TABLEAU DASHBOARD

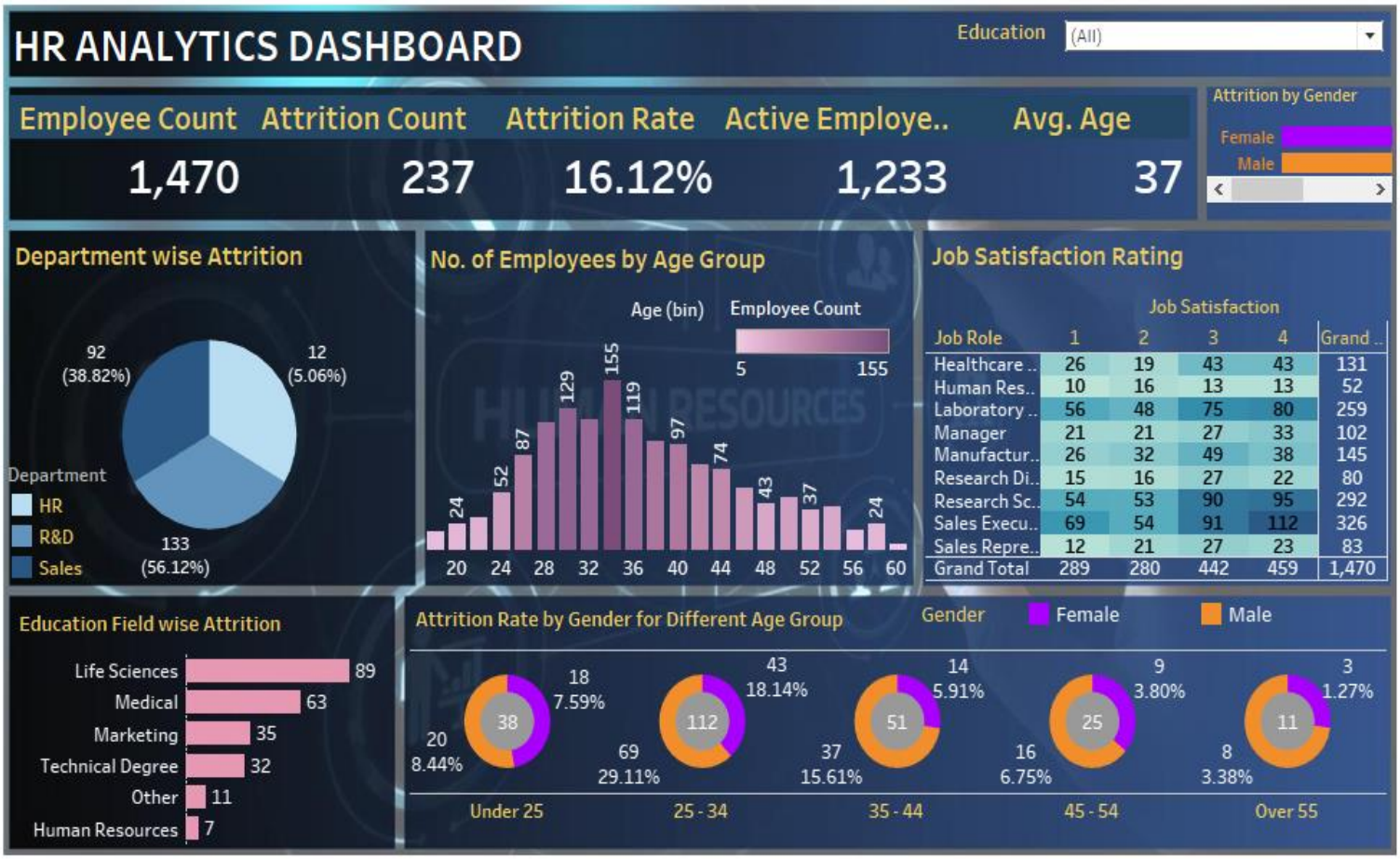
SUBMITTED TO : Dr. SHARAD SAXENA

SUBMITTED BY : AISHVARYA VARDHINEE SRIVASTAVA

ROLL NO. :- 202201004

MCA , GROUP – 1

HR ANALYTICS DASHBOARD :

