

## Assignment 4

### Data Visualization by Microsoft Power BI

#### Introduction

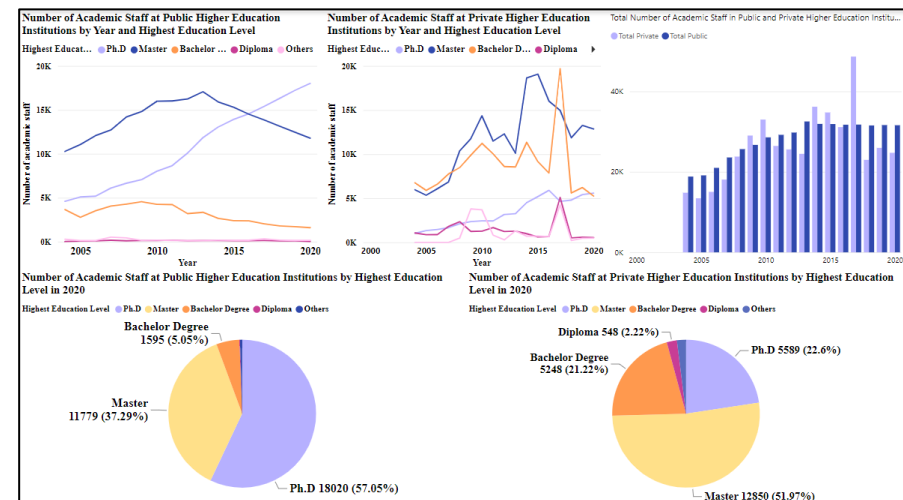
The education sector is indeed a crucial part for the development of a country as it aims to produce qualified and capable talents to better serve the nation. Academic staff such as lecturers and professors in higher education institutes are the main contributors to educate students and provide them curricular guidance. Using data virtualization, we are able to view the data transition clearly by visualizing the data in various forms. Therefore, we are able to answer a few questions by applying the usage of Microsoft Power Bi:

1. How does the involvement of academic staff in public and private higher education institutes differ through years?
2. Which higher education qualification involves the highest number of staff for both private and public ?
3. Which higher education institution attracts more academic staff, private or public?

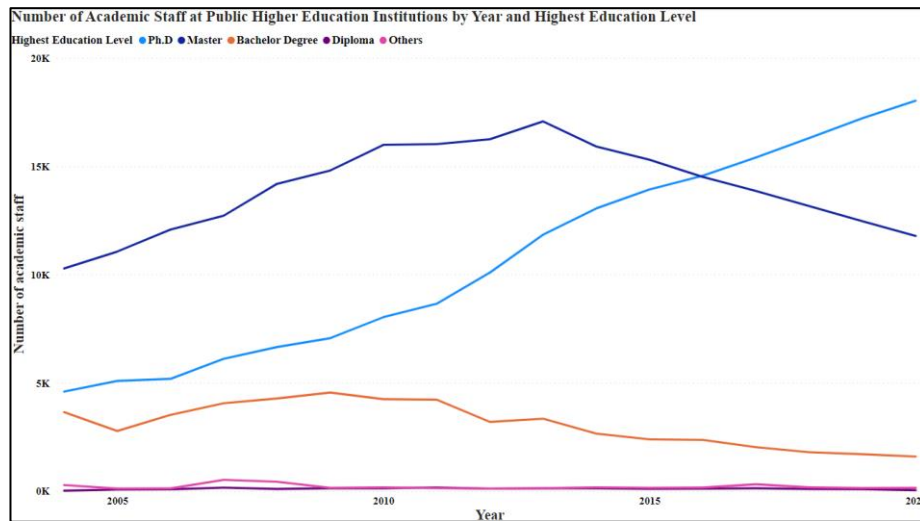
#### Summary of Industrial Talk

Data visualization is mainly aimed at conveying and communicating information clearly and effectively by different types of graphical means. We use computers to create graphs and charts, visualize the extracted data, and present various attributes and variables of the data. So that we are able to study the data in detail and summarize it using the extraction of useful information and conclusions from the application like Microsoft Power BI to perform this data analytics task.

