Task Performance and Defect Analysis

Problem Statement

- As a Data Analyst, the task is to analyze and derive insights from a dataset containing various features related to tasks, samples, defects, errors, and employee information within a company.

- Company operates across multiple departments, each responsible for executing various tasks critical to the company's operations. These tasks encompass a wide range of activities, from production processes to administrative functions.

- However, the company faces challenges in maintaining consistent task quality and efficiency, as evidenced by varying defect rates and error occurrences across departments and employee teams.

Analysis Objectives:

Task Performance Analysis:

- Evaluate the frequency and types of tasks performed over time. Identify trends in task completion rates and variations across departments and auditors.

Defect and Error Analysis:

- Investigate the relationship between defects, errors, and task types. Determine which tasks are more prone to defects and errors. Assess the impact of defects and errors on overall productivity.

Employee Productivity and Performance:

- Analyze employee performance based on task completion rates, defects, and errors. Identify high-performing employees and areas for improvement.

Analysis Objectives:

Managerial Oversight:

- Evaluate the effectiveness of managers in overseeing tasks and addressing defects and errors. Assess managerial responsiveness to issues identified during tasks.

Departmental Efficiency:

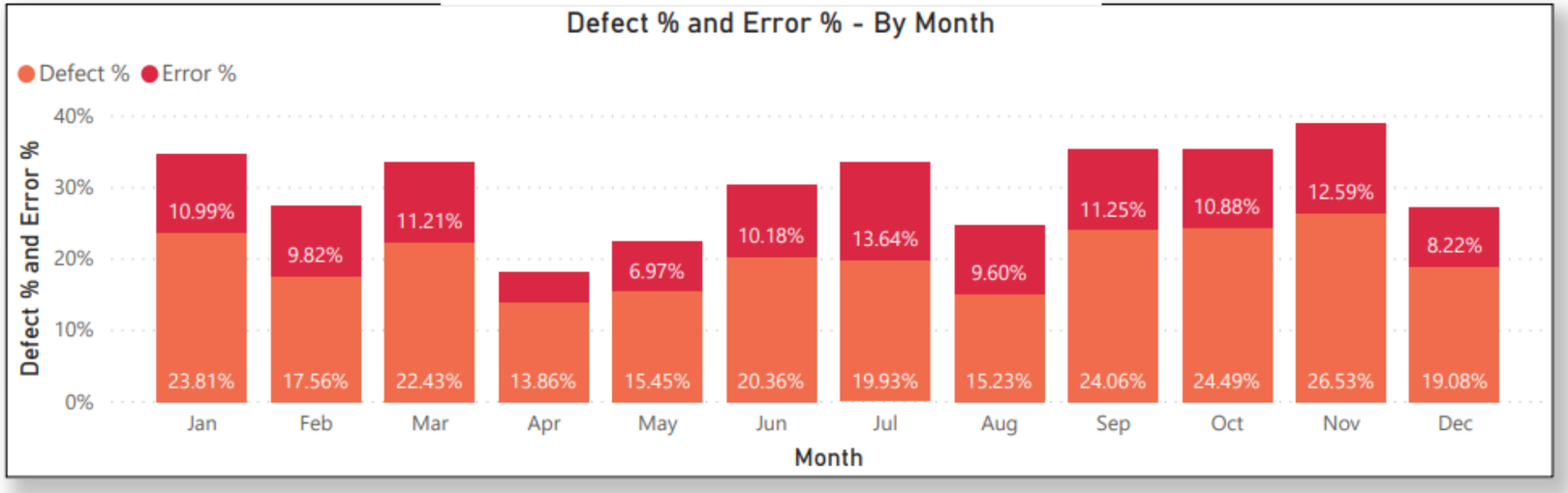
- Compare the performance and efficiency of different departments based on task completion rates, defects, and errors. Identify departments that may require additional resources or process improvements.