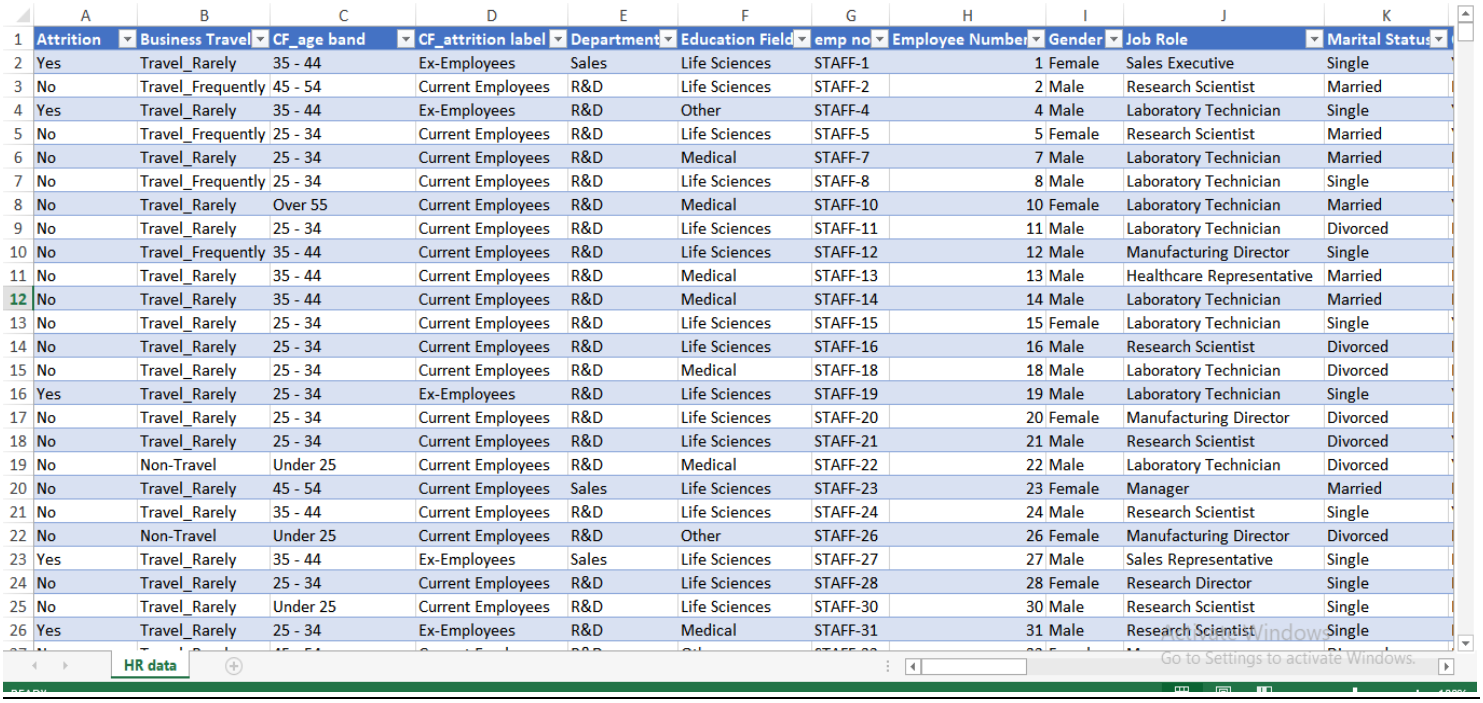


This HR analytical dashboard provides HR professionals with a comprehensive view of the organization's workforce data by attrition point (employees who are leaving the job) . It is a graphical representation of key HR metrics that helps HR leaders to figure out the reason, identify trends and patterns, for leaving organization and make informed decisions based on data analysis.

The dashboard typically includes data on various attrition aspects such asdepartment wise attrition, number of employee by age group, job satisfaction rate, education wise attrition, and attrition rate by gender for different age group .

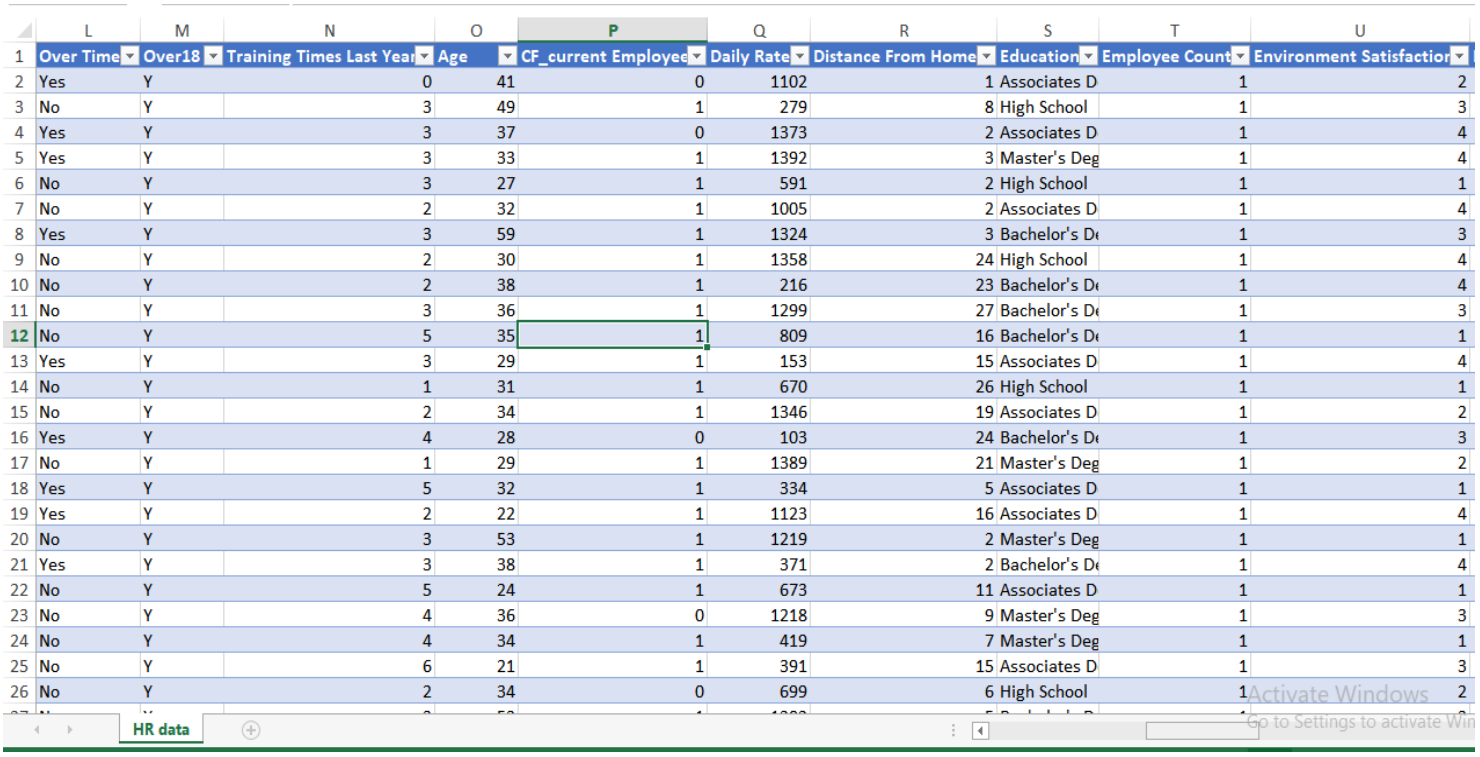
This, in turn, allows HR teams to implement effective solutions to address the issue and improve overall workforce productivity.

