REGRESSION RESULTS REPORT

Multiple linear regression was used to test if Previous Job Changes, Graduation Marks, Exp (months), College Tier, Role, and City type predicted CTC.

The fitted regression model equation was:

$Y = 45{,}434.8419 + 0.4516x_1 - 29.0412x_2 - 3.6524x_3 + 258.9406x_4 + 3{,}383.9125x_5 - 2{,}108.0935x_6 - 1{,}275.8190x_7 - 9{,}679.9718x_8 + 9{,}679.9718x_9 + 2{,}040.2887x_{10} - 2{,}040{,}2887x_{11}$

Where:

x_1 = Previous CTC

x_2 = Previous job changes

x_3 = Graduation marks

x_4 = Exp (Months)

x_5 = College_Tier 1

x_6 = College_Tier 2

x_7 = College_Tier 3

x_8 = Role_Executive

x_9 = Role_Manager

x_{10} = City type_Metro

x_{11} = City type_Non-Metro

The overall regression was statistically significant (R^2 = 0.608, $F(8, 1329)$ = 257.9, $p < .000$).

It was found that **Previous CTC** significantly predicted CTC (β = 0.4516, p = 0).

It was found that **Previous job changes** did not significantly predict CTC (β = -29.0412, p = 0.880)

It was found that **Graduation marks** did not significantly predict CTC (β = -3.6524, p = 0.801)

It was found that **Exp (Months)** significantly predicted CTC (β = 258.9406, p = 0)

It was found that **College_Tier 1** significantly predicted CTC (β = 3,383.9125, p = 0)

It was found that **College_Tier 2** significantly predicted CTC (β = -2,108.0935, p = 0)

It was found that **College_Tier 3** significantly predicted CTC (β = 1,275.8190, p = 0)

It was found that **Role_Executive** significantly predicted CTC (β = -9,679.9718, p = 0)

It was found that **Role_Manager** significantly predicted CTC (β = 9,679.9718, p = 0)

It was found that **City type_Metro** significantly predicted CTC (β = 2,040.2887, p = 0)

It was found that **City type_Non-Metro** significantly predicted CTC (β = -2,040.2887, p = 0)

MODEL EVALUATION METRICS

See below the values of MAE, MSE, and RMSE

Mean Absolute Error	6,166.6066
Mean Squared Error	61,728,794.1097
Root Mean Squared Error	7,856.7674

ANALYSES

1. Previous CTC, Exp (Months), College_Tier 1, College_Tier 2, College_Tier 3, Role_Executive, Role_Manager, City type_Metro, and City type_Non-Metro have small p-values. This means that there is association between the features and CTC.

2. Previous job changes, and Graduation marks have a large p-value. This means that there is no association between the features and CTC.

3. The features Previous CTC, Exp (Months), College_Tier 1, Role_Manager, and City type_Metro are positively associated to CTC

4. The features College_Tier 2, Role_Executive, City type_Non-Metro, College_Tier 3 are negatively associated to CTC.

5. The features Previous job changes, and Graduation marks though they appear to be negatively associated with CTC but they have little or no effect on CTC

6. The MAE and RMSE show that the predicted CTC and Actual CTC vary considerable. This can be a result of a combination of factors including

   a. Presence of outliers

   b. Underfitting of regression model which means the relationship between the features and CTC are not exactly linear. This may require employing more robust models.

   c. The provided features may not be sufficient to properly model the relationship between features and CTC.