



Hiring Process Analytics

Statistics

Overview

This project focuses on analyzing the dataset which is provided by the company with the data records of their previous hiring's. My task is to go through these trends and draw insights out of it and answer certain questions making sense out of that data. So, that these insights are then used by hiring department to work upon.

This data contains hiring records started from May 1st, 2014 to August 31st, 2014 and having details about people who registered for a particular post in a department of this company.

I have to use my knowledge in statistics and apply different formulas in Excel and draw necessary conclusions about the company based on the following criteria:

1. **Hiring:** Process of in-taking of people into an organization for different kinds of positions.
2. **Average Salary:** Adding all the salaries for a select group of employees and then dividing the sum by the number of employees in the group.
3. **Class Intervals:** The class interval is the difference between the upper class limit and the lower class limit. Draw the class intervals for salary in the company.
4. **Charts and Plots:** This is one of the most important parts of analysis to visualize the data. Draw Pie Chart/Bar Graph (or any other graph) to show proportion of people working different department.
5. **Charts:** Use different charts and graphs to perform the task representing the data. Represent different post tiers using chart/graph.

What is Hiring Process Analytics?

Hiring process analytics enables your hiring team to measure hiring efforts and adjust strategy based on data rather than instinct or experience alone. Hiring process analytics are an essential part of the hiring process. These analytics are data-driven that lead to finding, choosing and hiring the right candidates.

Hiring process is the fundamental and the most important function of a company. Here, the companies get to know about the major underlying trends about the hiring process. Trends such as **number of rejections, number of interviews, types of jobs, vacancies** etc. are important for a company to analyze before hiring fresher's or any other individual.

Hiring process analytics is the interpretation of past data and patterns in the hiring process. This data is studied carefully to understand the connections between variables. This analysis helps in making decisions for improvements in the hiring process. Well, data are the figures and statistics gathered from hiring activities. These activities include candidate sourcing, interview time taken, on boarding practices, etc.

Project Approach

This project is performed using MS Excel 2007 to answer the questions asked. First I have done EDA and following are the steps:

I. Understanding data columns and data

There are **7168** rows and **7** columns i.e. **application_id, Interview Taken on, Status, event_name, Department, Post Name, Offered Salary** in the dataset.

Columns	Unique Values
application_id	7141
Interview Taken on	7114
Status	2
event_name	4
Department	9
Post Name	16
Offered Salary	6910

II. Checking for missing data

There are some missing values in columns **event_name**, **Post Name** and **Offered Salary** as shown.

- For column **event_name** missing values are replaced with **“Don’t want to say”**.
- For column **Post Name** missing values are replaced with **Mode** that is **“c5”**.
- For column **Offered Salary** missing values are replaced with **Mean**.

Columns	Missing Values
application_id	0
Interview Taken on	0
Status	0
event_name	15
Department	0
Post Name	1
Offered Salary	1

III. Checking for outliers

The outliers are detecting using **IQR (Inter Quartile Range)** and it is found that there are **5** outliers in the data.

