

**Keywords:** urban public passenger transport; the evaluation of the effectiveness; indicators of effectiveness; efficiency; performance; quality; the indexation-rating model; factor analysis

**Sergey MOCHALIN, Mariya KASPER**

Siberian State Automobile and Highway University  
Mira av., 5, 644080, Omsk, Russia

**Oleg NIKIFOROV\***

Murmansk Branch of Emperor Alexander I St. Petersburg State Transport University  
Rybny proezd, 3, 183038, Murmansk, Russia

**Grigory LEVKIN, Natali KURSHAKOVA**

Omsk State Transport University  
Marx av., 35, 644046 Omsk, Russia

\*Corresponding author. e-mail: [nikifrv-oleg@rambler.ru](mailto:nikifrv-oleg@rambler.ru)

## DEVELOPMENT OF PROVISIONS FOR EVALUATING THE EFFECTIVENESS OF URBAN PUBLIC PASSENGER TRANSPORT SYSTEM

**Summary.** The work presents a methodology that allows us to evaluate the effectiveness of the system in accordance with accepted standards in terms of the three components of the “passenger–carrier–department” system, taking into account the interests of each side. The given comprehensive effectiveness evaluation of the urban public passenger transport system shows that a new scientific idea consists in forming fundamentally new sets of indicators for each participant of the system (passenger–carrier–department of transport) that correspond to the conditions of functioning of the urban passenger transport system in Russian Federation. The article presents a classification model for the formation of a basic system of indicators and a functional scheme for grouping and ranking them. The effectiveness of the urban public passenger transport system can be considered separately for each participant in the system from its side, in two directions: horizontal (by year, for example, for an enterprise) and vertical (in the current period for all participants).

### 1. INTRODUCTION

In accordance with the transport strategy of the Russian Federation, “the priority development of public transport systems involves improving competitiveness, availability, and quality of passenger traffic...”. To solve this problem, “strategies and development concepts in accordance with the achieved results” are proposed. However, a comprehensive evaluation of the effectiveness of the urban public passenger transport system (as the degree of implementation of planned activities and achievement of planned results) is based on methods with low accuracy and reliability. Uniform methodology for the integrated evaluation of the effectiveness of urban public passenger transport system has not been developed yet [9; 13]. The lack of a comprehensiveness of the effectiveness of the urban public passenger transport system is the reason for the untimely management decisions, which negatively affects the efficiency of transportation and the quality of services.

The system of urban public passenger transport, in general, is the area of interaction of the three systems: city (and its government and departments), transport (with transport enterprises), and population (passengers as customers). Thus, new scientifically grounded solutions that take into account the methodological basis for evaluating the effectiveness of complex systems and consider the