ANALYSIS OF IMPROVING THE EFFICIENCY OF TERMIZ CITY PUBLIC TRANSPORT STATIONS

Mirzayev Alisherjon Shamsutdin o'g'li
intern-teacher, Termiz Institute of Engineering and Technology
ali2016sher2016@gmail.com; +998936380033

Abdivoidov Rustam Baxtiyor o'g'li
intern-teacher, Termiz Institute of Engineering and Technology
rustamabdivoidov443@gmail.com; +998919760896

ANNOTATION

In this research work, it is discussed ways to increase the efficiency of services provided to passengers in public transport, in particular, to create amenities for passengers based on increasing the capacity of stations. In this regard, proposals were made for the development of new and modern technologies for passenger transportation, the implementation of scientific research in these areas of activity, the analysis and elimination of problems.

Keywords: transport, passengers, smart station, display, geo-tracker.

INTRODUCTION

Currently, due to the increasing population and mobility in our country, special attention is paid to improving the efficiency of the public transport system based on the provision of quality, safe and reliable service to passengers. At a time when the demand and need of the city residents for motor vehicles is increasing day by day in Ohamiz, large-scale measures aimed at ensuring the stability of the public transport service are being implemented in the cities.

Saving passengers' time, providing fast and high-quality service, and improving public transport bus stops are among the problems in the transport system. The use of intelligent technologies makes it possible to eliminate existing problems and systematically digitize the transport system.

As of July 1, 2023, the total permanent population of Surkhandarya region was 2 million 821 thousand 900 people [4]. In order to develop passenger transport services by 2026, taking into account the ever-increasing population, the establishment of new innovative station services in the region is one of the

important issues. Ideas and proposals for creating convenience for passengers by increasing the capacity of stations in public transport are presented on the basis of analysis in this research work.

MATERIAL AND METHODS

Bus stops are one of the most important parts of public transport. In most cases, we have to use parking spaces that do not meet modern requirements. Many modern parking lots do not fulfill their basic requirements, for example, most parking lots are made entirely of glass panels or polycarbonate, and have a shape that does not protect against weather conditions such as sun, rain and wind, and still sanitary. consists of stations that accommodate a small number of people who do not meet the requirements.

One of the main problems is that the available stops have limited access, and there are not enough facilities for disabled people, tourists, the elderly and children. Most of the city's residents who do not have private cars spend most of their personal time at bus stops waiting for public transport to arrive.

In this era of rapid development of information technology, even the time spent at the bus stop should be efficient and comfortable. The goal is to analyze the development of a multi-functional endpoint that is accessible to all.

The analysis of comfort indicators of the stations shows that the laconic form of the stations is covered with glass parts on both sides. The glass design does not block the view of the oncoming traffic, but this, in turn, provides for other bad weather conditions. acts as a barrier. And the fact that the stations are illuminated even at night allows convenient use of the parking space at any time. Such a design helps not only the residents of the city, but also the tourists to move easily.

The stations should be equipped with an electronic display that allows people to open a map of the city and find all available bus routes and information about the appropriate transport to reach the destination. Next to the display should be equipped with emergency call buttons, as well as tools that allow you to call the dispatcher and call a taxi service by voice message.

Also, there is a voice announcement at the stops, which informs about the approaching traffic, which ensures the unhindered use of public transport for the blind and children.

Pic. 1.1-1.2. Stations equipped with display and buttons.

Equipping bus stops based on modern technologies, in turn, creates additional comfort for passengers. As a result of these facilities, we can achieve an increase in public transport trust and public transport efficiency.

Smart parking modules form a single network with public transport, thanks to which you can monitor the arrival time of the bus and build a route around the city. The smart station indicates the arrival time of the transport, provides information about the traffic schedule, shows the routes passing through this station, as well as the ticket prices. Here you can use free Wi-Fi and charge your smartphone. Seats for station passengers are heated by solar batteries and create a comfortable temperature. Interactive pavilions are designed in a modern way and fit perfectly into the urban landscape. Smart stops also have screens for advertising. Terminals for selling tickets will be installed here in the future.
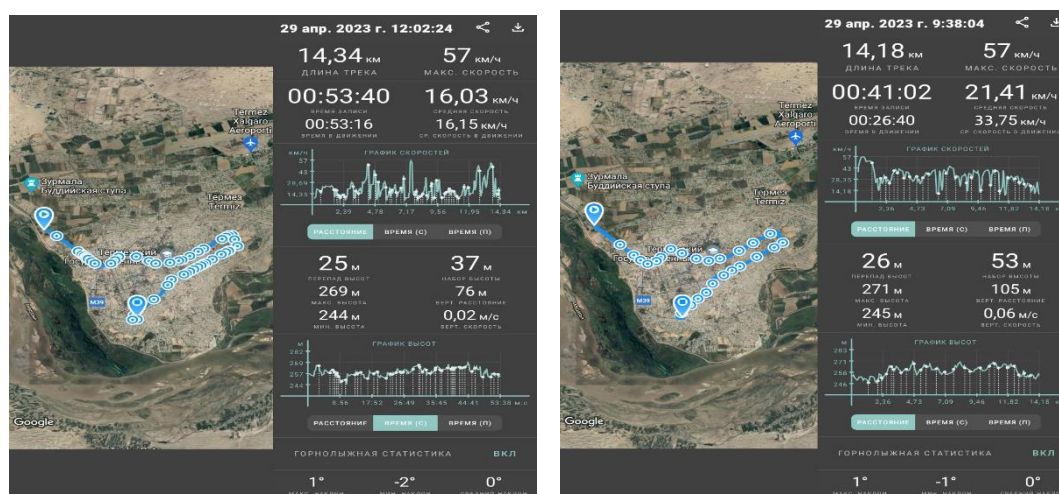
DISCUSSION

