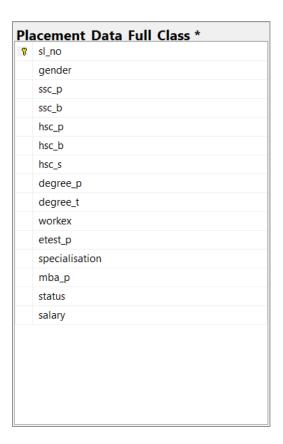# Placement Full Class – Introduction

The goal of this personal exercise, was to challenge myself with a real-life problem using PowerBI and proving my skills in SQL after a period that I studied it by myself. I wanted to deal with a practical use case where was possible for me to analyse and critically think about the data that I was representing building a report in PowerBI, trying to obtain the same result for some more "tricky" tables displayed in the report using SQL with the same dataset imported using "SQL Server Management Studio".

I downloaded from Kaggle a dataset that you can find using the link: https://www.kaggle.com/benroshan/factors-affecting-campus-placement

Importing the dataset in the SQL Database, we have the following view:

Placement Data Full Class *

- sl_no
- gender
- ssc_p
- ssc_b
- hsc_p
- hsc_b
- hsc_s
- degree_p
- degree_t
- workex
- etest_p
- specialisation
- mba_p
- status
- salary

The Dataset is defined as:

- Student ID (sl_no)
- Gender: Male or Female
- Ssc_p (Secondary education percentage)
- Ssc_b (ssc board): Central or others
- Hsc_p (Higher secondary education percentage)
- Hsc_n (hsc board): Central or others
- Hsc_s (hsc specialization): Arts, commerce or science
- Degree_p (Undergraduate degree percentage)
- Degree_t (Undergraduate field of studies): Comm&Mgmt, Sci&Tech and Others
- Workex (Working experience): Yes or No
- Etest_p (Employability test percentage)
- Specialisation: Mkt&HR, Mkt&Fin
- Mba_p (MBA percentage)
- Status: Placed or Not Placed
- Salary

We have plenty of information regarding each student, and the main goal is to understand if there are some particular factors that influence the chance of getting placed. Secondary, I wanted to check into the salary part, so after trying to answer at the first question, I checked if there are some values that influence the chance of get a High salary.

At the following link, you can find the public report that I create for this exercise:

https://app.powerbi.com/view?r=eyJrIjoiMTQwYTFjMzEtMjZmNy00YWNiLTkyZTAtZmUyMmQ4YzcxYmVlIiwid
CI6ImVkMGUzNDE0LTZlNTYtNDU0Yy04YTgyLWViODBiZWZiNzM4YiIsImMiOjh9

Placement Analysis: Which factor influence a candidate to find a placement?

First of all, I made the decision of defining some "brackets" with the purpose of grouping values together in terms of every percentage that we have, and for the salary. In that case we have only 3 discrete values that are defined as low, intermediate and high instead of working with a lot of discrete values that would be more difficult to answer at some questions if the values are really sparse. After showing in general an overview about the alumni based on Placement, Gender, Salary bracket and MBA percentage I tried to answer at the question based on different criteria.

1. Studies specialization and post graduate specialization influence the chance to get a placement?

I analyse the placement ratio based on the area of specialization in the different level of degree.

Post graduate Specialization: Can be Marketing & Finance (Mkt & Fin) or Marketing & HR (Mkt & HR). The bar chart shows clearly that alumni with a specialization of Marketing & Finance have a lot higher chance to get a placement (80% of the candidate with this specialization found a placement) compared to Marketing & HR with the 55% of the candidates that got a placement.

Hsc Specialization: Can be Science, Commerce or Arts. Seems that who come from a background in science and commerce, have a more chance to get placed, with a better employability ratio (70%). Hence who comes from Art background can find a placement but the employability ratio is a little bit lower (55%). Overall, there is not much difference from the employability ratio thinking about the 3 different specialization, so i would say that the Hsc Specialization is not an influencer to get a placement.

Undergraduate Specialization: Can be Commercial & Management (Comm & Mgmt), Science and Technology (Sci & Tech) and others disciplines. Comm & Mgmt and Sci & Tech seems that they have around the same employability ratio (70%) compared to the others discipline, where there are more unemployed then employed. That said, being in one of the two categories, give you more chance to get a placement.

2. The Gender influence the chance to get a placement?

Seems that around 71% of the Males students get a placement, compared to the total of 63% of the female students. Overall, seems that more males find placement compared to the females, although i don't think that being a Male is something that let you have more chance to get a placement, cause the difference in % is really little.

3. Having a previous working experience influence the chance to get a placement?

It's clearly visible by the bar chart, that having a previous working experience, influence a lot the chance of get placed. In fact, to see that even more clearly, the people that have a working experience that is placed is the 86% vs who that doesn't had a previous working experience, around the 59%

4.   The result of the employability test influences the chance to get a placement?

For sure having an high score on employability test, influence the chance to get a placement, in fact the students that got an high score and have a placement are the 81%, that is way high compared to score that is intermediate and low (that is around 63%). Sum up i would say that having an high score in the employability test, give you more chance to find a placement.

