Statistical Analysis Step-by-Step Using Statistical Calculator for Correlation Coefficient

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Methodology

We follow the steps described below to get the data analyzed and finding its outputs:

Step 1: Type www.psbvb.in in any browser that will open the following web page:

Step 2: Then click on Statistical Analysis which will open the page given below:

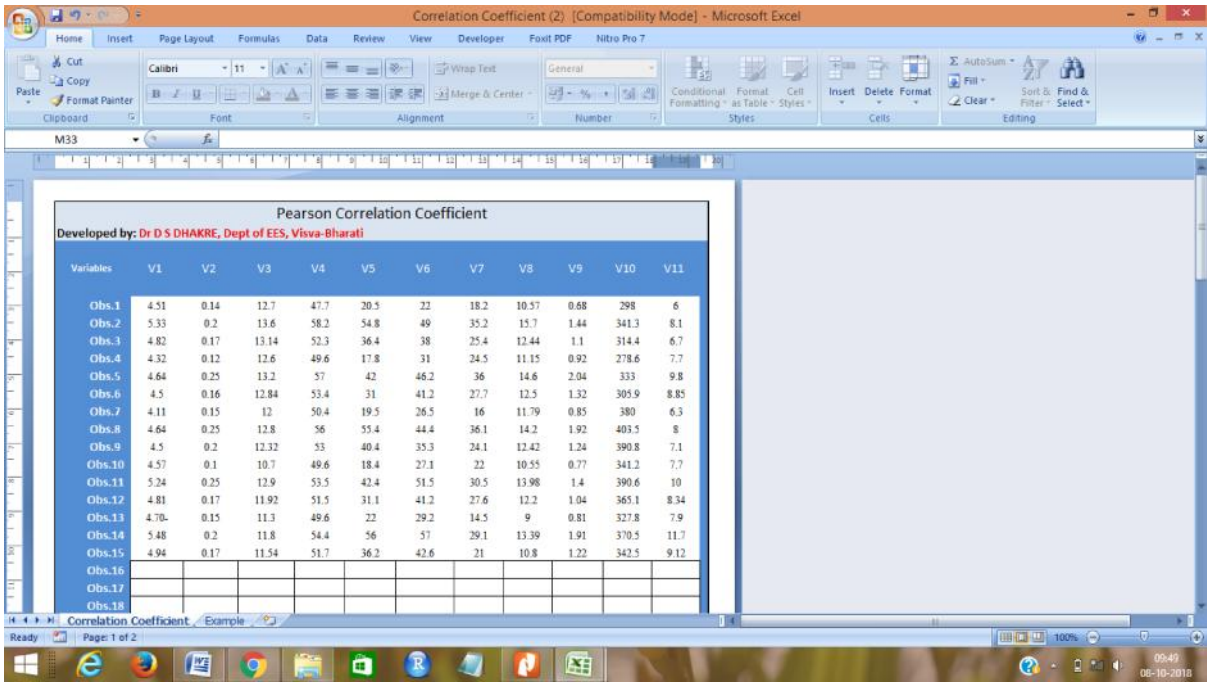
Step 3: Click on correlation the following page will show up:

Step 4: Then click on correlation coefficient, then that will download the statistical calculator of correlation coefficient within a second. You can keep it in your computer

or laptop forever. Next, you click on the downloaded file which is an excel file, a data spreadsheet will open up. Here you can analyse upto 11 number of variables with 46 observations each. Now you can enter your data directly in the given spreadsheet or copy from other sheet and paste it on the spreadsheet.

