

Evolutionary game of investors' opportunistic behaviour during the operational period in PPP projects

Access to new resource related to public private partnerships added to PMWL



Resource provided by [Diana Serikbay](#)

24 March 2022 – Almaty, Kazakhstan – Access to a new resource has been added to the PM World Library (PMWL) related to Public Private Partnerships. The new resource is titled “**Evolutionary game of investors' opportunistic behaviour during the operational period in PPP projects**” and is a paper published in Construction Management and Economics in 2016,

In this paper, the authors use evolutionary game theory to explore investor strategic choices and find the optimal solution to reduce opportunistic behavior. The issue of opportunistic behavior on the part of all players in PPP is raised. Authors emphasize that by optimizing evaluation methods, opportunistic behavior can be reduced, because it in turn generates conflicts and sometimes leads to a negative result.

Payoff matrix is conducted between departments of government and investors of the project. There are two parties in this game with different options:

- 1) Investors with two options: a) not to behave opportunistically and b) to behave opportunistically
- 2) Government with two options: a) to supervise and b) not to supervise

Also, in this analysis authors examine 10 parameters which are all non-negative numbers. According to the results of evolutionary game theory, the authors show that ESS (evolutionary stable strategies) between two players does not exist. There is no such combination of strategies that could be stable and not undergo any changes. As a result, the authors came to different equilibrium states:

- 1) The behavior of investors is opportunistic during the period of operation of the PPP, the state controls their behavior.
- 2) Investors behave opportunistically, the state does not control.
- 3) Investors refuse to behave opportunistically, and the state is not in control.
- 4) The behavior of investors is not opportunistic; the state takes control.

In part of the discussion, the authors come to the use of a mixed strategy. Where there is a certain percentage of investors who do not accept opportunistic behavior due to the flexible mechanism for imposing restrictions and control by the state. That is, there should be such a point in the system of state supervision that could not punish, but motivate investors to remove themselves from opportunistic behavior.

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For PMWL Post

Liu, J., Gao, R., Jen Cheah, C.Y. & Luo, J. (2016): **Evolutionary game of investors' opportunistic behaviour during the operational period in PPP projects**, Construction Management and Economics, DOI: 10.1080/01446193.2016.1237033. Available online at (https://www.researchgate.net/publication/308853430_Evolutionary_game_of_investors%27_opportunistic_behaviour_during_the_operational_period_in_PPP_projects) (Serikbay)

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