5.   The result of tests of student's studies influence the chance to get a placement?

Dividing the percentage of result for past studies in bracket, permits to study the influence in an easier way, although the result might be not that accurate (cause depends on the cluster choice etc..). The graphics show that:

Undergraduate Degree Percentage Bracket: people that have a degree percentage that is Intermediate or High have a better chance to get placed. The difference is huge between people placed and people not placed. And for instance, for people that are in the bracket « high », there aren't people without a placement.

SSC Percentage Bracket: Also, here there is a huge difference for people placed and not placed based on the bracket. Seems that who are in the bracket Intermediate or High have a higher chance to get placed. Here, as well, there aren't people in the bracket "high" that are without a placement- people that are without placement if they are in the bracket of « high »

HSC Percentage Bracket: Same things as said before is applied here, who are in the bracket of Intermediate or High percentage, have more chance of getting placed.

MBA Percentage Bracket: Here the results are different, but still more placement chance for students that are in the High and Intermediate bracket, but here i don't think the employability ratio is big enough to take some conclusions.

Overall, we can see that having did good in the past, and having a percentage to being in the bracket of intermediate or high, give more chance to get a placement.

At the end of this analysis, i create a page in PowerBI using the key influencers feature, and putting all factors that i used previously, after taking my conclusions, with the goal to discover what the built-in component saying about: What influence the status to be Placed?

Looking at the graph you could see that:

-    If the SSC Percentage Bracket is « High » is likely to get placed.
-    If the HSC Percentage Bracket is « High » is likely to get placed.
-    If the student has a previous working experience is likely to get placed
-    If the student's specialization is Marketing & Finance is likely to get placed

The influencers that are marked here, are complaints with the conclusion that i took in the previous analysis.

Salary Analysis: After get a placement, which factor influence a candidate to reach a high salary?

The following analysis wasn't the main goal of the exercise, but i thought could be interesting as well analyzing that, after taking the conclusion of what influence the chance of getting a placement. We can do exactly as before, analyzing the fact of having an high salary based on some different criteria.

6.   Studies specialization and postgraduate specialization influence the chance to get a placement?

Postgraduate Specialization: The only persons that have an high salary, seeing the bar chart, are people that come from a specialization that is in Marketing & Finance. We can say that not only if you come from this specialization is likely that you will have a placement, but also you could reach a high salary as well (although with a small percentage).

Hsc Specialization: If who is coming from a specialization of Science and Commerce had a higher chance of getting placed, they will have a high chance to reach a high salary as well compared to other types of specialization.

Undergraduate Specialization: The only candidates that have a high salary are coming from a background in Commerce & Management and Science & Technology, but Science & Technology give a higher chance of getting a high salary with the 9% of students of this specialization. More accurate, this would be equal at the 60% of candidates that got an high salary.

The conclusion that we can take here is that the specialization doesn't influence too much for having a High Salary, but is true in all the case that the specialization that give you more chance of get a placement, are also specialization that give you a chance of reaching a high salary. Overall, having a high percentage within the studies, in general, give you more chance of, if you get placed, to get a high salary as well.

7. The Gender influence the chance to get a high salary?

Seems that more males reached a higher salary compared to the females, but only because the population of Males placed are higher compared to females. So i would say there is no influence here.

8. Having a previous working experience, influence the chance to get a high salary?

Seems that who had a previous working experience, will likely get as well a high salary compared to who doesn't had a previous working experience.

Seeing at the end the results with the Key Influencer part, we can answer at the question "What influence the salary bracket to be « high »?"

- The postgraduate specialization is Marketing & Finance
- The student has a previous working experience
- The undergraduate field of degree is Science & Technologies

The influencers that are marked here, are complaints with the conclusion that i took in the previous analysis. Especially for the first two influencers, we clearly saw that are influencers and boost the chance of reaching a High Salary.

Others Visualizations

And at least, i wanted to display some other tables, having in mind the purpose of exercise myself and show my skills with SQL. Following the tables that are in the section of the report « Others Info » obtained with SQL Queries:

