

JOURNAL OF TRANSPORT



ISSUE 2, 2025 vol. 2

E-ISSN: 2181-2438

ISSN: 3060-5164



RESEARCH, INNOVATION, RESULTS



**TOSHKENT DAVLAT
TRANSPORT UNIVERSITETI**

Tashkent state
transport university



JOURNAL OF TRANSPORT

RESEARCH, INNOVATION, RESULTS

E-ISSN: 2181-2438

ISSN: 3060-5164

VOLUME 2, ISSUE 2

JUNE, 2025



jot.tstu.uz

TASHKENT STATE TRANSPORT UNIVERSITY

JOURNAL OF TRANSPORT

SCIENTIFIC-TECHNICAL AND SCIENTIFIC INNOVATION JOURNAL

VOLUME 2, ISSUE 2 JUNE, 2025

EDITOR-IN-CHIEF

SAID S. SHAUMAROV

Professor, Doctor of Sciences in Technics, Tashkent State Transport University

Deputy Chief Editor

Miraziz M. Talipov

Doctor of Philosophy in Technical Sciences, Tashkent State Transport University

The “**Journal of Transport**” established by Tashkent State Transport University (TSTU), is a prestigious scientific-technical and innovation-focused publication aimed at disseminating cutting-edge research and applied studies in the field of transport and related disciplines. Located at Temiryo‘lchilar Street, 1, office 465, Tashkent, Uzbekistan (100167), the journal operates as a dynamic platform for both national and international academic and professional communities. Submissions and inquiries can be directed to the editorial office via email at jot@tstu.uz.

The Journal of Transport showcases groundbreaking scientific and applied research conducted by transport-oriented universities, higher educational institutions, research centers, and institutes both within the Republic of Uzbekistan and globally. Recognized for its academic rigor, the journal is included in the prestigious list of scientific publications endorsed by the decree of the Presidium of the Higher Attestation Commission No. 353/3 dated April 6, 2024. This inclusion signifies its role as a vital repository for publishing primary scientific findings from doctoral dissertations, including Doctor of Philosophy (PhD) and Doctor of Science (DSc) candidates in the technical and economic sciences.

Published quarterly, the journal provides a broad spectrum of high-quality research articles across diverse areas, including but not limited to:

- Economics of Transport
- Transport Process Organization and Logistics
- Rolling Stock and Train Traction
- Research, Design, and Construction of Railways, Highways, and Airfields, including Technology
- Technosphere Safety
- Power Supply, Electric Rolling Stock, Automation and Telemechanics, Radio Engineering and Communications
- Technological Machinery and Equipment
- Geodesy and Geoinformatics
- Automotive Service
- Air Traffic Control and Aircraft Maintenance
- Traffic Organization
- Railway and Road Operations

The journal benefits from its official recognition under Certificate No. 1150 issued by the Information and Mass Communications Agency, functioning under the Administration of the President of the Republic of Uzbekistan. With its E-ISSN 2181-2438, ISSN 3060-5164 the publication upholds international standards of quality and accessibility.

Articles are published in Uzbek, Russian, and English, ensuring a wide-reaching audience and fostering cross-cultural academic exchange. As a beacon of academic excellence, the "Journal of Transport" continues to serve as a vital conduit for knowledge dissemination, collaboration, and innovation in the transport sector and related fields.

Increasing the attractiveness of suburban passenger train services

D.B. Butunov¹, Sh.A. Daminov¹, Sh.F. Ergashev¹

¹Tashkent state transport university, Tashkent, Uzbekistan

Abstract:

The purpose of the study is to analyze the movement of suburban passenger trains in the logistics of railway passenger transportation. In organizing the movement of suburban passenger trains, the movement of trains running in the direction of the cities of Tashkent and Khojikit was studied. The location of stations and stops on the Tashkent-Khojikit-Tashkent and Tashkent-Chinorkent-Tashkent (express) trains running on this route was presented graphically. It was found that the use of suburban trains among residents coming from neighboring cities is low. One of the main reasons for this was the inconvenient location of the train stations, stations and stops on the Tashkent-Khojikit-Tashkent and Tashkent-Chinorkent-Tashkent (express) train routes. Therefore, it was proposed to use the German experience in organizing suburban train traffic. This will create an opportunity to increase the attractiveness of suburban passenger train traffic among the population.

Keywords:

passenger transportation logistics, express, single transport card, marketing and advertising, station

Shahar atrofi yo'lovchi poyezdlari harakatini tashkil etish jozibadorligini oshirish

Butunov D.B.¹, Daminov Sh.A.¹, Ergashev Sh.F.¹

¹Toshkent davlat transport universiteti, Toshkent, O'zbekiston

Annotatsiya:

Tadqiqotning maqsadi temir yo'l transporti yo'lovchi tashish logistikasida shahar atrofi yo'lovchi poyezdlar harakatini tahlil qilishdan iborat. Shahar atrofi yo'lovchi poyezdlari harakatini tashkil etishda Toshkent va Xojikit shaharlari yo'nalishida harakat qilayotgan poyezdlar harakati o'rganib chiqildi. Ushbu yo'nalishda harakatlanayotgan Toshkent-Xojikit-Toshkent va Toshkent-Chinorkent-Toshkent (ekspres) poyezdlar harakati yo'nalishidagi stansiyalar va to'xtash punktlari joylashuv holati grafik usulda taqdim etildi. Toshkent shahriga yaqin atrof shaharlardan keluvchi aholi orasida shahar atrof poyezdlaridan foydalanish ko'rsatkichlari past ekanligi aniqlandi. Bunda asosiy sabablardan biri sifatida Toshkent-Xojikit-Toshkent va Toshkent-Chinorkent-Toshkent poyezdlar harakati yo'nalishidagi vokzal, stansiya va to'xtash punktlari joylashuvi aholiga noqulay ekanligi aniqlandi. Shu sababli shahar atrofi poyezdlar harakatini tashkil etishda Germaniya tajribasidan foydalanish taklif etildi. Bu orqali shahar atrofi yo'lovchi poyezdlar harakatini aholi orasida jozibadorligini oshirish imkoniyati yaratiladi.