DATASET :



	A	B	C	D	E	F	G	H	I	J	K
1	Attrition	Business Travel	CF_age band	CF_attrition label	Department	Education Field	emp no	Employee Number	Gender	Job Role	Marital Status
2	Yes	Travel_Rarely	35 - 44	Ex-Employees	Sales	Life Sciences	STAFF-1	1	Female	Sales Executive	Single
3	No	Travel_Frequently	45 - 54	Current Employees	R&D	Life Sciences	STAFF-2	2	Male	Research Scientist	Married
4	Yes	Travel_Rarely	35 - 44	Ex-Employees	R&D	Other	STAFF-4	4	Male	Laboratory Technician	Single
5	No	Travel_Frequently	25 - 34	Current Employees	R&D	Life Sciences	STAFF-5	5	Female	Research Scientist	Married
6	No	Travel_Rarely	25 - 34	Current Employees	R&D	Medical	STAFF-7	7	Male	Laboratory Technician	Married
7	No	Travel_Frequently	25 - 34	Current Employees	R&D	Life Sciences	STAFF-8	8	Male	Laboratory Technician	Single
8	No	Travel_Rarely	Over 55	Current Employees	R&D	Medical	STAFF-10	10	Female	Laboratory Technician	Married
9	No	Travel_Rarely	25 - 34	Current Employees	R&D	Life Sciences	STAFF-11	11	Male	Laboratory Technician	Divorced
10	No	Travel_Frequently	35 - 44	Current Employees	R&D	Life Sciences	STAFF-12	12	Male	Manufacturing Director	Single
11	No	Travel_Rarely	35 - 44	Current Employees	R&D	Medical	STAFF-13	13	Male	Healthcare Representative	Married
12	No	Travel_Rarely	35 - 44	Current Employees	R&D	Medical	STAFF-14	14	Male	Laboratory Technician	Married
13	No	Travel_Rarely	25 - 34	Current Employees	R&D	Life Sciences	STAFF-15	15	Female	Laboratory Technician	Single
14	No	Travel_Rarely	25 - 34	Current Employees	R&D	Life Sciences	STAFF-16	16	Male	Research Scientist	Divorced
15	No	Travel_Rarely	25 - 34	Current Employees	R&D	Medical	STAFF-18	18	Male	Laboratory Technician	Divorced
16	Yes	Travel_Rarely	25 - 34	Ex-Employees	R&D	Life Sciences	STAFF-19	19	Male	Laboratory Technician	Single
17	No	Travel_Rarely	25 - 34	Current Employees	R&D	Life Sciences	STAFF-20	20	Female	Manufacturing Director	Divorced
18	No	Travel_Rarely	25 - 34	Current Employees	R&D	Life Sciences	STAFF-21	21	Male	Research Scientist	Divorced
19	No	Non-Travel	Under 25	Current Employees	R&D	Medical	STAFF-22	22	Male	Laboratory Technician	Divorced
20	No	Travel_Rarely	45 - 54	Current Employees	Sales	Life Sciences	STAFF-23	23	Female	Manager	Married
21	No	Travel_Rarely	35 - 44	Current Employees	R&D	Life Sciences	STAFF-24	24	Male	Research Scientist	Single
22	No	Non-Travel	Under 25	Current Employees	R&D	Other	STAFF-26	26	Female	Manufacturing Director	Divorced
23	Yes	Travel_Rarely	35 - 44	Ex-Employees	Sales	Life Sciences	STAFF-27	27	Male	Sales Representative	Single
24	No	Travel_Rarely	25 - 34	Current Employees	R&D	Life Sciences	STAFF-28	28	Female	Research Director	Single
25	No	Travel_Rarely	Under 25	Current Employees	R&D	Life Sciences	STAFF-30	30	Male	Research Scientist	Single
26	Yes	Travel_Rarely	25 - 34	Ex-Employees	R&D	Medical	STAFF-31	31	Male	Research Scientist	Single

HR data



	L	M	N	O	P	Q	R	S	T	U
1	Over Time	Over18	Training Times Last Year	Age	CF_current Employee	Daily Rate	Distance From Home	Education	Employee Count	Environment Satisfactior
2	Yes	Y	0	41	0	1102	1	Associates D	1	2
3	No	Y	3	49	1	279	8	High School	1	3
4	Yes	Y	3	37	0	1373	2	Associates D	1	4
5	Yes	Y	3	33	1	1392	3	Master's Deg	1	4
6	No	Y	3	27	1	591	2	High School	1	1
7	No	Y	2	32	1	1005	2	Associates D	1	4
8	Yes	Y	3	59	1	1324	3	Bachelor's De	1	3
9	No	Y	2	30	1	1358	24	High School	1	4
10	No	Y	2	38	1	216	23	Bachelor's De	1	4
11	No	Y	3	36	1	1299	27	Bachelor's De	1	3
12	No	Y	5	35	1	809	16	Bachelor's De	1	1
13	Yes	Y	3	29	1	153	15	Associates D	1	4
14	No	Y	1	31	1	670	26	High School	1	1
15	No	Y	2	34	1	1346	19	Associates D	1	2
16	Yes	Y	4	28	0	103	24	Bachelor's De	1	3
17	No	Y	1	29	1	1389	21	Master's Deg	1	2
18	Yes	Y	5	32	1	334	5	Associates D	1	1
19	Yes	Y	2	22	1	1123	16	Associates D	1	4
20	No	Y	3	53	1	1219	2	Master's Deg	1	1
21	Yes	Y	3	38	1	371	2	Bachelor's De	1	4
22	No	Y	5	24	1	673	11	Associates D	1	1
23	No	Y	4	36	0	1218	9	Master's Deg	1	3
24	No	Y	4	34	1	419	7	Master's Deg	1	1
25	No	Y	6	21	1	391	15	Associates D	1	3
26	No	Y	2	34	0	699	6	High School	1	2

