

# Distribution characteristics (Kurtosis, Skewness, Variance, Standard Deviation)

## Kurtosis

Tells how extreme or outlier-prone the data is

## Skewness

Tells which side the data leans—left or right

## Variance

Shows how widely the data is spread out from the average

## Standard Deviation

Shows how far data points are from the average in simple units



# DATA STATISTICS

	ssc_p	hsc_p	degree_p	etest_p	mba_p	salary
kurtosis	-0.60751	0.086901	-0.09749	-1.08858	-0.470723	-0.239837
skew	-0.132649	0.162611	0.204164	0.282308	0.313576	0.8067
Var	117.228377	112.063731	53.60471	176.251018	34.028376	2944596800.882517
Std	10.827205	10.586016	7.321524	13.275956	5.833385	54264.139179



**KURTOSIS =**  
tells how  
extreme your  
data values are.



**High kurtosis =**  
many outliers.

**Low kurtosis =**  
fewer outliers.

Kurtosis tells us how “tall or flat” a distribution is, and how heavy the tails are. Think of a graph of data (like a mountain)



# 📌 1. Kurtosis Analysis

Column	Kurtosis	Meaning
ssc_p	-0.60751	Flatter than normal (light tails)
hsc_p	0.086901	Very close to normal distribution
degree_p	-0.09749	Close to normal
etest_p	-1.08858	Very flat, light tails
mba_p	-0.470723	Slightly flat distribution
salary	-0.239837	Slightly flat distribution

## Summary:

- ✦ Most variables have **negative kurtosis**, meaning the distributions are **flatter** with fewer extreme outliers.



## 📌 2. Skewness Analysis

Column	Skew	Meaning
ssc_p	-0.132649	Slight left skew
hsc_p	0.162611	Slight right skew
degree_p	0.204164	Mild right skew
etest_p	0.282308	Noticeable right skew
mba_p	0.313576	Right skew
salary	0.8067	Strong right skew

### Summary:

- ✦ **Salary is highly right-skewed**, meaning a few people earn much higher salaries than others.
- ✦ Other columns have only mild skew.

### 3. Variance (Var)

Column	Variance
ssc_p	117.228377
hsc_p	112.063731
degree_p	53.60471
etest_p	176.251018
mba_p	34.0309376
salary	2944596800.882517

#### Summary:

- ❖ **Salary variance is extremely high**, showing salary values vary a lot.
- ❖ **MBA and Degree percentages have the lowest variance** (more consistent values).



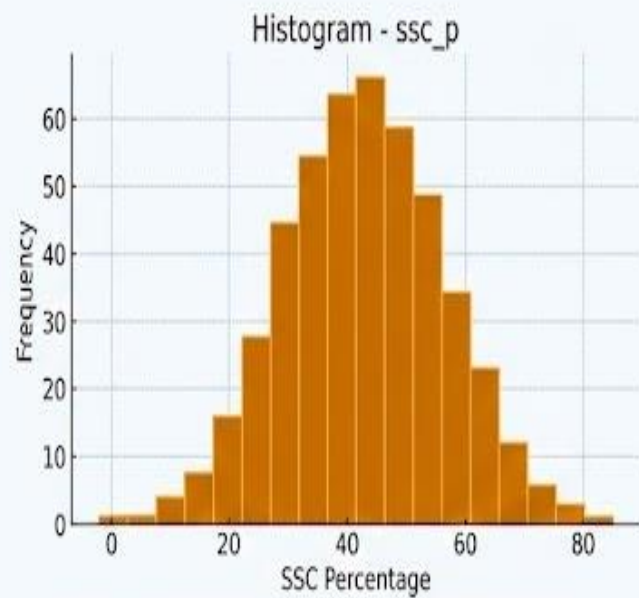
## 📌 4. Standard Deviation (Std)

Column	Std
ssc_p	10.827205
hsc_p	10.586016
degree_p	7.321524
etest_p	13.275956
mba_p	5.833385
salary	54264.139179

