Box 12

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A MATHEMATICAL INDEX FOR INTERVIEWS

35 pp

February, 1931

February 19, 1931.

[redacted] - 6088-1:

For some time, we have looked at the interviewing method as a means by which we could get a general idea of employees' mental attitudes, and with this knowledge would be able to discover differences between groups of employees. In the past, we have been unable to make much progress in this direction, due largely to the fact that no numerical method has been available whereby we could classify each interview as an entity. The percentages of favorable and unfavorable comments have been calculated for individual departments, but these comments pertain to a particular subject or group. This reflects little difference in the mental attitudes of the individuals. What is needed is a method of evaluating objectively the general tone of the interview so that these evaluations can be compared. A method by which this might be accomplished was suggested by Dr. Henderson during his recent visit, and the following paper reports the results of a study based on his suggestion.

The method suggested was to determine a mathematical ratio between an employee's favorable and unfavorable comments, with the thought in mind that this would give us an index (expressed mathematically) of the tone of the entire interview. If a process of analyzation could be formulated, which developed sufficiently explicit criteria, all interviews could be evaluated with compatible results. This method should give rise to a statistical procedure having sufficient validity to warrant its use.

[redacted], following the lead presented by [redacted], suggested a simple formula for arriving at a mathematical index, which could be expressed as follows: $I = \frac{Y}{Z+Y}$ where "Y" represents the number of unfavorable comments made by the employee, and "Z" the number of favorable comments.

After a rather thorough conference discussion of this proposal among members of Department 6088-1, it was decided to have four interviewers analyze the same one hundred interviews, selected at random, to determine how much variation there would be in the scores of the different individuals making the ratings. It was agreed that this was to be done to develop a tentative method of analysis.

The group chosen for the analysis, realizing that comments were not of equal importance to the interviewer, suggested two methods by which these might be weighed. The first was to assign numerical values to the comments, which would indicate their relative importance. These values varied from 1 to 10, which meant that a

comment rating 5 was relatively neutral, while those at the extremes of the scale, 1 and 10, represented respectively the maximum and minimum of optimistic tone. The difficulty of placing comments in this wide range scale led to the method which was used during the analysis; namely, that of assigning the number of "Y's" and "Z's" which the comment seemed to warrant, when considering it in relation to other comments, and to the interview as a whole.

In educational work, the grading of examination papers has always been a point of great discussion, and pedagogists have spent considerable time in attempting to standardize the grading systems in this field. This can be done only to a certain point, as the judgement of the individual graders must be taken into consideration. In order to arrive at comparible results, standard grades must be determined by applying factors to the grades given by each instructor, which allow for the tendencies to grade higher or lower than the norm.

Our problem was very similar. We had a definite formula in which we substituted values, but these values were, in themselves, dependent to a certain extent upon individual opinion. It was necessary, therefore, to calculate standard scores for each of the four hundred ratings before we could determine the correlation coefficients. This was done by obtaining the actual deviation of each of the raw scores from the mean score of the analyst assigning that particular rating, and dividing these by the calculated standard deviation (σ) of the same analyst. Scores computed in this fashion were numerically compatible; the variable factor of differences from the norm was accounted for.

After the effect of this factor was eliminated, the standard scores of each analyst were plotted against those of every other analyst, and the Pearson Coefficients of Correlation determined. These coefficients ranged from .63 to .82, a correlation that was significantly high. A table showing the standard scores, and the six correlation graphs with the Pearson Coefficients are given in the appendix

After the completion of the calculations, the group which performed the analysis again met, and suggested the following method of analysis in determining the index of an interview:

1. The interview should be read carefully. This gives a general idea of the contents, and in many cases, statements may be evaluated by considering explanatory matter which follows the initial comment.

2. The subjects which the employee wishes to talk about are graded and weighted according to their seeming importance to the employee. All subjects, therefore, bear a ratio to each other, and the rating assigned should show the degree of difference existing in them. The analyst must not rate a subject by considering the effect upon himself, but

must be guided by what the interviewee himself states.

In the latter part of the appendix, we have included an interview on which the index has been calculated. Assigned values of the comments, and marginal notations are found at the left of the interview.

We conclude from this study that this particular method has merit, as the results clearly indicate that it lends itself, and is adaptible to a statistical procedure. Before recommending its adoption as a standard procedure for our work, however, we believe that a larger sample should be analyzed.

[redacted] - 6088-1B.

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APPENDIX

ANALYSIS OF 100 INTERVIEWS

Int. No.	Rating 1	Rating 2	Rating 3	Rating 4	Actual Deviation (Mean .499) 1 Score - Mean	Actual Deviation (Mean .536) 2 Score - Mean	Actual Deviation (Mean .491) 3 Score - Mean	Actual Deviation (Mean .569) 4 Score - Mean	Standard Score (σ .224) 1 Act.D./S.D.	Standard Score (σ .207) 2 Act.D./S.D.	Standard Score (σ .246) 3 Act.D./S.D.	Standard Score (σ .195) 4 Act.D./S.D.
1	.50	.50	.43	.61	+.001	-.036	-.061	+.041	+.004	-.174	-.248	+.210
2	.55	.60	.43	.64	+.051	+.064	-.061	+.071	+.228	+.309	-.248	+.364
3	.86	.66	1.00	.88	+.361	+.124	+.509	+.311	+1.611	+.599	+2.068	+1.594
4	.52	.62	.54	.61	+.021	+.084	+.049	+.041	+.094	+.406	+.201	+.210
5	.47	.22	.45	.57	-.029	-.066	-.041	+.001	-.129	-.319	-.167	+.005
6	.44	.29	.90	.44	-.059	-.096	+.409	-.129	-.263	-.464	+1.662	-.662
7	.42	.50	.45	.55	-.079	-.116	-.041	-.019	-.353	-.561	-.167	-.097
8	.71	.85	.77	.60	+.211	+.314	+.279	+.031	+.942	+1.517	+1.133	+.159
9	.50	.50	.50	.60	+.001	-.036	+.009	+.031	+.004	-.174	+.037	+.159
10	.93	.86	.71	.92	+.431	+.324	+.219	+.351	+1.925	+1.565	+.892	+1.427
11	.91	1.00	.91*	.96	+.411	+.464	+.419	+.391	+1.834	+2.242	+1.705	+2.005
12	.62	.67	.53	.80	+.121	+.134	+.039	+.231	+.540	+.648	+.158	+1.184
13	.16	.12	.12	.29	-.339	-.416	-.371	-.279	-1.513	-2.010	-1.508	-1.430
14	.50	.20	.30	.29	+.001	-.336	-.191	-.279	+.004	-1.623	? -.777	-1.430
15	.64	.62	.58	.82	+.141	+.084	+.089	+.251	+.630	+.396	+.362	+1.287
16	.45	.42	.57	.50	-.049	-.116	+.079	-.069	-.219	-.561	+.321	-.354
17	.01	.22	.00	.25	-.489	-.316	-.491	-.315	-2.192	-1.528	-1.996	-1.614
18	.38	.58	.50	.55	-.119	+.044	+.009	-.019	-.531	+.213	+.037	-.097
19	.35	.95	.20	.41	-.149	+.414	-.291	-.159	-.665	+.200	-1.182	-.816
20	.38	.50	.25	.60	+.081	-.036	-.241	+.031	+.362	-.174	-.979	+.159
21	.77	.56	.77	.60	+.271	+.024	+.279	+.031	+1.209	+.116	+1.133	+.159
22	.61	.53	.47	.70	+.111	-.006	-.021	+.131	+.496	-.029	-.085	+.672
23	.66	.50	.69	.73	+.161	-.036	+.199	+.161	+.719	-.174	+.809	+.826
24	.50	.33	.25	.56	+.001	-.206	-.241	-.009	+.004	-.996	-.979	-.046
25	.69	.67	.75	.65	+.191	+.134	+.259	+.081	+.853	+.648	+1.053	+.415
26	.60	.55	.50	.64	+.101	+.014	+.009	+.071	+.452	+.068	+.037	+.364
27	.16	.33	.17	.37	-.339	-.206	-.321	-.191	-1.513	-.996	-1.305	-.979
28	.57	.60	.57	.57	+.071	+.064	+.079	+.001	+.317	+.309	+.321	+.005
29	.66	.71	.71	.63	+.161	+.174	+.219	+.061	+.719	+.842	+.892	+.313
30	.83	.77	.75	.75	+.331	+.234	+.259	+.181	+1.478	+1.130	+1.053	+.928
31	.09	.88	.85	.92	+.409	+.344	+.359	+.351	+1.828	+1.661	+1.458	+1.427
32	.71	.64	.25	.75	+.211	+.104	-.241	+.181	+.942	+.503	-.979	+.928