HR data

	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	Hourly Rate	Job Involvement	Job Level	Job Satisfaction	Monthly Income	Monthly Rate	Num Companies Worked	Percent Salary Hike	Performance Rating	Relationship Satisfac
2	94	3	2	4	5993	19479	8	11	3	
3	61	2	2	2	5130	24907	1	23	4	
4	92	2	1	3	2090	2396	6	15	3	
5	56	3	1	3	2909	23159	1	11	3	
6	40	3	1	2	3468	16632	9	12	3	
7	79	3	1	4	3068	11864	0	13	3	
8	81	4	1	1	2670	9964	4	20	4	
9	67	3	1	3	2693	13335	1	22	4	
10	44	2	3	3	9526	8787	0	21	4	
11	94	3	2	3	5237	16577	6	13	3	
12	84	4	1	2	2426	16479	0	13	3	
13	49	2	2	3	4193	12682	0	12	3	
14	31	3	1	3	2911	15170	1	17	3	
15	93	3	1	4	2661	8758	0	11	3	
16	50	2	1	3	2028	12947	5	14	3	
17	51	4	3	1	9980	10195	1	11	3	
18	80	4	1	2	3298	15053	0	12	3	
19	96	4	1	4	2935	7324	1	13	3	
20	78	2	4	4	15427	22021	2	16	3	
21	45	3	1	4	3944	4306	5	11	3	
22	96	4	2	3	4011	8232	0	18	3	
23	82	2	1	1	3407	6986	7	23	4	
24	53	3	3	2	11994	21293	0	11	3	
25	96	3	1	4	1232	19281	1	14	3	
26	83	3	1	1	2960	17102	2	11	3	

Activate Windows
Go to Settings to activate Windows.

HR data

	AE	AF	AG	AH	AI	AJ	AK	AL
1	Relationship Satisfactior	Standard Hours	Stock Option Leve	Total Working Years	Work Life Balance	Years At Company	Years In Current Role	Years Since Last Promotior	Years W
2	1	80	0	8	1	6	4	0	
3	4	80	1	10	3	10	7	1	
4	2	80	0	7	3	0	0	0	
5	3	80	0	8	3	8	7	3	
6	4	80	1	6	3	2	2	2	
7	3	80	0	8	2	7	7	3	
8	1	80	3	12	2	1	0	0	
9	2	80	1	1	3	1	0	0	
10	2	80	0	10	3	9	7	1	
11	2	80	2	17	2	7	7	7	
12	3	80	1	6	3	5	4	0	
13	4	80	0	10	3	9	5	0	
14	4	80	1	5	2	5	2	4	
15	3	80	1	3	3	2	2	1	
16	2	80	0	6	3	4	2	0	
17	3	80	1	10	3	10	9	8	
18	4	80	2	7	2	6	2	0	
19	2	80	2	1	2	1	0	0	
20	3	80	0	31	3	25	8	3	
21	3	80	0	6	3	3	2	1	
22	4	80	1	5	2	4	2	1	
23	2	80	0	10	3	5	3	0	
24	3	80	0	13	3	12	6	2	
25	4	80	0	0	3	0	0	0	
26	3	80	0	8	3	4	2	1	

Activate Windows
Go to Settings to activate Windows.