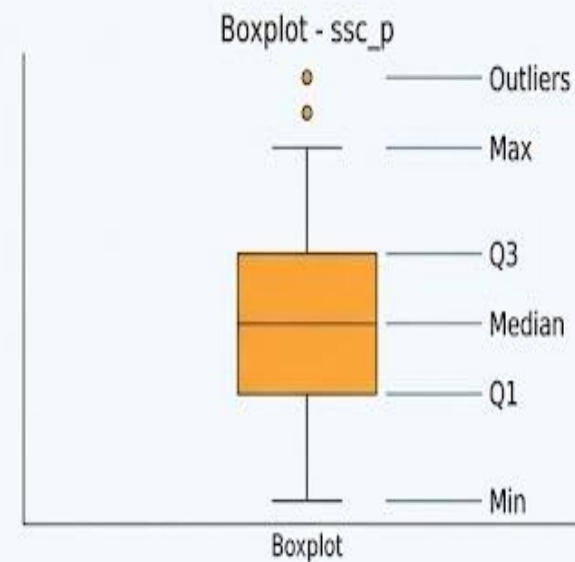
### Summary:

- ✦ **Salary** has a **very high standard deviation**, meaning values are widely spread.
- ✦ **MBA** has the lowest Std → values are close to the mean.

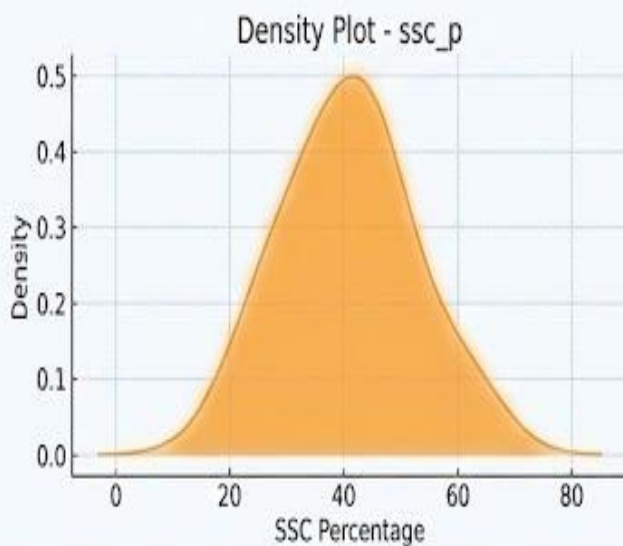