Kalit so'zlar:

Yo'lovchi tashish logistikasi, ekspres, yagona transport kartasi, marketing va reklama, stansiya

1. Kirish

Hozirgi kunda temir yo'l transporti orqali yo'lovchilarga xizmat ko'rsatish yo'lovchi tashish logistikasining eng muhim tarkibiy qismlaridan biri hisoblanadi [5, 9]. Bunda tashishlar uch turdagi, uzoq, mahalliy va shahar atrofi masofalarida amalga oshiriladi [1-4]. Bu yerda shahar atrofi tashishlari ommaviy ravishda yo'lovchi oqimlarga xizmat ko'rsatishi [1, 8-10] hisobiga alohida ahamiyatga ega.

Hozirgi kunga kelib aholi ko'p istiqomat qiladigan (megapolis) shaharlarda transport tizimini isloh qilish va undan samarali foydalanish asosiy masalalardan biri sanaladi. O'zbekiston Respublikasi geografik jihatdan temir yo'l transportini qurish va undan foydalanish uchun qulay hudud hisoblanadi [8, 9]. Shu bilan birgalikda aholining asosiy qismi kundalik transport vositalariga bo'lgan

ehtiyojlarini qondirishda asosan avtomobil va temir yo'l transportidan kengroq foydalanishadi.

Statistik ma'lumotlarga ko'ra hozirgi kunda umumiy yo'lovchi tashishning 91% avtomobil transporti, 6% temir yo'l transporti, 2% havo transporti va 1% boshqa transport turlari hisobiga to'g'ri kelishi keltirilgan [8, 10]. Biroq, avtomobil transporti vositalaridan aholining ommaviy ravishda foydalanishi ortidan juda ham jiddiy muammolar yuzaga kelib chiqayotgani hech kimga sir emas. Jumladan bularga: havoning ifloslanishi yani avtomobil yonilg'i yoqishi orqali havoga karbonat angidrit gazi (CO₂), azod oksidi (NO_x) ajralib chiqishi, doimiy shovqinni yuzaga kelishi, yuqori darajadagi tirbandliklarning paydo bo'lishi, yo'l harakati hodisalari sodir bo'lish ehtimolini yuqori ekanligi, shaharlarning ekologik holati va arxitekturasiga salbiy ta'sir ko'rsatishi kabi muammolarni keltirib chiqarishi BMTning atrof-muhitni himoya qilish tashkiloti (UNEP) tomonidan keltirib o'tilgan [11, 12]. Shu munosabat bilan butun dunyoda ekologik toza transport turi sanaladigan temir

^a <https://orcid.org/0009-0009-4165-0257>

^b <https://orcid.org/0009-0002-8934-8718>

^c <https://orcid.org/0009-0008-8865-5648>



yo'l transportidan ommaviy foydalanishga bo'lgan ehtiyoj yildan yilga ortib bormoqda. Jumladan jahondagi eng rivojlangan davlatlardan biri Germaniyada ham ushbu muammo dolzarb hisoblanadi. Hozirgi kunda Germaniya aholisining 68% avtomobil transporti orqali kundalik tarzda ishga borish uchun foydalanmoqda, temir yo'l transportidan 4.6%, umumiy jamoat transportidan 14% ya'ni (avtobus, tramvay, shahar atrofi poyezdi, yer osti va yer usti metrolari va h.k.), velosiped orqali 10.5% va piyoda ishga boradiganlar esa 6.7% ni tashkil etadi [2-7].

Shuning uchun shahar atrofi poyezdlari harakatini tashkil etishda yo'lovchi vokzallari, stansiyalari va to'xtash punktlarini aholiga qulay hududda (transport turlari harakati yaxshi rivojlangan) joylashtirish maqsadga muvofiqdir.

2. Tadqiqot metodologiyasi

Adabiyotlar tahlili va metodologiyasi. Shahar atrofi yo'lovchi poyezdlari harakatini samarali tashkil etish, ularni harakatiga salbiy ta'sir ko'rsatuvchi omillarni aniqlash, tahlil qilish va baholash hamda shahar atrofi poyezdlar harakatini tashkil etishda boshqa turdagi jamoat transportlari bilan muvofiqlashtirish usullarini rivojlantirish bo'yicha ko'plab olim va mutaxassislar ilmiy izlanishlar olib borgan [3, 4, 6]. Jumladan, muallif T.A. Malakhova o'zining [3] ilmiy ishida shahar atrofi yo'lovchi poyezdlar harakatini tashkil samarali tashkil etish uchun boshqa turdagi yo'lovchi poyezdlari va jamoat transportlari (tramvay va avtobus)lar o'rtasida multimodal tashishlarni tashkil etishni taklif etgan. Bunda yo'lovchilar yagona transport kartasi orqali transport turlari aro harakatlanganda chipta xarid qilish bilan bog'liq yuzaga keladigan muommalarni bartaraf etish imkoniyati yaratilgan.

