# Workplace Attendance Insights Using Power BI Case Study with Jacobs Ltd

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# 1. Project Objective

The **Human Resources Department** at Jacobs Ltd. initiated this analytics project to gain deeper insights into employee attendance behavior. With evolving workplace dynamics and a growing emphasis on flexible work models, understanding how employees utilize different types of leaves and remote working options has become critical for strategic planning and employee well-being.

The key objectives of this project were:

**1) Understanding employee work-from-home (WFH) preferences**

- Identify which days employees most often choose to work remotely.
- Determine whether WFH is being used to create long weekends or if it's spread throughout the week.

**2) Analyzing sick leave trends to proactively manage health-related risks**

- Detect any patterns in sick leaves that might indicate viral outbreaks, workplace stress, or absenteeism.
- Identify specific days of the week or months when sick leaves spike.
- Use this information to implement preventive measures (office sanitization, health awareness sessions).

**3) Measuring overall office presence across the past three months**

- Calculate the percentage of employees physically present in the office.
- Compare trends across April, May, and June to identify whether engagement is increasing or declining.
- Support HR decision-making on flexible work policies, hybrid scheduling, or return-to-office initiatives.

# 2. Data Overview

The data for this project was provided by the HR Department and comprised detailed employee attendance records across three months: **April, May, and June 2022**. Each month's data was stored in a separate Excel file.

## 2.1. Data Source and Structure

**1) Files**

- Three individual Excel worksheets (one per month).
- Each file captured the daily attendance status for all active employees during that month.

**2) Rows**

- Each row represents a unique employee, identified by their **Employee Code** (e.g., Atq-411, Atq-398).
- Every employee had one row capturing their attendance record across the days of the month.

**3) Columns**

- The first few columns captured metadata like *Employee Code*.
- The subsequent columns represented **individual dates** (6 - Jun, 7 - Jun, 8 - Jun) and were paired with the **day of the week** (Mon, Tue, Wed) written directly under the date.
- Under each date, the corresponding cell contained the **attendance status** for that employee on that particular day.

## 2.2. Attendance Status Types

Each employee's attendance status was recorded using a set of standard codes:

| ATTENDANCE KEY | |
|---|---|
| P | Present |
| PL | Paid Leave |
| SL | Sick Leave |
| HPL | Half day PL |
| HSL | Half day SL |
| WFH | Work from home |
| FFL | Floting festival leave |
| HFFL | Half Day Floting festival leave |
| BL | Birthday Leave |
| LWP | Leave without pay |
| HLWP | Half day Leave without pay |
| BRL | Bereavement Leave |
| HBRL | Half Bereavement Leave |
| HWFH | Half Work From Home |
| WO | Weekly Off |
| HO | Holiday Off |
| ML | Menstrual Leave |
| HML | Half Day ML |

*Table 1 Attendance Key*

# 3. Methodology

## 3.1. Data Import & Transformation

**Imported Multiple Sheets**:

- Brought in three separate monthly Excel sheets (April, May, and June) into Power BI.

**Addressed Structural Inconsistencies**:

- Each sheet had variations in headers and formatting.
- Followed Chris Webb's method of combining Excel sheets using a **template query** and a **custom function** to dynamically clean and merge each worksheet.
- This ensured consistent data structure without hard-coding sheet names.

**Standardized the Data**:

- Transformed attendance records into a single consolidated table, enabling seamless analysis across all three months.

- Ensured proper handling of date fields, employee codes, and attendance statuses for accurate aggregation and reporting

## 3.2. Data Cleaning & Calculation

To ensure the dataset was ready for accurate and meaningful analysis, a thorough cleaning and calculation process was performed:

### Defining Full-Day Presence

- Attendance statuses marked as **"Present" (P)** and **"Work from Home" (WFH)** were classified as full working days, both contributing fully (value of **1**) to cumulative work and presence metrics.
- This classification was critical for measuring true engagement, whether on-site or remote.

### Handling Half-Day Statuses

- Statuses such as **Half-Day Paid Leave (HPL)**, **Half-Day Sick Leave (HSL)**, **Half-Day Work from Home (HWFH)**, and others were carefully processed.
- These entries were assigned a **weight of 0.5** in calculations, reflecting partial day attendance.
- This approach ensured that overall workday counts were not overstated or understated due to partial attendances.

### Standardization of Leave Types

- Non-working statuses like **Weekly Off (WO)**, **Holiday Off (HO)**, and various leave types (e.g., PL, SL, BL) were excluded from the cumulative workday calculations to maintain the focus solely on actual working behavior.

## 3.3. Metric Calculations

- **Cumulative Work Days**: Total potential working days across all employees, excluding holidays and weekly offs.
- **Cumulative Presence Days**: Sum of all full and half-days where an employee was marked present or working from home.
- **Present Percentage**: Ratio of presence days (full + half-days) to cumulative work days.
- **WFH Percentage**: Ratio of WFH days (full + half-days) to cumulative work days.