ANALYSIS OF 100 INTERVIEWS

Int. No.	Rating 1	Rating 2	Rating 3	Rating 4	Actual Deviation (Mean .499) 1 Score - Mean	Actual Deviation (Mean .536) 2 Score - Mean	Actual Deviation (Mean .491) 3 Score - Mean	Actual Deviation (Mean .569) 4 Score - Mean	Standard Score (σ .224) 1 Act. D. / S.D.	Standard Score (σ .207) 2 Act. D. / S.D.	Standard Score (σ .246) 3 Act. D. / S.D.	Standard Score (σ .195) 4 Act. D. / S.D.
33	.46	.52	.68	.61	-.039	-.016	+.189	+.041	-.174	-.077	+.768	+.210
34	.92	.82	.82	1.00	+.421	+.284	+.329	+.431	+1.876	+1.372	+1.338	+2.201
35	.80	.77	.72	.81	+.301	+.234	+.229	+.241	+1.343	+1.130	+.932	+1.237
36	.58	.75	.75	.83	+.081	+.214	+.259	+.261	+.362	+1.033	+1.053	+1.338
37	.43	.50	.50	.50	-.069	-.036	+.009	-.069	-.308	-.174	+.037	-.354
38	.68	.76	.83	.66	+.181	+.224	+.339	+.091	+.808	+1.082	+1.378	+.466
39	.33	.75	.73	.55	-.169	+.214	+.239	-.019	-.754	+1.033	+.972	-.097
40	.75	.85	.20	.80	+.251	+.314	-.291	+.231	+1.121	+1.518	-1.182	+1.184
41	.25	.40	.00	.50	-.249	-.136	-.491	-.069	-1.111	-.657	-1.996	-.354
42	.57	.50	.25	.82	+.071	-.036	-.241	+.251	+.317	-.174	-.979	+1.287
43	.66	.70	.67	.66	+.161	+.164	+.179	+.091	+.719	+.792	+.728	+.466
44	.70	.80	.75	.57	+.201	+.264	+.259	+.001	+.898	+1.274	+1.053	+.005
45	.56	.59	.54	.46	+.061	+.004	+.049	-.109	+.272	+.019	+.201	-.559
46	.50	.55	.57	.60	+.001	+.014	+.079	+.031	+.004	+.068	+.321	+.159
47	.14	.37	.00	.31	-.359	-.166	-.491	-.259	-1.602	-.802	-1.996	-1.327
48	.25	.50	.60	.70	-.249	-.036	+.109	+.131	-1.111	-.174	-.443	+.672
49	.33	.60	.50	.58	-.169	+.064	+.009	+.011	-.754	+.309	+.037	+.056
50	.46	.63	.33	.60	-.039	+.094	-.161	+.031	-.174	+.454	+.654	+.159
51	.66	.70	.43	.70	+.161	+.164	-.061	+.131	+.719	+.792	+.248	+.672
52	.66	.62	.50	.71	+.161	+.084	+.009	+.141	+.719	+.396	+.037	+.723
53	.78	.83	.90	.66	+.281	+.294	+.409	+.091	+1.255	+1.421	+1.662	+.466
54	.00	.00	.00	.00	-.499	-.536	-.491	-.569	-2.223	-2.589	-1.996	-2.919
55	.77	.71	.82	.80	+.271	+.174	+.329	+.231	+1.209	+.842	+1.338	+1.184
56	.66	.64	.66	.82	+.161	+.104	+.169	+.251	+.719	+.502	+.687	+1.287
57	.50	.56	.57	.30	+.001	+.024	+.079	-.269	+.004	+.116	+.321	-1.380
58	.20	.28	.71	.33	-.299	-.256	+.219	-.239	-1.335	-1.236	-.892	-1.226
59	.50	.53	.46	.47	+.001	-.006	-.031	-.099	+.004	-.029	-.126	-.507
60	.25	.43	.30	.55	-.249	-.106	-.191	-.019	-1.111	-.512	-.777	-.097
61	.30	.37	.10	.35	-.199	-.166	-.391	-.219	-.889	-.802	-1.588	-1.122
62	.00	.00	.00	.00	-.499	-.536	-.491	-.569	-2.223	-2.589	-1.996	-2.919
63	.72	.68	.77	.70	+.221	+.144	+.279	+.131	+.988	+.696	+1.133	+.672
64	.14	.22	.20	.11	-.359	-.316	-.291	-.459	-1.602	-1.528	-1.182	-2.347
65	.66	.50	.33	.50	+.161	-.036	-.161	-.069	+.719	-.174	-.654	-.354
66	.70	.56	.71	.70	+.201	+.024	+.219	+.131	+.898	+.116	+.892	+.672

ANALYSIS OF 100 INTERVIEWS

Int. No.	Rating 1	Rating 2	Rating 3	Rating 4	Actual Deviation (Mean) 1 Score - Mean (.499)	2 Score - Mean (.536)	3 Score - Mean (.491)	4 Score - Mean (.569)	Standard Score (σ) 1 Act.D./S.D. (.224)	2 Act.D./S.D. (.207)	3 Act.D./S.D. (.246)	4 Act.D./S.D. (.195)
67	.62	.67	.50	.73	+.121	+.134	+.009	+.161	+.540	+.648	+.037	+.826
68	.57	.59	.53	.57	+.071	+.054	+.039	+.001	+.317	+.260	+.158	+.005
69	.40	.50	.25	.66	-.099	-.036	-.241	+.091	-.442	-.174	-.979	+.466
70	.36	.50	.50	.37	-.139	-.036	+.009	-.199	-.621	-.174	+.037	-1.021
71	.44	.52	.44	.66	-.059	-.016	-.051	+.091	-.263	-.077	-.207	+.466
72	.41	.42	.56	.42	-.089	-.116	+.069	-.149	-.397	-.561	+.280	-.764
73	.25	.33	.00	.46	-.249	-.206	-.491	-.109	-1.111	-.996	-1.996	-.559
74	.83	.67	.67	.83	+.331	+.134	+.179	+.261	+1.478	+.648	+.728	+1.338
75	.14	.28	.25	.36	-.359	-.256	-.241	-.209	-1.602	-1.236	-.979	-1.071
76	1.00	1.00	.80	.66	+.501	+.464	+.309	+.091	+2.236	+2.242	+1.256	+.466
77	.66	.50	.57	.71	+.161	-.036	+.079	+.141	+.719	-.174	+.321	+.723
78	.25	.26	.10	.35	-.249	-.276	-.391	-.219	-1.111	-1.332	-1.588	-1.122
79	.40	.44	.50*	.40	-.099	-.096	+.009	-.169	-.442	-.464	+.037	-.868
80	.43	.17	.43*	.50	-.069	-.366	-.061	-.069	-.308	-1.768	-.248	-.354
81	.43	.43	.38*	.71	-.069	-.106	-.111	+.141	-.308	-.512	-.452	+.723
82	.30*	.67	.50	.50	-.199	+.134	+.009	-.069	-.889	+.648	+.037	-.354
83	.29	.33	.29	.42	-.209	-.206	-.201	-.149	-.933	-.996	-.817	-.764
84	.33	.57	.62	.66	-.169	+.034	+.129	+.091	-.754	+.164	+.524	+.466
85	.44	.50	.00	.40	-.059	-.036	-.491	-.169	-.263	-.174	-1.996	-.868
86	.30	.43	.40	.33	-.199	-.106	-.091	-.239	-.889	-.512	-.369	-1.226
87	.29	.40	.44	.57	-.209	-.136	-.051	+.001	-.933	-.657	-.207	+.005
88	.82	.80	.66*	1.00	+.321	+.264	+.169	+.431	+1.432	+1.274	+.687	+2.201
89	.50	.50	.43*	.50	+.001	-.036	-.061	-.069	+.004	-.174	-.248	-.354
90	.89	.90	1.00	.88	+.391	+.364	+.509	+.311	+1.745	+1.758	+2.068	+1.594
91	.64	.66	.50	.61	+.141	+.124	+.009	+.041	+.630	+.599	+.037	+.210
92	.14	.30	.25	.43	-.359	-.236	-.241	-.139	-1.602	-1.139	-.979	-.713
93	.60	.55	.50	.44	+.101	+.014	+.009	-.129	+.452	+.068	+.037	-.662
94	.54	.57	.33	.37	+.041	+.034	-.161	-.199	+.183	+.164	-.654	-1.021
95	.27	.36	.57	.33	-.229	-.196	+.079	-.239	-1.023	-.947	+.321	-1.226
96	.33	.60	.60	.50	-.169	+.064	+.109	-.069	-.754	+.309	+.443	-.354
97	.31	.25	.14	.47	-.189	-.286	-.351	-.099	-.844	-1.381	-1.426	-.507
98	.55	.55	.83	.60	+.051	+.014	+.439	+.031	+.228	+.068	+1.782	+.159
99	.88	.83	.87	.80	+.381	+.294	+.379	+.231	+1.701	+1.420	+1.540	+1.184
100	.66	.75	.77	.66	+.161	+.214	+.279	+.091	+.719	+1.033	+1.133	+.466

