THE POPULARITY OF MODERN TRANSPORT IN TASHKENT

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Annotation: Tashkent, the capital of Uzbekistan, is undergoing a remarkable transformation as it embraces modern transport systems to address urbanization challenges and improve the quality of life for its residents. From electric buses and metro expansions to ride-sharing services and cycling infrastructure, modern transport solutions are gaining popularity in the city. Among these technologies, Unmanned Aerial Vehicles (UAVs), or drones, have gained significant popularity, becoming a symbol of Tashkent's transformation into a smart and innovative metropolis. This article explores the growing role of UAVs in modern Tashkent and their impact on various aspects of urban life, the impact of modern transport on Tashkent's urban landscape, and the challenges and opportunities that lie ahead.

Keywords : Modern transport ; UAV (Unmanned Aerial Vehicles); Urbanization; Sustainable mobility; Electric vehicles ;Tashkent Metro ;Ride-sharing; Smart cities ; Public transport ; Urban development

Introduction

Tashkent, a city with a rich history and a rapidly growing population, is at the forefront of Uzbekistan's modernization efforts. As urbanization accelerates, the demand for efficient, sustainable, and accessible transport systems has become a priority. Modern transport solutions, such as electric vehicles, metro systems, and smart mobility services, are increasingly popular in Tashkent, reshaping the city's infrastructure and enhancing connectivity.

Factors Driving the Popularity of Modern Transport

In recent years government has prioritized urban development and transport modernization. Initiatives such as the Tashkent City project and the expansion of the Tashkent Metro reflect the government's commitment to creating a modern, sustainable city. Investments in public transport infrastructure and policies promoting green mobility have played a key role in popularizing modern transport. Apart from this, Tashkent's population has grown significantly in recent years, leading to increased traffic congestion which is making people spending more time on the way. Modern transport systems, such as electric buses and metro lines, offer a solution to these challenges by providing efficient and eco-friendly alternatives to private vehicles.

As global awareness of climate change grows, Tashkent has embraced sustainable

transport options. Electric vehicles, cycling lanes, and pedestrian-friendly streets are becoming increasingly popular, reducing the city's carbon footprint and improving air quality. According to Statistics Agency in 2024 Uzbekistan increased its electric vehicle imports by 42 % , just over the first half of this year more than 10,540 electric cars were delivered to the country . Compered to the same period last year , the number of imported electric vehicles increased by 42.6%.

The integration of technology into transport systems has made modern transport more accessible and convenient. Ride-sharing apps(Yandex taxi ,Uklon ,My taxi etc.) contactless payment systems, and real-time tracking of public transport have enhanced the user experience, making modern transport a preferred choice for Tashkent residents. The expansion of the Tashkent Metro with 2 underground and 19 above ground stations , and the introduction of electric buses have significantly improved mobility within the city. These systems provide affordable and efficient transport options, connecting residential areas with commercial hubs and reducing travel time. By encouraging the use of public transport and non-motorized modes of travel, modern transport systems have helped alleviate traffic congestion in Tashkent. This has led to smoother traffic flow and reduced stress for commuters.

Modern transport infrastructure has boosted Tashkent's economy by facilitating trade and tourism. The city's improved connectivity and accessibility have attracted businesses and tourists, contributing to its economic development. The shift towards sustainable and efficient transport has improved the quality of life for Tashkent residents. Reduced pollution, safer streets, and better access to public services are among the many benefits of modern transport systems. While modern transport is gaining popularity in Tashkent, several challenges remain. These include the high cost of infrastructure development, the need for regulatory frameworks to support new technologies, and the importance of raising public awareness about sustainable transport options.

Looking ahead, Tashkent has the potential to become a model city for modern transport in Central Asia. Continued investment in infrastructure, the adoption of smart technologies, and a focus on sustainability will be key to achieving this goal. The popularity of modern transport in Tashkent reflects the city's commitment to innovation, sustainability, and urban development. By embracing electric vehicles, expanding public transport networks, and integrating technology into mobility solutions, Tashkent is paving the way for a brighter, more connected future. As the city continues to evolve, modern transport will play a central role in shaping its identity as a dynamic and forward-thinking metropolis. Tashkent's adoption of UAV technology is part of a broader effort by the Uzbek government to position the country as a regional leader in innovation and technology. The city's embrace of drones reflects its commitment to leveraging technology to solve urban challenges and improve

efficiency. Nowadays ,drones are globally being used in different fields. Currently , drones can be imported to Uzbekistan only with permission of the Cabinet of Ministers, there are 27 organizations are allowed to use drones and there are 250 drones has already been registered. Still, there are some limitations for UAV operations ,including age restrictions for operators (only people above 18) can control drones and weight (only up to 25 kg , in agro culture up to 100 kg can be entered to Uzbekistan) .

