

# **The Impact of Production Planning On Reducing Waste in the Pharmaceutical Field**

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## **Introduction:**

Production planning is an essential factor in the success of pharmaceutical companies, as it helps organize operations and use resources efficiently.

This sector often faces the problem of waste, such as damaged raw materials, overproduction and time loss which leads to higher cost.

Therefore, companies focus on effective production planning to reduce waste, improve operational efficiency and ensure the continuous availability of medications.

This research aims to explain the role of production planning in reducing waste within the pharmaceutical field.

## **Research Problem:**

Some pharmaceutical companies experience waste in materials and cost due to weak production planning, which negatively affects work efficiency and may lead to financial losses.

From here the question comes of how can pharmaceutical companies improve production planning to reduce the waste.

## **Importance of the Research:**

- helps reduce costs and improve production efficiency.
- supports better organization of operations in pharmaceutical companies.
- adds academic value that can support future studies.
- contributes to minimizing waste and ensuring medicine availability.

## **Research Questions:**

- What is production planning?
- What causes waste in pharmaceutical companies?
- How does production planning reduce waste?

. Dose production planning improves efficiency.

### **Research Objectives:**

- . To explain production planning in the pharmaceutical field.
- . To identify causes of waste.
- . To explain how production planning reduces waste.
- . To study relationship between planning and efficiency.

### **Research Hypotheses:**

- . There is relationship between production planning and waste reduction
- . Good production planning improves efficiency
- . Poor production planning increases waste

### **Research Model:**



### **Suggested Organization:**

The study can be applied at king fahad specialist hospital-Dammam in supply chains department to see how planning affects waste in materials, time and costs.

### **Research Methodology:**

This research uses a descriptive method by collecting information from Arabic references about Production planning and waste then analyzing them.

### **Project Structure:**

Introduction

Theoretical framework

Suggested study

Results and Recommendations

### **Table Of Contents:**

Introduction  
Research problem  
Research importance  
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### **Literature Review:**

Production planning is important in all industries, especially in the pharmaceutical industry, it helps companies organize production and use resources better, which reduces mistakes and cost.

Many studies show that good production planning helps reduce waste, Heizer et al. (2020) explained that planning helps control production and reduce unnecessary costs.

In the pharmaceutical industry, waste is a big problem because the expiration and overproduction, shah (2024 ) mentioned that poor forecasting and extra production lead to waste.

Also, good planning helps match production with demand, which reduces extra inventory and waste ( Slack & Brandon-Jones, 2019) .

In conclusion, production planning has an important role in reducing waste in pharmaceutical companies.

### **References:**

- 1- Shaarawy,
- 2- Arab institute for operations management
- 3- Al-marsal website
- 4- The role of lean production in achieving sustainable
- 5- Heizer, j render, B&Munson , C ( 2020 ) . Operations Management pearson
- 6- Shah,N&Brandon – Jones, A ( 2019 ) operation management pearson

### **Questionnaire Appendix for Research Variables:**

## **Section A: Demographic information**

### **1- Gender**

Male

Female

### **2- Age**

under 30 years

30-40 years

41-50 years

Above 50 years

### **3- Years of experience**

Less than 5 years

5-10 years

More than 10 years

## **Section B: Production Planning**

**Please indicate your level of agreement with the following statements:**

| <b>Statement</b> | <b>Strongly Agree</b> | <b>Agree</b> | <b>Neutral</b> | <b>Disagree</b> |
|------------------|-----------------------|--------------|----------------|-----------------|
|------------------|-----------------------|--------------|----------------|-----------------|

|                                                                                |  |  |  |  |
|--------------------------------------------------------------------------------|--|--|--|--|
| The company relies<br>On demand forecasting when<br>preparing production plane |  |  |  |  |
|--------------------------------------------------------------------------------|--|--|--|--|

|                                                                    |  |  |  |  |
|--------------------------------------------------------------------|--|--|--|--|
| Production schedules are clearly<br>developed and regularly update |  |  |  |  |
|--------------------------------------------------------------------|--|--|--|--|

|                                                           |  |  |  |  |
|-----------------------------------------------------------|--|--|--|--|
| Inventory level are effectively<br>planned and controlled |  |  |  |  |
|-----------------------------------------------------------|--|--|--|--|

|                                                                                    |  |  |  |  |
|------------------------------------------------------------------------------------|--|--|--|--|
| There is effective coordination<br>among departments during<br>production planning |  |  |  |  |
|------------------------------------------------------------------------------------|--|--|--|--|

|                                                                    |  |  |  |  |
|--------------------------------------------------------------------|--|--|--|--|
| Accurate data are used to support<br>production planning decisions |  |  |  |  |
|--------------------------------------------------------------------|--|--|--|--|

## **Section C : Waste Reduction**

| <b>Statement</b> | <b>Strongly Agree</b> | <b>Agree</b> | <b>Neutral</b> | <b>Disagree</b> |
|------------------|-----------------------|--------------|----------------|-----------------|
|------------------|-----------------------|--------------|----------------|-----------------|

|                                                         |  |  |  |  |
|---------------------------------------------------------|--|--|--|--|
| Production planning helps<br>Reduce raw materials waste |  |  |  |  |
|---------------------------------------------------------|--|--|--|--|

Improved planning has  
reduced the number of  
defective products

Production planning helps  
minimize losses due to  
product expiration

Effective planning improves  
the efficient utilization of  
resources

Production planning contributes  
to reducing waste-related costs