

## Section Study on Residents' Acceptance of New Transit Project in Local Cities by TPB

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### 1. Introduction

A new transit project of constructing High Speed Surface Transportation (HSST) is taken as the case of this study. The line under consideration crosses Kusatsu and Otsu cities in Shiga Prefecture, connecting three universities and the residential area to be ended with JR Kusatsu and Ishiyama Station, totally about 11 kilometers, and it is to be extended in the future. The target is to provide convenient, comfortable transportation with high service level to citizens and to promote the new transportation style.

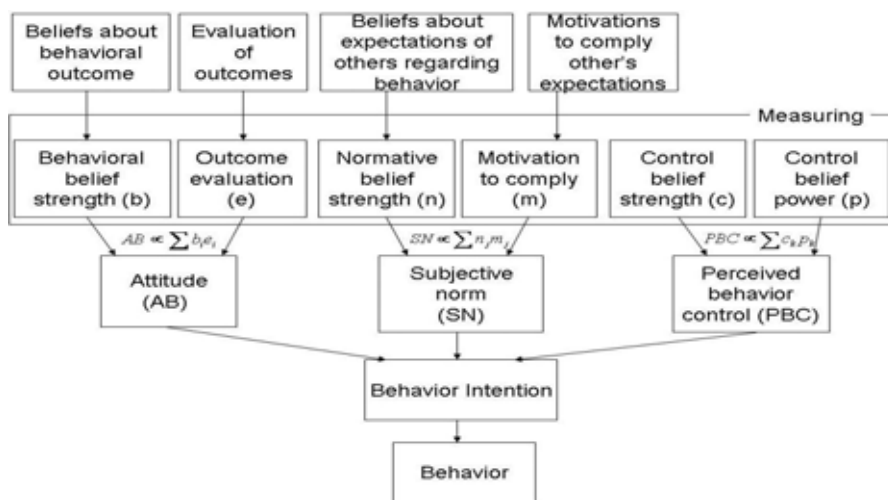


Fig. 1 Frame of Psychological Analysis

Many researches have been carried out to study the relationship of the behavior and psychology. In this study, acceptance and implementation of the new transit module will be evaluated using the Theory of Planned Behavior (TPB) (Ajzen & Fishbein, 1980) as a theoretical framework. TPB has been proved to be able to describe the psychological process to reach an intention, which is predicted to directly influence conduct of the behavior. The simulation frame has been shown in Fig. 1.

Attitudes are a function of beliefs about the behavioral outcome and an evaluation of how those outcomes are desirable. Normative influences are what an individual believes others think they should do (normative beliefs) and how many individuals feel influenced by these social referents (motivation to comply). Perceived behavior control is perceived ease or difficulty in performing a behavior. Therefore, the model does not include any

### 2. Planning Theory

Though transportation plan is centered on transportation policies or infrastructure, transportation should be considered as a tool for people to realize some activities. So it is said that travel demand is a derived demand. There comes the necessity to find out the process of decision making for trip. This will lead to the psychological analysis.

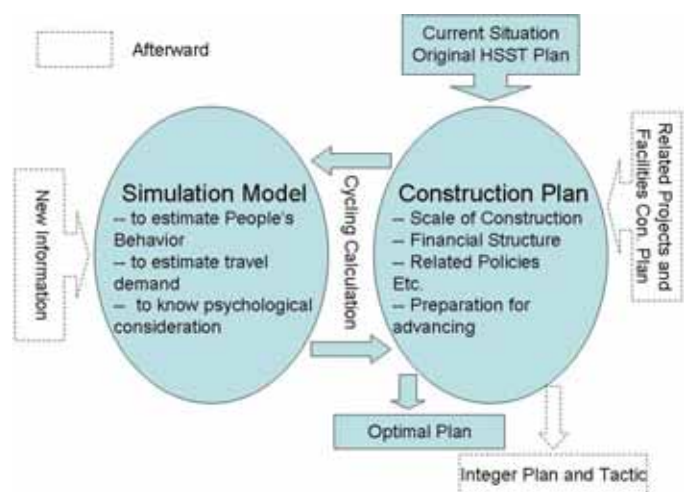


Fig. 2 Step-in Hybrid Planning System

background variables, such as age, marital status, or education. These demographic variables are posited to indirectly influence behavioral intention and behavior through their interactions on the three elements mentioned above. Brief-based measure of each element is obtained by applying the expectancy-value formula to the measuring data.