* Analysts' Interview.

X VARIABLE = STANDARD SCORES ANALYST #2.

SAME AS FREQUENCIES "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #1.

+1.897+2.242																			
+1.553+1.896																			
+1.209+1.552																			
+.865 +1.208																			
+.521 +.864																			
+.177 +.520																			
-.167 +.176																			
-.511 -.168																			
-.855 -.512																			
-1.199 -.856																			
-1.553 -1.200																			
-1.887-1.554																			
-2.231-1.888																			
-2.575-2.232																			
-2.919-2.576																			

f		2	0	1	1	5	7	9	17	14	13	12	7	7	3	2		
d_x		8	7	6	5	4	3	2	1	0	1	2	3	4	5	6		
fd_x		16	0	6	5	20	21	18	17		13	24	21	28	15	12		
fd_x^2		128	0	36	25	80	63	36	17		13	48	63	112	75	72		

NUMBER OF CASES (N) = 100

f	d_y	fd_y	fd_y^2
2	6	12	72
6	5	30	150
7	4	28	112
6	3	18	54
15	2	30	60
13	1	13	13
9	0		
13	1	13	13
8	2	16	32
11	3	33	99
2	4	8	32
6	5	30	150
2	6	12	72

X

$\Sigma fd_x + = 113$

$\Sigma fd_x - = 103$

$\Sigma fd_x = 10$

$c_x = \frac{\Sigma fd_x}{N} = \frac{10}{100} = .1$

$c_x^2 = .01$

$\frac{\Sigma fd_x^2}{N} = \frac{768}{100} = 7.68$

$\frac{\Sigma fd_x^2}{N} - c_x^2 = 7.67$

$\sigma_x = \sqrt{\frac{\Sigma fd_x^2}{N} - c_x^2} = 2.77$

Y

$\Sigma fd_y + = 131$

$\Sigma fd_y - = 112$

$\Sigma fd_y = 19$

$c_y = \frac{\Sigma fd_y}{N} = \frac{19}{100} = .19$

$c_y^2 = .0361$

$\frac{\Sigma fd_y^2}{N} = \frac{859}{100} = 8.59$

$\frac{\Sigma fd_y^2}{N} - c_y^2 = 8.554$

$\sigma_y = \sqrt{\frac{\Sigma fd_y^2}{N} - c_y^2} = 2.92$

$\Sigma XY + = 6.74$

$\Sigma XY - = 4$

$\Sigma XY = 670$

$\frac{\Sigma XY}{N} = 6.70$

$c_x c_y = .019$

$\frac{\Sigma XY}{N} - c_x c_y = 6.68$

$\sigma_x \sigma_y = 8.09$

$r = \frac{\frac{\Sigma XY}{N} - c_x c_y}{\sigma_x \sigma_y} = .82$

$P.E._r = .6745 \frac{1 - r^2}{\sqrt{N}} = .022$

$r = .82 \pm .022$

X VARIABLE = STANDARD SCORES ANALYST #2.

SAME AS FREQUENCIES "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #1

+1.897+2.242															1	1		
+1.553+1.896										1		2	2	1				
+1.209+1.552								1		2	2	2						
+.865 +1.208								1	1	1		3						
+.521 + .864							3		3	7	2							
+.177 + .520							2	6	3		2							
-.167 + .176					1		4	3	1									
-.511 - .168				1		3	6	2	1									
-.855 - .512				1			1	1	4		1							
-1.199- .856					4	5	1			1								
-1.553-1.200				1	1													
-1.887-1.554	1		1		2	1	1											
-2.231-1.888	1				1													
-2.575-2.232																		
-2.919-2.576																		

ΣY	+	11	26	18	15	23	9		1	7	2	0	0	0				
	−					3	2		17	5	23	7	27	12				
ΣY	+	11	26	18	15	20	7			2								
	−								16		21	7	27	12				
ΣXY	+	66	130	72	45	40	7		16		63	28	135	72				
	−									4								

SUBJECTS DETERMINATION OF DISSATISFACTION QUOTIENT (100 INTERVIEWS).

COMPUTED BY [redacted] CHECKED BY _____ DATE 2-2-'51

DATA SHEET FOR COMPUTATION OF PEARSON'S r

4-9-24

X VARIABLE = STANDARD SCORES ANALYST #3.

Y VARIABLE = STANDARD SCORES ANALYST #1.

			SAME AS	FREQUENCIES "Y"-AXIS																f	d_y	fd_y	fd_y^2
+1.897+2.242												|	||							3	5	15	75
+1.553+1.896													||	|	||					5	4	20	80
+1.209+1.552						|					||	|||	|	|						8	3	24	72
+.865 +1.208						|						||||	|							6	2	12	24
+.521 + .864							|		||||	|||	|||	|||								14	1	14	14
+.177 + .520						||	|	|	||||	||		|		|						12	0		
-.167 + .176						|	|	||	|||	|||										10	1	10	10
-.511 - .168			|			|		||||	||	||	||			|						13	2	26	52
-.855 - .512					|	|			|||	|	|	|								8	3	24	72
-1.199- .856			||	||			||	|||	|	|										11	4	44	176
-1.553-1.200					||	|														3	5	15	75
-1.887-1.554			|			|||														4	6	24	144
-2.231-1.888			|||																	3	7	21	147
-2.575-2.232																							
-2.919-2.576																							
f			7	2	3	11	5	10	17	12	8	13	6	4	2								
d_x			7	6	5	4	3	2	1	0	1	2	3	4	5								
fd_x			49	12	15	44	15	20	17		8	16	18	16	10								
fd_x^2			343	72	75	176	45	40	17		8	32	54	64	50								