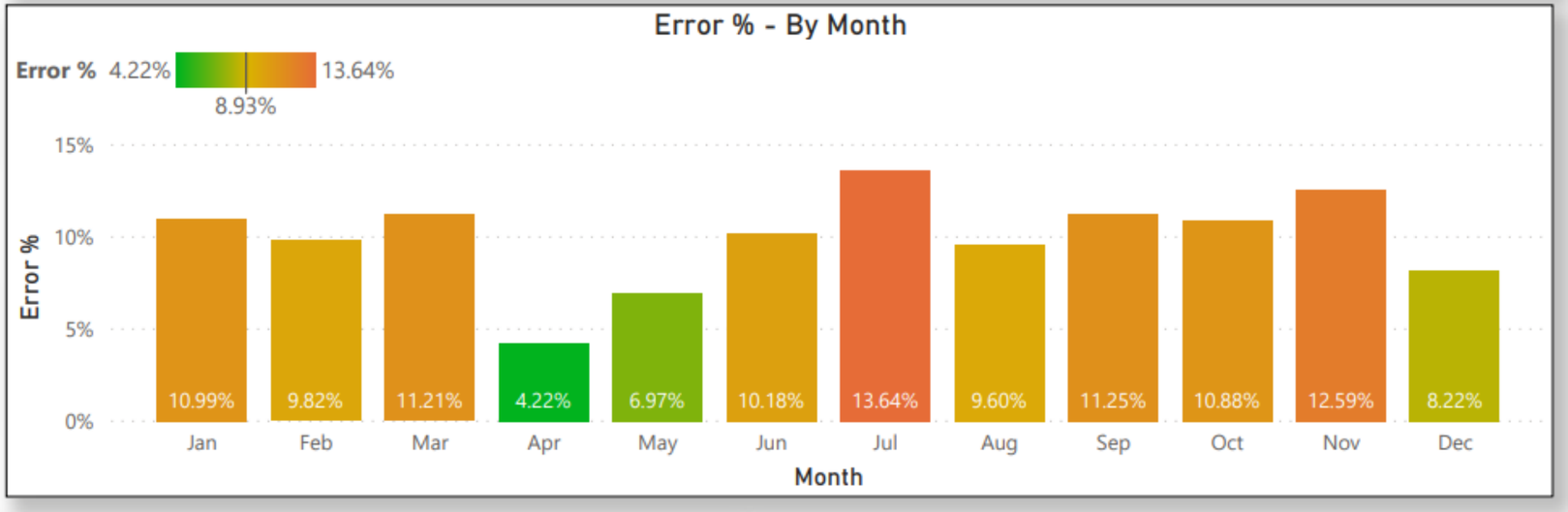
Auditor Performance:

- Assess the performance of auditors in identifying defects and errors during tasks. Determine whether certain auditors consistently perform better than others.

Quality Analysis Dashboard

15K All task Total	79.90% Quality Score
3667 Sample Total	25.21% Sample %
737 Defects Total	20.10% Defect %
362 Errors Total	9.87% Error %





Department

Backoffice | Finance | Sales

Auditor Name

Auditor A | Auditor X | Auditor Y | Auditor Z

Manager

Evelyn Harry | Louis Adam | Nicholas Justin

Analysis Insights

- **Overall quality score:** 79.90%

- **Defect % and Error % by Month:** This section shows the number of defects and errors, as well as the defect and error rates, for each month. The defect rate is the number of defects divided by the total number of tasks, while the error rate is the number of errors divided by the total number of tasks. The month with the highest defect rate is March (23.81%) and the month with the highest error rate is December (26.53%).

- **All tasks total:** This section shows the total number of defects, errors, and tasks for all tasks. There are a total of 15,000 tasks, 3,667 defects, and 1,737 errors.

- **Sample total:** This section shows the same information as the "All tasks total" section, but for a sample of the data. There are a total of 366 samples, 362 errors, and 737 defects.

Analysis Insights

- **Defect % by Month:** This section shows the defect rate for each month. The month with the highest defect rate is March (23.81%) and the month with the lowest defect rate is September (15.23%).