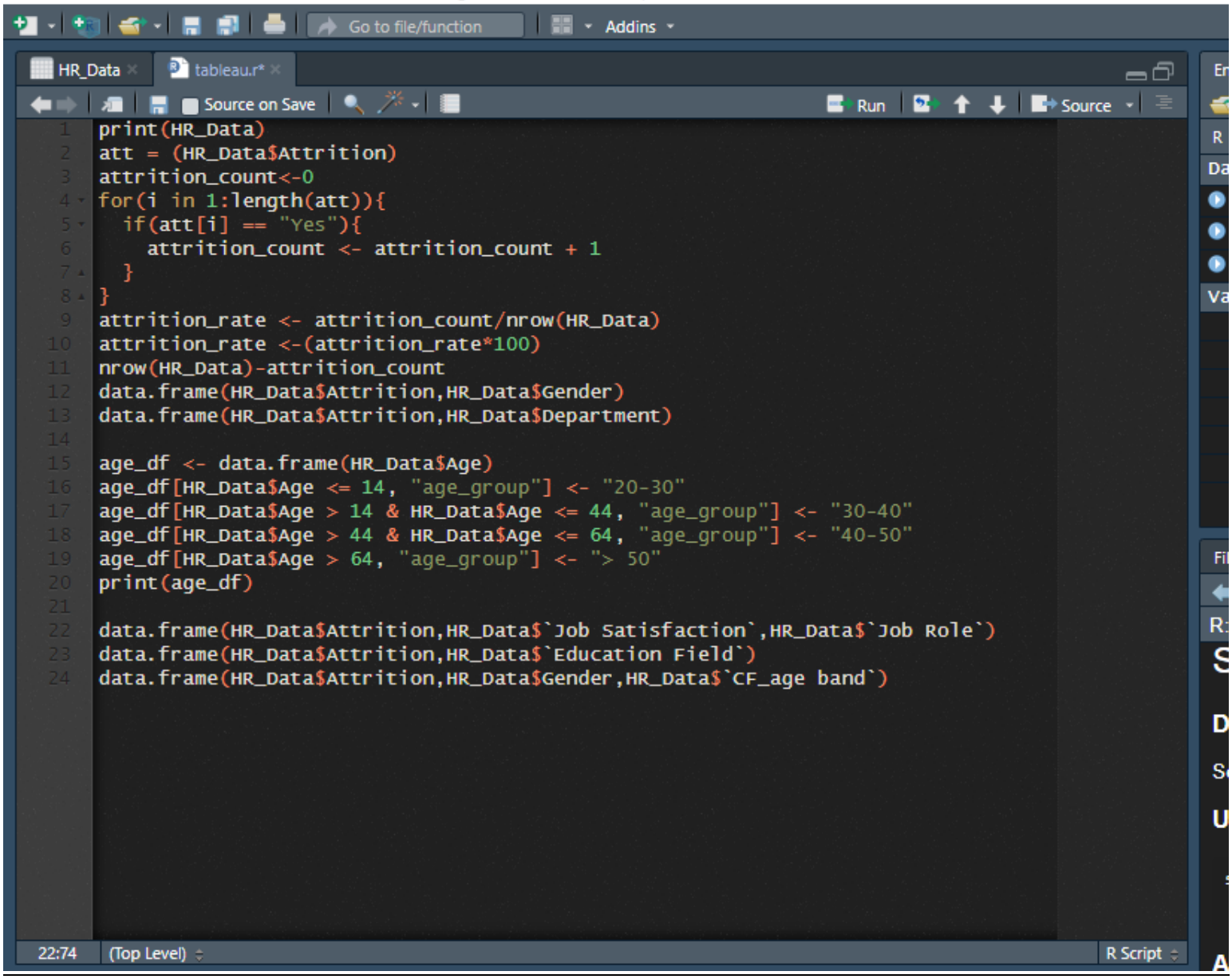
HR data

	AF	AG	AH	AI	AJ	AK	AL	AM	AN
1	Standard Hours	Stock Option Leve	Total Working Years	Work Life Balance	Years At Company	Years In Current Role	Years Since Last Promotion	Years With Curr Manager	
2	80	0	8	1	6	4	0	5	
3	80	1	10	3	10	7	1	7	
4	80	0	7	3	0	0	0	0	
5	80	0	8	3	8	7	3	0	
6	80	1	6	3	2	2	2	2	
7	80	0	8	2	7	7	3	6	
8	80	3	12	2	1	0	0	0	
9	80	1	1	3	1	0	0	0	
10	80	0	10	3	9	7	1	8	
11	80	2	17	2	7	7	7	7	
12	80	1	6	3	5	4	0	3	
13	80	0	10	3	9	5	0	8	
14	80	1	5	2	5	2	4	3	
15	80	1	3	3	2	2	1	2	
16	80	0	6	3	4	2	0	3	
17	80	1	10	3	10	9	8	8	
18	80	2	7	2	6	2	0	5	
19	80	2	1	2	1	0	0	0	
20	80	0	31	3	25	8	3	7	
21	80	0	6	3	3	2	1	2	
22	80	1	5	2	4	2	1	3	
23	80	0	10	3	5	3	0	3	
24	80	0	13	3	12	6	2	11	
25	80	0	0	3	0	0	0	0	
26	80	0	8	3	4	2	1	3	

Activate Windows
Go to Settings to activate Windows.

HR data

R Programming :-



SHEET 1 - KPI : (Tableau)

CHART – TEXT TABLE

Calculation Field in Tableau -

Employee Count :

SUM(Employee count)

Attrition Count :

IF [Attrition]='Yes' THEN 1 ELSE 0 END

SUM(Attrition count)

Attrition Rate :

SUM([Attrition Count])/SUM([Employee Count])

AGG(Attrition Rate)

Active Employee :

SUM([Employee Count])-SUM([Attrition Count])

AGG(Active Employee)

Average Age :

AVG(Age)

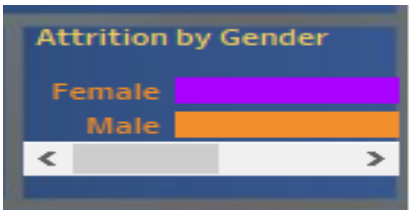
DATASET FOR KPI : (R Program)

```
HR_Data <- read_excel("C:/Users/Sankalp Shakti/Downloads/HR Data.xlsx")
 print(HR_Data)
#sum of employee count
nrow(HR_Data)
#sum of attrition count
att = (HR_Data$Attrition)
attrition_count<-0
for(i in 1:length(att))
{
    if(att[i] == "Yes")
    {
            attrition_count <- attrition_count + 1
    }
}
print(attrition_count)
#aggregation of attrition rate
attrition_rate <- attrition_count/nrow(HR_Data)
print(attrition_rate*100)
#active employee
nrow(HR_Data)- attrition_count
```

```
> att = (HR_Data$Attrition)
> attrition_count<-0
> for(i in 1:length(att)){
+   if(att[i] == "Yes"){
+     attrition_count <- attrition_count + 1
+   }
+ }
> attrition_rate <- attrition_count/nrow(HR_Data)
> attrition_rate <-(attrition_rate*100)
> nrow(HR_Data)-attrition_count
```

SHEET 2 –ATTRITION BY GENDER : (Tableau)

CHART – HORIZONTAL BAR GRAPH



Calculation Field in Tableau -

SUM(Attrition count)

Gender

DATASET FOR ATTRITION BY GENDER: (R Program)