Convenient and rational placement of bus stops in cities is a requirement of today. As far as possible, bus stops should not cause damage to vehicles moving on city roads. The reason is that the bus stop point is mainly an area where vehicles and passengers are crowded. The optimal distance between stops on city bus routes is recommended to be from 300 to 700 meters, depending on the length of the passenger journey. In suburban passenger traffic, the inter-stop distance is 700-1000 meters, and in bus routes to long-distance destinations, taking into account residential areas on the way. When calculating the stopping time at intermediate stops, it is accepted to set 1.5-2.0 seconds for a passenger to get on the bus, and a maximum of 1.5 seconds for getting off.

Public transport No. 7 in the city of Termiz was chosen as a test study, and a practical experiment was conducted to determine the time it takes for the bus to

arrive from the Termiz Bus Station to "Istiqlol" Square. In this case, the traffic indicators of public transport were implemented on the basis of the modern "Geo Tracker" program, and the time spent on each stop was studied and analyzed.

RESULS

Before the rational placement of bus stops using the Geo-tracker program, studies were conducted on the current state of public transport. Initially, when the travel time of public transport from Termiz Avtosohbekati to "Istiqlal" square (farmer's market) was calculated using the "Geo tracker" application, the total time of the bus was 53 minutes and 16 seconds. made requests. In addition to the fact that public transport has to stop at stops during the journey, wasting time by stopping passengers delays the arrival times of passengers to their destinations for a certain period, increases the fuel costs of the bus, as well as the costs caused by public transport stopping on the roadway. The carrying capacity of the road is slightly reduced, which endangers the movement of pedestrians and other motor vehicles.

Pic. 1.3-1.4. The results of public transport from Termiz Autosohbekati to "Istiqlal" square during the initial and subsequent journeys.

At the next stage of the test, using the geo-tracker application, taking into account the maximum and minimum exits of passengers, the stops were placed rationally based on the established standards. The bus stopped only at designated stops and made 25 stops. As a result of the test, the Bus arrived at the destination

in 26 minutes and 40 seconds, saving 26 minutes and 36 seconds from the initial state and reaching the destination earlier.

Table 1.1 We take the average value of all the received data and compare the initial and subsequent indicators

Technical indicators	Initial state	Next state
Walking distance	14 km	14 km
Time in action	00:53:16 h	00:26:40 h
Maximum speed	57 km/h	57 km/h
Average speed	16,03 km/h	21,41 km/h
Average speed in motion	16,15 km/h	33,75 km/h
Number of stops	45	20
Time spent at each stop	10-50 second	60 second

As can be seen from the table, as a result of the comparison, many stops of buses are currently a negative indicator for buses and passengers. Many stops in turn cause a lot of time and a decrease in speed. During the research work, by reducing the number of stops from 45 to 20, we will achieve a reduction of 00:26:19 hours, in turn, the average speed of public transport will increase significantly.

REFERENCES:

1. Amonovich U. I., Kuziyev A. U., Shamsutdin o'g'li M. A. YO'LOVCHILARNI SHAHARLARARO TASHISHNI TASHKIL ETISHDA SAMARALI TEXNOLOGIYALARNI ISHLAB CHIQISH //ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ. – 2023. – Т. 24. – №. 2. – С. 109-113.

2. Kuziev A.U, Mirzayev A.Sh., Xolboyev Sh.K. Improvement of quality indicators of publictransport services. International bulletin of engineering and technology.Volume 2, Issue 12 December Page 79-84

3. Abdullayev B.I., Luqmonov M.M., Karimov F.Z., Mirzayev A.Sh. Yo'lovchilarning manzillariga o'z vaqtida yetib borishlarini ta'minlash masalalari // "Barqaror transport tizimlari –barqaror iqtisodiyot uchun" xalqaro ilmiy-texnik anjuman 2022-yil

4. http://www.stat.uz