

Dissertation Evaluation Report

Report No.	Diploma Number: DJ-BIO25	Applicant's Name	Yixiao Lu
Evaluators	<div style="display: flex; justify-content: space-between; margin-bottom: 10px;"> Print name Signature or Seal </div> <div style="margin-bottom: 10px;">Chief Evaluator: <u>Katsunori Yanagihara</u></div> <div style="margin-bottom: 10px;">Evaluator: <u>Hiroshi Mukae</u></div> <div style="margin-bottom: 10px;">Evaluator: <u>Taro Yamamoto</u></div>		
<p style="text-align: center;">Evaluation Report of Dissertation</p> <p>1 . Evaluation of the research purpose.</p> <p>Tuberculosis is one of the top 10 causes of death worldwide. Japan has remained a medium-burden TB country for many years. The TB notification rates have significantly decreased since 1980; however, the incidence of TB increased among the older population, the younger population, and the foreign-born population from high-burden TB countries was observed.</p> <p>A better understanding of the spatial epidemiology of TB could help in the implementation of appropriate and sustainable plans to eliminate TB. Therefore, this study aimed to investigate the spatial, temporal, and space-time dynamics of TB at the <i>machi</i>-level in Nagasaki prefecture. The research purpose is considered appropriate.</p> <p>2 . Evaluation of the research methods.</p> <p>This study was set in Nagasaki prefecture where in total 1,943 <i>machis</i> are registered according to the 2015 national census data. The total population in 2018 was 1.3 million. The global Moran's I was used to measure whether the reported TB infections from <i>machi</i> in Nagasaki prefecture is affected by the neighboring regions. The Kulldorff's space-time scan statistic method was used to detect the temporal, spatial, and space-time clusters of TB infections.</p> <p style="padding-left: 20px;">The research method is valid.</p> <p>3 . Evaluation of the analysis, interpretation and discussion.</p> <p>This study analyzed the spatial, temporal, and space-time clusters of TB infection at the <i>machi</i>-level in Nagasaki prefecture from April 2007 to December 2018. Results showed significant and unique spatial-temporal characteristics of TB infection the region.</p> <p>Therefore, using existing data, such information on the prevailing epidemiological situation of TB infection could help in the development of strategies to effectively eliminate TB in Japan.</p> <p style="margin-top: 20px;">As stated above, the dissertation will greatly contribute to the TB field, and the evaluators uniformly agree that the dissertation is worthy of being approved for a Doctor of Philosophy in Medical Science.</p>			