# SSC\_P - Statistical Visuals



**Histogram:** Shows a normal, symmetrical distribution of SSC percentages.



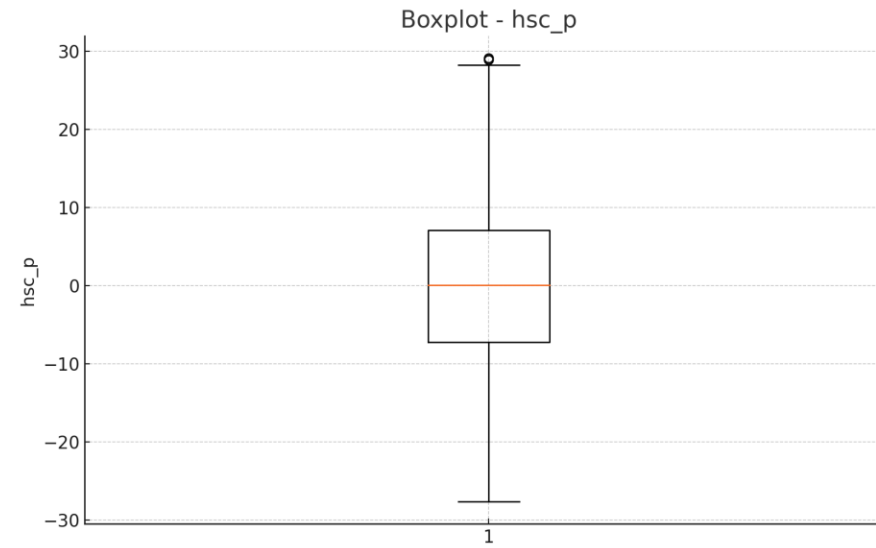
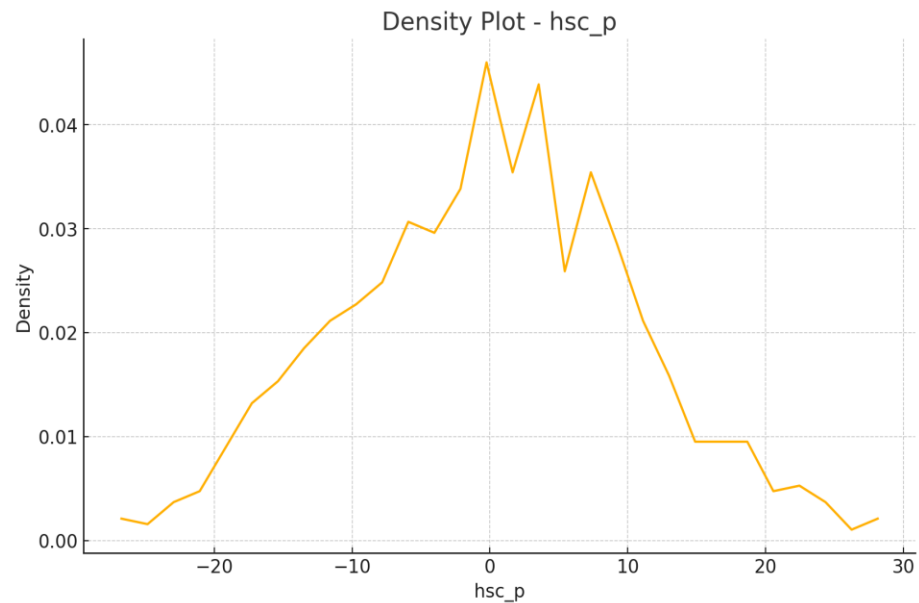
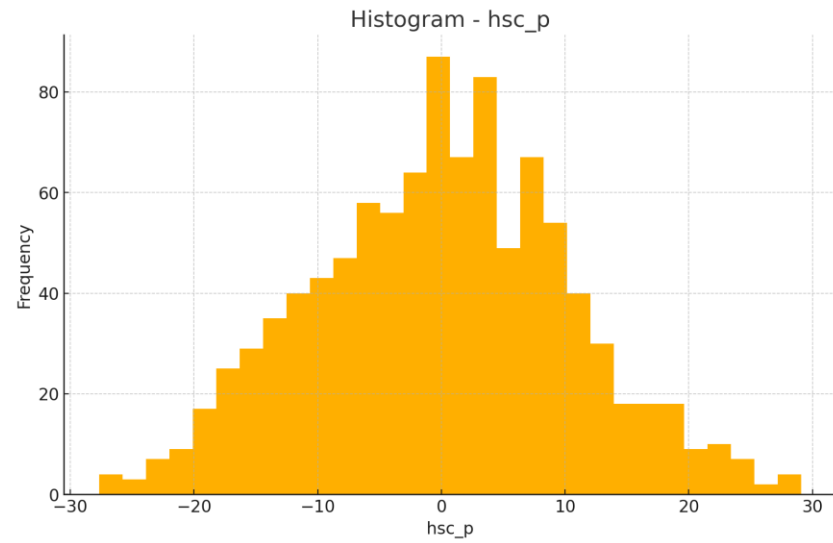
**Boxplot:** Highlights the median, interquartile range, and potential outliers in the data.



