

## CHAPTER EIGHT

### SOME PERSONALITY TRAITS -

#### - INTROVERSION : EXTROVERSION (E)

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Contrary to rather widespread belief, there is no one position in the family circle that might be regarded as the ideal. Each position in the family circle involves special problems as well as certain advantages. There are so many variables which affect the personality development of growing adolescents. What type of home life the child has is important to his personality development. And the type of home life is largely determined by the parents.

Introversion and Extroversion are two traits of personality. These two words were introduced by Jung in the history of abnormal psychology. William James recognized two types:

the tender-minded and tough-minded, while Jung's concept of introversion-extroversion has become common knowledge.

On basis of literature and observation characteristics of introvert and extrovert personality can be summarized thus:

Behaviour of introvert persons is determined by subjective considerations; they are quiet, aloof, secretive, prefer solitude, they are inflexible, rigid, live by rules and ideas, are touchy, tender, sensitive, suspicious, given to day-dreaming and self analysis, emotionally reserved, unsympathetic, cold etc.

Behaviour of extrovert persons is determined by objective environment; they are talkative, good mixer, confiding, prefer company, are adaptable, practical, their conduct is governed by expediency, they are tough-minded, indifferent to criticism, not suspicious, rarely day dreamy or engage in self-analysis, are emotionally uninhibited, impulsive, genial, warm-hearted etc.

Only a few individuals characteristically react in an introverted or extroverted fashion. The overwhelming majority of people exhibit both tendencies in varying amounts and therefore are neither introverts nor extroverts, but are ambiverts.

If we consider Jung's (1921) position first, we note that in his view every individual possesses both the mechanisms of introversion and extroversion, and it is the only relative strength of one as compared with the other, which creates the specific type. A rhythmic alternation of these two psychic functions characterizes the normal course of life. External circumstances and inner dispositions frequently favour one mechanism and impede or restrict the other. This quite naturally leads to the dominance of one of the mechanisms.

The extroverted attitude is characterized by an interest in people and things and in relationships with events in the external world. The extravert is more concerned with outer reality than with inner fantasy, and tends to have scientific rather than metaphysical interests. He is more or too much social, mixing and a 'pushing' and easy taking type of individual.

The introverted attitude on the other hand prefers reflection to activity. The introvert tends to show lack of confidence in his relationship with people and things and seems to be attracted more to philosophical than scientific interests. He is somewhat isolated, moody and reflective individual with a serious outlook on life. Every individual falls at some point on a continuum between the two extremes, the normal being in between.

In order to assess this type of trend of personality and study the differences between the different groups of subjects under study, an Introvert-Extrovert Scale consisting of forty statements, specially constructed by Dr. A.S. Patel for Gujarati-speaking individuals was administered to all the subjects. Responses were scored as per key (maximum being 40). The higher the score, the more the trend towards extroversion. These scores were tabulated as needed for the purpose, were analysed with appropriate statistical techniques and results have been summarised and discussed, following the same pattern as in earlier chapters.

## RESULTS AND DISCUSSIONS

### I Overall Analysis:

All the data obtained on the Introvert-Extrovert Scale administered to the sample under study have been analysed and summarized in the general summary sheets (E) No.1, 2 and 3 presented herewith.

General Summary Sheet (E) No. 1

General Summary Sheet (E) No. 2

General Summary Sheet (E) No. 3

## General Summary Sheet (E) No. 1

showing the mean scores on Introversion -  
Extroversion of the main groups

Main Variables	G r o u p	Number	Mean
A Sex	Boys	735	15.93
	Girls	701	17.75
B Birth Order	I First-born	500	15.78
	II Second-born	308	14.65
	III Middle-born	332	20.19
	IV Last-born	296	17.05
C. Family Size	F 1	100	14.49
	F 2	183	11.96
	F 3	190	17.09
	F 4	313	15.22
	F 5	291	18.03
	F 6	359	20.23

Grand Total :

