

Chapter 7

Environmental Suitability of National Logistics Village Proposals in Kocaeli, Türkiye

Tayfun Salihoğlu

 <https://orcid.org/0000-0002-9959-6961>

Pamukkale University, Turkey

ABSTRACT

In recent years, Turkey has seen a rise in investments in the international transportation and logistics sector, positioning the city of Kocaeli as a crucial hub in national planning documents. The national logistics master plan outlines the establishment of two significant logistics centers in Kocaeli. The areas designated for these centers currently have zoning plans for various local uses. However, if the proposed logistics centers are realized, it will necessitate physical transformation and planning revisions in these areas, which have been an element to the city's character for many years. The nationally significant investments in Kocaeli are expected to have a multiplier effect in various sectors, leading to extensive spatial changes around the logistics villages and their immediate surroundings. While the logistics centers have been proposed in Kocaeli's districts in national plans, their location decision needs to consider environmental and sustainability impacts, given their accessibility advantages at transportation intersections and proximity to production centers. This study aims to assess the impacts of globally and nationally significant logistics centers in Kocaeli on urban resilience and sustainability, focusing on their spatial suitability and integration with local plans and property relationships. To achieve this, environmentally fragile areas have been overlaid with logistics village boundaries in a GIS environment, and potential changes and their effects have been evaluated by comparing current land uses with potential new land uses in logistics villages and their surroundings in local-level zoning plans.

INTRODUCTION

Logistics centers, also known as freight villages, logistic parks, or logistic bases, are essential nodes in the supply chain network. These centers serve as strategic hubs where various transportation, warehousing,

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and distribution activities converge. The concept of logistics centers has gained significant attention in academia and industry due to their role in enhancing supply chain efficiency and facilitating the smooth movement of goods.

One of the fundamental aspects of logistics centers is their role in clustering transportation and logistics activities. Europlatform, representing 55 logistics center operators across nine European countries, defines logistics centers as specialized areas where different businesses conduct activities using privately owned or leased buildings, land, or vehicles (Europlatform, 2023). This definition underscores the importance of collaboration among stakeholders to optimize resources and streamline operations within a dedicated logistics infrastructure.

The classification of logistics centers is another area of interest in scholarly research. In Turkey, for example, the Türkiye Logistics Master Plan (TLMP) project team has classified logistics centers into three types: A, B, and C, based on criteria such as size, handling capacity, and regional reach (TLMP, 2022). This classification framework provides insights into the diverse functionalities and capacities of logistics centers, enabling policymakers and industry stakeholders to tailor strategies according to specific needs and objectives.

Furthermore, the literature highlights the significance of location and infrastructure quality in determining the effectiveness of logistics centers. Optimal placement, characterized by accessibility to transportation networks and proximity to key markets, is crucial for maximizing operational efficiency and reducing transportation costs (Western Black Sea Development Agency, 2015). Moreover, logistics centers must comply with stringent standards and regulations governing safety and performance to ensure seamless operations within the competitive market landscape.

In addition to their physical attributes, logistics centers offer a wide range of benefits to stakeholders across the supply chain. These benefits include cost reduction, enhanced service quality, and improved urban traffic management through the diversion of heavy vehicle traffic away from city centers. By providing centralized facilities for storage, handling, and distribution, logistics centers contribute to the overall efficiency and resilience of supply chain operations.

Looking ahead, the literature emphasizes the importance of continuous innovation and technological integration in enhancing the capabilities of logistics centers. From advanced information systems to automation technologies, ongoing investments in infrastructure and technology are essential for meeting the evolving demands of global trade and commerce (Işıkhhan, 2011). Moreover, collaborations between public and private sectors are instrumental in fostering an enabling environment for the sustainable growth of logistics centers and the broader logistics industry.

In conclusion, the concept of logistics centers represents a critical pillar of modern supply chain management, facilitating the seamless flow of goods and services across local, regional, and global markets. By synthesizing insights from academic research and industry practices, this literature review provides a comprehensive overview of the multifaceted nature and significance of logistics centers in driving economic development and fostering international trade.

Logistics centers are complex facilities that encompass all services related to transportation. In Turkey, the Republic of Turkey State Railways (TCDD), as the planner and implementer of this concept, defines logistics centers as areas where official institutions related to logistics and transportation companies are located. These centers facilitate various activities such as storage, maintenance, loading, unloading, handling, weighing, sorting, combining, and packaging, with effective connections to all modes of transportation, providing low-cost, fast, and secure transfer areas and equipment (TLMP, 2022).

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