PASSENGER FLOW MONITORING METHODS AND ANALYSIS

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Annotation. The so-called passenger flow to passengers, which must be transported in a certain direction and Section (section) of roads. In order to fully satisfy the demand of the population for transportation and provide them with high-quality transport service, information about the flow of passengers and their characteristics will be kera. This article describes the methods, conditions, processes and their analysis of the study of passenger flows in urban and suburban areas.
Keywords: passenger flow, transportation, robbery, questionnaire, Ticket, Schedule method, robbery, stop.

Statistical information about passenger traffic can be determined using various methods:

- to the questionnaire;
- looting;
- eye observation;
- table;
- questionnaire;
- tickets.

It is also worth mentioning that the flow of passengers is either gross (buses running in the entire city, district or direction are covered) or selective (one of the buses running in the city, district or direction
part) can learn. Which method to use is selected based on what purpose the passenger flow is being determined.

Questionnaire method. In this method, special questionnaires are prepared and distributed to the population to study the flow of passengers. The questionnaire shows how many times and for what purpose each population uses the transport service within a certain period, which questions such as the direction and how far it will go will be written.

The data obtained will be used to assess the quality of transportation services to the population, develop a plan for the development of the transport network in the future, select the type of transport and solve such issues as the urban transport plan.

At the same time that the questionnaire method is the best tool for solving the most pressing issues before transport, it also has some disadvantages. Such disadvantages can be attributed to:

1. The complexity of conducting a questionnaire survey (preparation of questionnaires, their distribution to each household and Re-collection).

2. The fact that a lot of time is spent on processing the data of the questionnaire.
3. Inability to accurately indicate the "rush" time of the flow of passengers on the routes by the hours of the day and the most kata values \ u200b \ u200bof the traffic and distribution of traffic along the sections of the route.
Method of looting.At the same time that the looting method is the most used in the study of passenger traffic, the collection and analysis of initial data is the most labor-intensive method.
The main purpose of the looting method is to determine the amount of passengers going out, falling and passing without falling into the vehicle at the stops.
This method allows you to determine the flow of passengers in each direction by the hours of the day, sections of the route, the amount and unevenness coefficients in the direction of movement, the average distance of passenger transportation, the total productivity of work performed (passenger and passenger-in kilometers). The study of passenger traffic in the Talon method is carried out as follows. A looting is prepared in which a more order number is written than the total number of stops (fig.1).

1	2	3	4	5	6	Tushayotganingizda talonni hisobchiga topshiring
7	8	9	10	11	12	
13	14	15	16	17	18	
19	20	21	22	23	24	

Figure 1.The appearance of Talon.

At each station, the accountant will mark which stop (mark the station number) and give the pass to the passengers who are going to transport, they will return it at the station where they are going down, and the pass will be recorded at which station the passenger fell. Collected data are analyzed and the connection of each passenger by stops is determined (Table 3).
Calculations are carried out in alohidalah in the direction of traffic (correct direction, reverse direction).
A preliminary analysis of passenger information will be the basis for making the first proposals on which type of bus route it is advisable to open in the direction under consideration. The main criterion for choosing which type of route is the level of occupancy of buses served. In this case, it is necessary to choose the type of bus route in such a way that the level of capacity use of the bus is high (the profitability of the route is ensured), thereby providing comfort for passengers at one time (so that the level of capacity use does not exceed the norm).
Passenger correspondency can be in the views in Figure 2.
Depending on the appearance of passenger communication G.A.Varelopulo recommends choosing the following type of routes:

1. Figure 2, position in 1. As can be seen from the picture, it turns out that the most passenger exchange occurs at Point c, that is, at this point the bulk of passengers is updated. Therefore, in Part A-c of such a direction, it will be advisable to open a shortened direction at peak times.

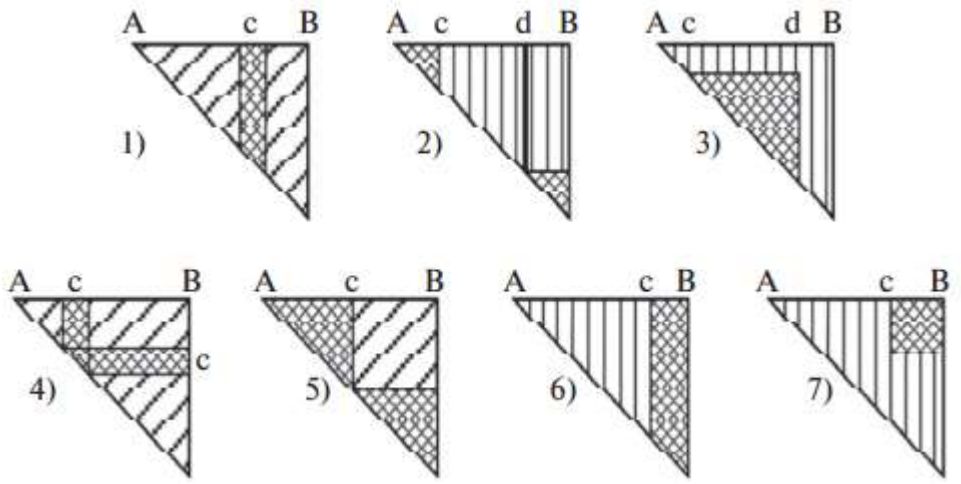

Figure 2.General views of passenger communication on the route (most passenger communications are described by checkered barcodes).