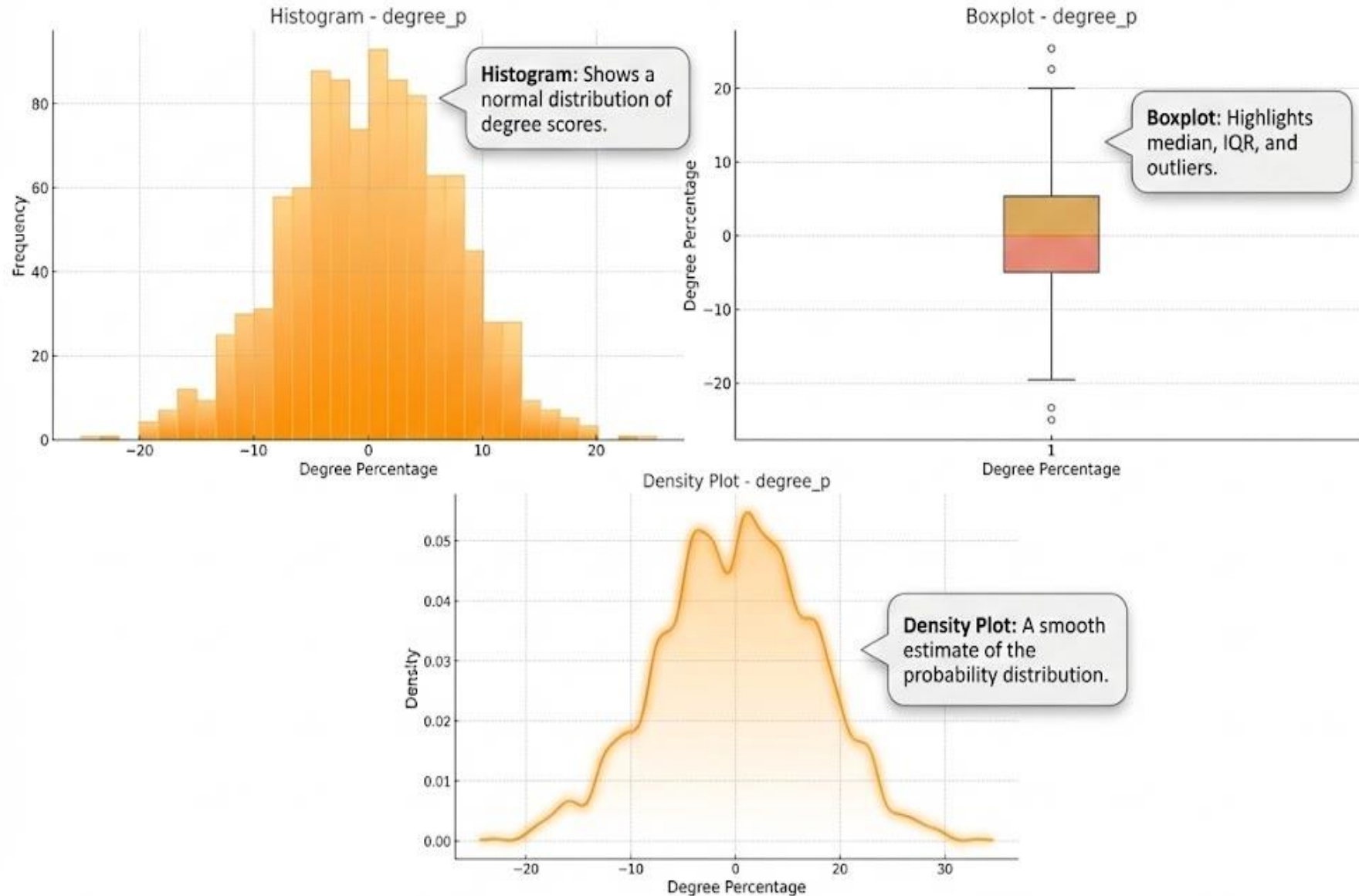
**Density Plot:** Provides a smooth visualization of the probability distribution function.