Weining Haoa [4] da yo'lovchi poyezdlari harakatini tashkil etishda yo'lovchi oqimini hisobga olgan holda oraliq

to'xtash stansiya va punktlari ishini takomillashtirish usuli ishlab chiqilgan. Ishda poyezdlar harakati yo'lovchilardan kelib tushgan ta'lablar asosida tashkil etilishi keltirilgan.

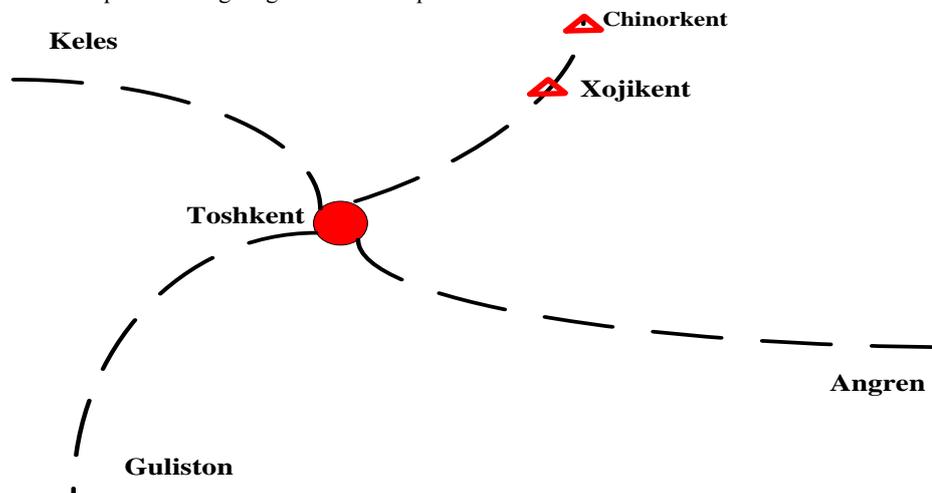
Muallif Jin Qin [6] da tez yurar yo'lovchi poyezdlar harakatini tashkil etishda yo'l kira narxlarini oshirmagan holda yo'lovchilar sayohat vaqtlarini qisqartirish orqali ularga qo'shimcha qulayliklar yaratish imkoniyatlarini amaliyotga joriy etish usullari tahlil qilindi.

O'rganilgan ilmiy-tadqiqot ishlari natijasidan shuni ko'rish mumkinki, shahar atrofi poyezdlari harakatini samarali tashkil etish borasida turli yillarda ko'plab olimlar ilmiy izlanishlar olib borgan. Biroq, shahar atrofi poyezdlari harakatini tashkil etishda yo'lovchi stansiya vokzal va to'xtash punktlarini imkon qadar aholi yashash joylariga yaqinroq joylashishini ta'minlash lozim ekanligi aniqlandi. Shuningdek, zarur holatlarda shahar atrofi poyezdlari to'xtash punktlari va aholi yashash markazlari o'rtasida yo'nalishli jamoat transportlari harakatini tashkil etish taklif etildi.

3. Natija va muhokamalar

O'zbekiston Respublikasida hozirgi kunga kelib poytaxt Toshkent shahri

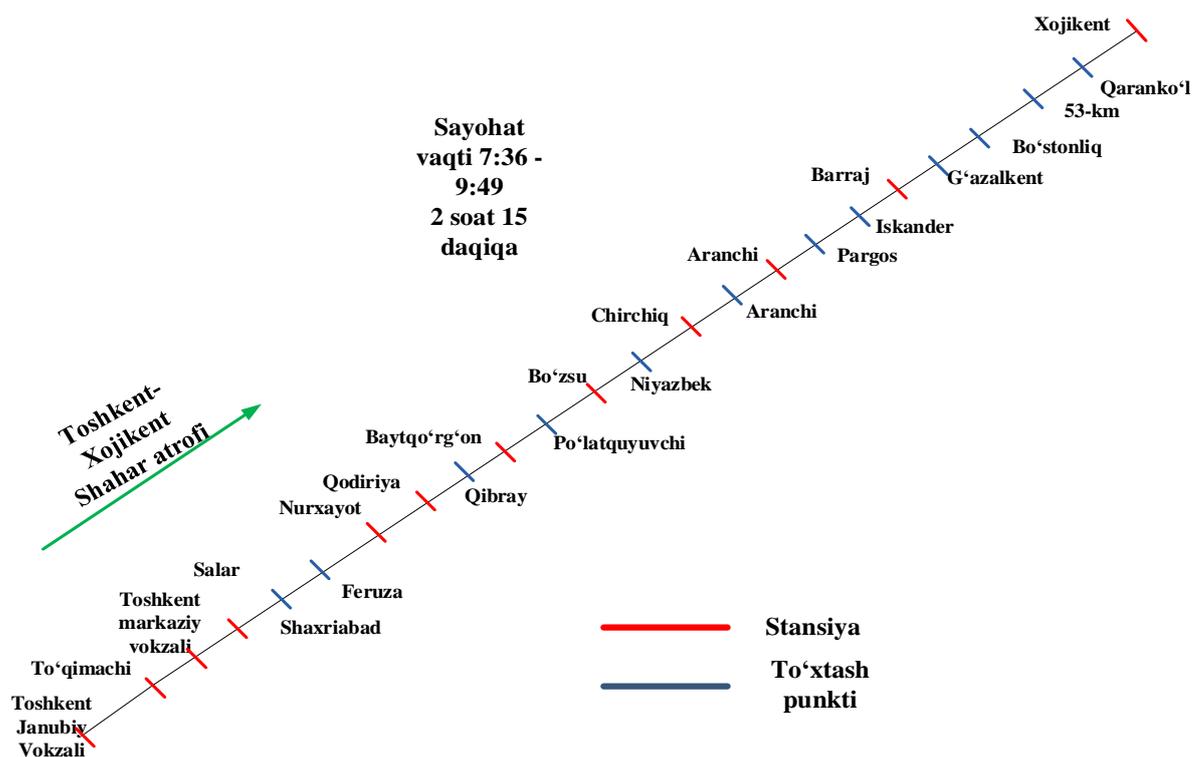
2025-yil, 1-yanvar holatiga ko'ra viloyatlar kesimida eng ko'p aholi yashaydigan shahar 3 mln. 112 ming 800 kishini tashkil etmoqda. Tabiiyki Toshkent shahri Respublikamizda sanoat va ishlab chiqarish markazi hisoblanadi bunda faqat shaharning doimiy yashaydigan fuqarolaridan tashqari yaqin atrofdagi shahar va tumanlardan kunlik ravishda ish, o'qish va boshqa maqsadlarda kelib ketadilar (1-rasm). Shu sababli ish kunlarining boshlanish va tugash vaqtlarida doimiy tirbandliklar yuzaga kelishi odatiy holga aylangan.



