | 774 |
| e. Honda HRV CVT Prestige 1.8 AT | 283 | 283 | 283 | 283 | 283 |
| f. Honda HRV CVT Prestige 1.8 AT New | 144 | 144 | 144 | 144 | 144 |
| g. Toyota All New Fortuner 4x22 4 G AT Diesel | 890 | 890 | 890 | 890 | 890 |
| **Total Car Rental Cost Savings** | 2.768 | 2.768 | 2.768 | 2.768 | 2.768 |
| Saving Contribution of Employee Installment (30% Assumption) |      |      |      |      |      |
| a. Honda City All New E CVT | 583 | 583 | 583 | 583 | 583 |
| b. Toyota All New Kijang Innova V A/T Diesel | 29 | 29 | 29 | 29 | 29 |
| c. Toyota All New Kijang Innova V M/T Diesel | 99 | 99 | 99 | 99 | 99 |
| d. Honda New CR-V 2.0 AT | 36 | 36 | 36 | 36 | 36 |
| e. Honda HRV CVT Prestige 1.8 AT | 188 | 188 | 188 | 188 | 188 |
| f. Honda HRV CVT Prestige 1.8 AT New | 59 | 59 | 59 | 59 | 59 |
| g. Toyota All New Fortuner 4x22 4 G AT Diesel | 30 | 30 | 30 | 30 | 30 |
Projected COP costs can be seen that the total cost has increased from year to year. This is due to rising costs, including the cost of risk management by 5% with a 10% increase each year and maintenance costs 15% each year.

Table 2. Costs Arising from The COP

| Spentung | 2018 | 2019 | 2020 | 2021 | 2022 |
|----------|------|------|------|------|------|
| **Spending** |      |      |      |      |      |
| Assumption of COP Program | | | | | |
| Installment Charges | | | | | |
| a. Honda City All New E CVT V A/T Diesel | 95 | 95 | 95 | 95 | 95 |
| b. Toyota All New Kijang Innova V A/T Diesel | 329 | 329 | 329 | 329 | 329 |
| c. Toyota All New Kijang Innova V M/T Diesel | 122 | 122 | 122 | 122 | 122 |
| d. Honda New CR-V 2.0 AT | 625 | 625 | 625 | 625 | 625 |
| e. Honda HRV CVT Prestige 1.8 AT | 198 | 198 | 198 | 198 | 198 |
| f. Honda HRV CVT Prestige 1.8 AT New | 101 | 101 | 101 | 101 | 101 |
| g. Toyota All New Fortuner 4x22 4 G AT Diesel | 474 | 474 | 474 | 474 | 474 |
| Car Care Cost Assumption (15%) | 503 | 503 | 503 | 503 | 503 |
| Administration (15%) | 36 | | | | |
| Tax Expense Assumption STNK Extension (2%) | | | | | |
| a. Honda City All New E CVT V A/T Diesel | 7 | 7 | 7 | 7 | 7 |
| b. Toyota All New Kijang Innova V A/T Diesel | 21 | 21 | 21 | 21 | 21 |
| c. Toyota All New Kijang Innova V M/T Diesel | 7 | 7 | 7 | 7 | 7 |
| d. Honda New CR-V 2.0 AT | 42 | 42 | 42 | 42 | 42 |
| e. Honda HRV CVT Prestige 1.8 AT | 23 | 23 | 23 | 23 | 23 |
| f. Toyota All New Fortuner 4x22 4 G AT Diesel | 43 | 43 | 43 | 43 | 43 |
| Cost of Risk Management 5% (Increase 10% per year) | 167 | 184 | 203 | 223 | 245 |
| **Total Spending** | 2.792 | 2.773 | 2.792 | 2.812 | 2.834 |

Then it is seen that the difference between income (austerity post) and expenditure (cost item) has increased from year to year. This amount is also increasing accumulatively. So at the end of 2022 obtained the difference in total cost of benefits of Rp. 2 751 300 419.
Table 3. Simulation of car rental savings on COP cost

| Discussion                                      | 2018   | 2019   | 2020   | 2021   | 2022   |
|------------------------------------------------|--------|--------|--------|--------|--------|
| **Income**                                      |        |        |        |        |        |
| Car Rental Cost Savings                        | 2.768  | 2.768  | 2.768  | 2.768  | 2.768  |
| Saving Contribution of Employee Installment (30% Assumption) | 583    | 583    | 583    | 583    | 583    |
| **Total Income**                                | 3.351  | 3.351  | 3.351  | 3.351  | 3.351  |
| **Spending**                                    |        |        |        |        |        |
| Assumption of COP Program                      |        |        |        |        |        |
| Installment Charges                            | 1.943  | 1.943  | 1.943  | 1.943  | 1.943  |
| Car Care Cost Assumption (15%)                  | 503    | 503    | 503    | 503    | 503    |
| Administration (15%)                            | 36     |        |        |        |        |
| Tax Expense Assumption STNK Extension (2%)      | 143    | 143    | 143    | 143    | 143    |
| Cost of Risk Management 5% (Increase 10% per year) | 167    | 184    | 203    | 223    | 245    |
| **Total Spending**                              | 2.792  | 2.773  | 2.792  | 2.812  | 2.834  |
| **Rest**                                        | 559    | 578    | 559    | 539    | 517    |
| **Gap**                                         | 559    | 1.137  | 1.696  | 2.235  | 2.752  |

To obtain a comprehensive comparison, the benefits of improving employee performance are shown in Table 4.1 as follows:

Table 4. Simulation of changing conditions when benefits fall and costs rise

| No | Discussion                        | Normal Condition | Changing Condition | 2,5% *(MillionRp) | 5% *(MillionRp) | 7,5% *(MillionRp) | 10% *(Million Rp) |
|----|-----------------------------------|------------------|--------------------|-------------------|-----------------|-------------------|-------------------|
| 1. | Benefit Down                      |                  | 2,5%               | 5%                | 7,5%            | 10%               |
|    | a. Net Present Value (NPV)        | 1.780            | 1.510              | 1.240             | 971             | 701               |
|    | b. Profitability Index (PI)       | 1.20             | 1.17               | 1.14              | 1.11            | 1.08              |
| 2. | Cost Rising                       |                  | 2,5%               | 5%                | 7,5%            | 10%               |
|    | a. Net Present Value (NPV)        | 1.780            | 1.554              | 1.329             | 1.104           | 879               |
|    | b. Profitability Index (PI)       | 1.20             | 1.17               | 1.14              | 1.11            | 1.09              |
|    | *for NPV                          |                  |                    |                   |                 |                   |

From the table above it is known that NPV is positive. Under normal conditions the value of the benefit to cost ratio is 1.20 which means that this activity is feasible. If there is a decrease in benefits or cost increase feasibility is still achieved.

3.2. The Results of the Popular Consultation

The poll was followed by 15 respondents with the majority of respondents’ sexes were men 86.7% and women 13.3%. The age range of respondents was 38 years. Respondents mostly worked in the evaluation and monitoring division (13.3%). From the results of the survey and the questionnaire filling obtained information that the type of official cars most widely used by respondents is Toyota Fortuner (20%) and Honda-CRV (13.3%). As many as 60% of respondents have owned private cars...
and 90% of respondents have 1 unit of car. Also known 40% of respondents who already have a private car still bear the mortgage.

93.3% of respondents agreed with this COP. They also argue that COP benefits employees rather than rental cars. COP is also long awaited by BLU employees with 60% of respondents agree. As many as 80% of respondents agree that COP is a form of BLU attention to its employees. Despite monthly income cuts for COP installments, 86.7% of respondents agreed. In the terms of monthly transportation cost savings of employees, as many as 80% declare their approval. And this COP will increase the loyalty of BLU employees with the number of respondents agree as much as 86.7%.

However, the performance of BLU employees will not be affected by the presence or absence of COP programs expressed by 66.7% of respondents. 53.3% of respondents strongly agree that the existence of COP will improve the performance of BLU as an institution. As many as 66.7% of BP3TI employees strongly agree that without any COP, BLU needs to have superior performance.

With COP, 53.3% of BLU employees strongly agree that they will be more enthusiastic to work. Employees agree that COP will be able to improve employee welfare supported by 100% approval of respondents.

3.3. Discussion

An Analysis of research results obtained from the analysis of cost-benefit analysis of COP in BLU are:

1. The scheme of COP scheme in BLU is as follows: 1) Terms of COP recipients are permanent employees with minimum service life and good performance, 2) BLU selects 3rd party (Bank) to finance car purchase for COP program employees; 3) Term COP time is 5 years (60 months), 4) The amount of COP ceiling corresponds to the official level and 5) If there is an excess of the cost of purchasing the car to be the responsibility of the COP recipient employee.

2. The cost consequence of the COP scheme is that BLU will bear the car financing cost of 70%, while the employee will bear 30% financing fee to the bank. Costs incurred during the COP period, such as vehicle maintenance costs, renewal fees for vehicle registration, vehicle insurance costs including backlinks the name (at the end of the COP period) should be set forth in the agreement clause.

3. The consequences of the risks that accompany the scheme change are still safe to simulate the 10% down benefit and the 10% up cost, the financial consequence of COP is the increase in car maintenance costs and risk management costs in the COP period that can be greater than when renting. However, based on financially simulated it is known that NPV is positive, that is Rp. 1,779,550,563, - which means that the project is feasible and beneficial to the BLU and the replacement scheme is feasible in cost and benefit.

4. Conclusion

Based on the results of a cost-benefit feasibility study and an opinion poll to employees for employee car ownership (COP) program at BLU, the program is feasible. This policy is still new and should keep the BLU in a conservative risk management

References

[1] C. N. Fletcher, S. B. Garasky, and R. B. Nielsen, “Transportation hardship: Are you better off with a car?,” *J. Fam. Econ. Issues*, vol. 26, no. 3, pp. 323–343, 2005.

[2] T. Gurley and D. Bruce, “The effects of car access on employment outcomes for welfare recipients,” *J. Urban Econ.*, vol. 58, no. 2, pp. 250–272, 2005.

[3] H. F. Cervone, “Using cost benefit analysis to justify digital library projects,” *OCLC Syst. Serv. Int. Digit. Libr. Perspect.*, vol. 26, no. 2, pp. 76–79, 2010.

[4] M. Linn, “Cost-benefit analysis: examples,” *Bottom Line*, vol. 24, no. 1, pp. 68–72, 2011.

[5] K. Shaton and A. Hervik, “Economic appraisal in the upstream gas transport sector,” *Impact Assess. Proj. Apprais.*, vol. 00, no. Juni, pp. 1–12, 2018.

[6] Y. W. Chang and P. Y. Hsu, “An empirical investigation of organizations’ switching intention
to cloud enterprise resource planning: a cost-benefit perspective,” *Inf. Dev.*, vol. X, no. XX, pp. 1–13, 2017.