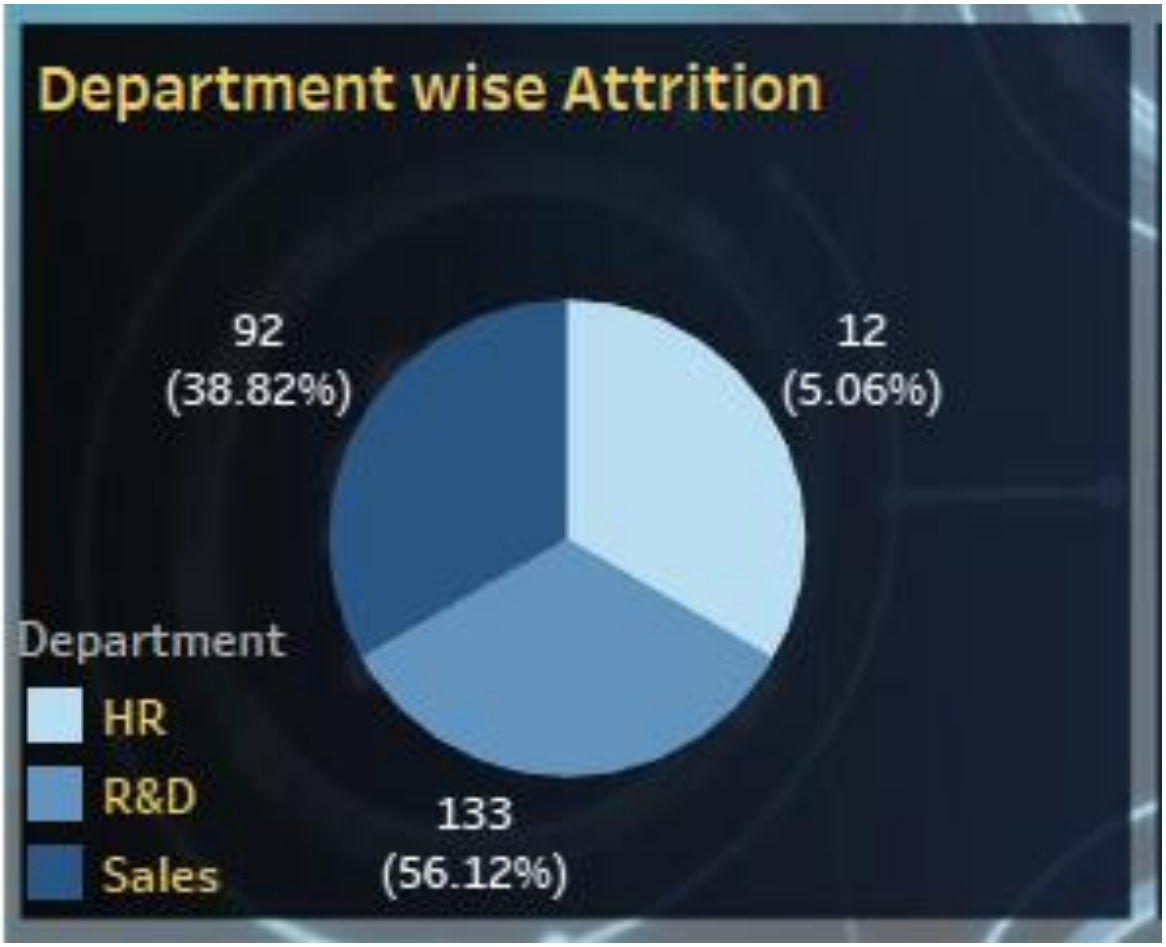
#attrition on the bases of gender

data.frame(HR_Data$Attrition,HR_Data$Gender)

```
> data.frame(HR_Data$Attrition,HR_Data$Gender)
    HR_Data.Attrition HR_Data.Gender
1                 Yes          Female
2                  No            Male
3                 Yes            Male
4                  No          Female
5                  No            Male
6                  No            Male
7                  No          Female
8                  No            Male
9                  No            Male
10                 No            Male
11                 No            Male
12                 No          Female
13                 No            Male
14                 No            Male
15                Yes            Male
```

SHEET 3 –DEPARTMENT WISE ATTRITION: (Tableau)

CHART – PIE CHART



Calculation Field in Tableau -

Department --- (Color filter)

SUM(Attrition count) ---(Department wise total employee)

SUM(Attrition count) ---(Department wise percentage of employee)

DATASET FOR DEPARTMENT WISE ATTRITION: (R Program)

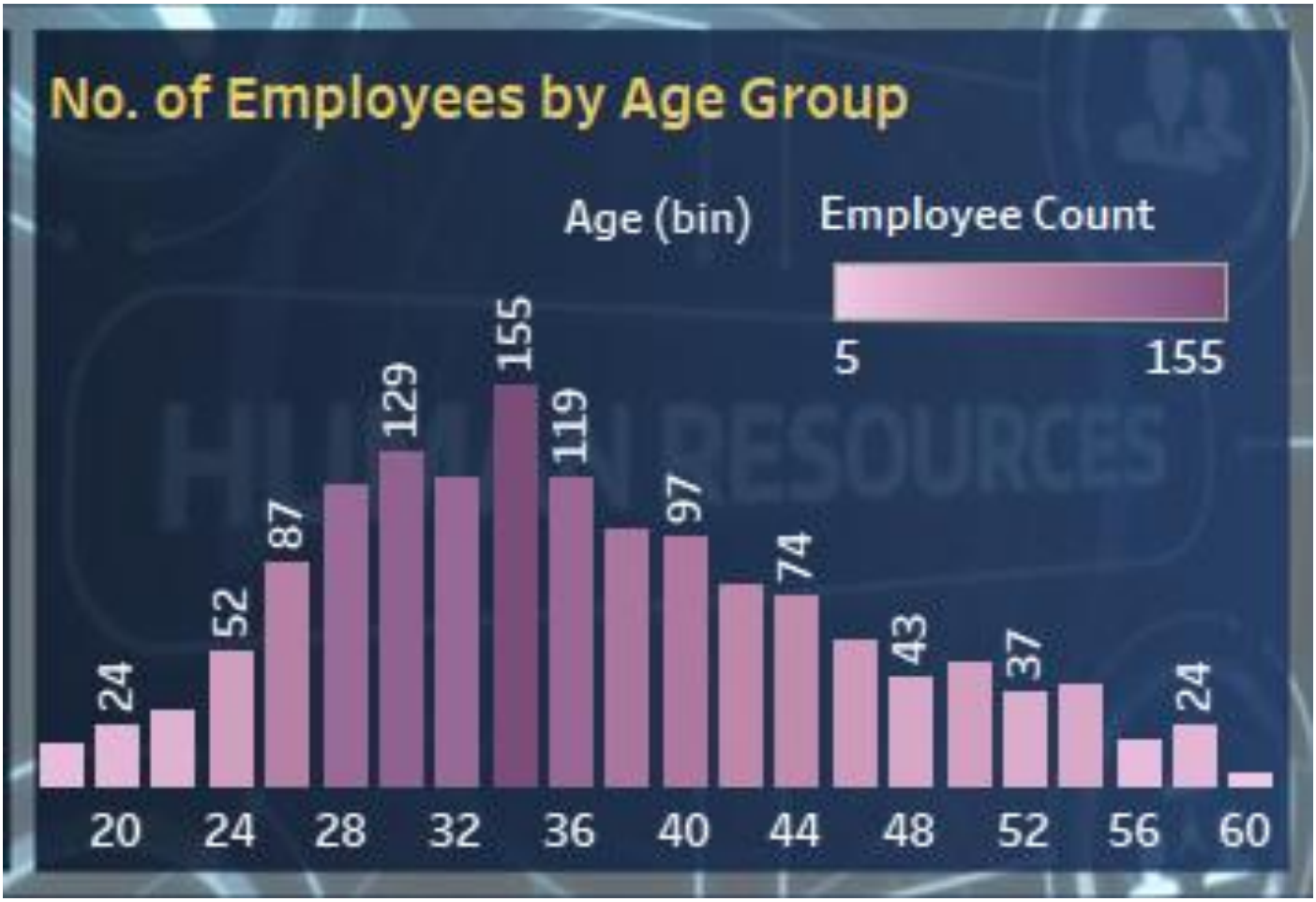
#attrition on department

data.frame(HR_Data$Attrition,HR_Data$Department)

```
> data.frame(HR_Data$Attrition,HR_Data$Department)
   HR_Data.Attrition HR_Data.Department
1                Yes              Sales
2                 No                R&D
3                Yes                R&D
4                 No                R&D
5                 No                R&D
6                 No                R&D
7                 No                R&D
8                 No                R&D
9                 No                R&D
10                No                R&D
11                No                R&D
12                No                R&D
13                No                R&D
14                No                R&D
15               Yes                R&D
16                No                R&D
17                No                R&D
```