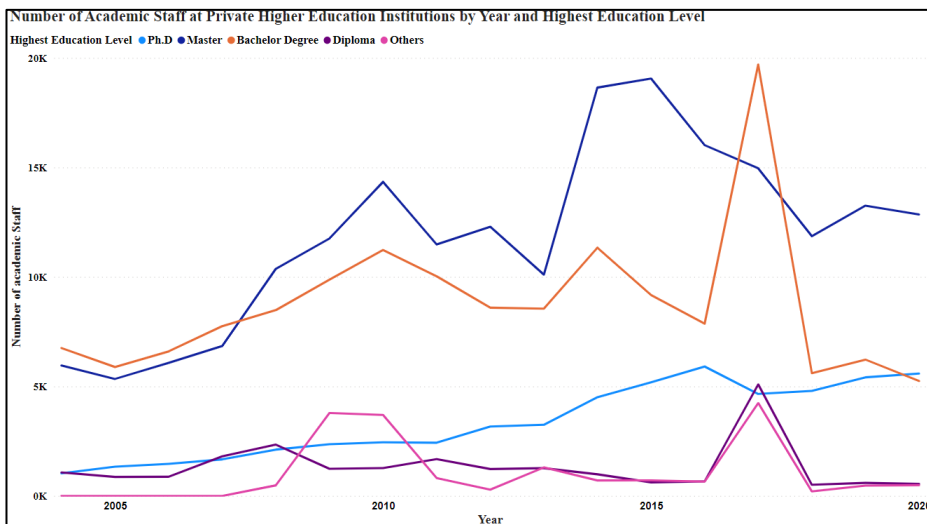
#### Dashboard Report :



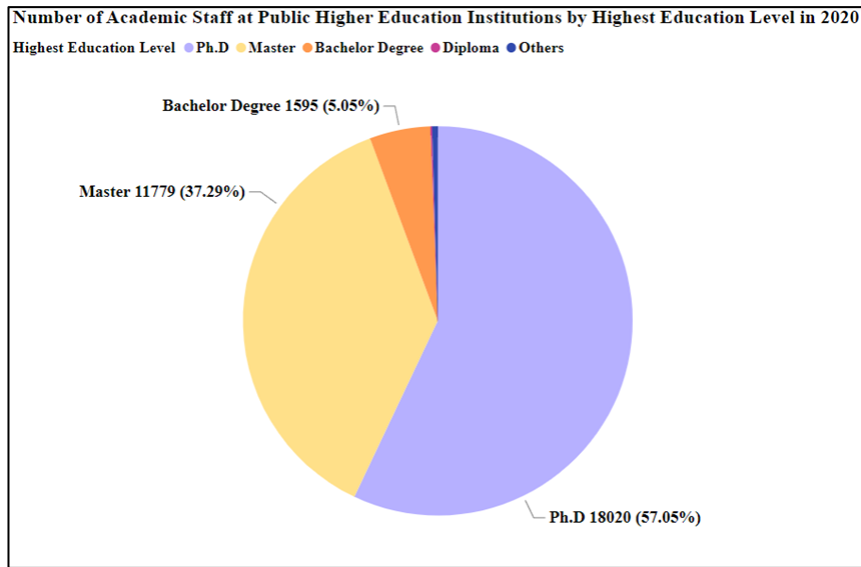
## Analysis :



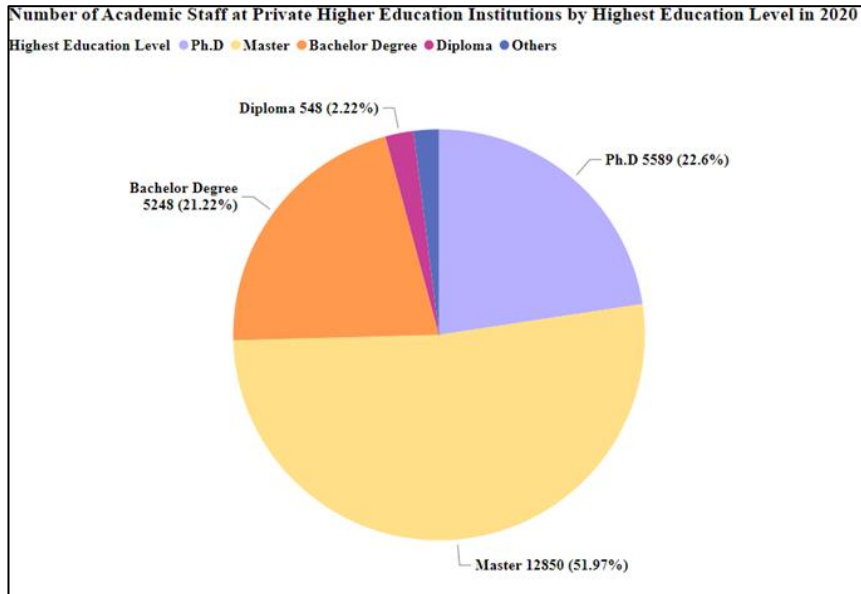
- After the year 2016, the trend of number of involvements with master has decreased and that of with Ph.D. is the highest.
- Also, there is an increasing trend of the academic staff with Ph.D. academic qualifications over the year 2014-2020.
- It is due to the fact that when there is a competitive environment as academic staff with master academic was overloaded, person of that with Ph.D. will help him to stand out among the rest as it is more career-orientated.