2. Figure 2, case in 2. As you can see from the picture, it turns out that the most passenger exchange occurs on sections A-c and d-B, so it will be more expedient to organize shortened routes on two sections of this route, namely on sections A-c and d-B.
3. Figure 2, case in 3. As you can see from the picture, C-d is the most passenger transport on the plots. When such situations arise, the transfer of part of other bus routes from this section can give good results (on the main streets of Andijan, this method is widely used. For example, Baburshokh Street, Muqimi streets, etc.).
4. Figure 2, condition in 4. As you can see from the picture, C is the most passengers on the plot, as long as they exchange or are described differently, the most passengers can move from one transport to another. So, in such cases, special attention should be paid to reducing the correct placement of bus stops (the distance of passengers walking from the station to the station).
5. Figure 2, 5. In these cases, opening two routes dividing the bus route in two can give good results.
6. Figure 2, 6. As can be seen from the picture, it is said that this route is a collecting route, that is, passengers on a-c sections mainly travel a longer distance. This situation is observed when transporting passengers from massifs located outside the city. For example, routes connecting the District of Sirli with the city center.
7. Figure 2, 7. In such cases, it will be advisable for some buses to move in a simple direction, and some in a fast direction.
Method of observation (chambing) by eye.This method is quite soda and at the same time approximate and is used to study the flow of passengers at the most loaded stops of the route. To do this, the accountants stand at the stops and evaluate how many passengers are inside the bus through a six-point system (fig .
- 1 point-more than half of the seats are empty;
- 2 points-the seats are all busy;
- 3 points-the seats are all occupied and half of the places intended for standing are occupied;
- 4 points-the capacity of the bus is used almost completely (2 passengers per 1 m2 of free space are coming straight);
- 5 points-the capacity of the bus is fully used (4 passengers per 1 m2 of free space);

- 6 points-the bus is overflowing, and passengers cannot get to it (8 passengers per 1 m2 of free space are accommodating).

In order to correctly determine how many passengers are driving in a vehicle when using this method, it is necessary to attach special importance to the bus model, to the fact that the seats have not changed in relation to the factory that produced the bus.

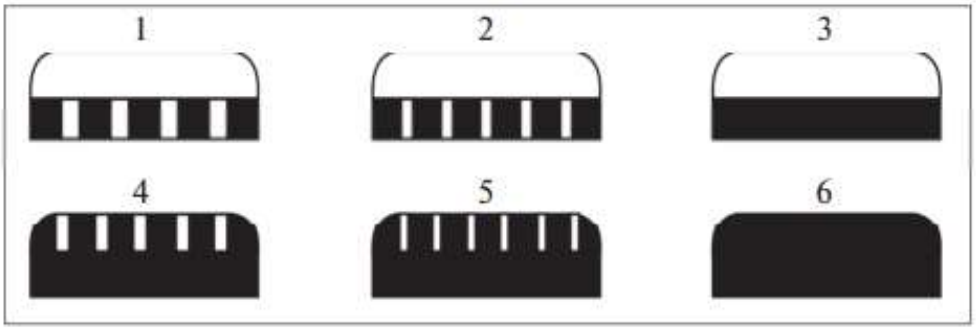

Figure 3. Points of the bus fullness level in the draft by eye.

Since the method of eye observation is simple and requires relatively little labor, it will be advisable to regularly apply in each direction when studying the flow of passengers by the hours of the day, days of the week and seasons of the year.

Table method. The schedule method is usually used to study the flow of passengers at some point in the week (most often Wednesday and Thursday) at a time in all types of urban passenger transport (as an exception, on selected routes).

In this case, students of colleges and institutes are also involved in it, since people in transport enterprises constitute a disadvantage.

To carry out the observation, special tables are prepared and multiplied in sufficient quantities. For several directions, a group of accountants and its leader are appointed. Before starting the account, the group leaders give instructions to the accountants on the rules for filling out the table. At the same time, some organizational issues should also be resolved in order to study passenger traffic. For example, where do accountants gather on the day of observation, how to deliver to the places of account start and to their address after the end of the report, the rest chart, etc.

Request method. This method is divided into two, and in the first, a leaflet with questions is sent to the population through communication sections. Using the survey method, it serves as the basis for solving such issues as the connection of stops with other stops, the location probability of transport nodes, what routes to organize to improve the quality of transportation services to residents who have moved to new topics, the correct choice of types and capacity of transport.

In the second method of conducting a survey, the leaflet is not sent to apartments. They are filled in at the stops by accountants with passengers through a question and answer. In some cases, accountants can also distribute the flyer to passengers traveling in transport and collect the completed flyers from them.

Ticket method. It will be advisable to use it when studying the flow of passengers, the volume of passengers transported, the distances of their average transportation in routes where monthly tickets do not pass (suburban, intercity, etc.).

The main reason why it is not advisable to use such a method within the city is that most passengers traveling within the city are provided with benefits for the use of transport (benefits that are provided to retired citizens, students, students, etc.).

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