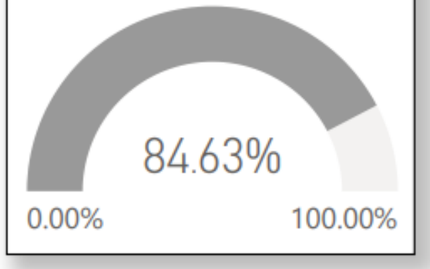
- **Error % by Month:** This section shows the error rate for each month. The month with the highest error rate is December (26.53%) and the month with the lowest error rate is January (0%).

- **Department:** This section shows the department, auditor name, and manager for each auditor.

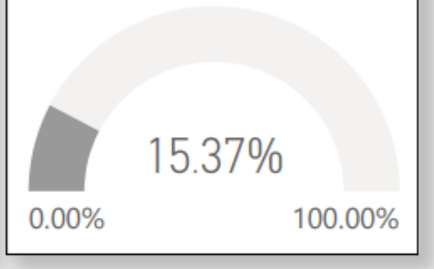
Over All Analysis:

Overall, the quality score is good, but there is room for improvement. The defect rate and error rate are highest in March and December, respectively. It is important to investigate why these rates are higher in these months and take steps to improve the quality of work in these months.

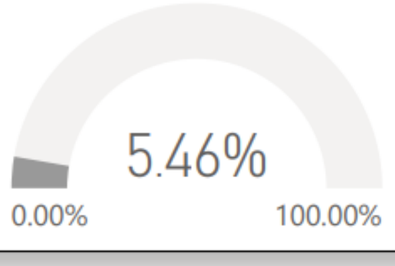
Quality Score



Defect %



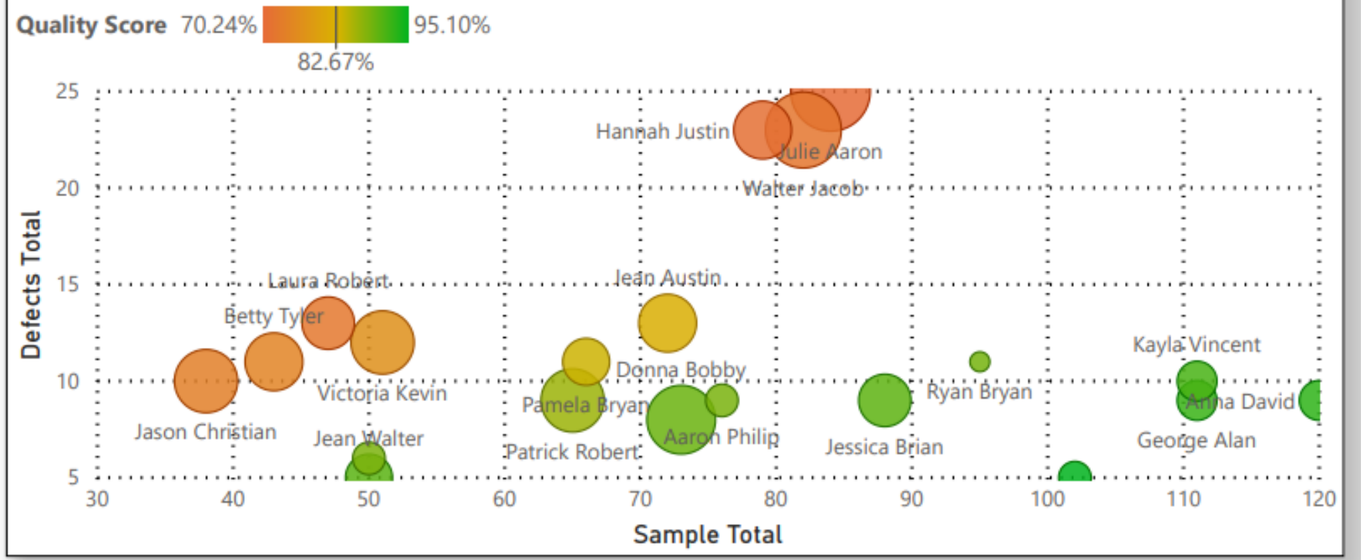
Error %



Quality Details - Based on Managers

Manager	Department	Sample %	Defect %	Error %	Quality Score
Diana Mark	Sales	23.92%	9.43%	3.14%	90.57%
Hannah Roy	Sales	21.92%	25.92%	9.17%	74.08%
Richard Gabriel	Sales	24.93%	19.32%	7.95%	80.68%
Total		**23.41%**	**15.37%**	**5.46%**	**84.63%**