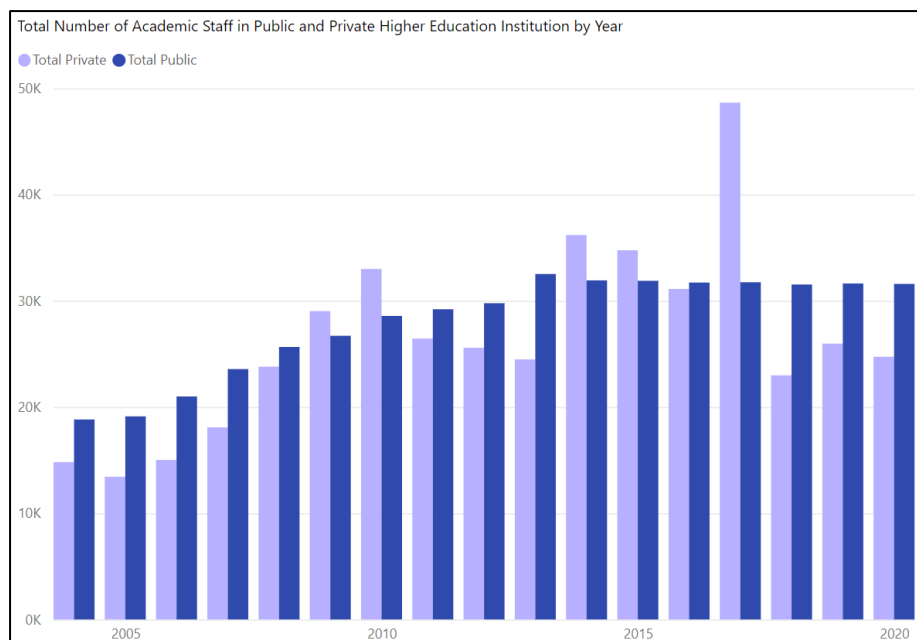
- In 2017, the number of academic staff with Ph.D, diploma and others have achieved its all-time greatest which are 14960, 5091, 4238 respectively.
- However, there is a significant decreasing trend shown after 2017 for the number of academic staff with Ph.D, master, bachelor degree and others.
- There are several factors of failure for private institutions to maintain the number of academic staff including unreasonable workload, underpaid and role conflict.



- The number of academic staff with Ph.D. occupied the largest space of the chart which is 57.05%.
- This is because the Ph.D. qualification becomes the requirement for a lecturer in a higher educational institution so that they have sufficient knowledge reserve for teaching.
- There are fewer academic staff with bachelor's degree (5.05%), diploma (0.47%), and others (0.13%) because they do not master some specific fields to teach students with a higher level of education.



- The number of academic staff with master qualification occupied the largest space of the chart which is 51.97%.
- This is because the pay grade for a master's holder is significantly lower than the Ph. D's holder.
- The number of academic staff with Ph.D. occupied 22.6%. Followed by bachelor's degree (21.22%), diploma (2.22%) and others (1.99%).



- Over the year 2014 to 2020, , the bar chart shows an increasing trend of academic staff with academic qualifications in both public and private higher institutions.
- It can be related to the surging of scholarships provided by both the government and private sector in recent years. With that, more students are affordable with the education fee and it also causes the demand of the academic staff of higher institutions to increase.

## Conclusion :

In conclusion, the number of academic staff in Public Higher Education Institutions and Private Higher Education Institutions have increased visually on the data in these years. These data have shown us a positive trend in our education institutions because of the vigorous development of various undertakings in our country. While the educational institutions in our country need to cultivate a large number of talents, the demand for the staff is also increasing year by year. From the data, we know that the highest number of higher education qualifications in Public Higher Education Institutions is Doctor of Philosophy (Ph.D) and in private is Master with 18020 staff and 12850 staff respectively. However, the total number of staff at Public Higher Education Institutions is more than Private Higher Education Institutions with 6857 staff in 2020. As a result, the Public Higher Education Institutions are more attractive than Private Public Higher Education Institutions.

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