NUMBER OF CASES (N) = 100

X

$\Sigma fd_x + = 68$

$\Sigma fd_x - = 172$

$\Sigma fd_x = -104$

$c_x = \frac{\Sigma fd_x}{N} = -1.04$

$c_x^2 = 1.08$

$\frac{\Sigma fd_x^2}{N} = \frac{976}{100} = 9.76$

$\frac{\Sigma fd_x^2}{N} - c_x^2 = 8.68$

$\sigma_x = \sqrt{\frac{\Sigma fd_x^2}{N} - c_x^2} = 2.94$

Y

$\Sigma fd_y + = 85$

$\Sigma fd_y - = 164$

$\Sigma fd_y = -79$

$c_y = \frac{\Sigma fd_y}{N} = -.79$

$c_y^2 = .61$

$\frac{\Sigma fd_y^2}{N} = \frac{941}{100} = 9.41$

$\frac{\Sigma fd_y^2}{N} - c_y^2 = 8.80$

$\sigma_y = \sqrt{\frac{\Sigma fd_y^2}{N} - c_y^2} = 2.95$

$\Sigma XY + = 727$

$\Sigma XY - = 0$

$\Sigma XY = 727$

$\frac{\Sigma XY}{N} = 7.27$

$c_x c_y = .82$

$\frac{\Sigma XY}{N} - c_x c_y = 6.45$

$\sigma_x \sigma_y = 8.67$

$$r = \frac{\frac{\Sigma XY}{N} - c_x c_y}{\sigma_x \sigma_y} = .74$$

$$P.E._r = .6745 \frac{1 - r^2}{\sqrt{N}} = .03$$

$r = .74 \pm .03$

SUBJECTS DETERMINATION OF DISSATISFACTION QUOTIENT (100 INTERVIEWS).

COMPUTED BY [redacted] CHECKED BY ________ DATE 2-2-'31

DATA SHEET FOR COMPUTATION OF PEARSON'S r

X VARIABLE = STANDARD SCORES ANALYST #3

Y VARIABLE = STANDARD SCORES ANALYST #1.

			SAME AS	FREQUENCIES "Y"-AXIS															
+1.897+2.242												1	2						
+1.553+1.896													2	1	2				
+1.209+1.552						1					2	3	1	1					
+.865+ 1.208						1						4	1						
+.521+ .864							1		4	3	3	3							
+.177+ .520						2	1	1	4	2		1		1					
-.167 + .176						1	1	2	3	3									
-.511- .168			1			1		4	2	2	2			1					
-.855- .512					1	1		3	1	1	1								
-1.199- .856			2	2			2	3	1	1									
-1.553-1.200					2	1													
-1.887-1.554			1			3													
-2.231-1.888			3																
-2.575-2.232																			
-2.919-2.576																			

ΣY	+	8	20	15	11	9		0	6	3	0	0	0	0
	−			4	4	7		14	21	12	39	14	19	21
ΣY	+	8	20	11	7	2								
	−							14	15	9	39	14	19	21
ΣXY	+	40	80	33	14	2		14	30	27	156	70	114	147
	−													

4 - 9 - 24

X VARIABLE = STANDARD SCORES ANALYST #4.

SAME AS "Y"-AXIS FREQUENCIES

Y VARIABLE = STANDARD SCORES ANALYST #1.

																f	d_y	fd_y	fd_y^2
+1.897 +2.242										I			I			2	6	12	72
+1.553 +1.896												I	I	II	II	6	5	30	150
+1.209 +1.552									I	I		II	II		I	7	4	28	112
+.865 +1.208									II		II	III				7	3	21	63
+.521 +.864								I		卌I	卌	I	II			15	2	30	60
+.177 +.520						I	II		IIII	II	I		II			12	1	12	12
-.167 +.176					II			II	IIII	II						10	0		
-.511 -.168						II	II	III	II	III	I					13	1	13	13
-.855 -.512						I	I	II	III	I						8	2	16	32
-1.199 -.856					II	I	II	II	II		I					10	3	30	90
-1.553 -1.200					II	I										3	4	12	48
-1.887 -1.554			I		I	I	I									4	5	20	100
-2.231 -1.888	I		I	I												3	6	18	108
-2.575 -2.232																			
-2.919 -2.576																			
f	1	0	2	1	7	7	8	10	18	16	10	7	8	2	3				
d_x	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6				
fd_x	8	0	12	5	28	21	16	10		16	20	21	32	10	18				
fd_x^2	64	0	72	25	112	63	32	10		16	40	63	128	50	108				

NUMBER OF CASES $(N) = 100$

X

$\Sigma fd_x + = 117$
$\Sigma fd_x - = 100$
$\Sigma fd_x = 17$

$c_x = \frac{\Sigma fd_x}{N} = .17$

$c_x^2 = .029$

$\frac{\Sigma fd_x^2}{N} = \frac{785}{100} = 7.85$

$\frac{\Sigma fd_x^2}{N} - c_x^2 = 7.801$

$\sigma_x = \sqrt{\frac{\Sigma fd_x^2}{N} - c_x^2} = 2.79$

Y

$\Sigma fd_y + = 133$
$\Sigma fd_y - = 109$
$\Sigma fd_y = 24$

$c_y = \frac{\Sigma fd_y}{N} = .24$

$c_y^2 = .058$

$\frac{\Sigma fd_y^2}{N} = \frac{860}{100} = 8.60$

$\frac{\Sigma fd_y^2}{N} - c_y^2 = 8.542$

$\sigma_y = \sqrt{\frac{\Sigma fd_y^2}{N} - c_y^2} = 2.92$

$\Sigma XY + = 653$
$\Sigma XY - = 0$
$\Sigma XY = 653$

$\frac{\Sigma XY}{N} = 6.53$

$c_x c_y = .04$

$\frac{\Sigma XY}{N} - c_x c_y = 6.49$

$\sigma_x \sigma_y = 8.15$

$$r = \frac{\frac{\Sigma XY}{N} - c_x c_y}{\sigma_x \sigma_y} = .80$$

$$P.E._r = .6745 \frac{1 - r^2}{\sqrt{N}} = .024$$

$r = .80 \quad \pm .024$

SUBJECTS DETERMINATION OF DISSATISFACTION QUOTIENT (100 INTERVIEWS).

COMPUTED BY [redacted] CHECKED BY ______ DATE 2-2-'31

DATA SHEET FOR COMPUTATION OF PEARSON'S r

X VARIABLE = STANDARD SCORES ANALYST #4.

SAME AS "Y"-AXIS FREQUENCIES

Y VARIABLE = STANDARD SCORES ANALYST #1.

+1.897 +2.242										1			1		
+1.553 +1.896												1	1	2	2
+1.209 +1.552									1	1		2	2		1
+.865 +1.208									2		2	3			
+.521 +.864								1		6	5	1	2		
+.177 +.520						1	2		4	2	1		2		
-.167 +.176					2			2	4	2					
-.511 -.168						2	2	3	2	3	1				
-.855 -.512						1	1	2	3	1					
-1.199 -.856					2	1	2	2	2		1				
-1.553 -1.200					2	1									
-1.887 -1.554			1		1	1	1								
-2.231 -1.888	1		1	1											
-2.575 -2.232															
-2.919 -2.576															

ΣY	+	5	29	21	13	27	12		5	1	2	0	0	0
	−	0	0	0	0	1	7		13	7	17	11	15	19
ΣY	+	5	29	21	13	26	5							
	−								8	6	15	11	15	19
ΣXY	+	30	145	84	39	52	5		8	12	45	44	75	114
	−													

4-9-24

X VARIABLE = STANDARD SCORES ANALYST #3.

