

論文審査の要旨  
Summary of Dissertation Review

博士の専攻分野の名称 Degree	Doctor of Philosophy	氏名 Author	HAEWON NAMGUNG
学位授与の要件	学位規則第4条第①・2項該当		
論文題目 Title of Dissertation Exploring Multiple Stakeholders' Perspectives on Resource Sharing in New Mobility Services: Toward a System of Systems			
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〔論文審査の要旨〕 Summary of Dissertation Review			
<p>The concept of "sharing" is getting more important than other emerging service elements in regional or rural areas. To enrich the discussion of sharing into a single frame, this dissertation connects the concept of System-of-Systems (SoS) with local public transport design. This study aims to make a theoretical and practical contribution by generating value according to the service-dominant logic with the diversified viewpoints of multiple stakeholders.</p> <p>Chapter 2 designs regional and rural public transport by considering how to incorporate individual systems that already exist, each of which is discussed in terms of users, suppliers, and the general public. This chapter looks at the relationship between the subsequent data and the methodologies that will support the proposed SoS structure.</p> <p>Chapter 3 explores service users' heterogeneity when sharing a vehicle's space. It is assumed that the public transport service transports passengers and freight together within a vehicle to expand the insufficient demand in rural areas. A stated preference (SP) survey for conventional buses and integrated transportation was conducted in a rural area in Japan. With the survey data, this chapter explores people's preferences are classified with a heterogeneous value of time (VOT) using latent class modeling.</p> <p>Chapter 4 discusses the optimal operating direction when users with different VOT discussed above use integrated transportation. Based on the public transport utilization ratio, destination, and time zone obtained from the survey, the synthetic demand is simulated through the vehicle routing problem with a time window. The objective function of the operation is to maximize the utility of the users and freights, supposing that they gather at the meeting point to increase the efficiency of the operation.</p> <p>Chapter 5 discusses how multiple operators can transition to a new business through new technologies and services from the operator's viewpoint. An SP survey was conducted on whether to provide the taxi operator with a new business model combining new technologies/services and business implementation. Through this, the chapter figures out the barriers to the process of moving to a new business model and what can be a catalyst to transitioning to a new business model in a repopulating region in Japan. The heterogeneity of preferences was examined at the municipal level through classification based on Japan's local autonomy.</p> <p>Chapter 6 extends the discussion from the existing link function of streets to the new space function (i.e., surrounding infrastructure for users' waiting places at transit stops and pedestrians' walking environments), by setting a stakeholder as a general public citizen. The chapter involved a survey on the people's preferences when a new technology that connects tram-bus and autonomous vehicle are introduced in Hiroshima city and discusses ways to improve the acceptability and safety of these systems.</p> <p>Finally, Chapter 7 summarizes the findings of each chapter and does a cross-case analysis to propose a prototype of the System of Systems with multiple stakeholders' roles. The limitations and the further expected research are also discussed.</p> <p>The applicant has published two reviewed papers in connection with this dissertation. Three more relevant SCI-indexed papers are under review.</p> <p>With the above evidence, all the committee members unanimously recognized that Ms. Haewon Namgung has sufficient knowledge and ability to be awarded a Doctoral Degree of Philosophy.</p>			