

**TOPIC 4.1.: COST-BENEFIT/COST-EFFECTIVENESS ANALYSIS  
AND CONTROL OF PUBLIC AND SOCIAL EXPENDITURE**

**EXERCISE 1**

Exercise of application of Cost-Benefit Analysis. The following information is available: In a city the improvement of a park is proposed. To do this, there are three alternatives: construction of a bridge (option P), installation of a bike lane (CB) and construction of a lake (L). The Net Present Value (NPV) of each project depends on its use according to the following table:

Utilization degree	Low	Medium	High
Bridge (Project P)	-20	8	30
Bike lane (Project CB)	2	9	14
Lake (Project L)	7	12	18

- a) If the expected degree of utilization responds to the following probabilities:  $p_{Low} = 0.1$ ,  $p_{Medium} = 0.6$  y  $p_{High} = 0.3$ . If society is risky neutral, which Project should be developed?
- b) If, on the contrary, the probabilities were unknown, what would be the best option? Use to answer the criteria of insufficient reason, maxi-min and mini-max. If the mini-max were combined with the insufficient reason, would it contradict or reaffirm your previous conclusion?  
Reason your answers appropriately..

**EXERCISE 2**

In Santander, the improvement of communication between two parts of the city is proposed and two alternative projects are proposed: A (underground communication) and B (bridge). It is expected that they generate the following income and costs in monetary units:

Project A (underground communication)

Years	Associated Costs			Associated Income	
	Building	Maintenance	Signaling	Time	Accident
2022	80	0	14	0	0
2023	0	20	0	60	12
2024	0	20	0	42	8
2025	0	20	0	27	6

Project B (bridge)

Years	Associated Costs			Associated Income	
	Building	Maintenance	Señalización	Building	Maintenance
2022	220	0	25	0	0
2023	0	14	0	110	39
2024	0	14	0	70	26
2025	0	14	0	48	22

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The following is requested:

- a) Calculate the total annual net benefits as well as the viability of both projects, taking as a basis that the decision criteria is the Net Present Value (NPV) and that the social discount rate is 3%, which project should be selected?
- b) Determine what would be the project to be carried out if the Internal Rate of Return (IRR) is used as a decision criterion and the minimum return on investment set by the City Council is 4% (consider only two periods for this). . Why does the result now change with respect to a) above?

**EXERCISE 3**

Choose the correct answer for each of the following questions. There is only one correct answer:

- 1) The objectives of the CBA tend to attend to:
  - a) Improve firm's profit.
  - b) Increase collection by public administrations.
  - c) Financial, economic and social profitability.
  - d) None of the above.
- 2) The following information is available: In a city, the improvement of a square is proposed. To do this, there are three alternatives: remodeling of banks, installation of a fountain and construction of a lake. The Net Present Value (NPV) of each project depends on its use. If the expected degree of utilization responds to unknown probabilities, which project should you select??
  - a) If the decision-maker is optimistic, by the MAXIMAX criterion, he will choose the option that provides the highest NPV of the possible.
  - b) If the decision-maker is optimistic, based on the HUWICZ criterion, he will choose the option that provides the highest NPV of the possible.
  - c) If the decision-maker is optimistic, based on the HUWICZ criterion, he can assign probabilities to the results, giving the "best" option a higher probability.”.
  - d) All the above answers are correct.
- 3) Regarding the legal control of public spending, indicate the incorrect answer:
  - a) In the case of the Spanish public sector, since the drafting of the constitutional text, the postulates of good management have become evident, with respect to the financial activity of the public Administration, which imply the implementation of control procedures.
  - b) The control procedures are divided by the legislation into internal ones, in the case of being carried out by some body of the public entity, or external, when, on the contrary, the control is carried out by entities other than the one that is controlled.
  - c) Both internal and external control, with their particularities, have a similar objective "that the activity of an economic-financial nature of public entities and, more specifically, their assessment in terms of their adjustment to the double legal requirement (in a broad sense) and economics (principles of efficiency and economy)”.

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- d) None of the answers is correct.
- 4) Choose the correct answer:
- a) Regarding the external control of the economic-financial activity of the public sector, the General Intervention of the State Administration (GISA) is the jurisdictional body that is in charge of that control
  - b) Regarding the internal control of the economic-financial activity of the public sector, the Court of Audit (CAu) is the jurisdictional body that is in charge of that control.
  - c) Given the decentralization of the Public Administration, all the autonomies have also provided themselves with autonomous external control bodies with similar functions to the Court of Accounts but restricted to the autonomic sphere.
  - d) None is correct.
- 5) Choose the incorrect answer:
- a) Regarding the internal control of the economic-financial activity of the public sector, the General Intervention of the State Administration (GISA) is the jurisdictional body that is in charge of that control
  - b) Regarding the external control of the economic-financial activity of the public sector, the Court of Audit (CAu) is the jurisdictional body that is in charge of that control.
  - c) Given the decentralization of the Public Administration, all the autonomies have also provided themselves with autonomous external control bodies with similar functions to the Court of Accounts but restricted to the autonomic sphere
  - d) The two functions the CAu develops the external control of the economic-financial activity of the public sector are the supervisory and the jurisdictional.