- **Sick Leave Percentage**: Ratio of sick leave days to cumulative work days.

This systematic cleaning and computation provided a highly accurate basis for generating attendance trends, behavioral insights, and actionable recommendations.

### 3.4. Visualization

- Developed dashboards to display trends over time, by weekdays, and per employee.

# 4. Key Metrics

| Metric | Value |
|---|---|
| Present Percentage | 82.65% |
| WFH Percentage | 9.18% |
| Sick Leaves Percentage | 1.10% |
| Total Sick Leaves (Count) | 48 |
| Present Cumulative Days | 3,611 |
| Work from Home Days | 401 |
| Cumulative Work Days | 4,369 |

*Table 2 Key Metrics*

# 5. Insights

## 5.1. Work-from-Home Patterns

- Employees are more likely to work from home on **Fridays (11.74%)** and **Thursdays (10.44%)**.
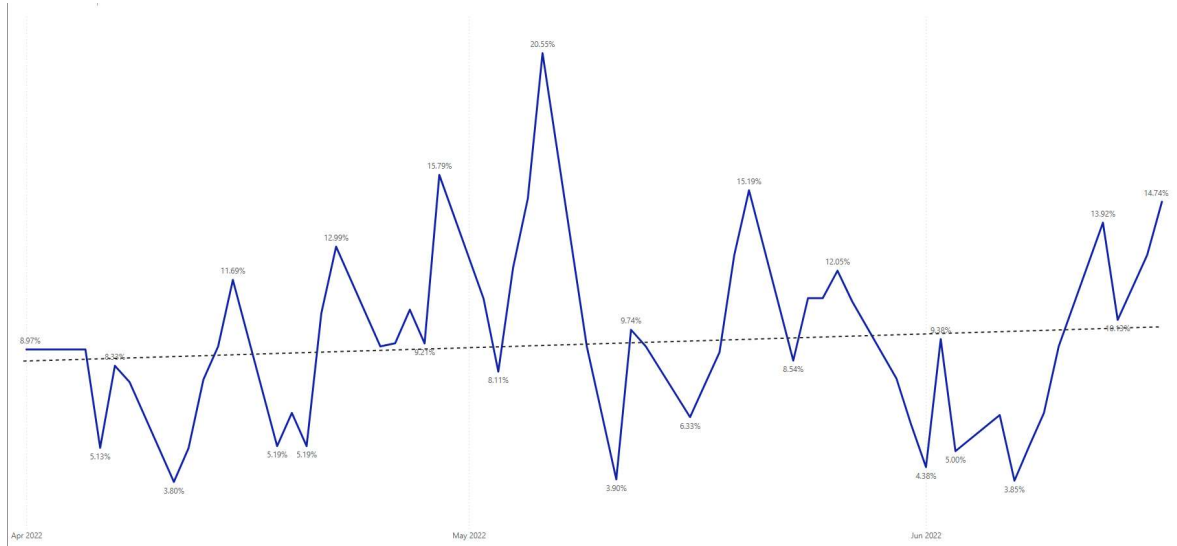- Indicates a tendency to prefer remote work leading into weekends.



*Figure 1 Work from Home Percentage Trend*

| Day of Week | WFH % |
|---|---|
| Fri | 11.74% |
| Mon | 8.18% |
| Thu | 10.44% |
| Tue | 7.55% |
| Wed | 7.77% |
| **Total** | **9.18%** |

*Figure 2 Work from Home Percentage Day Wise Trend*

## 5.2. Sick Leave Trends

- **Mondays** recorded the highest sick leave percentage at **1.62%**.
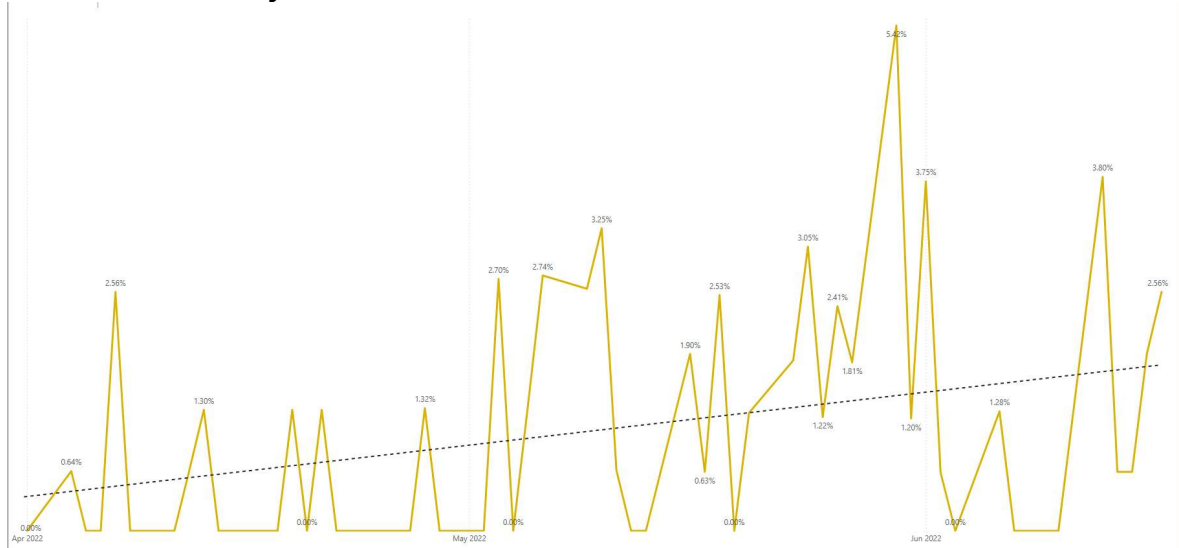- A general **upward trend** in sick leaves was observed from April to June **5.43 % on May 30.**



