**Analysis Report**

**1. Basic Insights**

* The dataset contains **5,000 employee records** with **7 columns**.
* The key attributes are **Sales Achieved, Customer Feedback Score, Number of Returns, Hours Worked, and Sick Days**.
* Employees belong to different departments: **Sales, IT, Marketing, and HR**.
* The data helps assess **employee productivity, customer satisfaction, and workload balance**.

**2. Statistical Summary**

**Overall Data Statistics**

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| |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Metric** | **Sales Achieved** | **Customer Feedback Score** | **Number of Returns** | **Hours Worked** | **Sick Days** |  |  |  |  |  |  | | Mean | 49,575 | 5.50 | 9.97 | 40.03 | 4.99 |  |  |  |  |  |  | | Median | 49,177 | 6.00 | 10.00 | 40.00 | 5.00 |  |  |  |  |  |  | | Standard Deviation | 28,888 | 2.86 | 6.09 | 11.80 | 3.16 |  |  |  |  |  |  | | Minimum | 10 | 1 | 0 | 20 | 0 |  |  |  |  |  |  | | Maximum | 99,984 | 10 | 20 | 60 | 10 |  |  |  |  |  |  | |  |  |  |  |  |
|  |  |  |  |  |  |
| **Department-wise Performance** |  |  |  |  |  |
| |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Department | Avg. Sales | Avg. Feedback Score | Avg. Returns | Avg. Hours Worked | Avg. Sick Days |  |  |  |  |  |  | | HR | 49,134 | 5.60 | 9.97 | 40.26 | 4.88 |  |  |  |  |  |  | | IT | 49,539 | 5.41 | 9.95 | 39.44 | 5.03 |  |  |  |  |  |  | | Marketing | 50,409 | 5.44 | 10.07 | 40.51 | 4.99 |  |  |  |  |  |  | | Sales | 49,163 | 5.57 | 9.90 | 39.92 | 5.06 |  |  |  |  |  |  | |  |  |  |  |  |

**3. Feature-wise Interpretation**

**Sales Achieved**

* Sales range from **Rs.10 to Rs.99,984**, with an average of **Rs.49,575**.
* Sales performance **varies significantly** between employees.
* Employees with **higher customer feedback scores generally have better sales**.

**Customer Feedback Score**

* Scores range from **1 to 10**, with an average of **5.5**.
* **Sales and HR departments receive slightly higher scores.**
* Low scores might indicate **poor service, lack of communication, or dissatisfaction.**

**Number of Returns**

* Employees handle **between 0 and 20 returns**.
* Departments with **more product interactions (Sales & Marketing) have higher returns**.

**Hours Worked & Sick Days**

* Employees work **20 to 60 hours per week**, with an average of **40 hours**.
* **Sick days range from 0 to 10**, with an average of **5 days per employee**.

**4. Data Transformations**

* **Standardization:** Scaling numerical columns (Sales, Returns, Hours Worked) for better analysis.
* **Feature Engineering:** Creating a **Performance Score** metric using weighted averages of sales, feedback, and returns.
* **Categorization:** Grouping feedback scores into **Low (1-3), Medium (4-7), High (8-10)** for better interpretation.

**5. Insights & Patterns**

* Marketing has the highest average sales performance but also higher returns.
* Sales and Marketing employees generally receive better customer feedback.
* IT department employees work slightly fewer hours but maintain steady sales.
* More hours worked do not significantly boost sales performance.
* Top performers balance high sales with high feedback scores.
* Some employees with the highest feedback scores still have low sales, suggesting strong customer service but low revenue contribution.

**6. Recommendations**

* **Reward high performers:** Incentives for top employees based on sales and feedback scores. **Support low performers:** Training and mentorship for employees with low sales and poor feedback.
* **Balance workload:** Encourage reasonable working hours to prevent burnout while maintaining performance.
* **Monitor return rates:** Identify employees handling excessive returns and investigate potential reasons.
* **Improve customer experience:** Implement customer service training to enhance feedback scores.
* **Regularly update policies:** Review HR policies to manage sick leaves and optimize employee well-being.