

## Title

Author's name

## INTRODUCTION

PT PT. XYZ was established in Indonesia. It pioneered the commercial use of aeroponic technology for vegetable cultivation, becoming the first company to implement this innovative method (Al-Kodmany, 2018). The concept of PT. XYZ emerged from the promising prospects of the agricultural sector in Indonesia, which has demonstrated resilience during economic downturns, such as the monetary crisis in 1998 (NA, 2016). Inspired by advancements in agriculture worldwide, PT. XYZ aimed to demonstrate its ability to run a successful agricultural business in Indonesia, leveraging the country's favorable climate (Scholz et al., 2014).

The company initially focused on developing organic vegetable farming in West Java, with a management approach that prioritizes organic farming practices and considers natural and environmental factors (Sumardjo, 2021). Indonesia is currently witnessing significant growth in the industrial sector, and agriculture stands out as a flourishing field (Kushairi et al., 2017). The agricultural sector continues to provide opportunities for small-scale farmers, particularly in the Bandung Barat Regency (Rustiadi et al., 2021). Lembang, a sub-district within this region, is renowned for its vegetable and horticultural production. The high number of farmers in Lembang has spurred the growth of local medium-sized businesses that leverage this abundant workforce (Ayodele & Sotola, 2014). PT PT. XYZ, known as PT. XYZ, has capitalized on this opportunity by employing farmers and partnering with them as suppliers of horticultural products.

To efficiently distribute these goods to retail stores, the company employs nine refrigerated trucks, integrating transportation, procurement, and warehousing activities for cost-effectiveness (Sun et al., 2021). The distribution process involves decision-making to optimize travel distance, cost, time, and resources. Timely and efficient distribution significantly impacts the success of the supply chain. However, the multitude of sources and destinations presents challenges in optimizing distribution and minimizing shipping costs. Transportation plays a vital role in the distribution process, and determining the appropriate transportation method is crucial.

In this study, the distribution channels of PT PT. XYZ in the Lembang region are analyzed to optimize transportation costs. Vogel's Approximation Method is used to solve the company's initial allocation in the transportation method, and the Modified Distribution (MODI) method is employed to test its optimality (Chawla, n.d.). The title chosen for this research is "Optimizing Distribution Costs for Agricultural Company Using Transportation Method"

In order to stay competitive in the market, PT. XYZ needs to minimize its distribution costs to prevent significant increases in product prices (Lipion, 1968). Currently, the farm follows standard methods for product distribution from the PT. XYZ Warehouse to its customers. However, this approach poses challenges in efficiently delivering goods from various sources to different destinations while considering capacity and cost constraints (Dias et al., 2006). To address this problem, it is crucial to minimize transportation costs during shipment. One potential solution for PT. XYZ is to adopt transportation methods, such as the Vogel Approximation Method (VAM), which helps determine optimal product capacities and distribution costs (Ablordeppey, 2012).

The research aims to address the transportation challenges faced by PT. XYZ and improve their distribution efficiency. To accomplish this, several research questions have been formulated. Firstly, the study seeks to understand how the transportation model is currently applied at PT. XYZ before implementing the Vogel Approximation Method (VAM). Secondly, it explores the changes in the transportation model after implementing the VAM method. Lastly, the research aims to identify the key differences between the pre- and post-implementation of the transportation model using the VAM method at PT. XYZ.

**Title**

Author's name

To achieve these objectives, the study will apply the transportation model at PT. XYZ both before and after implementing the VAM method, enabling a comparative analysis of the two approaches. By examining the impact of the VAM method on transportation costs and efficiencies, the research will provide valuable insights and recommendations for improving the transportation model at PT. XYZ.

The research offers practical and academic benefits. In practical terms, it contributes to the development of knowledge in transportation models and the VAM method, providing insights that can be applied in various companies. Additionally, it serves as a foundation for future research and can guide decision-making in transportation management. From an academic perspective, the research benefits the author by expanding their understanding of transportation models and the VAM method. It also provides an evaluation tool and input for enhancing the transportation model at PT. XYZ, ultimately improving the company's.