*Figure 3 Sick Leave Percentage Trend*

| Day of Week | Sick Leaves % |
|---|---|
| Mon | 1.62% |
| Tue | 1.22% |
| Thu | 1.05% |
| Wed | 0.93% |
| Fri | 0.70% |
| **Total** | **1.10%** |

*Figure 4 Sick Leave Percentage Day Wise Trend*

## 5.3. Office Presence

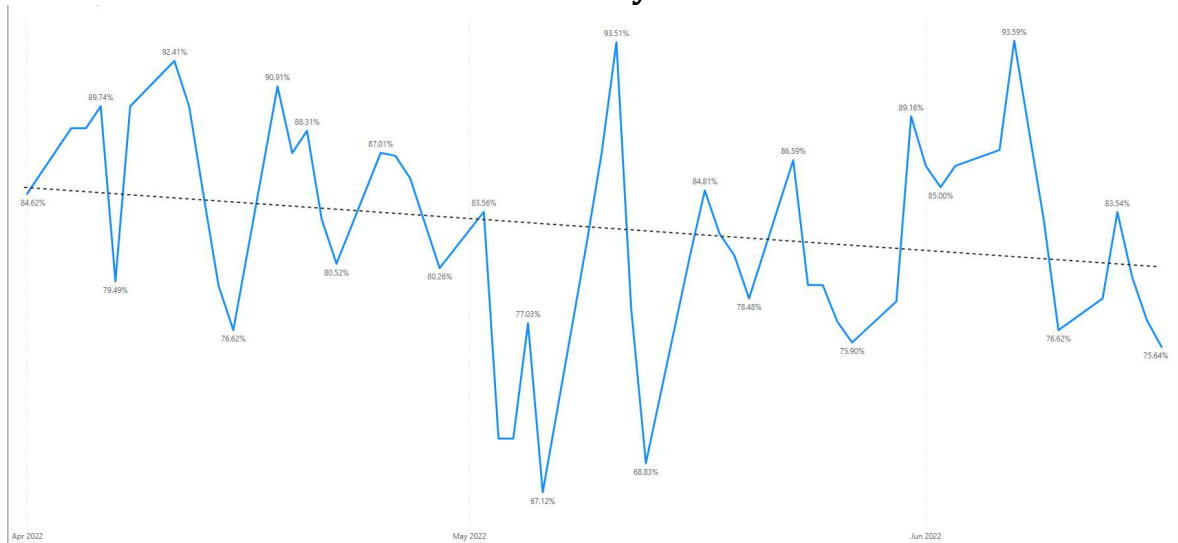- Presence in the office **declined steadily** over the three months.


*Figure 5 Office Presence Percentage Trend*

- Highest present percentages were observed earlier in the week (Tuesday and Monday).

| Day of Week | Present Percentage % |
|---|---|
| Tue | 85.48% |
| Mon | 85.03% |
| Wed | 84.35% |
| Thu | 80.28% |
| Fri | 78.46% |
| **Total** | **82.65%** |

*Figure 6 Present Percentage Day Wise Trend*

# 6. Recommendations

- **Health Monitoring**:
  - The rise in sick leaves suggests potential office health risks.
  - Recommend implementing additional hygiene measures and optional remote work policies when symptoms arise.
- **Employee Engagement**:
  - To counter the declining office presence, HR can introduce flexible schedules, team activities, or wellness programs to make the office environment more inviting.
- **Flexible Work Policy**:
  - Given the preference for WFH on Fridays, HR could consider piloting a flexible Friday or hybrid working model to boost employee morale and satisfaction.

# 7. Conclusion

The analysis has provided Jacobs Ltd with a comprehensive view of employee attendance behavior, critical for both operational planning and employee engagement strategies. With actionable insights on WFH trends and health-related patterns, HR can implement targeted policies to enhance workplace productivity and wellness.