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Project Information	Project Number : 22H04927	Project Period (FY) : 2022-2026
	Keywords : Policy analysis, COVID-19, SIR model, simulation	

Purpose and Background of the Research

●Outline of the Research

Pandemics can cause not only a public health crisis but also a socioeconomic crisis. However, prior to the outbreak of COVID-19, we lacked a framework to answer the following question: “How might we balance countermeasures against infectious diseases and socioeconomic activity?” By constructing and analyzing various mathematical models, our research aims to present a framework that can serve as a guide in balancing non-pharmaceutical interventions (NPIs) and economic activities during future pandemics. Moreover, we conduct ex-post evaluations of COVID-19-related policies and analyze the medium to long-term effects COVID-19 has had on society. This effort aims to build an environment that can facilitate discussions between policymakers and citizens on the balance between NPIs and economic activities, with a focus on the long-term impacts, should pandemics occur in the future.

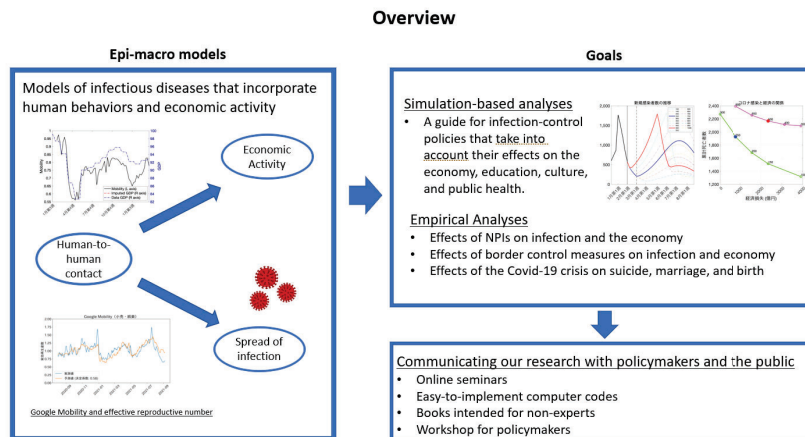


Figure 1. Overview of the research

●Evaluation of Policies during the Covid-19 crisis

Since 2021, our research team has provided policymakers with insights from real-time simulation analyses on the impacts of lockdowns, vaccine distributions, hosting the Olympic Games, and border control measures, etc. In the future, we aim to evaluate the effects of various policies implemented during the COVID-19 pandemic via simulations and empirical analyses. In addition, as a part of our evaluation, we plan to review the role that simulation analyses have played in making policy decisions.

●Analysis of medium to long-term impacts

The medium to long-term impacts of the COVID-19 crisis is another key aspect of our research theme. COVID-19 can not only cause short-term damage to the economy but is also likely to cause severe medium to long-term impacts on society by bringing about major changes to society. Our team has conducted real-time analysis on the impacts COVID-19 has had on marriage, birth rates, and suicide. We plan to continue and deepen our research.

Expected Research Achievements

Through our model analysis, we expect to present new insights for designing optimal NPIs that consider not only the mitigation of new infections but also the socioeconomic effects that pandemic countermeasures can cause. In addition, we will conduct various empirical analyses on the policies implemented during the COVID-19 pandemic.