1-rasm. Toshkent shahri va unga yaqin yirik shaharlar

Hozirgi kunda Toshkent shahridan harakatlanuvchi ko'plab shahar atrofi poyezdlari qatnovlari mavjud, bularga: Toshkent-Xovos-Toshkent, Toshkent-Bekobod-Toshkent, Toshkent-Xojikent-Toshkent, Toshkent-Chinorkent-Toshkent (ekspres). Jumladan, yo'lovchi oqimlari qolgan

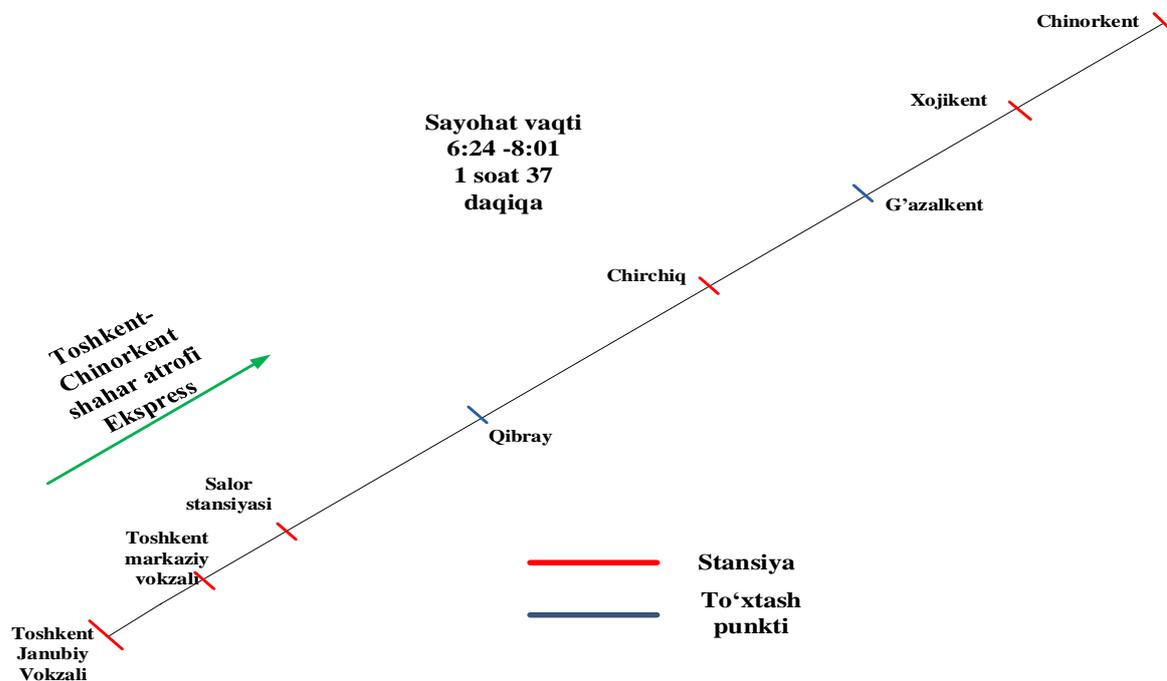
yo'nalishlarga nisbatan sezilarli darajada ko'p va bir tekis bo'lgan Toshkent-Xojikent-Toshkent va Toshkent-Chinorkent-Toshkent temir yo'l yo'nalishlari to'xtash manzillarini inobatga olgan holdagi sxematik ko'rinishi 2-va 3-rasmlarda keltirildi.