Example 3.1: Find the correlation coefficient and its significance for the following data:

V_1=pH	V_2=EC	V_3=CEC	V_4=Porosity	V_5=Sand	V_6=Silt	V_7=clay	V_8=LR	V_9=OC	V_{10}=N	V_{11}=P
4.51	0.14	12.7	47.7	20.5	22	18.2	10.57	0.68	298	6
5.33	0.2	13.6	58.2	54.8	49	35.2	15.7	1.44	341.3	8.1
4.82	0.17	13.14	52.3	36.4	38	25.4	12.44	1.1	314.4	6.7
4.32	0.12	12.6	49.6	17.8	31	24.5	11.15	0.92	278.6	7.7
4.64	0.25	13.2	57	42	46.2	36	14.6	2.04	333	9.8
4.5	0.16	12.84	53.4	31	41.2	27.7	12.5	1.32	305.9	8.85
4.11	0.15	12	50.4	19.5	26.5	16	11.79	0.85	380	6.3
4.64	0.25	12.8	56	55.4	44.4	36.1	14.2	1.92	403.5	8
4.5	0.2	12.32	53	40.4	35.3	24.1	12.42	1.24	390.8	7.1
4.57	0.1	10.7	49.6	18.4	27.1	22	10.55	0.77	341.2	7.7
5.24	0.25	12.9	53.5	42.4	51.5	30.5	13.98	1.4	390.6	10
4.81	0.17	11.92	51.5	31.1	41.2	27.6	12.2	1.04	365.1	8.34
4.70-	0.15	11.3	49.6	22	29.2	14.5	9	0.81	327.8	7.9
5.48	0.2	11.8	54.4	56	57	29.1	13.39	1.91	370.5	11.7
4.94	0.17	11.54	51.7	36.2	42.6	21	10.8	1.22	342.5	9.12



Step 5: Now, you click on print command, then that command will start analysis of the data and produces the results in a printable format. If a printer is attached to the

computer, then you can take a print out of the results. Otherwise, you can see your results in a print preview mode and the following will come up:

Output

Variables		V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
V1	r	1	0.462	0.140	0.528	0.735	0.822	0.510	0.535	0.491	0.251	0.688
	sig				*	**	**		*			**
	p-value		0.082	0.619	0.042	0.002	0.000	0.051	0.039	0.062	0.366	0.004
	N		15	15	15	15	15	15	15	15	15	15
V2	r		1	0.547	0.797	0.820	0.749	0.741	0.779	0.844	0.595	0.497
	sig			*	**	**	**	**	**	**	*	
	p-value			0.034	0.000	0.000	0.001	0.001	0.001	0.000	0.018	0.058
	N			15	15	15	15	15	15	15	15	15
V3	r			1	0.585	0.453	0.360	0.627	0.720	0.426	-0.120	-0.031
	sig				*			*	**			
	p-value				0.021	0.088	0.185	0.012	0.002	0.112	0.671	0.913
	N				15	15	15	15	15	15	15	15
V4	r				1	0.881	0.810	0.883	0.917	0.873	0.388	0.509
	sig					**	**	**	**	**		
	p-value					0.000	0.000	0.000	0.000	0.000	0.151	0.051
	N					15	15	15	15	15	15	15
V5	r					1	0.874	0.789	0.817	0.865	0.528	0.569
	sig						**	**	**	**	*	*
	p-value						0.000	0.000	0.000	0.000	0.042	0.026
	N						15	15	15	15	15	15
V6	r						1	0.774	0.758	0.840	0.404	0.837
	sig							**	**	**		**
	p-value							0.001	0.001	0.000	0.134	0.000
	N							15	15	15	15	15
V7	r							1	0.908	0.837	0.268	0.510
	sig								**	**		
	p-value								0.000	0.000	0.333	0.051
	N								15	15	15	15
V8	r								1	0.787	0.398	0.405
	sig									**		
	p-value									0.000	0.140	0.133
	N									15	15	15
V9	r									1	0.414	0.703
	sig											**
	p-value										0.123	0.003
	N										15	15
V10	r										1	0.239
	sig											
	p-value											0.389
	N											15
V11												1
	** correlation is significant at the 0.01 level					* correlation is significant at the 0.05 level						

References

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