

博士学位論文 審査結果の要旨

Abstract of review result

芝浦工業大学大学院 理工学研究科 博士（後期）課程

Doctoral thesis defense committee

博士学位論文審査委員会

Main examiner

主査 HENRY Michael

Examiner

審査委員 IYODA Takeshi

Examiner

審査委員 INAZUMI Shinya

Examiner

審査委員 LE Yiping

Examiner

審査委員 KATO Yoshitaka

Examiner

審査委員

氏名 Applicant's Name	Mekonnen Tibebe Chekol
論文題目 Thesis title	Development and application of assessment methods for the sustainable management of road projects based on lean principles
〔論文審査の要旨〕 Abstract of review	
<p>The final defense was held on Friday, July 25, with three committee members present in person and two online. Approximately eight SIT students also joined on-site.</p> <p>The final defense began with a 60-minute presentation by the candidate on the outcomes of his doctoral study. He began by reviewing road construction issues globally and in Ethiopia before introducing lean philosophy and the concept of lean construction. He then reported on the results of applying four lean construction tools to road projects and highlighted their merits and demerits. This served as the basis for the development of a leanness evaluation framework for road projects based on multi-attribute utility theory (MAUT). In this framework, the leanness of road projects was evaluated through a comprehensive set of leanness parameters spanning six dimensions, which were identified and structured through a thorough literature review. The framework was then demonstrated through an empirical study of road construction projects in Addis Ababa, Ethiopia. Two surveys – one on wastes in current road projects and the relative importance of leanness parameters for leanness evaluation, and one on the challenges facing leanness implementation – were carried out with relevant stakeholders from the Addis Ababa City Roads Authority. The weights derived from the social survey were then used to construct a context-specific evaluation equation, which was applied to a set of in-progress road projects to evaluate their current degree of leanness achievement and to identify areas for improvement.</p> <p>In the Q&A, the examiners asked for clarification regarding the originality of the doctoral study. They also inquired about future plans, including how to put the developed framework into practice. It was noted that some analytical approaches may be too advanced for people in the field, and the candidate was encouraged to consider a simplified tool. Other lines of questioning focused on the lack of critical information about the study in the presentation, such as the details of how the leanness parameters were developed, whether the survey sample was representative, and what is the relationship between the different study objectives. The examiners expressed that the candidate should address these issues in the final revision of the thesis.</p> <p>Nonetheless, considering the overall degree of research achievement, the committee members unanimously agreed that the candidate passed the final examination of his doctoral thesis.</p>	