1436

16.82

# SUMMARY SHEET NO. 2

Showing Mean Scores of each Specific Groups on Introvert-Extrovert

Sr. No.	Ordinal Status of the Group	Family Size	Boys		Girls		Total	
			No.	Mean	No.	Mean	No.	Mean
1.	I Only Child	F1	50	14.36	50	14.62	100	14.49
2.	I First Born	F2 (M.S.)	50	14.20	50	9.00	100	11.60
3.	I First Born	F2 (S.S.)	10	14.80	10	14.10	20	14.85
4.	I First Born	F3 (M.S.)	25	11.80	25	14.96	50	13.38
5.	I First Born	F3 (S.S.)	10	18.30	10	17.30	20	17.80
6.	I First Born	F4 (M.S.)	25	11.84	25	14.96	50	13.40
7.	I First Born	F4 (S.S.)	10	18.50	10	20.10	20	19.30
8.	I First Born	F5 (M.S.)	25	19.24	25	23.00	50	21.12
9.	I First Born	F5 (S.S.)	10	13.00	10	17.80	20	15.40
10.	I First Born	F6 (M.S.)	25	19.23	25	23.04	50	21.14
11.	I First Born	F6 (S.S.)	10	22.60	10	25.70	20	24.15
Total			250	15.41	250	16.15	500	15.78

(contd.....)

## Summary Sheet No. 2 (contd....)

1	2	3	4	5	6	7	8	9	10
12.	II	Second Born	F3	31	16.38	41	22.73	72	20.00
13.	II	Second Born	F4 (M.S.)	31	7.45	31	14.00	62	10.77
14.	II	Second Born	F4 (S.S.)	36	10.30	36	17.02	72	13.66
15.	II	Second Born	F5	27	9.29	26	14.30	53	11.75
16.	II	Second Born	F6	25	16.72	24	15.87	49	16.30
	II	Second Born	Total	150	11.88	158	17.29	308	14.65
17.	III	Middle Born	F4 (3rd)	30	20.66	30	19.70	60	20.18
18.	III	Middle Born	F5 (3rd)	25	20.24	20	19.40	45	19.86
19.	III	Middle Born	F5 (4th)	30	13.30	20	23.45	50	17.36
20.	III	Middle Born	F6 (3rd)	25	23.80	20	23.70	45	23.75
21.	III	Middle Born	F6 (4th)	22	21.27	20	19.65	42	20.50
22.	III	Middle Born	F6 (5th)	45	20.28	45	19.77	90	20.03
	III	Middle Born	Total	177	19.78	155	20.67	332	20.19
23.	IV	Last Born	F2	32	11.21	31	12.67	63	11.61
24.	IV	Last Born	F3	27	14.74	21	12.28	48	16.29
25.	IV	Last Born	F4	25	17.00	24	17.45	49	17.22
26.	IV	Last Born	F5	42	19.57	31	21.77	73	20.50
27.	IV	Last Born	F6	32	17.90	31	19.90	63	18.88
	IV	Last Born	Total	158	16.31	138	17.92	296	17.05
		Grand Total	Total	735	15.93	701	17.75	1436	16.82

## General Summary Sheet (E) No. 3

Showing a Summary of Results i.e. Mean Scores  
on Introversion-Extroversion of each 714 Main  
and Sub-heads

Groups		Boys		Girls		Total	
		No.	Mean	No.	Mean	No.	Mean
I	All Boys Vs. All Girls	735	15.93	701	17.75	1436	16.82
II	First Born Vs. Other Later Born	500	15.78	936	17.37	1436	16.82
III	Only Child Vs. Other First Born	100	14.49	400	16.10	500	15.78
IV	Only Child Vs. Other First (Boys)	50	14.36	200	15.67	250	15.41
V	Only Child Vs. Other First (Girls)	50	14.62	200	16.53	250	16.15
VI	First Born of Middle Sex Vs. First Born of Same Sex	300	15.37	100	18.30	400	16.10
VII	Only Child Vs. Later Born (Excluding First Born)	100	14.49	936	17.37	1036	17.09
VIII	First Born Vs. Last Born (Youngest)	500	15.78	296	17.05	796	16.25
IX	Last Born Vs. Second Born (Youngest) and Middle Born	296	17.05	640	17.53	936	17.37
X	Last Born Vs. Only Child (Youngest)	296	17.05	100	14.49	396	16.39
XI	First Born Vs. First Born (Boys)	250	15.41	250	16.15	500	15.78
XII	Second Born Vs. Second Born (Boys)	150	11.88	158	17.29	308	14.65
XIII	Middle Born Vs. Middle Born (Boys)	177	19.78	155	20.67	332	20.19
XIV	Last Born Vs. Last Born (Boys)	158	16.31	138	17.92	296	17.05



Thus, it would be seen from the General Summary Sheet (E) No. 1 presenting the contribution of main variables, viz. sex, birth order and family size towards introversion - extroversion that on the whole the girls contrary to expectation got higher score i.e. were more extravert (17.75) than the boys (15.93); as regards the role of birth order the middle-born were highest (20-19) i.e. most extravert in relation to others; the last-born were next best (17.05); then were the first-born (15.78) and least extrovert were the second-born (16.65).