2-rasm. Toshkent-Xojikent-Toshkent yo'nalishi sxematik ko'rinishi

Toshkent-Xojikent-Toshkent yo'nalishida (2-rasm) har kuni 4 juftdan shahar atrofi poyezdlar qatnovi yo'lga qo'yilgan. Toshkent janubiy vokzalidan 1-poyezd ertalab soat 7:36 da yo'lga chiqib oxirgi manzil stansiya Xojikentga soat 9:49 da yetib bormoqda, 2-poyezd 13:32 dan 15:53

gacha, 3-poyezd 16:50 dan 19:03 gacha, va so'ngi 4-poyezd 18:55 dan 21:19 gacha harakati tashkil etilgan. Xojikentdan-Toshkentga esa 1-poyezd 05:20 dan 07:53 gacha, 2-poyezd 06:22 dan 08:56 gacha, 3-poyezd 10:13 dan 12:25 gacha va 4-poyezd 16:12 dan 18:23 gacha harakat qiladi.



3-rasm. Toshkent-Chinorkent-Toshkent yo'nalishi sxematik ko'rinishi

Toshkent-Chinorkent-Toshkent yo'nalishi Toshkent-Xojikent-Toshkent yo'nalishining mantiqiy davomi sifatida Chorvoq shaharchasigacha yana 1.5 km masofaga uzaytirildi. 2025-yilning 22-yanvar kuni Bo'stonliq

tumanida "Chinorkent" temir yo'l stansiyasi foydalanishga topshirildi. Bunda ko'zlangan asosiy maqsad Chorvoq dam olish maskaniga tashrif buyuruvchi sayyohlar va mahalliy aholiga imkon qadar qulaylik yaratish, bu o'z navbatida



tashrif buyuruvchilarni sonini ortishiga va yana shu maskanga qayta tashrif buyurishiga turtki bo'lib xizmat qiladi. Toshkent-Chinorkent-Toshkent va Chinorkent-Toshkent-Chinorkent yo'nalishlarida 3 juftdan ekspress poyezdlari belgilangan jadval asosida harakatlanmoqda, bunda birinchi ekspress poyezd Toshkent Janubiy vokzalidan tongi 6:24 da jo'nab ketadi va 8:01 da manzil stansiyasiga yetib boradi, ikkinchi poyezd 12:15 dan 13:48 gacha, uchinchi poyezd 18:24 dan 19:56 gacha harakatlanmoqda. Chinorkent-Toshkent-Chinorkent yo'nalishida esa birinchi poyezd 08:26 dan 10:01 gacha, ikkinchi poyezd 14:19 dan 15:52 gacha va so'ngi poyezd 20:16 dan 21:49 gacha harakatlanmoqda [8-10].

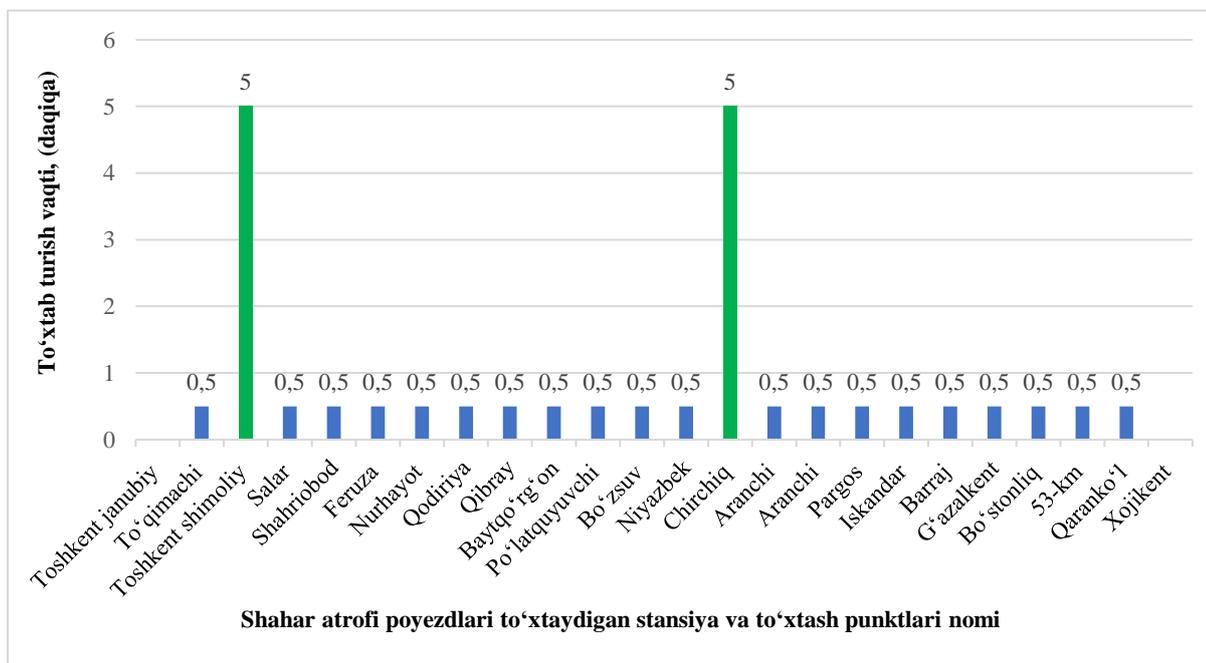
Jahonda ko'pgina rivojlangan davlatlar temir yo'l transportida shahar atrofi poyezdlari harakatini samarali tashkil etmoqdalar. Jumladan, Germaniya shahar atrofi poyezdlari harakatini samarali tashkil etishda namunaviy faoliyat yutib kelmoqda. Hozirgi kunda Germaniya "Yashil transport" dasturini qo'llab quvvatlab, dastur rivojlanishi va aholini ushbu umummilliy harakatda foal bo'lishga chaqirmoqda. Shu munosabat bilan "Intermodal transport" tizimi ya'ni (elektropoyezd+velosiped+piyoda yurish)ni aholi o'rtasida faol targ'ib etmoqda. Ushbu targ'ibot ishlari faqat qog'ozda qolib ketmasligini taminlash maqsadida 2023-yilning 1-maydan 49 yevrolik "Deutschlandticket" yagona transport kartalari amaliyotga joriy etildi. Ushbu karta umum foydalanish transportlari avtobus, yer osti va usti metrolari, tramvay va shahar atrofi poyezdlariga 30 kun davomida amal qiladi, istisno sifatida (ICE-Intercity express va CE-City express) poyezdlariga amal qilmaydi. 2023-yilning birinchi yarmida Germaniyada avtobus va poyezd orqali tashilgan yo'lovchilar soni 5.3 milliardga yetdi va bu 2022-yilning shu davriga nisbatan 10% ga ko'ndir. 30 km va undan ortiq masofaga qatnovchi shahar atrof poyezdlari (RE-regional express, IRE-intercity express) poyezdlar

