

Chapter 13

Future Trends in Sustainable Urban Logistics

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ABSTRACT

There is a need to reduce the negative effects caused by load distribution in urban areas as a result of the increase in population and urbanization rate. At this point, it is necessary to eliminate the negativities related to transportation in order to make transportation activities in urban areas sustainable. Recently, the importance of the concept of urban logistics has increased, and approaches that facilitate urban life and logistics actions have become more important. However, logistics service providers have begun to look for ways to respond to consumer demands with fast, reliable, economic, and innovative methods. In order to maintain urban logistics, different methods can be used to deliver products to consumers. The study offers a perspective on technological developments affecting urban logistics and draws attention to sustainable and innovative delivery methods.

INTRODUCTION

Logistics, a term of military origin, is defined by the Council of Supply Chain Management Professionals as covering the planning, organizing, control and evaluation of the rapid, efficient flow and storage of all kinds of products, services and information throughout the supply chain, from the point of origin to the point of consumption, in order to meet the needs of customers (Akben and Bahçeci, 2018). Logistics activities; It covers stages such as transportation, packaging and storage of physical resources from the point of origin to the point of arrival. These activities are based on the organization and cooperation of various fields. The aim of logistics activities is to have the right products ready in the right quantity, on time and in the desired format at the least cost (Tutar et al., 2009). Transportation is the most important function of logistics, and transportation methods include road, sea, railway and air transportation, as well as pipelines and inland waterways. While the majority of foreign trade in world-wide freight transportation is by sea, and road transport comes second, 89.5% of freight transportation in Turkey is

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Future Trends in Sustainable Urban Logistics

provided by road (Taşkın, 2016). Logistics activities are the sector that uses fossil resources the most, especially in transportation. High fossil resource use causes significant environmental problems. At this point, many countries attach importance to environmental sustainability and look for alternative ways to reduce carbon emissions. Recently, sustainable practices have come to the fore to minimize problems such as climate change and global warming. The concept of urban logistics is closely related to the development of cities in economic, environmental, commercial and many similar areas. Most of the population in the world lives in cities. While approximately 3% of the world's population lived in cities in 1800, this rate increased to 51.6% in 2010 and 56.2% in 2020 (Özdemir, 2022; Bimay, 2021). It is estimated that the population living in cities will increase rapidly. It is expected that this rate will increase to 86.6% by 2050. The increase in population in cities will also bring about changes in urban usage areas. In recent years, increasing migration from rural areas to cities creates new problems. On the other hand, economic growth and sustainable development are possible with the increase in urban opportunities. Developments in logistics activities are important for countries to progress in the economic field. The increase in population and economic growth in urban areas has brought about an increase in the demand for products and services. The increase in demand causes an increase in urban transportation. As a result, factors such as increased pollution, increased energy costs, decreased traffic safety, loss of time increase and increase urban logistics problems (Savrun, 2019).

Growth and population growth in urban areas lead to increased customer demands and expectations. Taking into account the sustainability of urban logistics in solving such problems, decisions taken in the context of this issue in the future have become important. Stakeholders are important in the successful implementation of these decisions. This study, which is a compilation, aims to first compile basic information about the environmental problems of logistics and urban logistics activities, explain the solutions developed for these problems, and then the solutions to innovative logistics services in urban areas in the future. The study draws attention to the concept of urban logistics in general. The study aims to clarify the concepts of urban logistics and urban freight transportation and evaluate their contributions to sustainable urban development. Urban transportation systems include not only the transportation of goods but also the transportation of people (Sousa and Moreira, 2015). Ensuring good planning and coordination in integrating more than one mode in urban transportation modes will also reduce environmental negativities. Integration of transportation modes in urban transportation, in other words, correct planning of transfer centers should be made, accurate determinations should be made in terms of location selection and accessibility, and the maximum benefit of the users should be determined (Yiğit and Suri, 2020).

BACKGROUND

Sustainable Urban Logistics

Sustainability is used in the sense of preventing the consumption of natural resources and keeping them at a certain level in order to protect the environment (Oxford English Dictionary, 2019). The concept of sustainability was first discussed at the international level by the United Nations at the Stockholm Conference in 1972. The right to the environment was discussed for the first time in this conference and environmental problems were mentioned internationally for the first time. At this conference, all participating countries worked to achieve a compromise between the desire for economic development and the need to protect the environment in order to protect the environment and seek solutions to environmental

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