Similarly, as regards the role of family size, the general picture shows that the least extrovert were children of F2 (11.96) and the most extrovert were the children of F6 (20.23), others in order being F1 (14.49), F4 (15.22), F3 (17.09 and F5 (18.03).

This was the score out of 40; so it can be said arbitrarily that a normal child would avoid both extremes and would be expected to score between 15 and 25. In this sense, all children under study could be called average on the introversion-extroversion scale, though the second born scoring lowest i.e. just 14.65 or children from F2 (11.90) and F1 (14.49) might be said to be a little just inclined toward introversion. However, for purpose of comparison only, one would be described in this chapter as more or less

extrovert in relation to other though all except F2 were moderately introvert-extrovert.

Looking to the scores on the whole, there seems to have not been observed increase or decrease of systematic trend in extroversion with the birth order or with family size. On the contrary to expectation, girls scores higher than boys on extroversion; the second-born were lower in extroversion and children from F2 were the lowest i.e. were almost introvert type. The second-born and F2 were found generally better on adjustment and less anxious in earlier chapters were observed to be a little introvert here somehow. It may be said from general results on family size that children tended to be more extrovert with increase in the family size, and this is an expectation since with more in number a child in a larger family would be developing an extrovert type.

The same results in greater details for each of all 27 sub-groups have been split up separately and presented in General Summary Sheet (E) No.2; and results of only specific 14 groups in General Summary Sheet (E) No. 3.

The above paragraphs give us only a general picture. In order to draw reliable inferences, all these data were subjected to appropriate statistical techniques, viz. the analysis of variance to study overall significance of different and the L.S.D. Test to examine the differences between specific

sub-groups. All these results have been presented in (E) tables 1 to 14 (a), (b), (c) in the same pattern as given earlier.

In order to study the statistical significance of these overall results and specifically to find out whether the first main variable of birth has contributed significantly or not to the introversion-extroversion of the subjects, the data were classified according to the birth order separately for boys and girls and subjected to the statistical technique of analysis of variance as well as L.S.D. Test. The classification of data in the form of the factorial experimental design (2 x 4), i.e. two levels of sex and four levels of birth order, enabled the investigator to study not only the main effects of birth order, but also the main effects of sex as well as interaction effects if any. All these results are summarised in (E) Table 1(a), (b) and (c), - (a) presenting mean scores, (b) showing results of analysis of variance for overall significance and (c) revealing the results of L.S.D. Test for specific group pair significance.

(E) Table 1 (a)

(E) Table 1 (b)

(E) Table 1 (c)

It would be observed from (E) Table 1(b) that sex, birth order and their interaction played significant role in introversion-extraversion level of subjects under study.

Group I : Introversion-Extroversion (All boys Vs.  
All girls) : Sex Vs. Birth order

(E) Table 1(a) showing Mean Scores.

Order	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
First born	250	15.41	250	16.15	500	15.78
Second born	150	11.88	158	17.29	308	14.65
Middle born	177	19.78	155	20.67	332	20.19
Later born	158	16.31	138	17.92	296	17.05
Total	735	15.93	701	17.75	1436	16.82

(E) Table 1 (b) showing Analysis of Variance  
for above data

Sources	df	SS	MS	F ratio	Significant
SS sex	1	1181.07	1181.07	14.51	Sig. at .01
SS Order of birth	3	5786.30	1928.76	23.70	Sig. at .01
SS S x O	3	1389.50	463.16	5.69	Sig. at .01
Within	1428	116214.50	81.38	<del>5x</del>	
SS	1435	124571.37			

(E) Table 1 (c) showing Results of L.S.D. Test  
Birth order-wise

Groups	Boys	Girls	Total
F.B. Vs. S.B.	Sig. at .01	Not sig.	Not sig.
F.B. Vs. M.B.	Sig. at .01	Sig. at .01	Sig. at .01
F.B. Vs. L.B.	Not sig.	Not sig.	Not sig.
S.P. Vs. M.B.	Sig. at .01	Sig. at .05	Sig. at .05
S.B. Vs. L.B.	Sig. at .01	Not Sig.	Sig. at .05
M.B. Vs. L.B.	Sig. at .05	Sig. at .05	Sig. at .05

#### Sex-wise

Among FB : B - G : Not Sig.  
 Among SB : B - G : Sig. .01  
 Among MB : B - G : Not Sig.  
 Among LB : B - G : Not Sig.

