

Study of associations between grades awarded in the system of internal and external evaluation

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Abstract

In this paper we propose to study whether the scaling down is really essential. For this first we will study whether there is associations between internal and external grades. On the basis of data collected from the college about 583 students earlier we have estimated scaling down parameters and also effect of scaling down in this study the association will be studied. Earlier it is observed that the difference between percentage of marks scored in external and internal examination follows exponential distribution. On the basis of Data of 583 students the estimate of parameters is obtained using SPSS.

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INTRODUCTION

All over the world examination system at undergraduate and post graduate level consists of two parts namely internal continuous assessment and external assessment. Internal assessment is broadly based on class tests on part of syllabus, class assignments, presentation on particular topic either in group or individually, via voce, group discussion, debate etc. Often these types of assessment have subjective elements and it is not done objectively. Whereas external assessment have lesser subjectivity as compare to internal assessment. It has been observed in many cases time and again students perform better in internal assessment and do not perform equally well in external assessment. This may have two possible reasons,

one that internal assessment (IA) based on smaller part of the syllabus also have different way of assessment of learner and external assessment (EA) generally theory or practical examination based on entire syllabus of either term or year depending upon semester or annual examination pattern. Other reasons which we widely believed in is that IA is done very liberally most of the time at college or department level which is not the case with EA. In many higher educational institutions (HEI) there is practice of reducing marks of IA, if there is sizeable difference in the percentage marks scored by learner in IA and EA in case marks scored in EA are significantly less than that of marks scored in IA. This reduction of marks in IA is termed as Scaling down.

METHODOLOGY

1. Data on more than 583 students is collected with their scores of Internal and External marks.
2. It's a primary data based on examination of students in particular college
3. Marks in the Internal as well as External are converted into percentages
4. Grades are assigned using following table

Marks in Percentage	Result	Numerical Grade for SPSS
0 to 39	Fail	1
40 to 44	Pass	2
45 to 59	Second Class	3
60 to 74	First Class	4
75 to 100	Distinction	5

- Using simple excel functions like lookup entire percentage of marks are converted into Grades as per as above definition.
- Using SPSS techniques following Hypothesis are tested

Hypothesis

1) H_{01} : There is no significant difference between the percentage of marks scored in internal assessment and percentage of marks scored in external assessments.

2) H_{02} There is no association between grades in internal examination and grades in external examination.

Testing of Hypothesis H_{01}

Since the test is carried for two variables on same units we will use paired t- test. SPSS analysis is as under,

T-Test					
Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Percentage Marks in Internal	66.69	583	12.591	.521
	Percentage Marks in External	45.93	583	17.827	.738

Paired Samples Correlations			
		N	Correlation
Pair 1	Percentage Marks in Internal & Percentage Marks in External	583	.552

Paired Samples Test									
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Percentage Marks in Internal - Percentage Marks in External	20.756	15.118	.626	19.527	21.986	33.150	582	.000

H_{01} is rejected and there is significant difference between percentage of Marks in Internal and percentage of Marks in External

Testing of Hypothesis H_{02} :

Students are assigned grades depending on the percentage of marks as defined above hence these grades are considered as ordinal course and to test the association between grades scored by students in internal and grades scored by students in external Chi-square test of association is used the output of Chi-square test of association is as under,

Case Processing Summary						
	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
	Grade in Internal * Grade in External	583	100.0%	0	0.0%	583

Grade in Internal * Grade in External Crosstabulation							
		Count					Total
		Grade in External					
Grade in	Fail	Fail	Pass	Second Class	First Class	Distinction	
	Fail	6	0	0	0	0	6

Internal	Pass	15	5	2	0	0	22
	Second Class	51	40	28	6	1	126
	First Class	47	76	80	50	8	261
	Distinction	9	22	69	47	21	168
	Total	128	143	179	103	30	583

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	163.263 ^a	16	.000
Likelihood Ratio	166.621	16	.000
Linear-by-Linear Association	134.825	1	.000
N of Valid Cases	583		

8 cells (32.0%) have expected count less than 5. Minimum expected count is.31. Thus there is no association between grades scored in internal examination and grades scored in external examination.

CONCLUSION

From the Data it is observed that there is no association between marks or grades in the internal examination as against marks and grades in the external examination.

Data

The Data is based on Marks scored by 604 students in Internal as well as External .marks in Internal are out of 40 and Marks in external are out of 60.Out of 604 students 21 students were absent either in Internal evaluation examination or in External evaluation examination or both.Roll No of absent students are deleted from the data and marks are sorted in order of Total marks and fresh roll no are assigned from 1 to 583 in order through remove identity of the candidate. The data is tabulated as under,