Sample Total vs Defects Total vs Error Total



Quality Details - Based on Employees

Emp Name	Department	Sample %	Defect %	Error %	Quality Score
Aaron Philip	Sales	22.35%	11.84%	1.32%	88.16%
Anna David	Sales	25.42%	7.50%	1.67%	92.50%
Anthony Noah	Sales	29.31%	4.90%	0.98%	95.10%
Betty Tyler	Sales	22.28%	25.58%	11.63%	74.42%
Donna Bobby	Sales	20.28%	10.96%	9.59%	89.04%
George Alan	Sales	26.00%	8.11%	1.80%	91.89%
Hannah Justin	Sales	20.79%	29.11%	6.33%	70.89%
Jason Christian	Sales	21.71%	26.32%	15.79%	73.68%
Jean Austin	Sales	29.27%	18.06%	6.94%	81.94%
Jean Walter	Sales	16.95%	10.00%	6.00%	90.00%
Jessica Brian	Sales	22.56%	10.23%	4.55%	89.77%
Julie Aaron	Sales	17.57%	29.76%	11.90%	70.24%
Kayla Vincent	Sales	25.52%	9.01%	1.80%	90.99%
Laura Robert	Sales	23.50%	27.66%	8.51%	72.34%
Marie Ethan	Sales	24.04%	12.00%	2.00%	88.00%
Pamela Bryan	Sales	23.16%	16.67%	4.55%	83.33%
Patrick Robert	Sales	24.71%	13.85%	9.23%	86.15%
Ryan Bryan	Sales	24.05%	11.58%	0.00%	88.42%
Victoria Kevin	Sales	27.57%	23.53%	11.76%	76.47%
Walter Jacob	Sales	23.77%	28.05%	10.98%	71.95%
Total		**23.41%**	**15.37%**	**5.46%**	**84.63%**

Department

- ○ Backoffice
- ○ Finance
- ◉ Sales

Auditor Name

- ☐ Auditor A
- ☐ Auditor X
- ■ Auditor Y
- ☐ Auditor Z

Quality Details - Based on Locations

Office Location	Sample %	Defect %	Error %	Quality Score
Australia	24.93%	19.32%	7.95%	80.68%
China	23.57%	9.59%	3.94%	90.41%
United Kingdom	25.00%	11.17%	3.07%	88.83%
United States	21.34%	26.23%	8.83%	73.77%
Total	**23.41%**	**15.37%**	**5.46%**	**84.63%**

