

Optimizing the pharmaceutical industry

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Research published in the *International Journal of Simulation and Process Modelling* shows how integrated simulations can be used to optimize a pharmaceutical production line in a way that conventional mathematical modeling cannot.

Ahmad Taher Azar of Prince Sultan University, in Riyadh, KSA, and



colleagues built their <u>simulation</u> using data and information from a working production line and then utilized the simulation to generate putative inputs and outputs for a range of production scenarios to show how they might be optimized for different resources and products. "This is the first study in which an integrated simulation DEA is used for the performance optimization of a pharmaceutical unit," the team writes.

The simulations showed six bottlenecks that reduce efficiency and slow production. These were brought into the simulated, verified and validated simulations so that they might be expunged from particular production scenarios. The simulations could then be combined in such a way to generate the optimal setup for any of more than 40 scenarios that the engineering team on a production line might face. Critically, any one of the many factors can affect overall efficiency and so a <u>holistic</u> <u>approach</u> has to be taken to reduce overheads and ensure the most efficient and effective approach.

More information: Naser Habibifar et al. Performance optimisation of a pharmaceutical production line by integrated simulation and data envelopment analysis, *International Journal of Simulation and Process Modelling* (2019). DOI: 10.1504/IJSPM.2019.103587

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