harakat qatnovlari 30.4% ga oshdi. Umumiy temir yo'ldan foydalanish ko'rsatkichi 10% dan 12% foizga oshishga erishdi. Germaniya federatsiyasi va Deutschbahn kompaniyasi shahar atrof poyezdlarini aholiga yaqindan tanitish maqsadida ko'pgina targ'ibot ishlarini amalga oshirdi:

- rasmiy ommaviy axborot kompaniyalari (radio, TV) "Eng arzon chiptani tanlang-butun Germaniya bo'ylab sayohat qiling" shiori ostida.
- DB, BVG va MVV transport kompaniyalarining poyezdlar va avtobuslar ichidagi "Siz 49 yevroga qayerga bormoqchisiz" kabi reklama qog'ozlari orqali.
- Telecom operatorlik kompaniyalari bilan birgalikda maxsus omadli ishtirokchi aksiyalari bilan.
- yashil transport targ'iboti bilan bog'langan "Ecologic point" balli tizimi orqali.

Toshkent shahri va unga yaqin shaharlardan poytaxtga ish va turli xil yumushlar bilan kelib ketadigan yo'lovchilarga qulaylik yaratish maqsadida "O'ztemiryo'lovchi", "Toshshahartransxizmat" AJ va "Metropolitan" DUK birgalikda shahar atrofi poyezdlari, metro va avtobuslar uchun yagona to'lov kartasi "ATTO" ishlab chiqildi. Hozirda bu yagona karta tizimi aholi orasida keng foydalanilmoqda, bu o'z navbatida shahar atrofi poyezdlaridan foydalanadigan aholiga qo'shimcha qulaylik yaratadi [11, 12].

Shahar atrofi poyezdlari harakat davomida boshqa turdagi poyezdlardan farqli ravishda ko'plab stansiya, vokzal va to'xtash punktlari ga to'xtab poyezddan yo'lovchilarni tushirib va yangi yo'lovchilarni chiqaradi. Shu sababli bu turdagi poyezdlarning umumiy harakat tezligi ham ko'plab omillar tasirida yuqori bo'lmasligi aniqlandi. Toshkent-Xojikent-Toshkent va Toshkent-Chinorkent-Toshkent yo'nalishlarida to'xtash stansiya, vokzal va to'xtash punktlari o'rganildi (4- va 5-rasm).



4-rasm. Toshkent-Xojikent-Toshkent yo'nalishida shahar atrofi poyezdlari to'xtash stansiya va punktlari

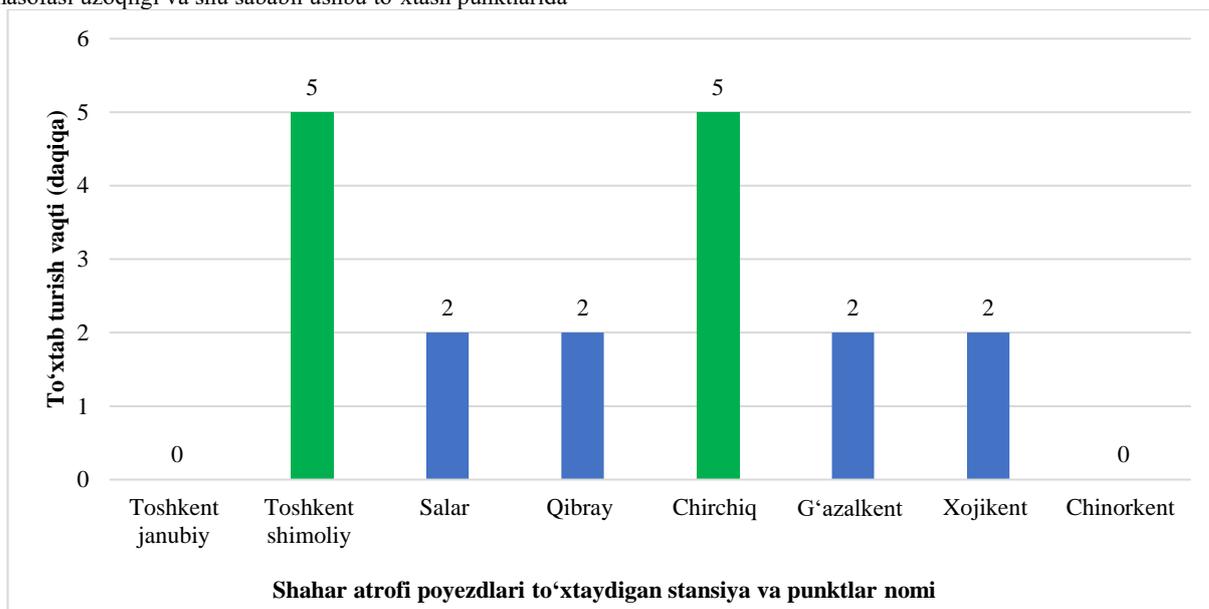
Toshkent-Xojikent-Toshkent yo'nalishida poyezdlar harakat davomida Toshkent shimoliy va Chirchiq vokzallarida 5 daqiqa va boshqa stansiya va to'xtash punktlarida 0.5 daqiqa to'xtashi aniqlandi (4-rasm).

