CHAPTER VI

PILOT ADMINISTRATION

The Inventory was to be standardized for the educated and English knowing population. It was difficult to define the limits of such a population and objections could be raised against the arbitrary selection of any criterion. In this work, passing of S.S.C. with English was considered the primary requisite for being considered educated and as knowing English. Though the criterion is untenable theoretically, it serves the practical purpose of defining the population which was very nearly the population for which the Inventory was to be standardized. A representative sample of this population had to be taken for the pilot administration of the Inventory. The data, collected by administering the pilot form of the Inventory to this sample, was to be used for the calculation of the two indices

already discussed in the fourth chapter, viz. the preference index and the discrimination index. Pairs were to be formed on the basis of equal preference value primarily and it was to be seen that at least one member of each pair had a good internal consistency value (r above .25).

6.1 SAMPLE

Once the population was defined, the problem of selecting the sample could be attacked. But in this particular case it was difficult to identify the definite section of the population. Even the census data did not include all the details needed for this purpose. For example, it was necessary to know the number of persons in each occupation who had education upto at least S.S.C. In the absence of such population statistics it was a difficult job. Therefore, it was necessary for the investigator to resort to his own estimates, which were necessarily subjective, and only the broad categories of people which composed the population in this study could be considered.

The population in the colleges fell definitely in the area of the sample for this study; so also the professionals like doctors, engineers, secondary school teachers, university and college teachers, and clerical staff in the Government, Semi-Government institutions, and industry in most of the cases. Besides these, people in private business, service or enterprise were likely to be educated and knowing English. Therefore, these categories were considered for the selection of the sample. Not that these are the only categories, but they account for a very great proportion, and no major division of the population remains unrepresented.

After deciding upon these categories, the question was to determine the weightage for these various categories in the total sample. Census data did not give the number of people engaged in these professions, and therefore, it was difficult to decide upon their representation. The strengths of the students in the three universities existing in this part of the country (Gujarat) were known.

The number of educated and English knowing people at large besides these categories were, of course, not known.

The minimum sample for the determination of reliable measures of preference and discrimination values should generally include two hundred cases. In the present case 370 cases were taken, as is customary in all test standardization studies here. This is, because, the upper and lower 27 per cent groups have one hundred cases each, and the calculations of internal consistency index becomes simply a matter of referring to a table.[1]

The following table describes the distribution of the sample according to the categories discussed above.

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1 R.L.Thorndike, Personnel Selection (New York: John Wiley & Sons, 1950), pp. 348-51.

TABLE VI-1

Distribution of the Sample in Pilot Study

Category of people	Number		(Approximate) Percentage in the total sample
	Males	Females	
College students	140	54	52
Engineers	11	0	3
Doctors	7	0	2
Secondary school teachers	66	18	23
University teachers	18	0	5
Clerical personnel	40	0	11
Others (not included in the above categories)	16	0	4
Total		370	100

6.2 ANALYSIS OF THE DATA - PREFERENCE INDEX

The analysis was made by preparing the item analysis tables. Against the name of each person his answers to all the questions were recorded as either 'Y' or 'N'. The total of 'Y's in each individual column gave the measure of the degree to which

the individuals endorsed that item as applicable to them. It was the measure of their preference. The items were to be paired on the basis of these values. The members of each pair should have equal or almost equal preference values. The table VI-2 gives the preference values in terms of percentage endorsement of each item by the whole group.

TABLE VI-2

Table of Preference Values

Item No.	'P' Value	Item No.	'P' Value
1	4	11	20
2	17	12	15
3	5	13	16
4	35	14	16
5	16	15	62
6	38	16	74
7	27	17	25
8	18	18	66
9	35	19	12
10	20	20	31

Table VI-2 (Contd.)

Item No.	'P' Value	Item No.	'P' Value
21	48	40	92
22	45	41	63
23	27	42	53
24	62	43	58
25	22	44	37
26	26	45	77
27	33	46	63
28	39	47	83
29	36	48	40
30	49	49	44
31	65	50	63
32	80	51	59
33	77	52	82
34	84	53	34
35	83	54	72
36	78	55	52
37	63	56	58
38	92	57	84
39	57	58	75

Table VI-2 (Contd.)

