

Midterm Project Case Study

Introduction

Inventory management plays a vital role in balancing the costs associated with holding and ordering stock. For Quick Sale Mart, high holding costs and frequent ordering issues have been identified. This case study applies the Economic Order Quantity (EOQ) model to determine the most cost-efficient order size.

Methodology

The EOQ model was used to find the optimal order size that minimizes total inventory cost. The formula applied is: $EOQ = \sqrt{(2DS / H)}$, where D = annual demand, S = ordering cost, and H = holding cost per unit per year.

Data

The following inputs were considered:

- Annual demand (D): 12,000 units
- Ordering cost (S): ₱500 per order
- Holding cost (H): ₱2 per unit per year

Calculation

$EOQ = \sqrt{(2 \times 12,000 \times 500 / 2)} = \sqrt{6,000,000} = 2,449$ units (approximately).

Results

The optimal order quantity is 2,449 units. This minimizes the combined costs of ordering and holding. Ordering this amount reduces expenses and prevents stockouts while avoiding excessive storage costs.

Interpretation

The EOQ model shows that Quick Sale Mart should place fewer, larger orders rather than many small ones. By doing so, the company achieves cost efficiency and smoother inventory flow. The cost curve demonstrates the balance point where total cost is lowest.

Reflection

Through this case study, I learned how EOQ helps businesses manage inventory efficiently. It highlighted the importance of balancing ordering and holding costs to minimize total expenses. However, real-world applications may require adjustments due to supplier constraints, seasonal demand, or minimum order requirements.

Conclusion

The EOQ model is a valuable tool for inventory decision-making. In this study, the calculated EOQ of 2,449 units provides Quick Sale Mart with a practical guideline to lower costs and improve inventory practices.