Problem Statement

KPI Requirement

The HR Department is responsible for monitoring and managing various aspects of employee data to ensure the organization maintains a healthy workforce. However, there is a lack of clear performance indicators to track and analyze key HR Metrices. Therefore, there is a need to design and implement a set of KPIs to address the following points:

1. Employee Count: The HR Department lacks visibility into the total number of employees, making it challenging to access workforce size and plan for future growth or downsizing effectively.
2. Attrition Count: The organization lacks a standardized method to track employee attrition, resulting in complete and unreliable data on the number of employees who have left the organization.
3. Attrition Rate: Without a clear measure of attrition rate, the organization can not access the overall turnover level or compare it with industry benchmarks, hindering the ability to gauge employee satisfaction and engagement.
4. Active Employees: The organization lacks a mechanism to differentiate between active and inactive employees, leading to difficulties in accurately assessing the current workforce's productivity and capacity.
5. Average Age: The HR department lacks visibility into the average age of employees, making it difficult to evaluate workforce demographics, succession planning and the organization's abilities to attract and retain younger talent.

Chart Requirement

1. Attrition by Gender: The HR Department faces challenges in understanding the attrition patters based on gender, making it difficult to identify any gender-related disparities and implement targeted retention strategies.
2. Department by Attrition: The HR Department lacks visualization to showcase attrition rate across different departments. This hinders their ability to identify departments with higher attrition rate and address any underlying issues or concerns effectively.
3. Number of Employees by Age Group: The HR department require visual representations to analyze the distribution of employees across various age groups. This helps in assessing workforce demographics, identifying any age-related gaps or imbalances and implementing targeted HR Policies or programs.
4. Job Satisfaction Rating: The HR department lacks visualizations to represent job satisfaction ratings, hindering their abilities to measure employee engagement and overall job satisfaction levels effectively.
5. Education Field-wise Attrition: The HR Department requires visual representations to analyze attrition rate based on education fields. This helps identify specific educational backgrounds that may be associated with higher attrition, enabling the organization to tailor retention strategies accordingly.
6. Attrition Rate by Gender for Different Age Groups: The HR department lacks visualizations that display attrition rate based on gender and different age groups. This makes it challenging to identify any age and gender related attrition trends, preventing the

organization from implementing targeted retention strategies for specific employee segments.

SQL Queries

Create Table

```
create table hrdata
(
	emp_no int8 PRIMARY KEY,
	gender varchar(50) NOT NULL,
	marital_status varchar(50),
	age_band varchar(50),
	age int8,
	department varchar(50),
	education varchar(50),
	education_field varchar(50),
	job_role varchar(50),
	business_travel varchar(50),
	employee_count int8,
	attrition varchar(50),
	attrition_label varchar(50),
	job_satisfaction int8,
	active_employee int8
)
```

Import Data in Table Using Query

```
COPY hrdata FROM 'D:\hrdata.csv' DELIMITER ',' CSV HEADER;
```

Employee Count:

```
select sum(employee_count) as Employee_Count from hrdata;
```

Attrition Count:

```
select count(attrition) from hrdata where attrition='Yes';
```

Attrition Rate:

```
select
round (((select count(attrition) from hrdata where attrition='Yes')/
sum(employee_count)) * 100,2)
from hrdata;
```

Active Employee:

```
select sum(employee_count) - (select count(attrition) from hrdata  where attrition='Yes')
from hrdata;
```

OR

```
select (select sum(employee_count) from hrdata) - count(attrition) as active_employee from
hrdata

where attrition='Yes';
```

Average Age:

```
select round(avg(age),0) from hrdata;
```

Attrition by Gender

```
select gender, count(attrition) as attrition_count from hrdata

where attrition='Yes'

group by gender

order by count(attrition) desc;
```

Department wise Attrition:

```
select department, count(attrition), round((cast (count(attrition) as numeric) /

(select count(attrition) from hrdata where attrition= 'Yes')) * 100, 2) as pct from hrdata

where attrition='Yes'

group by department

order by count(attrition) desc;
```

No of Employee by Age Group

```
SELECT age,  sum(employee_count) AS employee_count FROM hrdata
GROUP BY age
order by age;
```

Education Field wise Attrition:

```
select education_field, count(attrition) as attrition_count from hrdata
where attrition='Yes'
group by education_field
order by count(attrition) desc;
```

Attrition Rate by Gender for different Age Group

```
select age_band, gender, count(attrition) as attrition,
round((cast(count(attrition) as numeric) / (select count(attrition) from hrdata where attrition = 'Yes'))
* 100,2) as pct
from hrdata
where attrition = 'Yes'
group by age_band, gender
order by age_band, gender desc;
```

Job Satisfaction Rating

```
-Run this query first to activate the cosstab() function in postgres
CREATE EXTENSION IF NOT EXISTS tablefunc;

-Then run this to get o/p-
SELECT *
FROM crosstab(
  'SELECT job_role, job_satisfaction, sum(employee_count)
   FROM hrdata
   GROUP BY job_role, job_satisfaction
   ORDER BY job_role, job_satisfaction'
         ) AS ct(job_role varchar(50), one numeric, two numeric, three numeric, four numeric)
ORDER BY job_role;
```