Thus, girls were significantly more extravert (17.75) than boys (15.93) on the whole; but examining the L.S.D. Test result in (E) table 1 (c) sexwise it has been found that girls were significantly more extrovert (11.88) than boys (17.29), Only among the second-born; there were no significant sex differences among other birth orders. Similarly, the overall significant contribution of birth order suggests middle born to be most extrovert (20.19), and next in order were last born (17.05), the first born (15.78) and then the second born (14.65) who were the least extrovert or more introvert. Examining separately the scores of boys and girls it would be seen that among both the middle born were the most extrovert, but the least extrovert among girls were the first born girls (16.15) and among boys were in second born boys (11.88) who were not merely least extrovert but were almost introvert. These differences (some significant and some not significant) among boys and girls of different birth order accounts for the significant interaction, i.e. sex and order did not by themselves played part, but their interaction was effective, through girls tended to be more extrovert than boys at all birth order positions (and significantly only at second birth order). Such trend of girls to score higher on extroversion seems to be unexpected in light of the social Hindu structure from where most of the girls were sampled. However, it is likely that at the age group of adolescence

to which the sample belonged, the girls might be developing the trend towards extroversion to a greater extent than the boys who would perhaps be still not coming out of their adolescent moodiness and introvert reflective attitude. Similarly, there was not observed any specific trend of increase or decrease in extra version with the increasing birth order, though it can be said that children of higher (middle and last) birth order (20.19 and 17.05) were more extrovert than children of first and second birth order (15.78 and 14.65) on the whole and also among the girls and also specifically more among boys. It would be expected that the increase in comparing in the higher birth order would tend to make siblings more of extrovert type.

In short, it can generally be inferred from the results that girls were more extrovert in comparison to boys, and that higher order siblings were also more extravert in comparison to siblings of early birth orders.

## II Analysis for Comparison between Birth Orders:

Early section reveals both sex and birth order as well as their interaction to be significant. It would be now more useful to compare the different birth orders as regards the level of extroversion and study whether the both order is different from the other birth order in this regard. Thus,

all data of boys and girls have been analysed for purpose of comparison among different birth order pairs and the results to follow. have been discussed in the next paragraphs/ The (E) Table 1 has presented overall results on birth order. The results for specific birth order comparisons under study have been presented in (E) Tables 2 to 10 (a), (b) and (c) following the same pattern of presentation of results - (a) giving mean of scores, (b) giving the results of analysis of variance, and (c) giving the L.S.D. Test results wherever possible for being applied.

(E) Table 2 (a), (b), (c)

Table 3 "

Table 4 "

Table 5 "

Table 6 "

Table 7 "

Table 8 "

Table 9 "

Table 10 "



Group II : Sex Vs. Birth Order : First born Vs. Other  
later born Siblings.

(E) Table 2 (a) Showing Mean Scores.

Birth Order	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
First born	250	15.41	250	16.15	500	15.78
Other Siblings	485	16.20	451	18.63	936	17.37
Total	735	15.93	701	17.75	1436	16.82

(E) Table 2 (b) Showing Analysis of Variance for above data.

Sources	df	SS	MS	F ratio	Sig.
Sex	1	1181.00	1181.00	0.13	Not Sig.
Order of Birth	1	829.26	829.26	9.71	Sig. at .01
Sxo	1	267.55	267.55	3.13	Sig. .05
Within	1432	122293.56	85.40		
Total	1435	124571.37			

(E) Table 2 (c) Showing Results of L.S.D. Test

Birth order-wise:

Among Boys : FB - Other later born : Not Sig.

Among Girls: FB - Other later born : Sig. .01

Sex-wise

Among FB : B - G : Not Sig.

Among other later born: B - G : Sig. .05

Group III : Only Child Vs. Other First born  
Sex Vs. Birth Order

(E) Table 3 (a) Showing Mean Scores

Birth Order	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
Only Child	50	14.36	50	14.62	100	14.49
Other First born	200	15.67	200	16.53	400	16.10
Total	250	15.41	250	16.15	500	15.78

(E) Table 3 (b) Showing Analysis of Variance for  
above data

Sources	df	SS	MS	F ratio	Sig.
Sex	1	68.44	68.44	0.49	Not Sig.
Order of Birth	1	208.66	208.66	1.47	Not Sig.
Sxo	1	7.20	7.20	0.051	Not Sig.
Within	496	69880.94	140.88		
Total	499	17165.24			

Group IV : Only Child (Boys) Vs. First born (Boys)

(E) Table 4 (a) Showing Mean Scores

Birth Order	B o y s	
	No.	Mean
Only Child	50	14.36
First Born	200	15.67
Total	250	15.41

(E) Table 4 (b) Showing Analysis of Variance for above data.