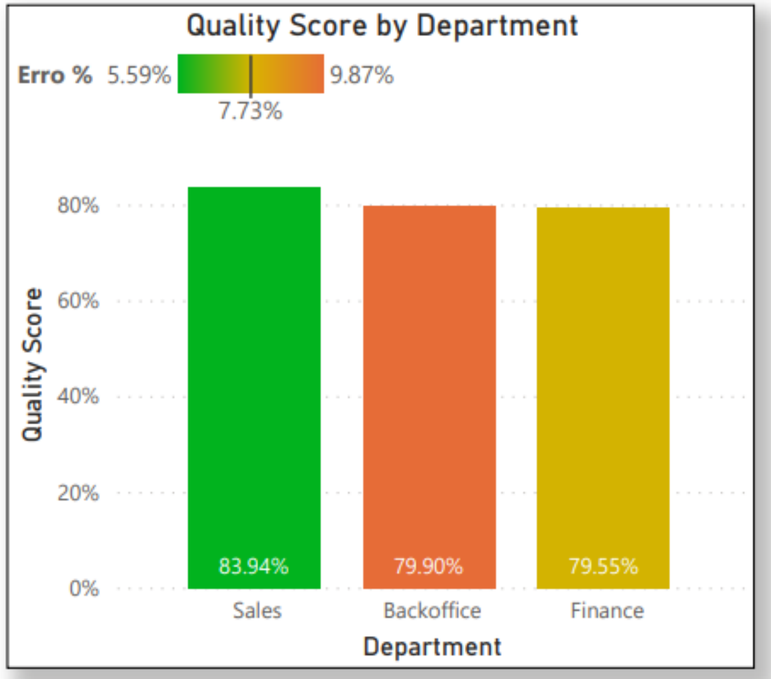
Analysis Insights

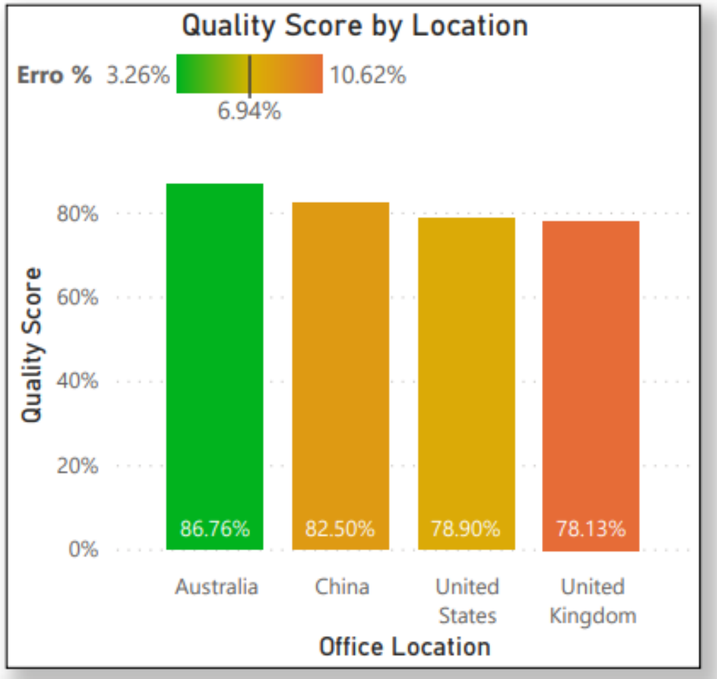
The report shows the quality score of samples, defects, and errors, as well as a breakdown by managers, departments, employees, and locations.