Toshkent-Chinorkent-Toshkent ekspress shahar atrofi poyezdlari yo'nalishida esa Toshkent shimoliy va Chirchiq vokzallarida 5 daqiqa va boshqa stansiya va to'xtash punktlarda 2 daqiqa to'xtash vaqtlari kuzatildi. Bunda ushbu



ekspress poyezdlari stansiya va to'xtash punktlarda ko'proq vaqt to'xtashining asosiy sababi to'xtash punktlari oraliq masofasi uzoqligi va shu sababli ushbu to'xtash punktlarida

yo'lovchi miqdori odatdagi punktlarga qaraganda ko'p bo'lishi aniqlandi.



5-rasm. Toshkent-Chinorkent-Toshkent yo'nalishida ekspress shahar atrofi poyezdlari to'xtash stansiya va punktlari

Toshkent-Xojikent-Toshkent va Toshkent-Chinorkent-Toshkent yo'nalishlarida umumiy harakatlanish vaqtlari to'xtash stansiya va punktlarining soniga to'g'ridan-to'g'ri bog'liq ekanligi aniqlandi.

Toshkent-Xojikent-Toshkent yo'nalishida harakatlanadigan shahar atrofi poyezdlari umumiy sayoxat vaqti odatda 2 soat va 15 daqiqa, biroq Toshkent-Chinorkent-Toshkent ekspress poyezdlari 1 soat va 37 daqiqa harakat qilmoqda.

Toshkent-Xojikent-Toshkent yo'nalishida jami 24 ta, shulardan 12 ta stansiya va 12 ta to'xtash punktlardan tashkil topgan. Toshkent-Chinorkent-Toshkent yo'nalishida esa umumiy 8 ta stansiya va 2 ta to'xtash punktlar mavjud. Bunda Toshkent-Xojikent-Toshkent yo'nalishida harakatlanadigan shahar atrofi poyezdlari safar davomida 22 ta stansiyada to'xtab yo'lovchilarni tushirib chiqarsa, Toshkent-Chinorkent-Toshkent yo'nalishida harakatlanadigan ekspress poyezdlari esa 6 ta stansiyada yo'lovchilarni tushirib chiqarish uchun to'xtamoqda. Har ikkala poyezdlarni harakatlanish vaqtlarini bir biriga taqqoslaganimizda ekspress poyezdlari 38 daqiqa vaqt kamroq harakatlanmoqda.

4. Xulosa

Shahar atrofi poyezdlarida harakatlanish Toshkent atrofiga sayohat qilishda aholi uchun xavfsiz, belgilangan vaqtda harakatlanishi va aynan dam olishga boruvchilar uchun juda qulay ekanligi aniqlandi.

Tahlil natijalari shahar atrofi poyezdlari harakatini tashkil etishda marketing siyosati va chipta xarid qilish tizimi parametrlari bir xil bo'lishiga qaramasdan har bir shahar va hudud geografik joylashishidan kelib chiqib yondashuvlar turlicha ekanligini ko'rsatdi.

Toshkent-Xojikent-Toshkent va Toshkent-Chinorkent-Toshkent shahar atrofi poyezdlari harakatini boshqa turdagi jamoat transport turlari bilan muvofiqlashgan holda tashkil

etish zaruriyati aniqlandi hamda ushbu yo'nalishlarni tizimli tahlil qilish natijasida quyidagilar aniqlandi:

- yo'lovchi oqimi doimiyliigi;
- sayohatchilarning aksariyat qismi chet-ellik sayyohlardan tashkil topganligi;
- qatnovlar kunning qulay vaqtlarida tashkil etilganligi (Toshkent shahriga kunlik qatnab ishlovchilar uchun ish vaqtlarining boshlanish va tugash vaqtiga qulay ekanligi);
- chipta narxi avtomobil transportidagi narxga nisbatan bir necha barobart arzon ekanligi;
- yo'nalishda ikki xil turdagi poyezdlardan foydalanish imkoniyati mavjud ekanligi;
- ekspress poyezdida umumiy safar vaqti to'xtash punktlari soni kamligi sababli 38 daqiqa vaqt tejashi kuzatildi.

Ushbu yo'nalishda stansiya, vokzal va to'xtash punktlarining soni ko'p ekanligiga qaramasdan aholi yashash joylariga uzoq ekanli va shu sababli avtobuslar va shahar atrofi poyezdlarining harakat grafiklari bir-biriga muvofiqlashtirilishi zarurligi taklif etildi. Bu shahar atrofi poyezdlaridan foydalanish ko'rsatkichlarini oshirish hamda poyezdlar sig'imidan samarali foydalanish imkoniyatlarini yaratadi.