Source	df	SS	MS	F ratio	Sig.
Between Groups	1	69.17	69.17	0.60	Not Sig.
Within	248	35743.40	114.12		
Total	249	35812.57			

Group V :

Only Child (Girls) Vs. First born (Girls)

(E) Table 5 (a) Showing Mean Scores.

Birth Order	Girls	
	No.	Mean
Only Child	50	14.62
First Born	200	16.53
Total	250	16.15

(E) Table 5 (b) Showing Analysis of Variance for above data.

Source	df	SS	MS	F ratio	Sig.
SS B	1	146.69	146.69	1.06	Not Sig.
Within	248	34137.54	137.65		
Total	249	34284.54			

Group VI :

First Born of Mixed Sex

Vs.

First Born of Same Sex

(E) Table 6 (a) Showing Mean Scores

Birth Order	No.	Mean
First Born of Mixed Sex	300	15.37
First Born of Same Sex	100	18.30
Total	400	16.10

(E) Table 6 (b) Showing Analysis of Variance for above data.

Sources	df	SS	MS	F ratio	Sig.
Between Groups	1	642.40	642.40	4.28	Sig. .05
Within	398	59573.19	149.68		
Total	399	60215.59			

Group VII :

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(E) Table 7 (a) Showing Mean Scores

Only Child Vs. Other Later born  
(excluding first born)

Sex Vs. Birth Order

Birth Order	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
Only Child	50	14.36	50	14.62	100	14.49
Later born	485	16.20	451	18.63	936	17.37
Total	535	16.03	501	18.23	1036	17.09

(E) Table 7 (b) Showing Analysis of Variance for above data.

Sources	df	SS	MS	F ratio	Sig.
Sex	1	1254.35	1254.35	20.90	Sig. at .01
Order of Birth	1	752.07	752.07	12.52	Sig. at .01
Sxo	1	128.48	128.48	2.54	Not Sig.
Within	1032	61936.06	60.01		
Total	1035	64070.96			

(E) Table 7 (c) Showing Results of L.S.D. Test:

Birth Order-wise:

Among Boys : Only Child - Later born : Not sig.

Among Girls : Only Child - Later born : Sig. .01

Sex-wise:

Among only Child : B - G : Not Sig.

Among later born : B - G : Sign. .01

Group VIII : First born Vs. Last born  
Sex Vs. Birth Order

(E) Table 8 (a) Showing Mean Scores

Birth Order	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
First born	250	15.41	250	16.15	500	15.78
Last born	158	16.31	138	17.92	296	17.05
Total	408	15.75	388	16.76	796	16.25

(E) Table 8 (b) Showing Analysis of Variance for above data.

Sources	df	SS	MS	F. ratio	Sig.
Sex	1	202.17	202.17	1.74	Not Sig.
Order of Birth	1	296.10	296.10	2.54	Not Sig.
Sxo	1	48.74	48.74	0.43	Not Sig.
Within	792	94123.76	118.84		
Total	795	94670.77			

Group IX : Last Born Vs. Aggregate of Second born and Middle born. 293

Sex Vs. Birth Order

(E) Table 9 (a) Showing Mean Scores.

Birth Order	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
Last born	158	16.31	138	17.92	296	17.05
S.B. and M.B.	327	16.15	313	18.96	640	17.53
Total	485	16.20	451	18.63	936	17.37

(E) Table 9 (b) Showing Analysis of Variance for above data.

Sources	sf	SS	MS	F ratio	Sig.
Sex	1	1380.14	1380.14	24.64	Sig. at .01
Order of Birth	1	48.06	48.06	0.86	Not Sig.
Sxo	1	66.97	66.97	1.19	Not Sig.
Within	932	52081.70	55.88		
Total	935	53576.87			

(E) Table 9 (c) Showing Results of L.S.D. Test

Sex-wise

Among Last Born : B - G : Not Sig.  
 Among Agg. of SB & MB : B - G : Sig. .01

Birth Order-wise

Among Boys : LB - SB & MB : Not Sig.  
 Among Girls : LB - SB & MB : Not Sig.