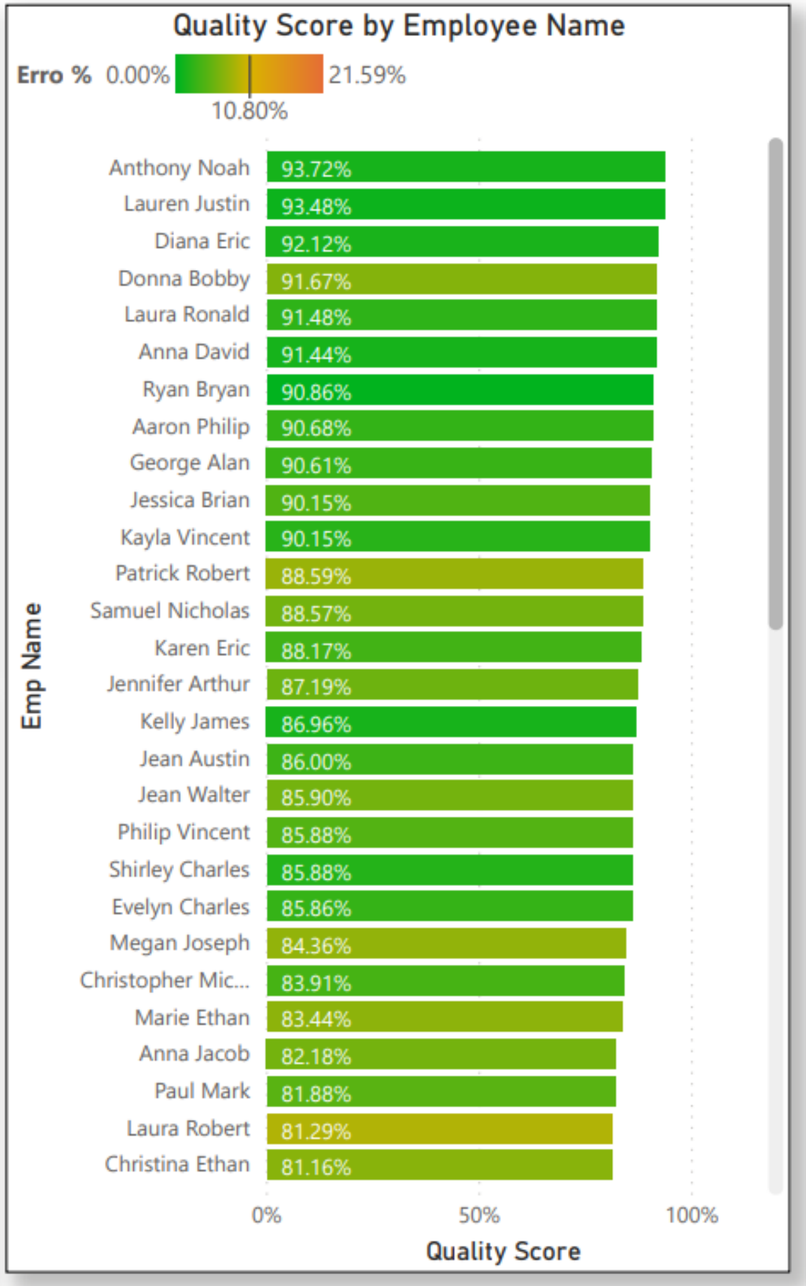
- Overall quality score: 84.63%
- Defect rate: 15.37%
- Error rate: 5.46%

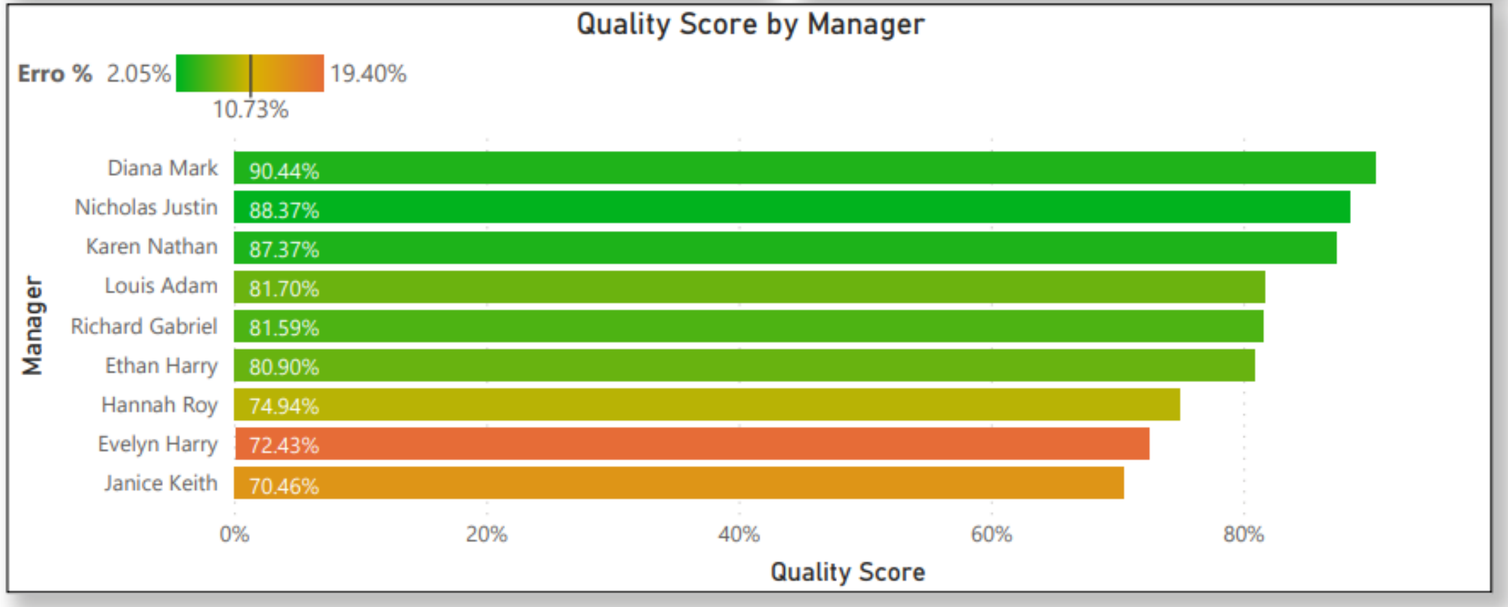
The report also shows that the quality score is higher for managers than for employees, and that the quality score is highest for the Sales department. The quality score is also higher for locations in China and the United Kingdom than for locations in the United States.

