



Analysis of Admission Data for ISB Campus 2019

STATISTICAL AND MATHEMATICAL TOOLS FOR DATA SCIENCE

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MS(DS)-A

Question 1:

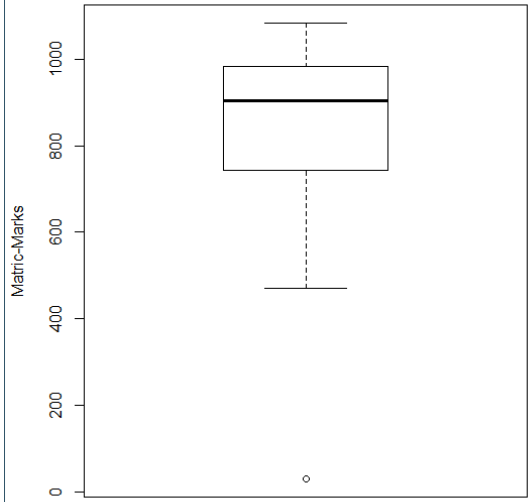
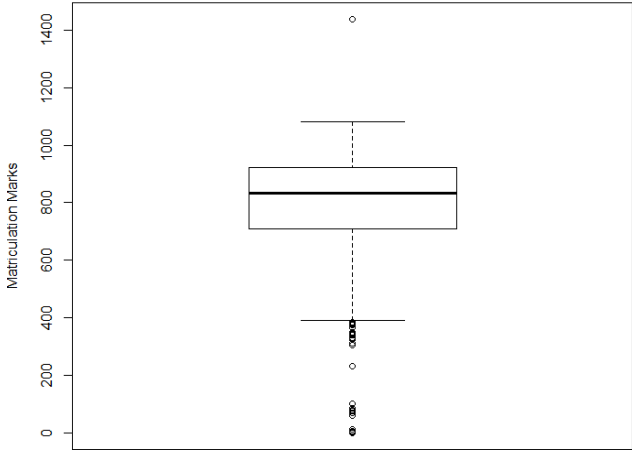
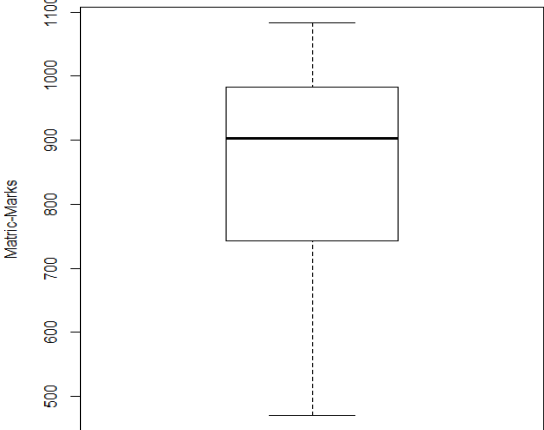
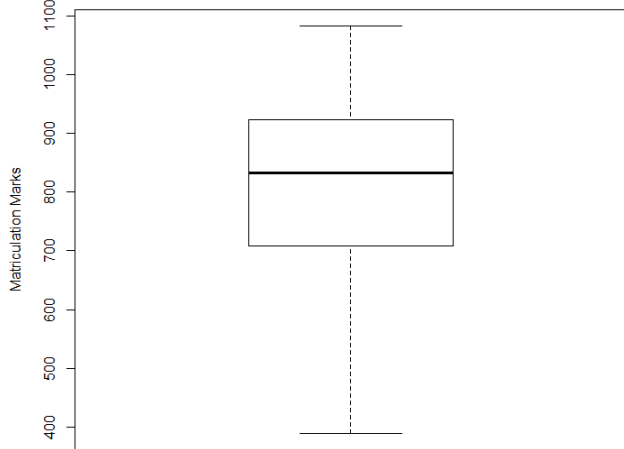
Admission Offered	Admission not Offered
Five number summaries of Matric marks with outliers. 31 743 903 983 1083	Five number summaries of Matric marks with outliers. 0 709 832 923 1438
Five number summaries of Matric marks without outliers. 471 743 903 983 1083	Five number summaries of Matric marks without outliers. 390 709 832 923 1082
Boxplot with outliers	Boxplot with outliers
<p>Box plot of Matric-Marks based on NU/NTS test</p>  <p>This box plot displays the distribution of Matric-Marks. The y-axis is labeled 'Matric-Marks' and ranges from 0 to 1000. The box represents the interquartile range from approximately 750 to 980, with a median line at 903. Whiskers extend from 471 to 1083. A single outlier is plotted at 31.</p>	<p>Box plot of Matric-Marks of students not offered based on NU/NTS test</p>  <p>This box plot displays the distribution of Matriculation Marks for students not offered admission. The y-axis is labeled 'Matriculation Marks' and ranges from 0 to 1400. The box represents the interquartile range from approximately 710 to 920, with a median line at 832. Whiskers extend from 390 to 1082. Multiple outliers are plotted at 0, 709, and 1438.</p>
Boxplot without outliers	Boxplot without outliers
<p>Box plot of Matric-Marks based on NU/NTS test</p>  <p>This box plot displays the distribution of Matric-Marks without outliers. The y-axis is labeled 'Matric-Marks' and ranges from 500 to 1100. The box represents the interquartile range from approximately 750 to 980, with a median line at 903. Whiskers extend from 471 to 1083.</p>	<p>Box plot of Matric-Marks of students not offered based on NU/NTS test</p>  <p>This box plot displays the distribution of Matriculation Marks for students not offered admission without outliers. The y-axis is labeled 'Matriculation Marks' and ranges from 400 to 1100. The box represents the interquartile range from approximately 710 to 920, with a median line at 832. Whiskers extend from 390 to 1082.</p>