SAME FREQUENCIES
AS "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #2.

																					f	d_y	fd_y	fd_y^2
	+1.897+2	.242													|	|						2	6	12	72
	+1.553+1	.896												|	|		|					3	5	15	75
	+1.209+1	.552					|						|	||	||	|						7	4	28	112
	+.865 +1	.208												𝍸	|							6	3	18	54
	+.521 +	.864									||||	|	|	|||	|		|					11	2	22	44
	+.177 +	.520						||		|	||||	||||	|||									14	1	14	14
	-.167 +	.176							|	|	||||	|||	||	||		|						14	0		
	-.511 -	.168			|			|||	|	||||	||||	|	|			|						16	1	16	16
	-.855 -	.512			||	|			|	|||	|	||										10	2	20	40
	-1.199-	.856			|		|	||	|			|										6	3	18	54
	-1.553-1	.200			|	|	|	|||														6	4	24	96
	-1.887-1	.554							|	|												2	5	10	50
	-2.231-1	.888					|															1	6	6	36
	-2.575-2	.232																				0	7	0	0
	-2.919-2	.576			||																	2	8	16	128
	f				7	2	4	10	5	10	17	12	8	15	6	4	2							
	d_x				6	5	4	3	2	1	0	1	2	3	4	5	6							
	fd_x				42	10	16	30	10	10		12	16	39	24	20	12							
	fd_x^2				252	50	64	90	20	10		12	32	117	96	100	72							

NUMBER OF CASES (N) = 100

X

$\Sigma fd_x + = 123$

$\Sigma fd_x - = 118$

$\Sigma fd_x = 5$

$c_x = \frac{\Sigma fd_x}{N} = .05$

$c_x^2 = .0025$

$\frac{\Sigma fd_x^2}{N} = \frac{915}{100} = 9.15$

$\frac{\Sigma fd_x^2}{N} - c_x^2 = 9.1475$

$\sigma_x = \sqrt{\frac{\Sigma fd_x^2}{N} - c_x^2} = 3.02$

Y

$\Sigma fd_y + = 109$

$\Sigma fd_y - = 110$

$\Sigma fd_y = -1$

$c_y = \frac{\Sigma fd_y}{N} = -.01$

$c_y^2 = .0001$

$\frac{\Sigma fd_y^2}{N} = \frac{791}{100} = 7.91$

$\frac{\Sigma fd_y^2}{N} - c_y^2 = 7.9099$

$\sigma_y = \sqrt{\frac{\Sigma fd_y^2}{N} - c_y^2} = 2.81$

$\Sigma XY + = 614$

$\Sigma XY - = 0$

$\Sigma XY = 614$

$\frac{\Sigma XY}{N} = 6.14$

$c_x c_y = 0$

$\frac{\Sigma XY}{N} - c_x c_y = 6.14$

$\sigma_x \sigma_y = 8.48$

$$r = \frac{\frac{\Sigma XY}{N} - c_x c_y}{\sigma_x \sigma_y} = .72$$

$$P.E._r = .6745 \frac{1 - r^2}{\sqrt{N}} = .032$$

$r = .72 \pm .032$

X VARIABLE = STANDARD SCORES ANALYST #3.

SAME FREQUENCIES
AS "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #2.

	+1.897+2	.242													1	1					
	+1.553+1	.896												1	1		1				
	+1.209+1	.552					1						1	2	2	1					
	+.865 +1	.208												5	1						
	+.521 +	.864									4	1	1	3	1		1				
	+.177 +	.520						2		1	4	4	3								
	-.167 +	.176							1	1	4	3	2	2		1					
	-.511 -	.168			1			3	1	4	4	1	1			1					
	-.855 -	.512			2	1			1	3	1	2									
	-1.199-	.856			1		1	2	1			1									
	-1.553-1	.200			1	1	1	3													
	-1.887-1	.554							1	1											
	-2.231-1	.888					1														
	-2.575-2	.232																			
	-2.919-2	.576			2																
ΣY	+	9	15	21	19	22	10		8	2	1	0	0	0	0						
	−	0	0	4	0	0	7		21	22	18	24	3	4	12						
ΣY	+	9	15	17	19	22	3														
	−								15	20	17	24	3	4	12						
ΣXY	+	54	65	68	57	44	3		15	40	51	96	15	24	84						
	−																				

SUBJECTS DETERMINATION OF DISSATISFACTION QUOTIENT (100 INTERVIEWS).

COMPUTED BY [redacted] CHECKED BY ________ DATE 2-2-'51

DATA SHEET FOR COMPUTATION OF PEARSON'S r

4-9-24

X VARIABLE = STANDARD SCORES ANALYST #4.

SAME AS FREQUENCIES "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #3.

																	f	d_y	fd_y	fd_y^2
+1.897+2	.242										ǀ					ǀ	2	6	12	72
+1.553+1	.896													ǀǀ	ǀ		3	5	15	75
+1.209+1	.552									ǀǀ	ǀ		ǀǀ			ǀǀ	7	4	28	112
+.865 +1	.208									ǀ	ǀǀ		ǀ	ǀǀ			6	3	18	54
+.521 +	.864								ǀ		ǀǀǀǀ	ǀǀǀ	ǀǀ	ǀ	ǀ		12	2	24	48
+.177 +	.520							ǀ	ǀ	卌	ǀǀ	ǀ	ǀ	ǀǀ			13	1	13	13
-.167 +	.176					ǀ	ǀ	ǀǀ	ǀ	ǀǀǀ	ǀǀǀǀ	ǀǀ					14	0		
-.511 -	.168						ǀǀǀ	ǀ	ǀǀǀ	ǀǀǀǀ	ǀǀ	ǀǀǀ		ǀ			17	1	17	17
-.855 -	.512					ǀǀ	ǀ	ǀ	ǀǀ	ǀǀ		ǀ					9	2	18	36
-1.199-	.856					ǀ	ǀ	ǀǀǀ		ǀ							6	3	18	54
-1.553-1	.200		ǀ		ǀ	ǀ	ǀǀ		ǀ								6	4	24	96
-1.887-1	.554					ǀ			ǀ								2	5	10	50
-2.231-1	.888					ǀ											1	6	6	36
-2.575-2	.232																0	7	0	0
-2.919-2	.576	ǀǀ															2	8	16	128
f		2	1	0	1	7	8	8	10	18	16	10	6	8	2	3				
d_x		8-	7	6	5	4	3	2	1	0	1	2	3	4	5	6				
fd_x		16	7	0	5	28	24	16	10		16	20	18	32	10	18				
fd_x^2		128	49	0	25	112	72	32	10		16	40	54	128	50	108				

NUMBER OF CASES $(N) = 100$

X

$\Sigma fd_x + = 114$

$\Sigma fd_x - = 106$

$\Sigma fd_x = 8$

$c_x = \frac{\Sigma fd_x}{N} = .08$

$c_x^2 = .006$

$\frac{\Sigma fd_x^2}{N} = \frac{834}{100} = 8.34$

$\frac{\Sigma fd_x^2}{N} - c_x^2 = 8.234$

$\sigma_x = \sqrt{\frac{\Sigma fd_x^2}{N} - c_x^2} = 2.87$

Y

$\Sigma fd_y + = 110$

$\Sigma fd_y - = 109$

$\Sigma fd_y = 1$

$c_y = \frac{\Sigma fd_y}{N} = .01$

$c_y^2 = .0001$

$\frac{\Sigma fd_y^2}{N} = \frac{791}{100} = 7.91$

$\frac{\Sigma fd_y^2}{N} - c_y^2 = 7.9099$

$\sigma_y = \sqrt{\frac{\Sigma fd_y^2}{N} - c_y^2} = 2.81$

$\Sigma XY + = 602$

$\Sigma XY - = 0$

$\Sigma XY = 602$

$\frac{\Sigma XY}{N} = 6.02$

$c_x c_y = 0$

$\frac{\Sigma XY}{N} - c_x c_y = 6.02$

$\sigma_x \sigma_y = 8.06$

$r = \frac{\frac{\Sigma XY}{N} - c_x c_y}{\sigma_x \sigma_y} = .75$

$P.E._r = .6745 \frac{1 - r^2}{\sqrt{N}} = .030$

$r = .75 \pm .030$

SUBJECTS DETERMINATION OF DISSATISFACTION QUOTIENT (100 INTERVIEWS).