Foydalangan adabiyotlar / References

- [1] 2025-2027 yillarda O'zbekiston Respublikasining ijtimoiy va ishlab chiqarish infratuzilmasini rivojlantirish chora tadbirlari to'g'risida O'zbekiston Respublikasi Prezidentining qarori <https://www.lex.uz/docs/7278617>
- [2] Shahar yo'lovchilar transporti to'g'risida O'zbekiston Respublikasining qonuni <https://lex.uz/docs/10943#11297>
- [3] Малахова Т.А. Методика оценки селексообразности назначению мультимодальной пассажирской перевозки / Т. А. Малахова, О. Д. Покровская, В. В. Шербаков // Буллетен результатов



научних исследований. – 2022. – № 3. – С. 39-52. – DOI 10.20295/2223-9987-2022-3-39-52

[4] Weining Haoa , Lingyun Menga, Francesco Cormanb , Sihui Longa , Xi Jianga, “A train timetabling and stop planning optimization model with passenger demand”. 8 th International Conference on Railway Operations Modelling and Analysis - RailNorrköping 2019. <https://doi.org/10.3929/ethz-b-000368928>

[5] Butunov Dilmurod Baxodirovich, Shukurov Murodulla Sulaymon o‘g‘li, Pardayeva Umida Norbayevna, Bo‘riyev, Shuxrat Xamroqul o‘g‘li yo‘lovchilarga chipta sotish jarayonini takomillashtirish // orienss. 2022. №4. url: <https://cyberleninka.ru/article/n/yo-lovchilarga-chipta-sotish-jarayonini-takomillashtirish> (дата обращения: 13.05.2025).

[6] Jin Qin, Xiqiong Li , Kang Yang, Guangming Xu, “Joint Optimization of Ticket Pricing Strategy and Train Stop Plan for High-Speed Railway: A Case Study”. Study. Mathematics 2022, 10, 1679. <https://doi.org/10.3390/math10101679> .

[7] Malakhova T. Analysis of the experience of operation and scope of application of direct connections to ensure passenger transportation on regional lines (Анализ опыта эксплуатации и области использования вагонов беспересадочного следования для обеспечения перевозок пассажиров на региональных линиях) / A. Kotenko, T. Malakhova, T. Shchmanev // Transportation Soil Engineering in Cold Regions: Proceedings of TRANSOILCOLD 2019. (Series: Lecture Notes in Civil Engineering, volume 49), Saint Petersburg, 15–22 апреля 2019 года. Vol. 1. – Singapore: Springer, 2020. – p. 363-372. DOI 10.1007/978-981-15-0450-1_37.

[8] Ю.О. Пазойского, “Организация пригородных Железнодорожных перевозок” учеб. пособие / Ю.О. Пазойский и др.; под ред. Ю.О. Пазойского. – М.: ФГБОУ «Учебно-методический центр по образованию на железнодорожном транспорте», 2015. – 270 с. ISBN 978-5-89035-816-5.

[9] O‘tkir O‘ktamjon o‘gli Xusenov, Dilmurod Baxodirovich Butunov, Shuxrat Xamroqul o‘gli Bo‘riyev shahar atrof poyezdlari to‘xtash punktlarining oraliq masofalarini aniqlash tartiblari // Academic research in educational sciences. 2021. №3. URL:

<https://cyberleninka.ru/article/n/shahar-atrof-poyezdlari-toxtash-punktlarining-oraliq-masofalarini-aniqlash-tartiblari> (дата обращения: 13.05.2025).

[10] <https://uzrailpass.uz/>

[11] <https://gov.uz/oz/mintrans>

[12] https://railway.uz/uz/informatsionnaya_sluzhba/novosti/36355/

[13] https://www.tagesschau.de/wirtschaft/verbraucher/oeenv-deutschlandticket-auslastung-fahrgastzahlen-100.html?utm_source=chatgpt.com

[14] https://www.mccberlin.net/en/news/information/information-detail/article/49-euro-ticket-resulted-in-significant-modal-shift-from-road-to-rail.html?utm_source=chatgpt.com

Mualliflar to‘g‘risida ma‘lumot/ Information about the authors

Butunov Dilmurod Baxodirovich / Butunov Dilmurod Bakhodirovich	Toshkent davlat transport universiteti “Temir yo‘ldan foydalanish ishlarini boshqarish” kafedrası professori. t.f.f.d (PhD). E-mail: dilmurodpgups@mail.ru Tel.: +99897 267 55 67 https://orcid.org/0009-0009-4165-0257
--	---

Daminov Shahriyor Asomiddin o‘g‘li / Daminov Shahriyor Asomiddin ugli	Toshkent davlat transport universiteti, tayanch doktorant E-mail: daminovshahriyor@gmail.com Tel.: +99894 039 16 99 https://orcid.org/0009-0002-8934-8718
---	--

Ergashev Shaxzod Farxod o‘g‘li / Ergashev Shakhzod Farkhod ugli	Toshkent davlat transport universiteti, magistrant E-mail: shaxzode8360@gmail.com Tel.: +99891 638 83 60 https://orcid.org/0009-0008-8865-5648
---	---



- N. Zayniddinov, U. Abdulatipov, A. Muminov**
Increasing the efficiency of diesel engines through the use of three-stage filters in the cooling system of UzTE16M diesel locomotives138
- M. Miralimov, K. Juraev, Kh. Urazov**
New types of prefabricated-monolithic span structures of highway bridges and overpasses142
- D. Butunov, Sh. Daminov, Sh. Ergashev**
Increasing the attractiveness of suburban passenger train services147