SHEET 4 –NO. OF EMPLOYEES BY AGE GROUP : (Tableau)

CHART – HISTOGRAM



Calculation Field in Tableau -

Age(bin)

SUM(Employee count)

SUM(Employee count) ---(Color filter)

DATASET FOR NO. OF EMPLOYEES BY AGE GROUP: (R Program)

#number of employees and their age group

```
age_df <- data.frame(HR_Data$Age)
age_df[HR_Data$Age <= 14, "age_group"] <- "20-30"
age_df[HR_Data$Age > 14 & HR_Data$Age <= 44, "age_group"] <- "30-40"
age_df[HR_Data$Age > 44 & HR_Data$Age <= 64, "age_group"] <- "40-50"
age_df[HR_Data$Age > 64, "age_group"] <- "> 50"
print(age_df)
```

```
> age_df <- data.frame(HR_Data$Age)
> age_df[HR_Data$Age <= 14, "age_group"] <- "20-30"
> age_df[HR_Data$Age > 14 & HR_Data$Age <= 44, "age_group"] <- "30-40"
> age_df[HR_Data$Age > 44 & HR_Data$Age <= 64, "age_group"] <- "40-50"
> age_df[HR_Data$Age > 64, "age_group"] <- "> 50"
```

```
    HR_Data.Age age_group
1            41     30-40
2            49     40-50
3            37     30-40
4            33     30-40
5            27     30-40
6            32     30-40
7            59     40-50
8            30     30-40
9            38     30-40
10           36     30-40
11           35     30-40
12           29     30-40
13           31     30-40
14           34     30-40
15           28     30-40
16           29     30-40
17           32     30-40
18           22     30-40
19           53     40-50
20           38     30-40
21           24     30-40
```

SHEET 5 –JOB SATISFACTION RATE : (Tableau)

CHART – HIGHLIGHT TABLE

Job Satisfaction Rating

	Job Satisfaction				
Job Role	1	2	3	4	Grand ..
Healthcare ..	26	19	43	43	131
Human Res..	10	16	13	13	52
Laboratory ..	56	48	75	80	259
Manager	21	21	27	33	102
Manufactur..	26	32	49	38	145
Research Di..	15	16	27	22	80
Research Sc..	54	53	90	95	292
Sales Execu..	69	54	91	112	326
Sales Repre..	12	21	27	23	83
Grand Total	289	280	442	459	1,470

Calculation Field in Tableau -

Job Satisfaction

Job Role

SUM(Employee count) ---(Text filter)

SUM(Employee count) ---(Color filter)

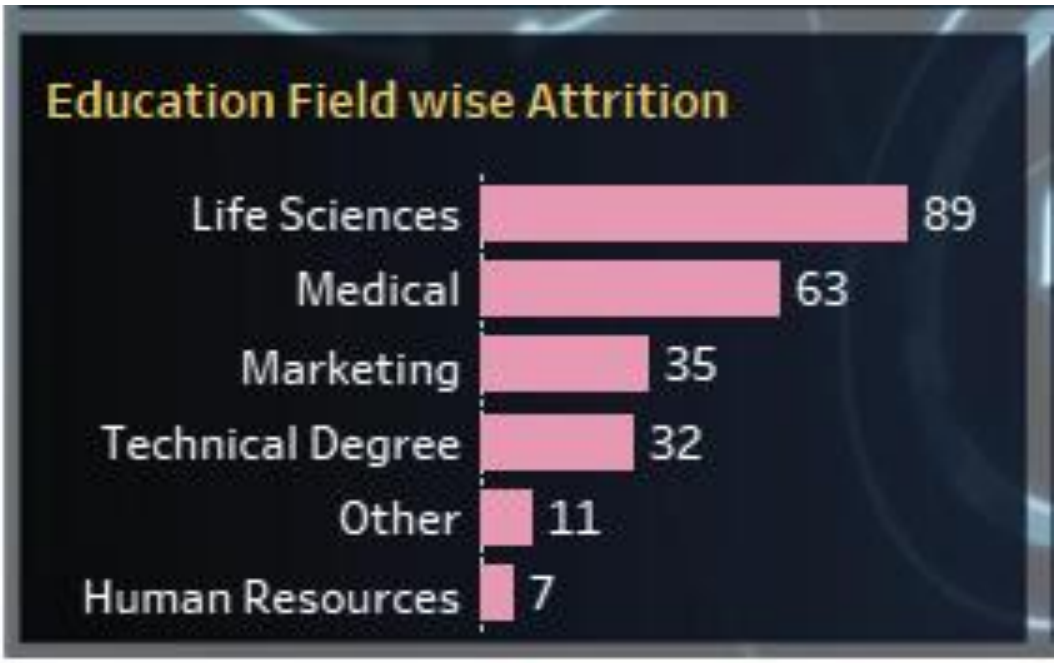
DATASET FOR JOB SATISFACTION RATE: (R Program)