Item No.	'P' Value	Item No.	'P' Value
59	53	77	72
60	37	78	62
61	63	79	47
62	60	80	74
63	45	81	85
64	65	82	58
65	52	83	10
66	93	84	34
67	91	85	21
68	44	86	15
69	74	87	29
70	62	88	60
71	65	89	22
72	64	90	63
73	57	91	23
74	52	92	40
75	80	93	50
76	77	94	45

Table VI-2 (Contd.)

Item No.	'P' Value	Item No.	'P' Value
95	20	113	44
96	25	114	35
97	40	115	88
98	8	116	80
99	29	117	23
100	60	118	61
101	15	119	84
102	24	120	67
103	26	121	27
104	25	122	18
105	26	123	62
106	33	124	19
107	45	125	48
108	84	126	34
109	46	127	73
110	28	128	86
111	26	129	25
112	29	130	27

Table VI-2 (Contd.)

Item No.	'P' Value	Item No.	'P' Value
131	33	149	36
132	24	150	54
133	10	151	11
134	87	152	19
135	76	153	41
136	48	154	35
137	45	155	97
138	54	156	21
139	17	157	96
140	31	158	10
141	28	159	25
142	15	160	19
143	41	161	19
144	19	162	93
145	17	163	23
146	20	164	8
147	31	165	27
148	15	166	16

Table VI-2 (Contd.)

Item No.	'P' Value	Item No.	'P' Value
167	25	182	6
168	29	183	29
169	7	184	52
170	25	185	6
171	45	186	50
172	41	187	26
173	16	188	66
174	25	189	53
175	40	190	34
176	15	191	68
177	20	192	16
178	14	193	40
179	32	194	28
180	26	195	90
181	8		

6.3 DISTRIBUTION OF SCORES

Scoring keys were developed as mentioned in

the Chapter V. Three keys for three scales are included in the Appendices: D,E & F. Each individual in the sample got a score on each of the three scales. All the three hundred and seventy persons were thrown into three distributions on the basis of their scores on the three scales. The tables VI-3, VI-4 and VI-5 show these distributions.

TABLE VI-3

Distribution of the Sample on the Introversion-Extraversion Scale

Score interval	f
14-16	3
17-19	18
20-22	40
23-25	61
26-28	96
29-31	82
32-34	49
35-37	15
38-40	6
Total	370

TABLE VI-4

Distribution of the Sample on the Normal-Neuroticism Scale

Score interval	f
28-31	19
32-35	37
36-39	63
40-43	83
44-47	58
48-51	51
52-55	44
56-59	12
60-63	1
64-67	2
Total	370

TABLE VI-5

Distribution of the Sample on the Normal-Psychoticism Scale

Score interval	f
6 - 7	13
8 - 9	36
10 - 11	70
12 - 13	109
14 - 15	98
16 - 17	34
18 - 19	5
20 - 21	0
22 - 23	2
24 & above	3
Total	370

6.4 INTERNAL CONSISTENCY INDEX

Separate item analysis sheets were prepared for all the three scales for those one hundred who were at the upper end of the scale and the one

hundred who were at the lower end of the scale. The internal consistency value in terms of product-moment correlation was obtained by referring to Flanagan's table.[2] The values obtained for all the items are given in the tables VI-6, VI-7 and VI-8.

TABLE VI-6

Internal Consistency Values for the Items in the Introversion-Extraversion Scale

Item No.	r	Item No.	r
6	.05	37	.31
11	.23	38	.17
17	.21	39	.64
21	.15	40	.14
31	.17	41	.31
32	.36	42	.53
33	.09	43	.12
34	.22	44	.25
35	.26	45	.26
36	.13	46	.22

2 Ibid.

Table VI-6 (Contd.)

Item No.	r	Item No.	r
47	.36	65	.27
48	.39	66	.25
49	.28	67	.41
50	.42	68	.03
51	.30	69	.11
52	.31	70	.37
53	.37	71	.31
54	.04	72	.05
55	.24	73	.16
56	.07	74	.25
57	.26	75	.19
58	.46	76	.29
59	.08	77	.26
60	.10	78	.21
61	.05	79	.44
62	.39	80	.20
63	.28	81	.03
64	.43	82	.29

TABLE VI-7

Internal Consistency Values for the Items in the Normal-Neuroticism Scale

Item No.	r	Item No.	r	Item No.	r
1	.25	24	.07	93	.38
2	.13	25	.24	94	.26
3	.20	26	.40	95	.32
4	.02	29	.15	96	.30
5	.23	30	.20	97	.29
7	.01	83	.39	98	.29
8	.18	84	.26	99	.08
9	.14	85	.10	100	.32
10	.26	86	.28	101	.26
12	.13	87	.29	102	.35
13	.19	88	.24	103	.27
14	.09	89	.45	104	.19
16	.04	90	.48	105	.41
18	.35	91	.21	106	.30
22	.13	92	.36	107	.15

Table VI-7 (Contd.)