O2 =COUNTIF(I2:I7169,"TRUE")															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	application_id	Interview Taken on	Status	event_name	Department	Post Name	Offered Salary		Outlier	Q1	Q3	IQR	Upper	Lower	Total Outliers
2	383422	01-05-14 11:40	Hired	Male	Service Department	c8	56553		FALSE	25463.75	74429	48965.25	147876.9	981.125	5
3	907518	06-05-14 08:08	Hired	Female	Service Department	c5	22075		FALSE						
4	176719	06-05-14 08:08	Rejected	Male	Service Department	c5	70069		FALSE						
5	429799	02-05-14 16:28	Rejected	Female	Operations Department	i4	3207		FALSE						
6	253651	02-05-14 16:32	Hired	Male	Operations Department	i4	29668		FALSE						
7	289907	01-05-14 07:44	Hired	Male	Sales Department	c5	85914		FALSE						
8	959124	06-05-14 16:27	Rejected	Male	Sales Department	i7	69904		FALSE						
9	86642	09-05-14 13:17	Rejected	Male	Sales Department	i7	11758		FALSE						
10	751029	02-05-14 13:09	Hired	Female	Service Department	i4	15156		FALSE						
11	434547	02-05-14 13:11	Rejected	Female	Service Department	i4	49515		FALSE						
12	518854	01-05-14 09:00	Rejected	Male	Service Department	n10	26990		FALSE						
13	649039	07-05-14 10:48	Hired	Female	Service Department	b9	200000		TRUE						
14	199526	07-05-14 10:50	Hired	Male	Service Department	b9	86787		FALSE						
15	539803	15-05-14 09:31	Hired	Male	Finance Department	b9	2308		FALSE						
16	191009	09-05-14 12:48	Hired	Female	Service Department	i7	56688		FALSE						
17	195323	09-05-14 12:48	Hired	Don't want to say	Service Department	i7	81757		FALSE						
18	51318	02-05-14 08:07	Hired	Male	Service Department	i5	15134		FALSE						
19	742283	02-05-14 08:11	Rejected	Don't want to say	Service Department	i5	100		TRUE						
20	513166	01-05-14 22:53	Hired	Female	Operations Department	i1	73579		FALSE						
21	791372	01-05-14 22:54	Rejected	Male	Operations Department	i1	50351		FALSE						
22	47857	01-05-14 22:55	Rejected	Female	Operations Department	i1	38462		FALSE						
23	834101	01-05-14 22:53	Rejected	Don't want to say	Operations Department	i1	82510		FALSE						
24	985008	01-05-14 09:41	Rejected	Male	Service Department	i6	52554		FALSE						
25	891568	01-05-14 16:28	Hired	Female	Operations Department	i7	3423		FALSE						
26	935899	10-05-14 14:17	Rejected	Male	Service Department	i1	88744		FALSE						
27	780839	10-05-14 14:18	Hired	Female	Service Department	i1	70979		FALSE						
28	851764	01-05-14 16:01	Rejected	Male	Operations Department	i6	99574		FALSE						
29	202821	01-05-14 16:01	Hired	Male	Operations Department	i6	52176		FALSE						
30	969924	01-05-14 11:47	Rejected	Male	Finance Department	i1	61432		FALSE						
31	765579	01-05-14 09:26	Rejected	Male	Sales Department	i4	87884		FALSE						

IV. Removing outliers

In this step I have removed the outliers by simply the deleting that entire row.

After the cleaning the data, then performed the analysis and finding the information that will help the hiring department.

Tech-Stack Used

Microsoft Excel 2007 is powerful data visualization and analysis software, which uses spreadsheets to store, organize, and track datasets with formulas and functions. Excel is used by hiring department, accountants, data analysts, and other professionals. It's part of the Microsoft Office suite of products.



What is Excel Used for?

- We can enter data in Strings, Dates or Numerical type of data in the Excel
- We can use variety of formulas available in Excel to perform calculations
- We can Develop Tools and Dashboards
- We can represent data in Charts
- We can drill down and analyze the data using Pivot Tables

Features of MS Excel

- **Graphical Features of Excel:** Excel has variety of the graphical features to represent the data in Charts and pictorial format. For Example: Charts, Shapes, Smart Arts, Clip Arts, Pictures, etc.
- **Database Features of Excel:** Excel can be used as database and perform variety of data operations. For example: Pivot Tables, Slicers, Tables, Spark lines, Database, Sorting, Filtering, Data Validation, Grouping, etc.
- **Functional Features of Excel:** Excel Tools and Functions will help to perform powerful calculations and enhance the Excel Application Features. For example: Formulas, VBA Macros, Add-ins, Hyperlinks, Conditional Formatting, Spell Check, Protection, etc.

Insights

1. How many males and females are hired?

	Hired
Male	2561
Female	1853

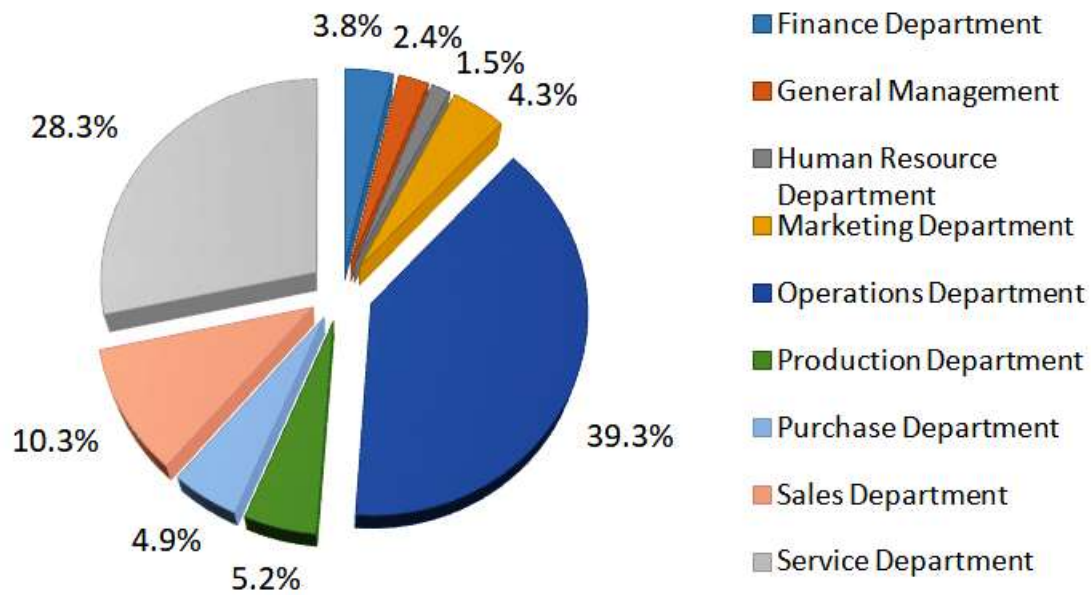
2. What is the average salary offered in this company?