COMPUTED BY [redacted] CHECKED BY ________ DATE 2-2-'31

DATA SHEET FOR COMPUTATION OF PEARSON'S r

X VARIABLE = STANDARD SCORES ANALYST #4.

SAME AS FREQUENCIES "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #2.

+1.897+2	.242										1					1
+1.553+1	.896													2	1	
+1.209+1	.552									2	1		2			2
+.865 +1	.208									1	2		1	2		
+.521 +	.864								1		4	3	2	1	1	
+.177 +	.520							1	1	5	2	1	1	2		
-.167 +	.176					1	1	2	1	3	4	2				
-.511 -	.168						3	1	3	4	2	3		1		
-.855 -	.512					2	1	1	2	2		1				
-1.199-	.856					1	1	3		1						
-1.553-1	.200		1		1	1	2		1							
-1.887-1	.554					1			1							
-2.251-1	.888					1										
-2.575-2	.232															
-2.919-2	.576	2														

ΣY	+	7	13	19	13	25	15		12	2	0	0	0	0	0
	−	0	0	0	0	1	3		14	15	13	23	5	4	16
ΣY	+	7	13	19	13	24	12								
	−								2	13	13	23	5	4	16
ΣXY	+	42	65	76	39	48	12		2	26	39	92	25	24	112
	−														

4-9-24

UNIVERSITY OF WISCONSIN - MILWAUKEE

X VARIABLE = STANDARD SCORES ANALYST #4.

SAME FREQUENCIES AS "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #3.

Y	f	d_y	fd_y	fd_y^2
+1.897+2.242	2	6	12	72
+1.553+1.896	4	5	20	100
+1.209+1.552	6	4	24	96
+.865 +1.208	13	3	39	117
+.521 + .864	8	2	16	32
+.177 + .520	12	1	12	12
-.167 + .176	18	0		
-.511 - .168	9	1	9	9
-.875 - .512	5	2	10	20
-.199 - .876	11	3	33	99
-1.553-1.200	3	4	12	48
-1.887-1.554	2	5	10	50
-2.231-1.888	7	6	42	252
-2.575-2.232				
-2.919-2.576				

f		2	1	0	1	7	8	9	9	18	16	10	6	8	2	3	
d_x		8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	
fd_x		16	7	0	5	28	24	18	9		16	20	18	32	10	18	
fd_x^2		128	49	0	25	112	72	36	9		16	40	54	128	50	108	

NUMBER OF CASES (N) = 100

X: $\Sigma fd_x + = 114$, $\Sigma fd_x - = 107$, $\Sigma fd_x = 7$

Y: $\Sigma fd_y + = 123$, $\Sigma fd_y - = 116$, $\Sigma fd_y = 7$

$C_x = \frac{\Sigma fd_x}{N} = \frac{7}{100} = .07$ $\quad C_y = \frac{\Sigma fd_y}{N} = \frac{7}{100} = .07$

$C_x^2 = .005$ $\quad C_y^2 = .005$

$\frac{\Sigma fd_x^2}{N} = \frac{827}{100} = 8.27$ $\quad \frac{\Sigma fd_y^2}{N} = \frac{907}{100} = 9.07$

$\frac{\Sigma fd_x^2}{N} - C_x^2 = 8.265$ $\quad \frac{\Sigma fd_y^2}{N} - C_y^2 = 9.065$

$\sigma_x = \sqrt{\frac{\Sigma fd_x^2}{N} - C_x^2} = 2.87$ $\quad \sigma_y = \sqrt{\frac{\Sigma fd_y^2}{N} - C_y^2} = 3.01$

$\Sigma XY + = 554$, $\Sigma XY - = 6$, $\Sigma XY = 548$

$\sigma_x \sigma_y = 8.64$

$\frac{\Sigma XY}{N} = \frac{548}{100} = 5.48$

$C_x C_y = .005$

$\frac{\Sigma XY}{N} - C_x C_y = 5.475$

$r = \frac{\frac{\Sigma XY}{N} - C_x C_y}{\sigma_x \sigma_y} = .63$

$P.E._r = .6745 \frac{1 - r^2}{\sqrt{N}} = .04$

$r = .63 \pm .04$

SUBJECTS DETERMINATION OF DISSATISFACTION QUOTIENT (100 INTERVIEWS).

COMPUTED BY [redacted] CHECKED BY _____ DATE 2-2-'31

DATA SHEET FOR COMPUTATION OF PEARSON'S r

4-9-24

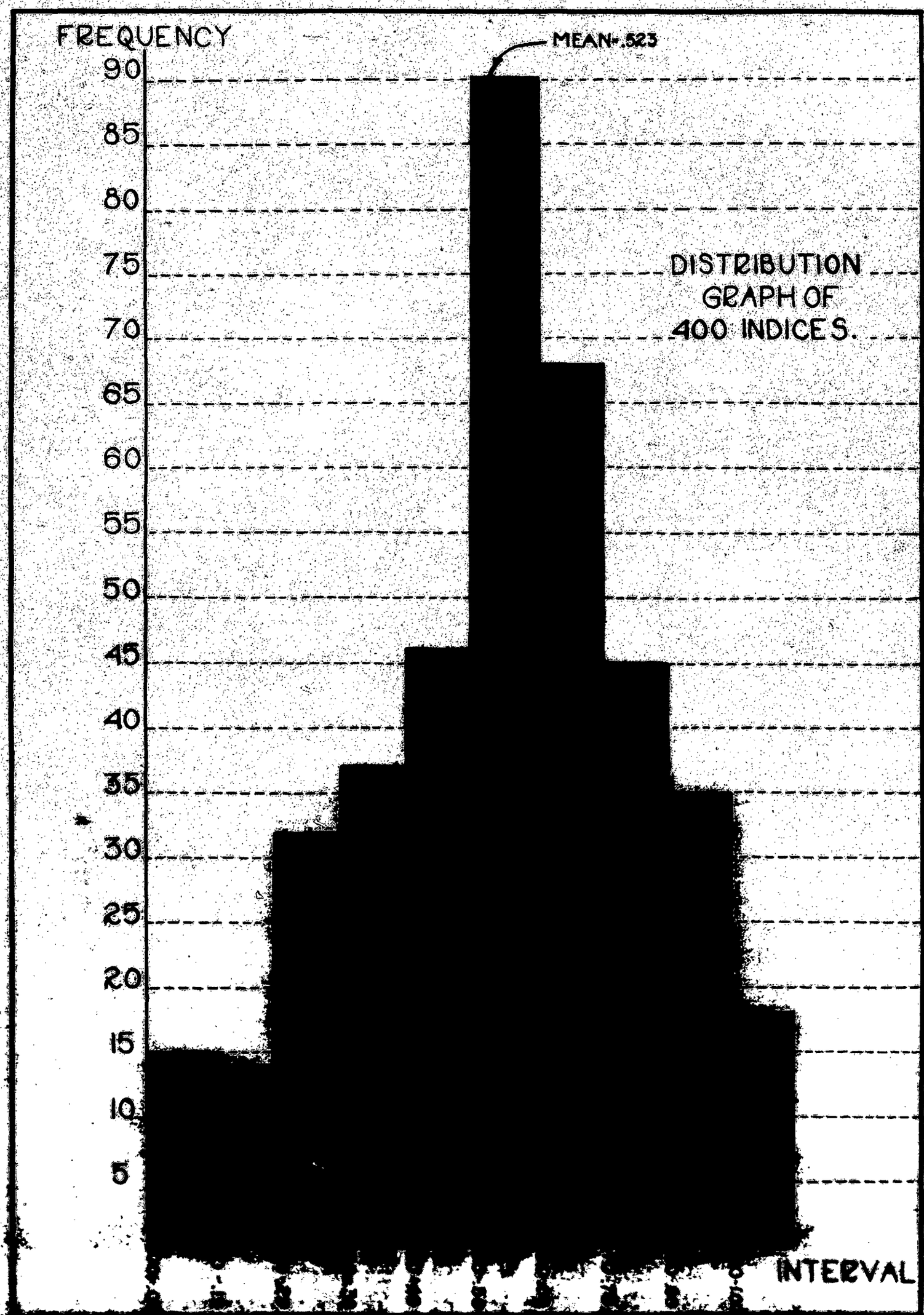
X VARIABLE = STANDARD SCORES ANALYST #4.

