

## Response to reviewers

A game theoretic model of the behavioural gaming that takes place at the ED-EMS interface

June 28, 2022

The authors would like to thank once again all the reviewers for their constructive feedback and for the time they took to review the manuscript. Please find the summary of the changes made:

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- Reviewer 1: *The following two papers are related to the current work and I suggest the authors add them in the references with citations in the literature review:*
    1. Chen, W., Z. G. Zhang, and X. Chen. 2020. "On Two-tier Healthcare System Under Capacity Constraint." *International Journal of Production Research* 58 (12): 3744-3764.
    2. Wang, J., Z. Wang, Z. G. Zhang and F. Wang. 2021. "Efficiency-quality trade-off in allocating resource to public healthcare systems." *International Journal of Production Research*, DOI:10.1080/00207543.2021.1992529

These two papers are now cited in the manuscript at the literature review section.

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- Reviewer 2: I gave a look into the new version and the comments made by the authors following the reviews they received. My criticism towards the paper as stated in the first round stays. It is basically the question of what are the standards of EJOR. If a paper which states a interesting model and gives details on numerical procedures for solving it but without any theorems and insights is good enough, then it should be accepted as the paper is doing a good job of what it promises. Otherwise, they should look for a more applied journal where what they do is sufficient.

Here's a list of reasons of why I think this paper should be considered for publication in EJOR. Firstly, reviewer 2 states that the paper does not provide any insights. We would like to point out that this paper does provide theoretical results and insights. Section 3 provides detailed theoretical expressions of the queueing model's performance measures. Expressions of the waiting time, blocking time and proportion of individuals within target have been derived and

are presented in the paper. Also, section 4.2 contains a list of applied scenarios where insights are presented. A busy model is examined and insights on ways to increase the relative efficiency of the model are presented.

Secondly here is a list of papers already published in EJOR that introduce a new model and give details on numerical procedures for solving it but without any new theorems:

- A queueing model for general group screening policies and dynamic item arrivals  
<https://doi.org/10.1016/j.ejor.2010.05.042>
- Selfish routing in public services:  
<https://doi.org/10.1016/j.ejor.2013.04.003>
- The effect of ambulance relocations on the performance of ambulance service providers  
<https://doi.org/10.1016/j.ejor.2015.12.022>
- Robust and stochastic formulations for ambulance deployment and dispatch  
<https://doi.org/10.1016/j.ejor.2019.05.011>
- A Markovian queueing model for ambulance offload delays  
<https://doi.org/10.1016/j.ejor.2012.11.030>
- Models and algorithms for an integrated vessel scheduling and tug assignment problem within a canal harbor  
<https://doi.org/10.1016/j.ejor.2021.10.037>
- The application of operational research to European air traffic flow management - understanding the context  
[https://doi.org/10.1016/S0377-2217\(99\)00084-3](https://doi.org/10.1016/S0377-2217(99)00084-3)

Finally, note that the aims and scope of EJOR do not emphasise that a paper should present a new theorem in order to be published. Here's the aim and scope of EJOR as listed in their website:

*The European Journal of Operational Research (EJOR) publishes high quality, original papers that contribute to the methodology of operational research (OR) and to the practice of decision making. EJOR contains the following types of papers:*

- *Invited Reviews, explaining to the general OR audience the developments in an OR topic over the recent years*
- *Innovative Applications of OR, describing novel ways to solve real problems*
- *Theory and Methodology Papers, presenting original research results contributing to the methodology of OR and to its theoretical foundations,*

- *Short Communications, if they correct important errors found in papers previously published in EJOR*