Department	Sum of Salary Offered
Service Department	67131165
Operations Department	90148854
Sales Department	23541682
Finance Department	8579698
Production Department	12140315
Purchase Department	11979912
Marketing Department	9664366
General Management	6171553
Human Resource Department	3431008
Sum of Salaries:	232788553
Number of Employees:	4693
Average Salary Offered:	49603.36

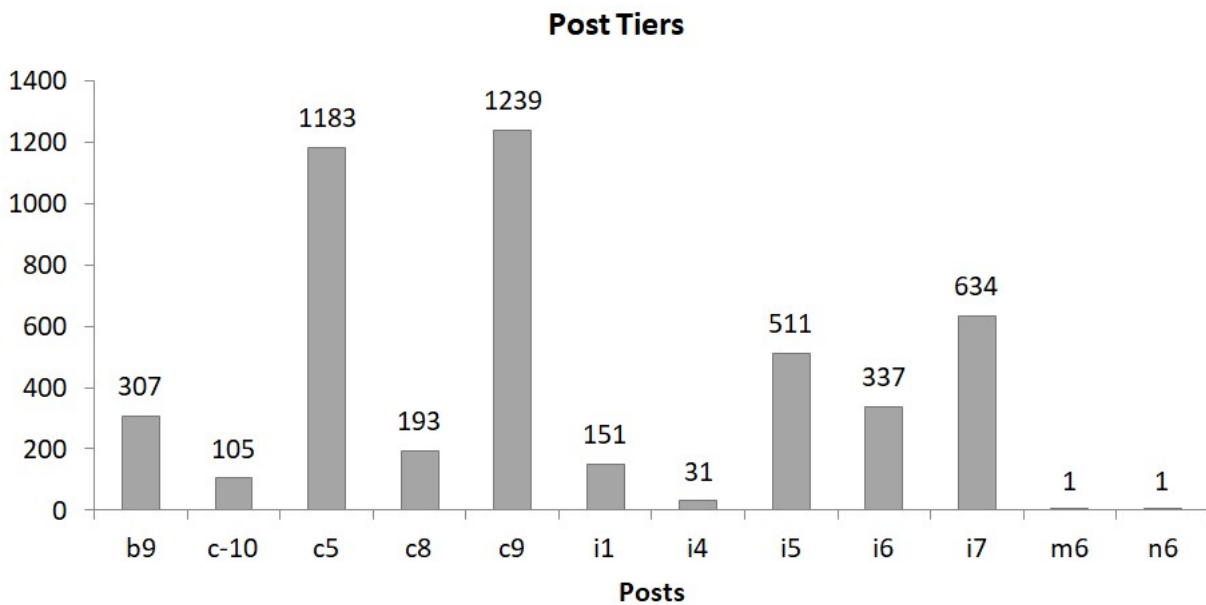
3. Draw the class intervals for salary in the company?

Lower Class Limit	Upper Class Limit	Frequency
0	10000	676
10000	20000	732
20000	30000	711
30000	40000	710
40000	50000	782
50000	60000	750
60000	70000	698
70000	80000	734
80000	90000	711
90000	100000	659

4. Draw Pie Chart/Bar Graph (or any other graph) to show proportion of people working different department?



5. Represent different post tiers using chart/graph?





Result

Hiring process analytics can help you make better hiring decisions and ultimately, build a strong workforce for your organization but only when you use it wisely.

It is crucial to know what metrics to track and why to understand what the data is telling you and to then act on that data to drive meaningful improvements. Doing so will allow you to continuously optimize your hiring process and make great hires, even under challenging, changing, and unforeseen circumstances.

To sum it up, hiring process analytics is your road map to attain your organizational goals. It helps you examine and analyze key metrics that tell how well your hiring process is functioning. Furthermore, you get to know your hiring strengths and weaknesses that help improve the hiring process leading to quality hiring.

Constantly track your hiring process analytics to leave no stone unturned in making your organization productive. You just cannot skip any stage if you want the best outcomes.