Application of Descriptive Statistics

Introduction

Decision machining driven by data is one of the emerging ways in case of business as well as personal decision making too. For instance, students now-a-days, before taking their final admission compare, contrast and check different alternatives for taking final course decision (Kholmauminov et al. 2019). It has made institutes to share their educational performance data as well as allowed them capture higher competitive advantage in getting better enrolment. For the present study, use of the data driven decision making in case of comparing Master of Business Administration (MBA) schools using descriptive statistics and correlation has been demonstrated. Graphical presentation has also been demonstrated to showcase easy understanding of relationship between dependent and independent variable.

For the present study, four variables have been considered, which are tuition fees presented in terms of 1000$, starting salary presented in 1000$, age and work experience has been considered for ten MBA schools. Here, dependent variable is starting salary as it influences the enrolment of students to a great extent. Other variables, like tuition fee, age and work experience has been considered as the independent variable (Siah et al. 2018). Although, as tuition fees is one of the major variables to influence the starting salary, relation between two has been focused upon. As the major statistical tool, descriptive analysis and correlation analysis has been considered and for the analysis Excel has been used here.

Descriptive statistics:

Table 1: Descriptive statistics of tuition fee

Tuition fee (1000$)	
Mean	37.5
Standard Error	3.004626063
Median	40
Mode	40
Standard Deviation	9.501461876

Sample Variance	90.27777778
Kurtosis	-1.466779374
Skewness	-0.060719401
Range	25
Minimum	25
Maximum	50
Sum	375
Count	10

As per the table 1, it can be seen that mean tuition fees is 37.5 thousand $ with median and mode of 40. Hence, most of the MBA schools have tuition fees of 40 thousand $. As per the standard deviation, it is 9.50 and sample variance of 90.27 demonstrate moderate variance in the data set. Maximum tuition fee is 50 thousand $ and minimum tuition fees is 25 thousand $. Skewness and Kurtosis demonstrates, the data has no outlier and it has right tail.

Table 2: Descriptive statistics of starting salary

Starting Salary (1000$)	
Mean	77.5
Standard Error	2.266911751
Median	80
Mode	80
Standard Deviation	7.168604389
Sample Variance	51.38888889
Kurtosis	-1.001147866
Skewness	0.282764527
Range	20

Minimum	70
Maximum	90
Sum	775
Count	10

As per the table 2, it can be seen that mean starting salary for MBA school students is 77.5 thousand $ with median and mode of 80. Hence, most of the MBA school students have starting salary of 80 thousand $. As per the standard deviation, it is 7.16 and sample variance of 51.38 demonstrate low variance in the data set. Maximum starting salary is 90 thousand $ and minimum starting salary is 70 thousand $. Skewness and Kurtosis demonstrates, the data has no outlier and it has right tail.

Table 3: Descriptive statistics of Age

Age	
Mean	21.1
Standard Error	2.258072
Median	20
Mode	20
Standard Deviation	7.14065
Sample Variance	50.98889
Kurtosis	0.66709
Skewness	1.364621
Range	19
Minimum	15
Maximum	34
Sum	211
Count	10

As per the table 3, it can be seen that mean age of MBA school students is 21.1 years with median and mode of 20. Hence, most of the MBA school students are of 20 years age. As per the standard deviation, it is 7.14 and sample variance of 50.98 demonstrate low variance in the data set. Maximum age of student of MBA school is 34 years and minimum age is 15 years. Skewness and Kurtosis demonstrates, the data has no outlier and it has right tail.

As far as work experience is concerned, as the data is not numeric, hence they have been coded into numerical values. Schools with work experience has been coded as 1 and schools with no work experience has been coded as 0. As per the proportion, it has been found that out of total 10 school, .2 have no experience and .8 schools have working experience.

Association between tuition fees and salary:

To demonstrate the association between the tuition fees and starting salary, scatter plot and correlation has been considered here.
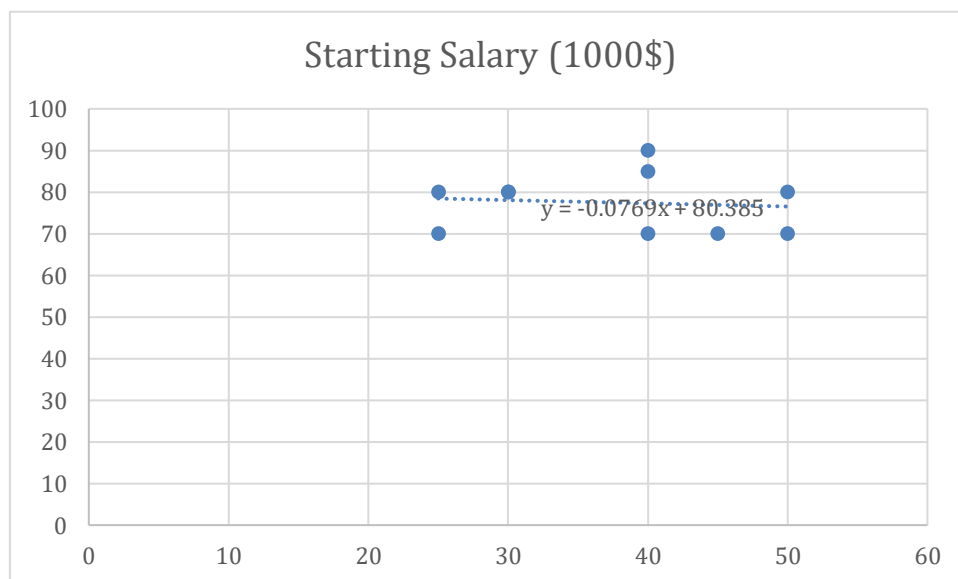

Figure 1: scatter plot of starting salary and tuition fees

As per the figure 1, it can be seen that the scatter plot between starting salary and tuition fees does not demonstrate good association between the variables. Although, as per the trend line it can be seen that there is a negative relation between the tuition fees and starting salary (Kelkay & Mola, 2020). Hence, as the tuition fees rise, starting salary for the MBA schools tends to fall.

Table 4: Correlation between tuition fees and starting salary

	Tuition fee (1000$)	Starting Salary (1000$)
Tuition fee (1000$)	1	
Starting Salary (1000$)	-0.10196	1

When the outcome of the figure 1 is compared with the correlation output demonstrated in table 4, it can be seen that there is a negative relation between two variables. With correlation value of -0.10196, it demonstrates that the two variables are negatively associated with each other (Faberman & Menzio, 2018). A unit change in the tuition fees can lead to fall in the starting salary by .10196 time.

Conclusion:

From the analysis it can be seen that most of the MBA school have tuition fees of 40 thousand $ and the starting salary is 80 thousand $. Most of the students are of 20 years for the MBA schools. Though there has been significant literary evidence that demonstrate positive association between tuition fees and salary, however, present study demonstrated, there is negative association between the two variables. Increase in the tuition fees lead to fall in the starting salary for MBA schools.

References

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