# HSC\_P - Statistical Visuals

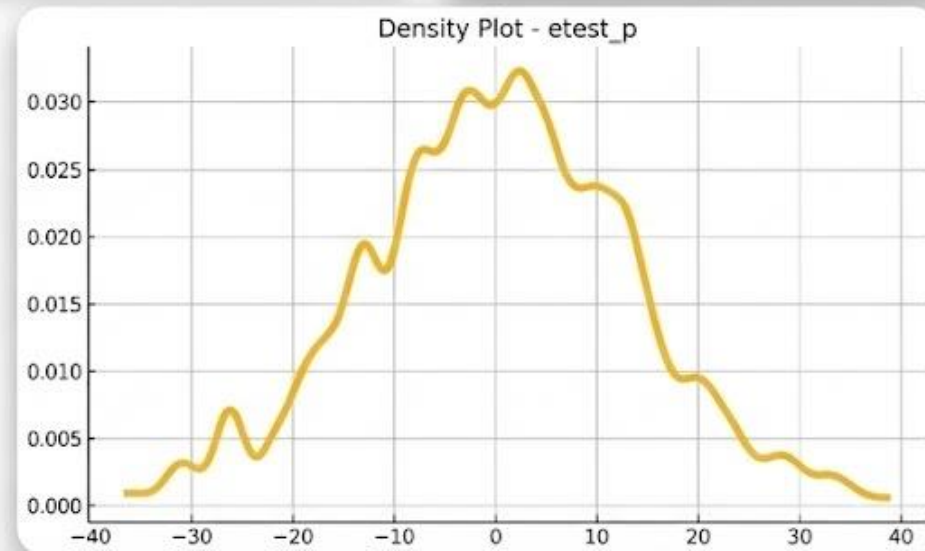
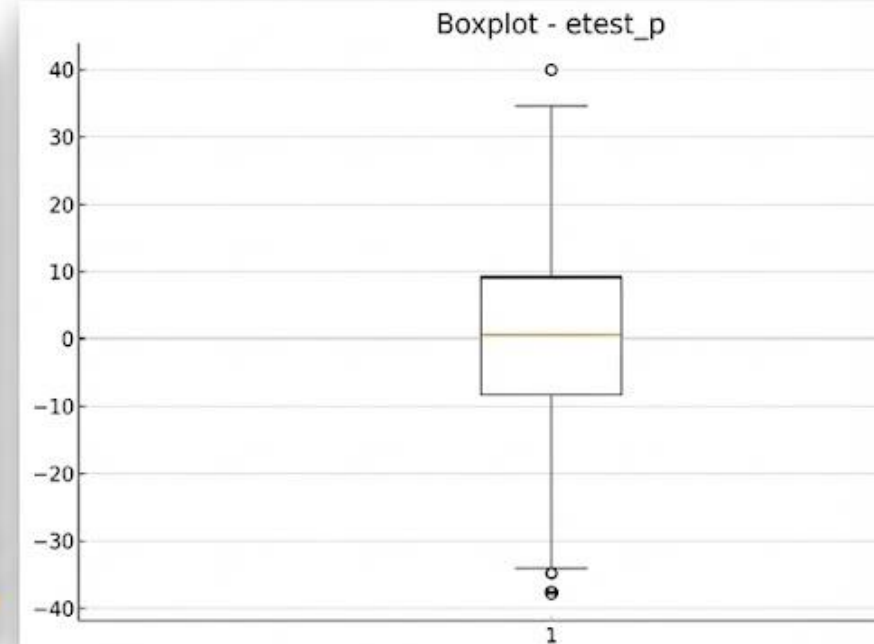
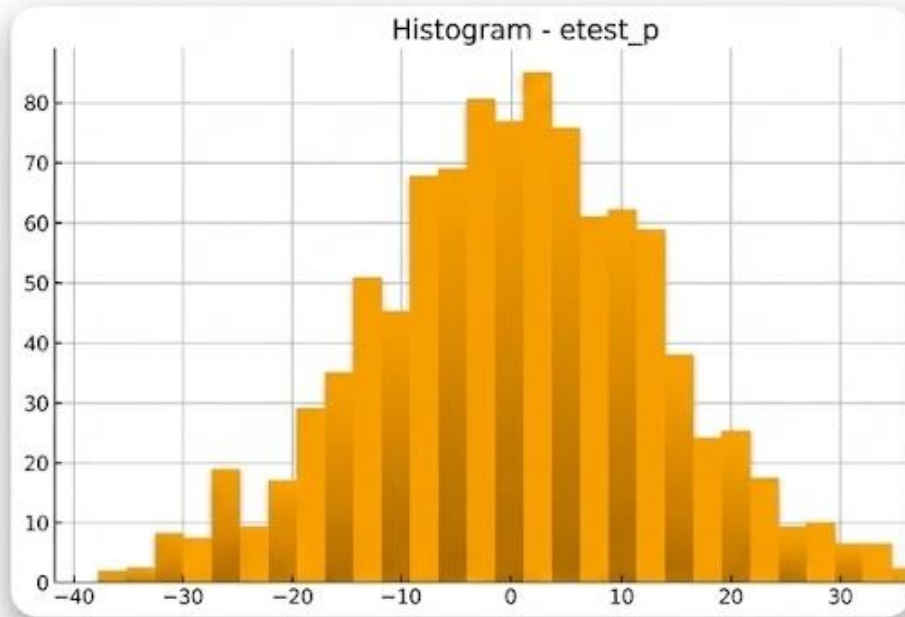