Item No.	r	Item No.	r	Item No.	r
108	.12	121	.08	134	.30
109	.21	122	.30	135	.33
110	.28	123	.24	136	.26
111	.01	124	.03	137	.27
112	.34	125	.21	138	.18
113	.04	126	.28	139	.42
114	.40	127	.22	140	.24
115	.19	128	.17	141	.29
116	.28	129	.31	142	.33
117	.31	130	.18	143	.19
118	.12	131	.12	144	.49
119	.27	132	.26	145	.38
120	.32	133	.34		

TABLE VI-8

Internal Consistency Values for the Items in the Normal-Psychoticism Scale

Item No.	r	Item No.	r	Item No.	r
146	.13	162	.14	180	.21
147	.10	164	.08	181	.17
148	.04	165	.06	182	.08
149	.29	166	.08	183	.01
150	.09	167	.10	184	.28
151	.07	168	.21	185	.09
152	.10	169	.03	186	.20
153	.12	170	.19	187	.02
154	.02	171	.17	188	.25
155	.01	172	.01	189	.10
156	.13	173	.10	190	.12
157	.19	174	.26	191	.18
158	.05	175	.11	192	.16
159	.20	176	.13	193	.13
160	.26	178	.12	194	.12
161	.13	179	.10		

The items which had r values above .25 were considered satisfactory. Only five of the internal consistency values were above .25 so far as the normal-psychoticism scale was concerned. It was, of course, doubtful whether such a scale was possible or not. This was only an attempt to tap the possibility which did not succeed. Therefore, the psychoticism scale was excluded from the second form of the Inventory.

Items having equal or almost equal preference values were grouped together. The data grouped in this way is presented in the table VI-9.

TABLE VI-9

Frequency Distribution of the Items on the Basis of Their Preference Values

'P' Value interval	f
1 - 10	11
11 - 20	30
21 - 30	36
31 - 40	26
41 - 50	20
51 - 60	18
61 - 70	20
71 - 80	15
81 - 90	12
91 - 100	7
Total	195

Two items which did not differ by 5 per cent from each other in their P value, and one of them having high internal consistency value and the other having low internal consistency value were paired. According to the criterion of a forced-choice technique each pair should have equal or almost equal preference values and one item with low and another with high discrimination value in terms of internal consistency index. Of course, the discrimination index was to be calculated again on the basis of the data obtained from the criterion groups obtained independently, and the pairs were to be examined in the light of the new discrimination indices in terms of validity.

Suitable instructions for the subjects were prepared in the same manner and considering all the points mentioned in Chapter V. Necessary changes were made in the light of the changed nature of items. Separate answer-sheet was prepared. Glossary of difficult words was prepared in the same manner as for the first form, described in the

previous chapter.

The second form of the Inventory prepared on the basis of this item-analysis data, the new answer-sheet and glossary are appended at the end (Appendices: G, H & I).

6.5 SUMMARY

The population for standardization of the Inventory was defined as the educated and English-knowing section of the people. It consisted mainly of the college students, professional people, secondary and college teachers, certain categories of clerical personnel,etc. A sample of 370 cases was selected randomly out of them for the determination of preference and discrimination indices. These were calculated for all the items with reference to the scales to which they belonged. It was observed that the psychoticism scale had only five valid items and hence it had to be dropped from the second form of the Inventory. Items were paired on the basis of equal or almost equal preference values.

These pairs were assembled into the second form of the Inventory. Instructions, separate answer-sheet, glossary and scoring keys were developed. This form was to be used in the cross-validation of individual items on the basis of independent criteria. Next two chapters deal with this cross-validation of items of the two scales of the Inventory.

REFERENCE

Thorndike, R.L., Personnel Selection. New York: John Wiley & Sons, 1950.