

How do I apply quadratic programming to analyze operating room financial data?

Quadratic programming in OR management was described originally in the paper: [Managing risk and expected financial return from selective expansion of operating room capacity: mean-variance analysis of a hospital's portfolio of surgeons \[PDF\]](#). Also use the follow-up papers: [Tactical decision making for selective expansion of operating room resources incorporating financial criteria and uncertainty in subspecialties' future workloads \[PDF\]](#) and [Tactical increases in operating room block time based on financial data and market growth estimates from data envelopment analysis \[PDF\]](#).

When analyzing OR financial data, the confidence intervals for contribution margin per OR hour (or variable costs per OR hour) **do** need to be used to avoid spurious conclusions. Results of analyses and decisions will differ. For corresponding managerial epidemiology, [click here](#), [click here](#), and [click here](#).

Individuals knowledgeable in operations research usually ask about applying Fieller's method to calculate the variance of the estimated contribution margin per OR hour by surgeon. The equation used is that given in reference 6 below equation (6). For individuals without experience, I recommend reference (5) to learn about quadratic programming.

[Click here](#) for information about the Division of Management Consulting performing the analysis with you (i.e., so that there is simultaneous education). [Click here](#) for a lecture on the topic.

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