SAME FREQUENCIES AS "Y"-AXIS

Y VARIABLE = STANDARD SCORES ANALYST #3.

Y																					
+1.897+2.242													2								
+1.553+1.896							1		1	1					1						
+1.209+1.552										2		2	1		1						
+.865 +1.208									4	3	2	1	3								
+.521 + .864								1	3	1		2		1							
+.177 + .520					2		2	2	2	1	2		1								
-.167 + .176						2	1	3	6	2	3	1									
-.511 - .168					-1			2	1	3	2										
-.875 - .512					1	1	1	1	1												
-1.199 - .876		1			1	1	2		2	1		2	1								
-1.553-1.200					1	1	1														
-1.887-1.554						2															
-2.231-1.888	2			1	1	1	1	1													
-2.575-2.232																					
-2.919-2.576																					

ΣY	+	10	7	18	22 ~~26~~	19	9		7	0	11	0	0	0							
	−		2	0	0	0	14		6	10	18	9	6	31							
ΣY	+	10	5	18	22 ~~26~~	19			1												
	−						5			10	7	9	6	31							
ΣXY	+	60	25	72	66 ~~78~~	38				20	21	36	30	186							
	−						5		1												



UNIVERSITY OF WISCONSIN - MILWAUKEE

We were introduced by the Section Chief.

I: "How do you do, Mr. Employee. Do you feel like taking a little walk this morning?"

E: "Where are we going? Will I need my coat?"

I: "No, I don't think so. It is not very cold outside. I thought we would go up to the little shack on the tracks east of the building here. You will only be outside for a moment. There is a fire in the stove there, so you will find it quite comfortable."

E: "Oh, that is all right. I thought maybe we were going up in the office. I didn't know whether to change my overalls and put on my coat or not."

I: "Oh, that isn't necessary. You and I will be out there all alone. Where has the other interviewer been going for his interviews?"

INTRODUCTORY MATERIAL

No Rating

E: "I don't know where the other men have been taken, but last year, we just went over into the next section here and sat down on a box."

I: "Well, it would have to be a stormy day and then I could do that too, but this is just a little bit farther and much more comfortable. I know we are going to be alone and that is worth something."

E: "Yes, it sounds good to me." (Upon arriving at location.)

I: "Well, how do you like this -- haven't I got a private office?"

E. laughing: "Yes, this is pretty good."

SUGGESTED POLITE RESPONSE

No Rating

I: "I am sorry I cannot furnish you a rocking chair."

E: "Oh, this is good enough. I am not used to any chair at this time of the day you know."

I: "That job keeps you fellows hopping most of the time, does it?"

LACK OF WORK

Possibly neutral at first glance. Supplemented by comments appearing later in the interview. Employee rejects suggested answer of interviwer's question.

"Y" Rating

E: "Yes, we are pretty busy. That is, we are when there is work. There is not a great deal of work now."

I: "Just enough to keep you going regular time, is that it?"

E: "Yes, we are working our regular time, but there are a lot of machines that are idle. The work has dropped off quite a bit."

I: "I guess it has in a good many departments. You fellows work on the eight hour shifts, don't you?"

E: "Yes, that is about the only way we can do it in here."

I: "I wonder if I have it right. You hold one shift for a month."

E: "Yes, that is it. Four weeks to a shift, but we are only working four days a week now."

I: "Oh, I see what you are doing. Thirty-two hours for the week."

E: "Yes, that is it except that the night crew has thirty-seven hours."

EXPOSITORY MATERIAL

No Rating

I: "How does that happen?"

E: "They have to clean up. There is a lot of work that must be done before the machines are allowed to stand, and they do that. Then the next shift that comes on Sunday afternoon at three o'clock. They start the machine and start the heat and work of that sort."

I: "Oh, I see. Then you can't just sit down to a machine and start to work on it."

E: "Oh no. It takes about five hours to get started."

SUGGESTED ANSWER

Employee expresses a definite opinion, however.

"Z" Rating

I: "Then you like the eight hour shift first rate."

E: "Oh yes, it is all right. Of course, some shifts are better than the other, but as long as we are divided up that way, I don't think we have any kick."

I: "Oh, there is no choice about it then. You have to take your turn on the shift."

E: "Well, sometimes you can get somebody to change with you. It just depends on the man. Some fellow may want to

RMH

work on the night shift for some reason of his own. If he gets one of the fellows on that shift to trade with him, why then that is all right."

I: "They they allow that."

E: "Oh, yes. The Foreman has no objection to that at all. Only you have to let them know so that they can make the proper arrangements with the payroll."

DISLIKES AFTERNOON SHIFT

"Y" Rating

I: "I suppose there are plenty of them that would like to have that afternoon shift, aren't there?"

E: "Well, that is one that I would like to get rid of."

I: "Is that so?"

E: "That is the worst one for me. Of course, I get home in pretty good time, but by the time I get something to eat, I am ready for bed by twelve o'clock, but I can't seem to go to sleep after that."

I: "I suppose that is because you have had something to eat, isn't it?"

E: "I don't know what it is. I lay awake and don't have a good rest at all. I think the eleven seven shift is about the best one. It suits me anyway."

I: "That means that you have your evening for anything that you might want."

E: "That suits a young man just right. Of course, if a fellow were married, I suppose he would want to be home at that time."

I: "That would make quite a difference. . . . . Eight years service I see. Is that all in this department?"

E: "Oh, no. I spent six years over in Department Dash, but they were sending that work East, so I had to find a job somewhere else. They transferred me over here."

I: "It is pretty good, is it?"

E: "Yes, except as I had to start in here as a new man."

I: "Yes, that is the way it goes when a fellow is on a new job. It is just like coming to the Company for the first time."

RMH

E: "But I had to take the starting rate for a new man over here."

I: "Oh, I see what you mean. That wasn't so good, was it?"

TRANSFERRING MEN AT STARTING RATE

E: "No, I thought they ought to transfer me at a better rate than that because the starting rate here is only fifty-three cents. In the next five years I got a two cent raise and then I got one this last year."

Service Raises Z"Y" Value

I: "Well, that compares with the other rates in the department, does it?"

Authorizes our First Rating on Hours.

E: "No, but most of the fellows that have been with the company as long as I have, are getting anywhere from sixty to sixty-five. I think a fellow's service ought to be considered when they make a change like that because with the hours we are working now, it is hard enough anyway."

I: "Your percentage helps out on that though, doesn't it, or is this work individual piece work?"

GANG PIECE WORK

"Y" Value

E: "No, it is gang piece work. I think it would be better if it were individual. I believe a fellow knows and works better if he knows just how much he is getting. When you have a large gang, there is always some who will lay down. That means that the fellow that does work hard, doesn't get all he earns."

I: "No doubt, there is some truth in that. . . . . Is the work here such that it could be run on an individual piece work basis?"

E: "Well, I suppose it could, but it would have to pay some men day work though."

EXPOSITORY

No Rating

I: "I have never been around in your department at all. I know nothing at all about the machines or the set up."

E: "The regular set up is three machines for a man, but they are trying out a new system now. I don't know if that is going to become permanent or not."

I: "And how is that?"

E: "Some of the men are running four machines now."

RH

I: "That must keep them hopping."

E: "Yes, it does. Of course, if everything is running smoothly it is all right, but if the set ups come together he is going to come into trouble."

I: "And I suppose that depends on the size of the tool."