The construction of behavior simulation model will contribute as an important part to the step-in hybrid planning system (shown in Fig. 2). The optimal searching starts from the input of current situation and original plan. Change the plan like the scale of stations will produce change in behavior simulation system. If the change is in positive direction, modification of plan will be continued, until convergence appears, which means the period optimal plan is got. Regarding the longer time change and the desire for more service contents, related projects, which produce correlation with the HSST plan, such as the NPO project of reconstruction on old Kusatsu River, will be added into evaluation as a step-in tactics in long period. This method has been proved to be rational in planning for construction.

### 3. Research Process

The questionnaires were distributed randomly in residential area of the two cities and 152 samples were usable. SPSS was applied for descriptive, factor reduction and inferential analysis. The simulation

structural equation model (SEM) was made with Amos 5, shown in Fig.3.

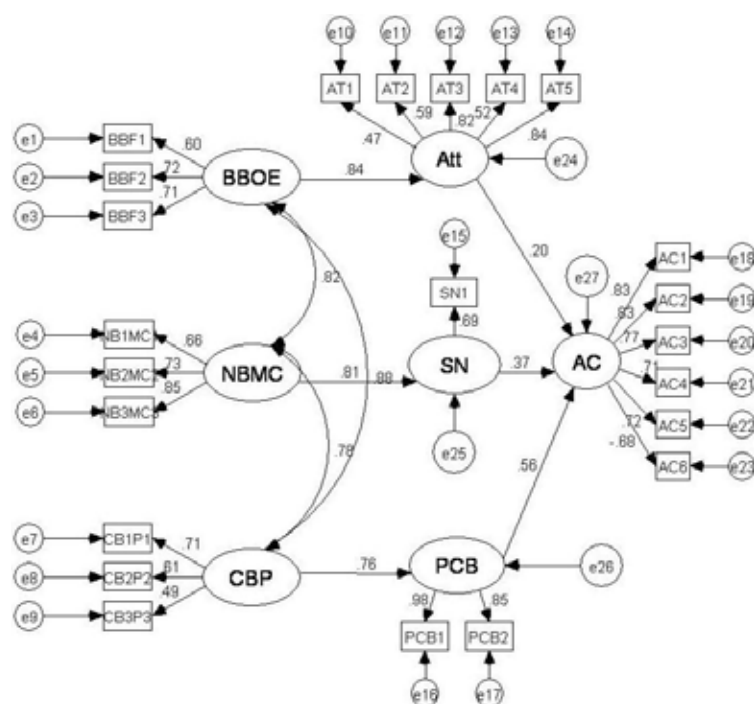


Fig.3 Simulation Model based on TPB

should still base OD data and personal trip survey. In the other aspect, land use, e.g. construction of new shopping center, will influence passengers' decision in using new transit or not. As mentioned before, the NPO project of reconstructing old Kusatsu River, if be taken into consideration with the HSST, will produce more positive affect. This concept will be studied in the further study.

Secondly, in subjective norm, we investigate the influence from groups of others to personal decision in travel behavior. The coefficient is 0.85, which is larger than the other two factors in SN group: norm to contribute the environment protection and media. It means that the passengers would like to follow groups in social behavior.

In future study, questionnaire will be performed with students and employees. More contents will be added in, and some new structure will be expanded from the original framework.

### 4. Conclusion

Based on the finding of the study, several salient implications can be derived. Firstly, PCB contributes the most in explain intention of acceptance, although the correlative coefficients between these three components express close relationship. It means that most residents' decision of taking what kind of transportation facilities or choosing what kind of travel pattern depends mostly on the accessibility or service time or the position of facilities related in their trip. So the planning transit in the local area