Roll_N o	Marks _Int	Marks_ Ext	Roll_N o	Marks _Int	Marks_ Ext	Roll_ No	Marks _Int	Marks_ Ext	Roll_ No	Marks _Int	Marks_ Ext
1	12	1	48	20	13	95	26	14	142	21	24
2	8	7	49	21	12	96	16	24	143	21	24
3	16	0	50	19	14	97	23	17	144	28	18
4	11	6	51	22	11	98	31	10	145	21	25
5	14	4	52	21	12	99	17	24	146	22	24
6	16	2	53	17	16	100	26	15	147	29	17
7	18	1	54	28	6	101	24	17	148	20	26
8	16	4	55	21	13	102	17	24	149	22	24
9	16	4	56	21	13	103	26	15	150	22	24
10	16	5	57	17	17	104	28	13	151	22	24
11	16	5	58	25	10	105	17	24	152	22	24
12	13	9	59	18	17	106	30	12	153	22	24
13	16	7	60	23	12	107	30	12	154	23	24
14	16	8	61	24	11	108	18	24	155	23	24
15	18	6	62	21	14	109	18	24	156	23	24
16	19	5	63	22	13	110	24	18	157	23	24
17	22	3	64	27	8	111	24	18	158	23	24
18	22	3	65	21	15	112	26	16	159	22	25
19	20	5	66	19	17	113	28	14	160	23	24
20	18	8	67	19	17	114	28	15	161	23	24
21	17	10	68	22	14	115	27	16	162	23	24
22	20	7	69	23	13	116	28	15	163	19	28
23	18	9	70	21	15	117	28	15	164	21	26
24	23	5	71	25	11	118	18	25	165	22	25
25	24	4	72	21	16	119	27	16	166	21	26
26	18	10	73	19	18	120	27	16	167	23	24
27	16	12	74	24	13	121	28	15	168	23	25
28	17	11	75	27	10	122	27	16	169	24	24

29	19	9	76	24	13	123	28	16	170	33	15
30	13	15	77	29	9	124	30	14	171	24	24
31	17	12	78	27	11	125	19	25	172	24	24
32	24	6	79	27	11	126	32	12	173	24	24
33	17	13	80	23	15	127	29	15	174	24	24
34	21	9	81	20	18	128	20	24	175	24	24
35	20	10	82	22	16	129	18	26	176	24	24
36	19	11	83	23	15	130	26	18	177	24	24
37	23	8	84	23	15	131	28	16	178	30	18
38	20	11	85	25	13	132	20	24	179	24	24
39	19	12	86	21	18	133	27	17	180	22	26
40	21	10	87	24	15	134	19	25	181	24	24
41	19	13	88	26	13	135	26	18	182	23	26
42	25	7	89	24	15	136	16	28	183	23	26
43	20	12	90	27	12	137	31	14	184	25	24
44	22	10	91	23	17	138	21	24	185	21	28
45	24	8	92	23	17	139	21	24	186	25	24
46	19	13	93	16	24	140	21	24	187	25	24
47	24	8	94	26	14	141	21	24	188	19	30

Roll_No	Marks_Int	Marks_Ext	Roll_No	Marks_Int	Marks_Ext	Roll_No	Marks_Int	Marks_Ext	Roll_No	Marks_Int	Marks_Ext
189	25	24	236	26	26	283	26	28	330	27	30
190	20	29	237	27	25	284	26	28	331	28	29
191	23	26	238	28	24	285	25	29	332	28	29
192	25	24	239	25	27	286	30	24	333	27	30
193	25	24	240	28	24	287	25	29	334	25	32
194	25	24	241	27	25	288	30	24	335	33	24
195	21	28	242	26	26	289	30	25	336	23	34
196	25	24	243	28	24	290	28	27	337	27	30
197	21	28	244	23	29	291	31	24	338	28	29
198	25	24	245	28	24	292	24	31	339	29	29
199	32	17	246	28	24	293	26	29	340	31	27
200	21	29	247	28	24	294	22	33	341	21	37
201	26	24	248	23	29	295	24	31	342	28	30
202	25	25	249	26	26	296	25	30	343	28	30
203	23	27	250	28	24	297	31	24	344	27	31
204	26	24	251	28	24	298	25	30	345	29	29
205	26	24	252	28	24	299	24	31	346	32	26
206	26	24	253	28	25	300	30	25	347	24	34
207	23	27	254	29	24	301	23	32	348	24	34
208	26	24	255	29	24	302	28	27	349	26	32
209	26	24	256	28	25	303	25	30	350	24	34
210	26	24	257	27	26	304	26	29	351	31	27
211	26	24	258	19	34	305	22	33	352	29	30
212	26	24	259	22	31	306	25	30	353	31	28
213	26	24	260	24	29	307	27	28	354	26	33
214	26	24	261	24	29	308	31	24	355	30	29
215	26	24	262	29	24	309	29	27	356	29	30
216	26	24	263	28	25	310	24	32	357	27	32
217	26	24	264	22	31	311	23	33	358	33	26
218	26	25	265	29	24	312	23	33	359	25	34
219	27	24	266	29	24	313	23	33	360	28	31
220	27	24	267	29	24	314	26	30	361	25	34
221	26	25	268	29	25	315	30	26	362	30	29
222	25	26	269	28	26	316	24	32	363	31	28
223	26	25	270	27	27	317	21	35	364	28	31
224	16	35	271	29	25	318	28	28	365	27	32
225	22	29	272	22	32	319	25	31	366	27	32
226	24	27	273	25	29	320	27	29	367	22	37
227	26	25	274	25	29	321	30	26	368	26	33
228	27	24	275	22	32	322	27	29	369	35	24
229	23	28	276	29	25	323	22	34	370	35	24
230	23	28	277	28	26	324	33	24	371	34	25
231	27	24	278	30	24	325	30	27	372	35	24
232	27	24	279	27	27	326	27	30	373	30	29
233	27	24	280	26	28	327	28	29	374	26	34
234	27	24	281	26	28	328	33	24	375	32	28
235	25	26	282	26	28	329	24	33	376	28	32

Roll_No	Marks_Int	Marks_Ext
565	36	42
566	33	46
567	35	44
568	31	48
569	31	48
570	30	49
571	30	49
572	32	48

573	31	50
574	37	44
575	33	49
576	36	46
577	34	49
578	35	49
579	38	49
580	29	58
581	35	55
582	35	57
583	38	55

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3. Use of SPSS

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