E: "Yes, and the size of the wire. On the small wire, they figure one set up for each shift, but on the large wire, you have more set ups than that, but they try to arrange it so that one shift doesn't have any more set ups than the other. That is where we lose time."

I: "I suppose each man handles his own set up."

E: "Well, if a man is having trouble, he can call the breakdown man in to help him."

I: "Then you have a man to help out in that case?"

MORE ESPOSITION

E: "Yes, there is a man who is supposed to fix up breakdowns and work of that sort and will usually help a man out if he is in trouble. If he happens to get a couple of set ups at the same time or if he is having trouble with one of the machines, then the breakdown man takes that machine while the operator will handle the other one."

I: "Is the breakdown man on the gang or is he a day work operator?"

E: "Oh, no. He is a gang member just like the rest of us."

I: "I see. Well, that comes in pretty handy because when a fellow is in trouble, he has help there for him."

E: "Well, the breakdown man is usually busy. He has to keep the floor clean and see that the tools are on hand. He also checks up on the other supplies. They keep him busy all right."

I: "Well, it seems as though he would be quite a help if he attends to all his duties and lets the operator pay strict attention to his machines and his output."

E: "Yes, it ought to work out all right, but the trouble is, our earnings have dropped off."

RH

I: "Just lately?"

E: "Well, our percentages used to run around fifty all the time, but now it is down to thirty-five. One week we only have thirty, and that is pretty low."

I: "Yes, indeed. There is quite a difference between thirty and fifty."

E: "I don't know why the earnings dropped now. Of course, we are only working thirty-two hours. Do you think that would have anything to do with it?"

EARNINGS

"Y" Value

I: "I am not familiar over here with the work to say, but I should think that by cutting the hours, your earnings per hour would increase. If you would spread the job out full time then it would cut the percentage, but if you cut the hours to fit the job, you don't keep the earnings up."

E: "Well, that is what they say anyway, but there isn't enough work. That is why the percentage has dropped."

I: "Well, they ought to know.". . . . . .

E: "I guess they do. I don't know why it is. I know we are not making much money now."

I: "Well, a fellow needs all of that he can get if he is buying a home."

E: "Yes, or a car."

I: "Then you have a car?"

E: "Oh, yes, I have had a car for several years now."

I: "Well, they are pretty nice things to have, all right. It gives a fellow a chance toget around a little bit when he does have some spare hours."

E: "Well, sometimes they are expensive, too."

I: "I guess that is right. Did you get yours recently?"

E: "Last spring is when I got it. Then I had one before that. I had one of those old style Essex, but I got a new one now."

EH

I: "Oh, it is an Essex then."

E: "So you know all about them. Did you ever drive one?"

I: "No, I didn't. I have no car."

E. laughing: "I thought that the way you talk, you had been stung on an Essex, too."

I: "You don't think much of them?"

CAR

"Y" Value

E: "Well, I don't think I got good service out of that one that I ought to, but then it was getting pretty old, so last spring I bought a Pontiac and now I am only working thirty-two hours a week, it keeps me humping to meet the payments."

I: "I guess there were a good many of them that bought cars and homes on the strength of the work that was going through last year that were disappointed. I have a friend that went in pretty heavy on a home. I don't know if he will be able to make it or not. It looks doubtful."

E: "Oh, I am not going to lose anything by it, but it will just mean that I will have to be more careful somewhere else. I just will have to go without some of the things that go with a car and be satisfied until we get more work to do."

I: "Sometimes that is easy to say, but hard to do."

EXPOSITION

E. laughing: "Oh, I will be able to do it all right. (Pulling his pay slip out of his pocket) Let's see. This week I got twenty-three dollars and then they take out a couple of dollars for stock. Gee, that leaves me twenty dollars. A fellow can get along on that all right."

I: "Yes, unless he has got particularly heavy expenses, he can get by on that. . . . . I happened to meet an old acquaintance of mine the first of this week and he was telling me how much money he was spending. I asked him how he happened to be getting so reckless all of a sudden and then he told me that he was going to be married Saturday."

E: "Well, then he will have more expenses to figure on than I have with my car. I don't think I would figure on getting married at a time like this unless I had a pretty good bank account on the side."

EMH

FATHER

"Y" Value

I: "Then you are staying at home?"

E: "Yes, but of course, I have to turn something in on the expenses at home. My father isn't working steady now."

I: "A good many of the older fellows have been caught in the layoff in different places."

E: "Yes, that is it. My father is getting old now and you can't expect an old man to hold his job steady unless he is in some place like this and has been there for a long time. My father wasn't married until he was pretty well along in life and didn't settle down until he was married, so you really don't know what a steady job is, as far as staying a long time in any one place is concerned."

I: "Then he waited quite a while before he built his home."

E: "Yes, he was forty-one when he was married. Now there are six children in the family, so you can see it kept him hustling to meet expenses."

I: "Well, that sure is enough. I suppose you are the oldest of the children."

E: "No, there are two older than I."

I: "Then you were born in Chicago?"

E: "Yes, I have been here all my life."

I: "Then you must have gotten a pretty good chance in school."

E: "Well, I only finished the grades. I commenced work when I was sixteen, you know, to help things out at home."

I: "Then this is your first job."

E: "Yes. Well, I did have another job for about a month, but I didn't like that and I quit. Then I came out here and got started. I liked things here so well that I decided to stay."

I: "Well, this isn't a bad place to work. I am pretty well satisfied, too, but I wandered quite a ways before I got here. I was born in Western Kansas."

E: "Oh, then you have traveled quite a bit."

EH

I: "Well, I haven't been around a great deal except when I came back here. Have you traveled?"

E: "No, I have never been west at all. I haven't been very far east either. I was over in Indiana and then I have been up in Michigan and Wisconsin a bit. I have been up in Illinois some, but I am going to take a trip some of these days."

I: "That will be a good way to break that Pontiac in, next summer. Give it a good try out now and then when vacation comes, give it a real workout."

E: "I have been thinking of that and if work picks up and I have a little money on hand, I guess that is what I will do. I think a fellow ought to get out and see what the country looks out away from home."

I: "So do I. If a fellow has any means of travel, he ought to take advantage of it."

E: "That is the way I feel about it. The Company gives you two weeks for a vacation anyway."

COMPANY PLANS

I: "That is it. We might just as well use it."

"Z" Value

E: "I think that is mighty fine that the Company gives vacations. The stock plan is good, too."

I: "It certainly is. I noticed a while ago that you were taking money out for stock and I said to myself, this fellow is watching things all right."

E: "Well, a fellow ought to save a little money and that is about as good a way to save it as I know. They take it out of your pay before you cash the check, and you never miss it. Then some day they will come around and say, 'here is your money.'"

I: "That is the way they do it and it is all right, too. Well, is there anything else that you have in mind that you want to talk over with me?"

E: "No, I am pretty well satisfied. I really haven't anything to say."

I: "Well, it is saying a whole lot when one says that he is satisfied. We are glad to get that kind of a story."

EMH

COMMENT GIVEN BEFORE No Rating	E: "Well, I am satisfied. I don't think there is anything to kick about here." I: "The only thing you could mention would be a little more money." E: "Yes, I would likt to get a raise now and then, so that I would be rated about the same as the other men that are doing the kind of work I am doing. I suppose that will work out in time."
SALUTATION No Rating	I: "No doubt it will. It usually does. I think you might as well call it a day now. I will walk back to your department with you and see if I can get another man." (On reaching the department we met the supervisor and he said: 'Well, how did you like it?') E: "It is all right. We had smokes and everything up there." I: "Well, I certainly enjoyed visiting with you, and I am mighty glad I met you." E: "Well, thanks. I am glad I met you, too. Goodbye."

Number of Unfavorable Comments = 8
Total Number of Comments =10
Index = 8/10 = .80

BMH
2-16-31

BOX 10

The documents in Box 10 of the original records appear on this film as parts of Box 4 and Box 7.