One of the most significant uses of UAVs in Tashkent might be in urban planning and infrastructure development. As the city undergoes rapid urbanization, drones are playing a crucial role in mapping, surveying, and monitoring construction projects. UAVs equipped with high-resolution cameras and LiDAR (Light Detection and Ranging) technology can quickly and accurately collect data on land use, topography, and existing infrastructure. Drones have been used to survey sites for new residential complexes, roads, and public facilities. This data helps urban planners make informed decisions, optimize designs, and ensure that projects are completed on time and within budget. According to open statistics South Korean construction companies got 10% work efficiency and it reduced the average time spending up to 10%.Additionally, drones are used to inspect bridges, roads, and buildings, identifying potential issues before they become major problems. For example , British company Balfour Beatty by using drones for checking bridges 'condition is getting 10 thousands dollars from each project. This proactive approach to infrastructure maintenance has improved safety and reduced costs for the city.

UAVs have also become invaluable tools for enhancing public safety and emergency response in modern world. The city's law enforcement agencies have adopted drones to monitor large public events, including public holidays like Navruz and Independence day ,track traffic violations, and conduct surveillance in high-risk areas. Drones provide a bird's-eye view of the city, enabling authorities to respond quickly to incidents and maintain order.

In emergency situations, such as fires or natural disasters, drones are deployed to assess damage, locate survivors, and deliver essential supplies. For instance, during a recent fire in a densely populated neighborhood, drones were used to identify hotspots and guide firefighters to the most critical areas. This use of UAVs can significantly improve the efficiency and effectiveness of emergency response efforts in the city.

While Tashkent is a bustling urban center, its outskirts are home to agricultural lands that play a vital role in feeding the city's population. UAVs are increasingly being used in these peri-urban areas to support precision agriculture. Farmers can use drones to monitor crop health, optimize irrigation, and apply fertilizers and pesticides more efficiently. By providing real-time data on soil conditions and plant health, drones help farmers increase yields while reducing resource use. This is particularly important in a

region where water scarcity is a growing concern. The adoption of drone technology in agriculture not only boosts productivity but also contributes to the sustainability of Tashkent's food supply. The effectiveness of the use of drones in Uzbek agriculture reveals problems beyond human ability to see, covering large areas of 20 million hectares of arable land and pastures, saving time and labor, providing detailed information on high-resolution images, increasing the potential for crop yield, increasing the yield of rice by 25%, and improving the yield of cereals by 15%. Results achieved include saving pesticides by 5%, optimizing irrigation, increasing the spraying speed of vineyards by 20 times, and detecting diseases in the soil.

Furthermore, the use of drones for food delivery and taxi services is an emerging trend that could revolutionize transportation and logistics in the city. There are a number of advantages of using drones in city's busy life .Drones can deliver food orders faster than traditional methods, especially in a bustling city like Tashkent with traffic congestion. It will reduce delivery costs for businesses, as drones don't require fuel or drivers. Drones can reach remote or hard-to-access areas, ensuring food delivery to all parts of the city. Electric drones produce fewer emissions compared to motorcycles or cars, aligning with global sustainability goals. Drones can serve as air taxis, reducing traffic congestion and providing faster travel across Tashkent. This modern trend has already been popular in some countries like China , Singapore and USA. Tashkent's growing tourism industry could benefit from drone taxis, offering unique aerial views of the city's landmarks. Drones could be used for rapid medical transport or emergency response. Yet, there might be some challenges in implementing drones in Tashkent's life. First of all we need proper infrastructure for takeoff and landing zones. Secondly, very high initial costs for developing and maintaining drone taxi fleets in Uzbekistan. Thirdly, definitely public acceptance and trust in drone safety, still most people accept these modern technologies as normal. However , nothing is impossible in 21st century , here some measurements must be considered before using drones in daily life :

- AI and Automation: Drones would rely on advanced AI for navigation, obstacle avoidance, and route optimization.

- Regulations: Uzbekistan would need to establish clear guidelines for drone operations, including airspace management and safety protocols.

- Partnerships: Collaboration between the government, private companies, and tech startups would be essential for successful implementation.

The use of drones for food delivery and taxi services in Tashkent has the potential to transform urban life, making it more efficient, sustainable, and innovative. However, successful implementation will require careful planning, investment, and collaboration between stakeholders. If adopted, Tashkent could become a model for other cities in the region.

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