Hand Calibration with Limited Data As The Initial Step Towards System Dynamics Model Validation For COVID-19 Case In Malaysia

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ABSTRACT
This paper presents the manual calibration effort for the System Dynamics (SD) COVID-19 model for Malaysia. This study aims to develop a COVID-19 SD model based on the COVID-19 scenario in Malaysia. The SD model consisted of nine compartments and was adapted based on a standard disease SEIR model using Vensim software. While the development of the model is still ongoing, an initial validation was carried out between 'Actively Infected' and the case data gathered from the Malaysia Ministry of Health's official COVID-19 websites. During this period, the parameters were manually adjusted by hand to align the model's output with the actual data. The expected outcome was not easy to achieve, but the result was acceptable. It is important to note that the lack of such strategies may compromise the model's validity due to uncertainty. This paper also discusses the challenges posed by hand calibration, the lessons learned during this work, and the potential future implications of this work.

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