- Best Alumni for MBA score but with a bad accademic path :

```
WITH brackets AS
(
SELECT sl_no AS Id_Alumni, ssc_p AS SecondaryEducation_Percentage,
CASE
      WHEN ssc_p >= min(ssc_p) AND ssc_p <= 69.0 THEN 'Low'
      WHEN ssc_p > 69.0 AND ssc_p <= 80.0 THEN 'Intermediate'
      WHEN ssc_p > 80.0 THEN 'High'
      ELSE 'Not Available'
END AS ssc_perc_bracket,
hsc_p AS HigherSecondaryEducation_Percentage,
CASE
      WHEN hsc_p >= min(hsc_p) AND hsc_p <= 69.0 THEN 'Low'
      WHEN hsc_p > 69.0 AND hsc_p <= 80.0 THEN 'Intermediate'
```

```sql
        WHEN hsc_p > 80.0 THEN 'High'
        ELSE 'Not Available'
END AS hsc_perc_bracket,
mba_p as mba_percentage,
CASE
        WHEN mba_p >= min(mba_p) AND mba_p <= 60.0 THEN 'Low'
        WHEN mba_p > 60.0 AND mba_p <= 70.0 THEN 'Intermediate'
        WHEN mba_P > 70.0 THEN 'High'
        ELSE 'Not Available'
END AS mba_perc_bracket
FROM Placement_Data_Full_Class
GROUP BY sl_no,ssc_p,hsc_p,mba_p
)
SELECT brackets.Id_Alumni, brackets.SecondaryEducation_Percentage,
brackets.ssc_perc_bracket,brackets.HigherSecondaryEducation_Percentage,
        brackets.hsc_perc_bracket,brackets.mba_percentage, brackets.mba_perc_bracket
FROM brackets
WHERE brackets.hsc_perc_bracket = 'Low'
AND brackets.mba_perc_bracket = 'High'
AND brackets.ssc_perc_bracket = 'Low'
```

- Top 3 alumni based on salary

```sql
SELECT TOP 3 sl_no as Id_Alumni, salary
FROM Placement_Data_Full_Class
ORDER BY salary DESC
```

- Best Females alumni, based on academic results

```sql
WITH brackets AS
(
SELECT sl_no AS Id_Alumni,
CASE
        WHEN etest_p >= min(etest_p) AND etest_p <= 69.0 THEN 'Low'
        WHEN etest_p > 69.0 AND etest_p <= 79.0 THEN 'Intermediate'
        WHEN etest_p > 79.0 THEN 'High'
        ELSE 'Not Available'
END AS Employability_test_percentage_bracket,
CASE
        WHEN ssc_p >= min(ssc_p) AND ssc_p <= 69.0 THEN 'Low'
        WHEN ssc_p > 69.0 AND ssc_p <= 80.0 THEN 'Intermediate'
        WHEN ssc_p > 80.0 THEN 'High'
        ELSE 'Not Available'
END AS ssc_perc_bracket,
CASE
        WHEN hsc_p >= min(hsc_p) AND hsc_p <= 69.0 THEN 'Low'
        WHEN hsc_p > 69.0 AND hsc_p <= 80.0 THEN 'Intermediate'
        WHEN hsc_p > 80.0 THEN 'High'
        ELSE 'Not Available'
END AS hsc_perc_bracket,
CASE
        WHEN mba_p >= min(mba_p) AND mba_p <= 60.0 THEN 'Low'
        WHEN mba_p > 60.0 AND mba_p <= 70.0 THEN 'Intermediate'
        WHEN mba_P > 70.0 THEN 'High'
        ELSE 'Not Available'
END AS mba_perc_bracket,
CASE
        WHEN Salary >= min(salary) AND Salary <= 300000 THEN 'Low'
        WHEN Salary > 300000 AND Salary <= 450000 THEN 'Intermediate'
        WHEN Salary > 450000 THEN 'High'
        ELSE 'Not Placed'
```

```sql
END AS SalaryBracket,
CASE
        WHEN degree_p >= min(degree_p) AND degree_p <= 69.0 THEN 'Low'
        WHEN degree_p > 69.0 AND degree_p <= 79.0 THEN 'Intermediate'
        WHEN degree_p > 79.0 THEN 'High'
        ELSE 'Not Available'
END AS Undergrad_degree_perc_bracket
FROM Placement_Data_Full_Class
GROUP BY sl_no,ssc_p,hsc_p,mba_p,salary,etest_p,degree_p
)
SELECT
brackets.Id_Alumni,gender,brackets.Employability_test_percentage_bracket,brackets.mba_perc_b
racket,

brackets.hsc_perc_bracket,brackets.ssc_perc_bracket,brackets.Undergrad_degree_perc_bracket
FROM brackets
JOIN Placement_Data_Full_Class
ON brackets.Id_Alumni = sl_no
WHERE brackets.hsc_perc_bracket = 'High'
AND brackets.mba_perc_bracket = 'High'
AND (brackets.ssc_perc_bracket = 'High' OR brackets.ssc_perc_bracket = 'Intermediate')
AND (brackets.Undergrad_degree_perc_bracket = 'High' OR
brackets.Undergrad_degree_perc_bracket = 'Intermediate')
AND gender = 'F'
AND brackets.Employability_test_percentage_bracket = 'High'
ORDER BY Id_Alumni
```

The others tables are the results of a combination variation of some of the queries below using the function TOP and the
view with the definition of brackets.