

POWER BI INTEGRATION FOR HR AND WORKFORCE ANALYTICS IN A LOGISTICS COMPANY

1. Background and Problem Statement:

A logistics and warehousing company with over 2,000 employees across multiple hubs faced difficulties in managing workforce data. Key metrics such as absenteeism, overtime, and attrition were tracked manually in Excel sheets by HR staff, leading to inconsistent reports and delayed interventions. Leadership lacked visibility into manpower distribution, productivity, and compliance. The company needed a **Power BI-integrated HR dashboard** to streamline workforce analytics, track trends in real time, and support data-driven HR decision-making.

2. Objectives:

- To integrate Power BI with the organization's HRMS, attendance, and payroll systems
- To create dashboards visualizing headcount, absenteeism, overtime, attrition, and compliance
- To enable regional HR managers and corporate leadership to access consistent, real-time insights
- To improve workforce planning, cost control, and employee engagement through actionable analytics

3. Methodology:

Systems and Data Sources Integrated:

- **SAP HR Module Export:** Employee master, department, location, attrition logs
- **Biometric Attendance System (CSV + SQL):** Check-in/out logs, shift data
- **Payroll System (Excel/ERP):** Overtime, leave balance, salary components
- **Power BI Tools Used:** Power BI Desktop, Gateway for refresh scheduling, DAX formulas

Implementation Steps:

1. **Data Consolidation and Cleaning:**
 - Unified employee IDs across systems

- Applied calculated columns for metrics like attendance %, overtime hours, and headcount ratio

2. Dashboard Design and Components:

- **Workforce Overview Page:**
 - Headcount by location, department, and designation
 - Joiners vs. leavers vs. net change
- **Attendance & Leave Monitor:**
 - Daily attendance %
 - Top reasons for absenteeism (tagged via HR comments)
 - Leave balance tracking by employee
- **Overtime & Compliance Dashboard:**
 - Overtime hours vs. approved hours
 - Compliance violations: overwork, missing log-ins, labor law flags
- **Attrition & Retention Analytics:**
 - Attrition trends by month, location, and function
 - Average tenure, early exits, and retention hotspots

4. Results:

- Reduced manual reporting time by **80%** through centralized dashboards
- Early detection of absenteeism spikes allowed managers to take pre-emptive measures
- Attrition hotspots in two locations were flagged and addressed through policy revisions
- Compliance reports auto-generated for labor audit submission, reducing effort and risk
- Average overtime hours dropped by **14%** due to visibility and targeted controls

5. Interpretation and Insights:

- Repetitive absenteeism clustered around specific shifts and departments, suggesting workload imbalance
- Tenure analysis highlighted that most attrition occurred within the first 6 months → revised onboarding and training programs

- Overuse of overtime was concentrated among certain supervisors, pointing to poor manpower planning
- Managers began using dashboards weekly to realign staff scheduling and reduce understaffed shifts

6. Recommendations:

- Automate alerts for absenteeism breaches and unapproved overtime
- Integrate employee engagement survey results to correlate satisfaction and retention
- Launch HR KPI review dashboards for all regional hubs
- Use Power BI mobile app to enable access for on-site HR executives

7. Future Work:

- Add performance appraisal data for correlation with absenteeism and attrition
- Build predictive model to flag high-risk employees for proactive retention
- Integrate training and upskilling dashboards with LMS (Learning Management System)

8. Stakeholder Relevance:

Academic:

- Demonstrates the use of business intelligence for HR analytics and compliance
- Suitable for HRM, workforce analytics, and Power BI training modules

Corporate:

- Enables HR teams to move from reactive reporting to proactive decision-making
- A complete solution for logistics firms managing large distributed workforces