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Research

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PLS Modeling in Order to Satisfaction Criteria Selection of Bus System (Case Study: Bus System of Zanjan City)

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ABSTRACT

Quality of service is defined as a comparison between customer expectations and service comprehension. Assessment and improvement of bus service quality is so important in order to increase the car ownership rate. In particular, research on the characteristics of service quality is important because of the high impact on customer satisfaction. Previous studies indicate that citizens have six indicators of travel time, convenience, accessibility, price, comfort, information, and safety are more important of other indicators. In this study, modeling of service quality indicators in the bus system of Zanjan city has been investigated. In this way, by these indicators, the most important factors of customer satisfaction were identified. The research method was empirical and the travelers were surveyed and the data extracted from the questionnaires were analyzed using the Smart PLS software. It is worth noting that at the end, a model was developed to determine customer satisfaction with the mentioned variables (quality indicators), which had the highest weights, respectively, safety, relaxation, travel time and convenience. In addition, the satisfaction of this system was 59%.

Key words: Structural models, Satisfaction indicators, Urban bus system, PLS.

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1. INTRODUCTION

Due to the limited capacity of the road network, excessive vehicle congestion has resulted in many problems such as waste of time, increased fuel and energy consumption, environmental pollution, noise and etc. (1). Hence, one of the important solutions to solve these problems is to reduce the use of private vehicles and increase the share of public transportation in the movement of passengers, along with the promotion of utility in this fleet. In fact, increasing supply and reducing demand through sustainable development of the public transportation system is an effective step in improving traffic conditions (2). Compared to a variety of public transport types, the optimization of the bus network, in particular the new modes of rapid bus transit, are the main, low-cost and fastest solutions (2). The most important goals of this system are increasing the utility of the bus, increasing passenger transportation efficiency, reducing environmental pollutants and fuel consumption, and

improvement in traffic situation, all of which are aimed at correcting the pattern of consumption in the field of urban management (3). The planning, design and implementation of bus routes, especially with regard to the indicators of macro policies, require specific measures. The use of high occupancy vehicle based on the principle of more passenger travel with less cars is superior to other transportation options from a variety of aspects, such as congestion, safety, air pollution, energy consumption, etc. (2). Customer satisfaction of public transportation can be measured as a general level of customer satisfaction and is defined as a percentage of customer expectations that has been met. Customer's commitment to continuous use of bus services is expressed by a set of attitudes and behaviors that can be investigated by measuring the degree of satisfaction of individuals (4). Customers use appropriate indicators, critics, and suggestions to evaluate the relevant service parameters, and ultimately define and perform actions to improve the services provided to