# DEGREE\_P - Statistical Visuals

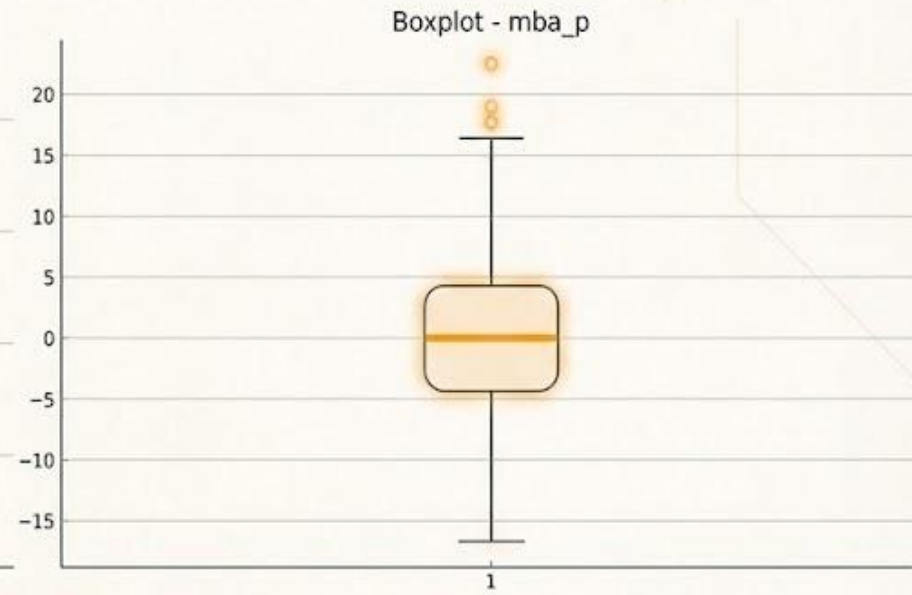
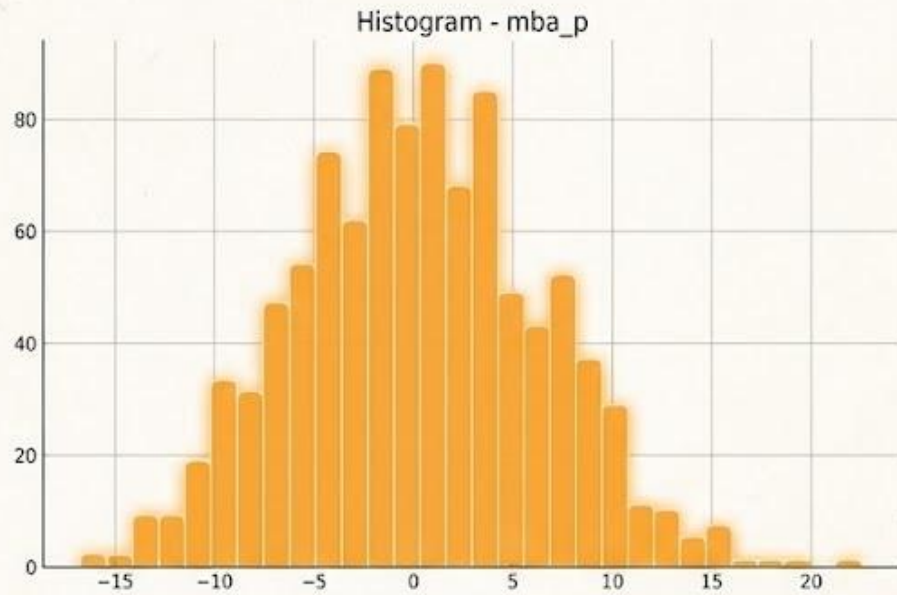




