

## Abstract

Al-Pinar General Trading Company is a leading Palestinian company located in AlBireh Industrial Area, established in 1999 as a family business and later in 2006 it was bought by a group of young investors and became a limited partnership company. It falls under the Food Industry sectors and specializes in the manufacture and distribution of dairy products with 35 product listed under 5 main categories, in the West Bank and Gaza Strip.

Production forecasting is the process of estimating future production levels for a company or organization. This kind of forecast is often created using data from previous production as well as information on the product or service's present and future demand. Production forecasting tries to assist businesses in anticipating demand and in making choices regarding inventory levels, labor requirements, and capacity growth. In the dairy industry, demand on some items is non-seasonal while it is seasonal on other items. Thus, having an efficient and effective forecasting system for dairy products is of great importance as it reduces the risks of shortages in satisfying demand and hence achieving more customer satisfaction, more competitive advantage and increasing market share.

This project aims to create forecasting models for Al-Pinar company, as a solution to the change of demands for products the company offers. Such models will be developed using effective and suitable forecasting techniques including trend analysis, regression analysis, and time-series analysis to predict the optimal monthly order quantities of each product, which help better understand future demand for products and plan production accordingly. Such forecasting models would save a company's money by ensuring that company only produces the amount of product needed. Also, forecasting can help businesses avoid running out or overstocking by ensuring they produce the right number of needed products giving better inventory management, especially in our case with short shelf-life products to avoid spoilage and the wasted costs associated with it. A good demand forecasting will result in smoother and leveled production schedules and more efficient inventory management for raw materials and finished dairy products. To this end, the project also aims at improving the inventory management at Al-Pinar as a result of developing good forecasting models.