It is important to note that this report only shows a snapshot of the quality data at a specific point in time. It is possible that the quality of the data has changed since the report was generated.


Quality Score by Department
Erro % 5.59% 9.87%
7.73%
80%
60%
40%
20%
0%
Quality Score
83.94%
79.90%
79.55%
Sales
Backoffice
Finance
Department


Quality Score by Location
Erro % 3.26% 10.62%
6.94%
80%
60%
40%
20%
0%
Quality Score
86.76%
82.50%
78.90%
78.13%
Australia
China
United States
United Kingdom
Office Location


Quality Score by Employee Name
Erro % 0.00% 21.59%
10.80%
Emp Name
Anthony Noah 93.72%
Lauren Justin 93.48%
Diana Eric 92.12%
Donna Bobby 91.67%
Laura Ronald 91.48%
Anna David 91.44%
Ryan Bryan 90.86%
Aaron Philip 90.68%
George Alan 90.61%
Jessica Brian 90.15%
Kayla Vincent 90.15%
Patrick Robert 88.59%
Samuel Nicholas 88.57%
Karen Eric 88.17%
Jennifer Arthur 87.19%
Kelly James 86.96%
Jean Austin 86.00%
Jean Walter 85.90%
Philip Vincent 85.88%
Shirley Charles 85.88%
Evelyn Charles 85.86%
Megan Joseph 84.36%
Christopher Mic... 83.91%
Marie Ethan 83.44%
Anna Jacob 82.18%
Paul Mark 81.88%
Laura Robert 81.29%
Christina Ethan 81.16%
0%
50%
100%
Quality Score


Quality Score by Manager
Erro % 2.05% 19.40%
10.73%
Manager
Diana Mark 90.44%
Nicholas Justin 88.37%
Karen Nathan 87.37%
Louis Adam 81.70%
Richard Gabriel 81.59%
Ethan Harry 80.90%
Hannah Roy 74.94%
Evelyn Harry 72.43%
Janice Keith 70.46%
0%
20%
40%
60%
80%
Quality Score

Analysis Insights

- **Quality Score by Department:** The Sales department has the highest quality score (83.94%), followed by Backoffice (79.90%) and Finance (79.55%).

- **Quality Score by Location:** China has the highest quality score (86.76%), followed by the United States (78.90%), the United Kingdom (78.13%), and Australia (77.55%).

- **Quality Score by Employee Name:** The employee with the highest quality score is Anthony Noah (93.72%), followed by Lauren Justin (93.48%) and Diana Eric (92.12%).

- **Quality Score by Manager:** The manager with the highest quality score is Kelly James (84.59%), followed by Karen Nathan (87.37%) and Nicholas Justin (88.37%).

Overall, the data suggests that the Sales department, China, and Anthony Noah have the highest quality scores

Thank you!