# ETEST\_P - Statistical Visuals

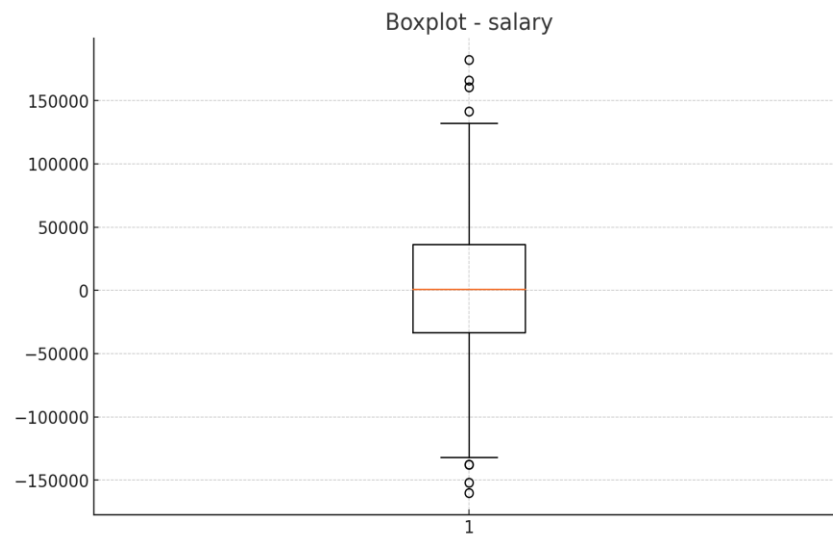
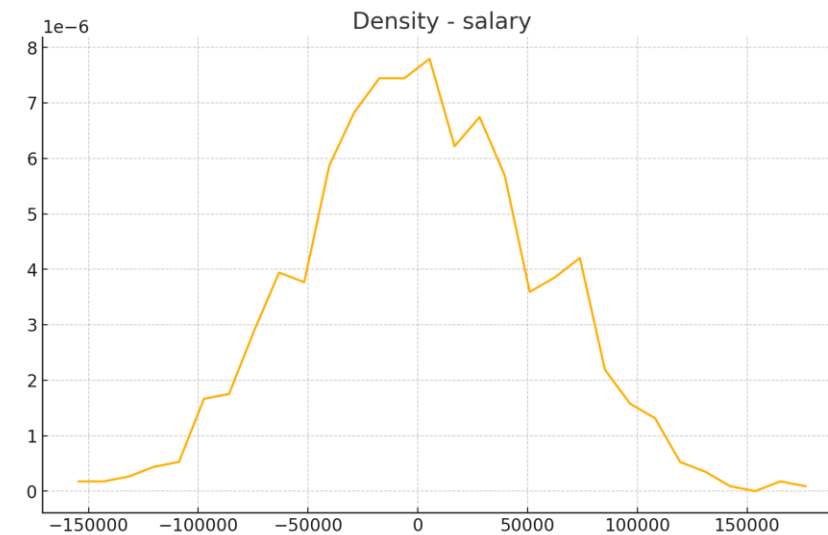
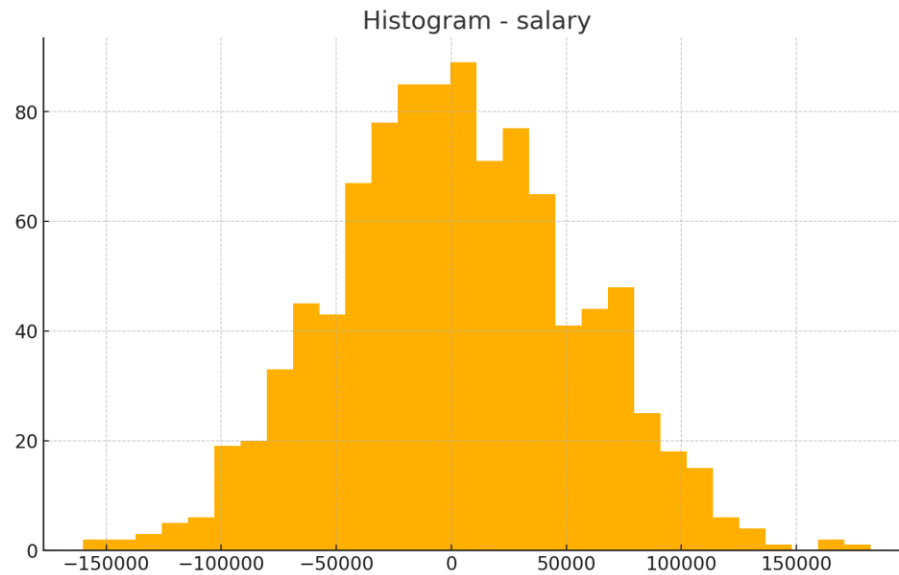