data.frame(HR_Data$Attrition,HR_Data$`Job Satisfaction`,HR_Data$`Job Role`)

```
> data.frame(HR_Data$Attrition,HR_Data$`Job Satisfaction`,HR_Data$`Job Role`)
   HR_Data.Attrition HR_Data..Job.Satisfaction.        HR_Data..Job.Role.
1                Yes                          4          Sales Executive
2                 No                          2        Research Scientist
3                Yes                          3     Laboratory Technician
4                 No                          3        Research Scientist
5                 No                          2     Laboratory Technician
6                 No                          4     Laboratory Technician
7                 No                          1     Laboratory Technician
8                 No                          3     Laboratory Technician
9                 No                          3    Manufacturing Director
10                No                          3 Healthcare Representative
11                No                          2     Laboratory Technician
12                No                          3     Laboratory Technician
13                No                          3        Research Scientist
14                No                          4     Laboratory Technician
15               Yes                          3     Laboratory Technician
16                No                          1    Manufacturing Director
17                No                          2        Research Scientist
18                No                          4     Laboratory Technician
19                No                          4                  Manager
20                No                          4        Research Scientist
21                No                          3    Manufacturing Director
22               Yes                          1      Sales Representative
23                No                          2         Research Director
24                No                          4        Research Scientist
25               Yes                          1        Research Scientist
26                No                          3                  Manager
```

SHEET 6 –EDUCATION FIELD WISE ATTRITION : (Tableau)

CHART – HORIZONTAL BAR GRAPH



Calculation Field in Tableau -

SUM(Attrition count)

Education Field

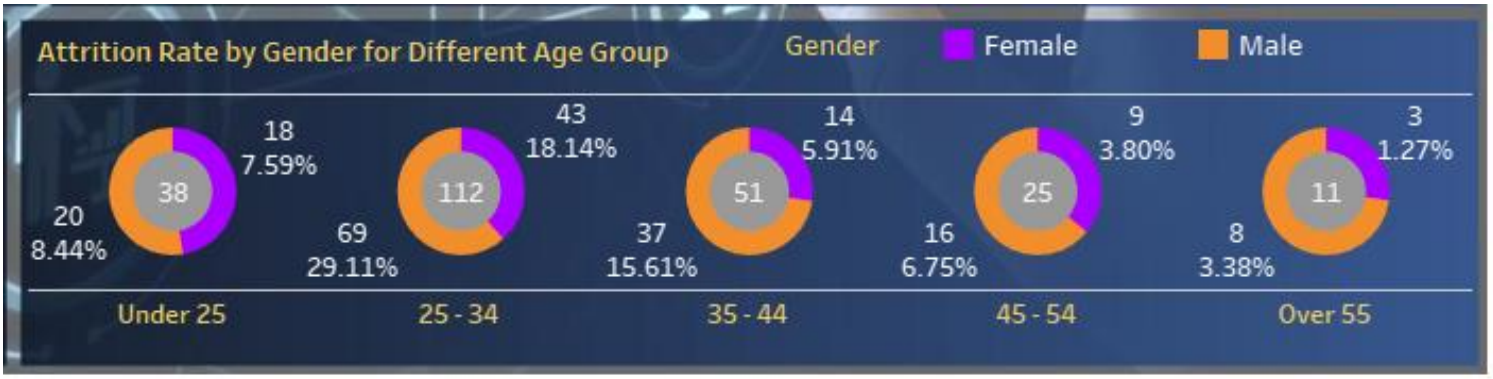
DATASET FOR EDUCATION FIELD WISE ATTRITION : (R Program)

```
data.frame(HR_Data$Attrition,HR_Data$`Education Field`)
```

```
> data.frame(HR_Data$Attrition,HR_Data$`Education Field`)
   HR_Data.Attrition HR_Data..Education.Field.
1                Yes             Life Sciences
2                 No             Life Sciences
3                Yes                     Other
4                 No             Life Sciences
5                 No                   Medical
6                 No             Life Sciences
7                 No                   Medical
8                 No             Life Sciences
9                 No             Life Sciences
10                No                   Medical
11                No                   Medical
12                No             Life Sciences
13                No             Life Sciences
14                No                   Medical
15               Yes             Life Sciences
16                No             Life Sciences
17                No             Life Sciences
18                No                   Medical
19                No             Life Sciences
20                No             Life Sciences
```

SHEET 7 – ATTRITION RATE BY GENDER FOR DIFFERENT AGE GROUP : (Tableau)

CHART – DONUT CHART



Calculation Field in Tableau -

CF age band

SUM(Attrition count)

GENDER ---(Color field)

SUM(Attrition count) ---(Angle filter)

SUM(Attrition count) ---(Text filter)

SUM(Attrition count) ---(Percentage filter)

DATASET FOR EDUCATION FIELD WISE ATTRITION : (R Program)

```
data.frame(HR_Data$Attrition,HR_Data$Gender,HR_Data$`CF_age band`)
```

```
> data.frame(HR_Data$Attrition,HR_Data$Gender,HR_Data$`CF_age band`)
   HR_Data.Attrition HR_Data.Gender HR_Data..CF_age.band.
1                Yes         Female               35 - 44
2                 No           Male               45 - 54
3                Yes           Male               35 - 44
4                 No         Female               25 - 34
5                 No           Male               25 - 34
6                 No           Male               25 - 34
7                 No         Female               Over 55
8                 No           Male               25 - 34
9                 No           Male               35 - 44
10                No           Male               35 - 44
11                No           Male               35 - 44
12                No         Female               25 - 34
13                No           Male               25 - 34
14                No           Male               25 - 34
15               Yes           Male               25 - 34
16                No         Female               25 - 34
17                No           Male               25 - 34
18                No           Male              Under 25
19                No         Female               45 - 54
20                No           Male               35 - 44
21                No         Female              Under 25
22               Yes           Male               35 - 44
23                No         Female               25 - 34
24                No           Male              Under 25
25               Yes           Male               25 - 34
26                No         Female               45 - 54
27               Yes         Female               25 - 34
28                No           Male               35 - 44
29                No         Female               35 - 44
30                No         Female               45 - 54
31                No           Male               25 - 34
32                No           Male               35 - 44
33                No           Male               25 - 34
34               Yes           Male               35 - 44
35               Yes           Male              Under 25
36                No         Female               35 - 44
37               Yes           Male               45 - 54
38                No         Female               35 - 44
39                No         Female               35 - 44
40                No         Female               25 - 34
```

FILTER – EDUCATION