Table-1

For above table-1 We conclude that the matric-marks does not affect the NU admission. There are many students that have good marks in matric and they fail to get admission. And there are such students that have 471 marks and they have gotten the admission in NU.

So, if a student has more than 700 marks then he/she has a better chance to get admission in NU.

Question 2:

Our results for Intermediate same as Matric. Because we find that the marks of Intermediate and Matric are same. We conclude that its error in data because it is impossible that the all students have the same marks in Matric and Intermediate.

We conclude that the it is Matriculation marks because the having 471 marks of a students get admission in NU.

Question 4:

	Mean
Intermediate-Marks offered by NU-Test	865.19
Intermediate-Marks offered by NTS-Test	888.58
BS programs merit offered by NU-Test	62.81
BBA/BS(AF) merit offered by NU-Test	60.40
NTS merit offered by NU-Test	77.70

Table-2

For above Table-2 we conclude that Students who have passed the NU-Test have a better chance of joining NUCES because the average marks of intermediate of the students who take NTS-Test is greater than the average marks of intermediate of the students who take NU-Test. Similarly, the average of NTS merit list is greater than the NU merit list.

Question 6:

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> table(FAST_Campuses,Admission_BS_Programs, dnn = c("FAST Campuses", "FAST BS Programs"))
      FAST BS Programs
FAST Campuses  BBA BS(AF) BS(AI) BS(CS) BS(CSDF) BS(CV) BS(DS) BS(EF) BS(SE)
CFD      139      0      0      611      0      0      0      212      293
ISB     1176     352     302     4399     305      0     85     1738      0
KHI      208      50      0     2686      0      0      0      377     722
LHR      819     205      0     5731      0    1144      0     1349      0
PWR       0       0      0      260      0      0      0      335     262
```

The above results show that the BS(CS) program is a popular choice for admission in all campuses except Peshawar campus.

Question 6:

The correlation between Matric/O-level/F.Sc./A-Level and the NU-Test score of BS is 0.396.

The correlation between Matric/O-level/F.Sc./A-Level and the NU-Test score of BBA/BS(AF) is 0.354.

For above two correlation values we conclude that there is positive and weak correlation between Matric/O-level/F.Sc./A-Level and the NU-Test score. The marks of Matric/O-level/F.Sc./A-Level do not much effect of NU-Test.

Question 7:

Table of Intermediate Boards and number of students having admission				Table of probability of Intermediate Boards and number of students having admission			
All boards of intermediate		Admission offered in NU		All boards of intermediate		Admission offered in NU	
		FALSE	TRUE			FALSE	TRUE
Abbotabad	222	35		Abbotabad	0.86381323	0.13618677	
Agha Khan	129	105		Agha Khan	0.55128205	0.44871795	
Armed Forces	1	0		Armed Forces	1.00000000	0.00000000	
Bahawalpur	293	93		Bahawalpur	0.75906736	0.24093264	
Bannu	29	0		Bannu	1.00000000	0.00000000	
Cambridge	306	218		Cambridge	0.58396947	0.41603053	
D. G. Khan	201	56		D. G. Khan	0.78210117	0.21789883	
D. I. Khan	32	6		D. I. Khan	0.84210526	0.15789474	
Faisalabad	777	489		Faisalabad	0.61374408	0.38625592	
Federal	2940	975		Federal	0.75095785	0.24904215	
Gujranwala	767	229		Gujranwala	0.77008032	0.22991968	
Hyderabad	272	95		Hyderabad	0.74114441	0.25885559	
Karachi	1210	594		Karachi	0.67073171	0.32926829	
Kohat	55	13		Kohat	0.80882353	0.19117647	
Lahore	3237	1206		Lahore	0.72856178	0.27143822	
Larkana	96	60		Larkana	0.61538462	0.38461538	
London	1	2		London	0.33333333	0.66666667	
Malakand Div	29	3		Malakand Div	0.90625000	0.09375000	
Mardan	153	26		Mardan	0.85474860	0.14525140	
Mirpur	133	34		Mirpur	0.79640719	0.20359281	
Mirpur Khas	140	82		Mirpur Khas	0.63063063	0.36936937	
Multan	488	175		Multan	0.73604827	0.26395173	
Others	84	19		Others	0.81553398	0.18446602	
Peshawar	492	100		Peshawar	0.83108108	0.16891892	
Punjab Technical	43	2		Punjab Technical	0.95555556	0.04444444	
Quetta	69	5		Quetta	0.93243243	0.06756757	
Rawalpindi	755	185		Rawalpindi	0.80319149	0.19680851	
Sahiwal	308	113		Sahiwal	0.73159145	0.26840855	
Sargodha	266	136		Sargodha	0.66169154	0.33830846	
Sawat	70	6		Sawat	0.92105263	0.07894737	
Sialkot	2	0		Sialkot	1.00000000	0.00000000	
Sindh Technical	4	2		Sindh Technical	0.66666667	0.33333333	
Sukkur	139	69		Sukkur	0.66826923	0.33173077	

Table-3

For above table-3 we conclude that maximum admissions were from Lahore board. But if we ignore the "London" Agha Khan Board was successful in getting admission in NU. The probability of getting admission of Agha Khan Board is 0.44.

Question 8:

NU-Test for BS or BBA	Regions	Mean
BS	Sindh	31.41548
BBA	Sindh	28.24689
BS	Punjab	37.0281
BBA	Punjab	37.35511
BS	Balochistan	21.01878
BBA	Balochistan	27.29167
BS	Khyber Pakhtunkhwa	30.62925
BBA	Khyber Pakhtunkhwa	34.09987
BS	Federal	37.85012
BBA	Federal	38.71706

Table-4

For above table-4 we conclude that the Federal region performed best in NU-Test having mean 38.71706 for BBA and 37.85012 for BS programs.