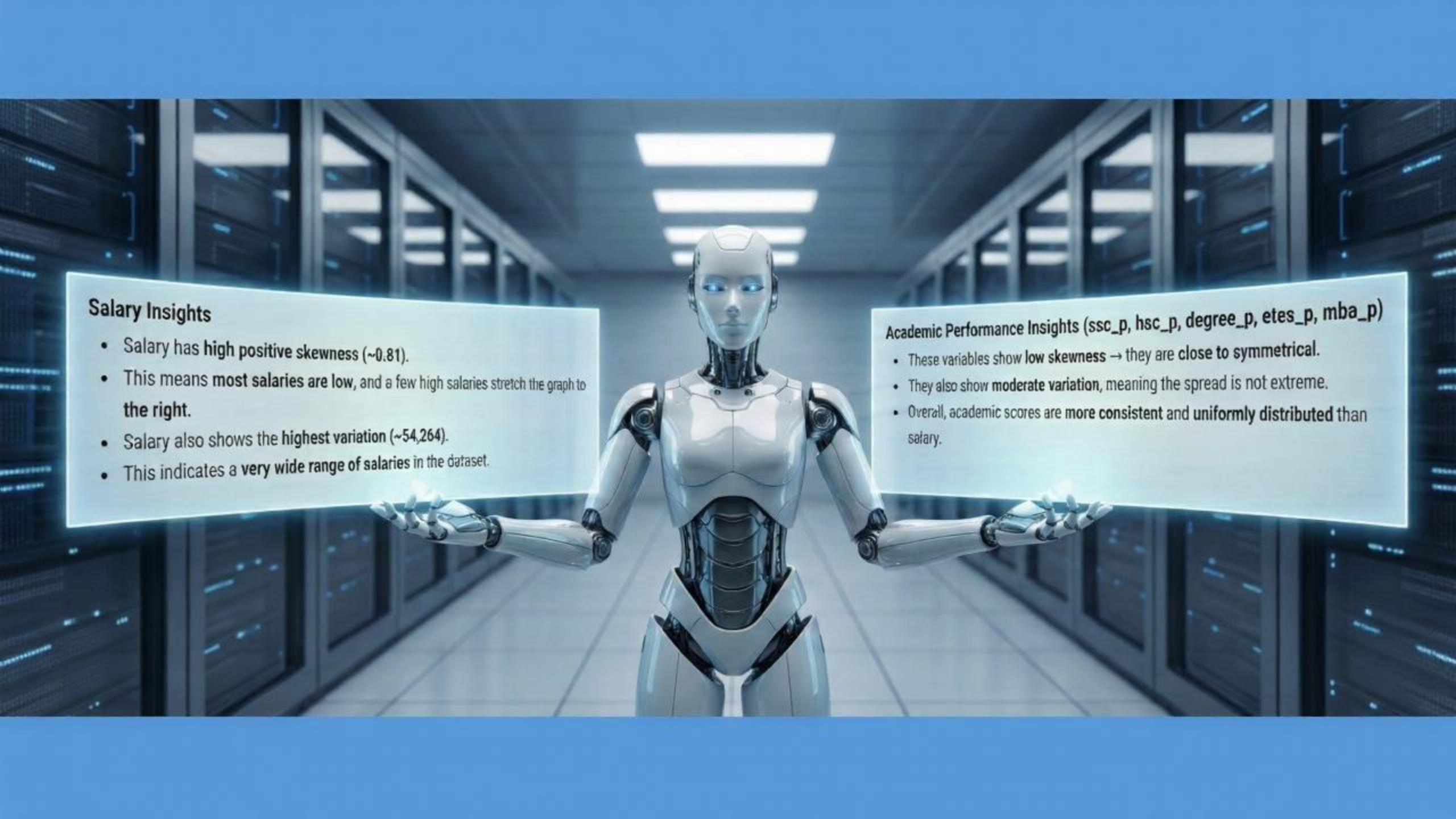
# MBA\_P - Statistical Visuals





# SALARY - Statistical Visuals



A futuristic robot with a white and black metallic body stands in the center of a server room. The room is filled with rows of server racks on both sides, illuminated by blue light. The robot's arms are extended, holding two glowing white rectangular panels that display data insights. The background shows the perspective of the server aisles receding into the distance under bright overhead lights.

### Salary Insights

- Salary has **high positive skewness** (~0.81).
- This means **most salaries are low**, and a few high salaries stretch the graph to **the right**.
- Salary also shows the **highest variation** (~54,264).
- This indicates a **very wide range of salaries** in the dataset.

### Academic Performance Insights (ssc\_p, hsc\_p, degree\_p, etes\_p, mba\_p)

- These variables show **low skewness** → they are close to symmetrical.
- They also show **moderate variation**, meaning the spread is not extreme.
- Overall, academic scores are **more consistent and uniformly distributed** than salary.





Thank you

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