Group X : Last Born Vs. Only Child  
Sex Vs. Birth Order

(E) Table 10 (a) Showing Mean Scores

Birth Order	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
Last Born	158	16.31	138	17.92	296	17.05
Only Child	50	14.36	50	14.62	100	14.49
Total	208	15.84	188	17.01	396	16.42

(E) Table 10 (b) Showing Analysis of Variance for above data.

Sources	df	SS	MS	F ratio	Sig.
Sex	1	136.23	136.23	1.59	Not Sig.
Order of Birth	1	487.54	487.54	5.64	Sig. at .05
Sxo	1	47.93	47.93	0.055	Not Sig.
Within	392	33766.26	86.14		
Total	395	34437.96			

(E) Table 10 (c) Showing Results of L.S.D. Test:

Birth Orderwise:

Among Boys : Only Child Vs. Last Born : Not Sig.

Among Girls : Only Child Vs. Last Born : Sig. at .01

Sex-wise

Among only Child : B - G : Not Sig.

Among Last Born : B - G : Not Sig.

(a) Comparison between the First-born  
and Other Later born:

The statistical results obtained for comparison between the first born siblings and all other later born ones are presented in (E) Table 2 (a), (b) and (c). It would be observed from these results that sex was not significant; only birth order and its interaction with sex were significant, at .01 and .05 level respectively. Thus, the other later born siblings were significantly more extrovert (17.37) than the first born (15.78). However, examination of L.S.D. Test results in (F) Table 2 (c) shows that only later born girls were significantly different from or more extrovert than first-born girls; there were no birth order differences among boys. Similarly though sex was not significant on the whole, there were significant sex differences among later born siblings, though not among the first-born siblings. This accounts for significant interaction. In short, birth order played significant role only among girls, and it would be inferred that only later born girls were significantly more extrovert (18.63) than the first born girls (16.15) though later born boys (16.20) tended to be somewhat more extrovert than first born boys (15.41); and similarly only later born girls were significantly more extrovert (18.63) than later born boys (16.20), though first-born girls also tended to be somewhat more extrovert (16.15) than first born boys (15.41).

(b) Comparison between Only Child Group  
and Other First-born:

Next, the results for comparison between the only child group and the other first-born group have been summarized in (E) Table 3(a) and (b). It is seen from the results obtained that neither sex nor birth order nor their interaction was significant. Examining the results closely, it could be seen that generally the girls tended somewhat more extrovert (16.15) than boys (15.41), and that other first born tended to be somewhat more extrovert (16.10) than the only children (14.49); however these differences were not significant in this birth order comparison.

(c) Comparison between Only Boys Group  
And Other First-born Boys Group :

(d) Comparison between Only Girls Group  
and Other First-born Girls Group :

Even examining the results separately for boys and girls for comparison between only child group and other first born group, some insignificant role of birth order is observed in results in (E) Table 4 (a) and (b) and (E) Table 5 (a) and (b) respectively.

(e) Comparison between the First-born Children of Mixed Sexes and the First-born children of same sex:

Results of this comparison have been presented in (E) Table 6 (a) and (b), which show that the first born of same sex were significantly more extrovert (18.30) than the first-born of mixed sex (15.37). This can be explained thus that children are more mixing with the same sex than with the other sex even in the same family, and this is often the observation in our culture.

(f) Comparison between Only Child Group And Other Later-born Group :

It has been seen earlier that the other later born were more extrovert (17.37) than the first born (15.78), and the other first born (excluding only children) were more extrovert (16.10) than the only children (14.41), it was worthwhile to examine the statistical position of the only children in relation to the other later born.

Results of analysis of data to bring out the comparison between the only child group and other later born group are given in (E) Table 7 (a), (b) and (c). Both sex and birth order were significant as .01 level, while their interaction is not significant. Girls were more extrovert (18.23) than boys (16.03) in these groups, and the later born were more

extrovert (17.37) than the only children (14.49) irrespective of each other. However, closer analysis by L.S.D. Test in (E) Table 7 (c) reveals that only later born girls were more extrovert than only born girls, and later born girls were more extrovert than later born boys; there was no other significant differences.

(g) Comparison between the First-born and the Last born :

Comparing the first born with the last born it was found from (E) Table 8 (a) and (b) that neither sex nor birth order nor interaction was significant in these groups. However, girls apparently tended to be somewhat more extrovert (16.76) than boys (15.75) of these groups as in earlier groups, and the last born tended to be somewhat more extrovert (17.05) than the first born (15.78) though not significantly.

(h) Comparison between the Last born and Aggregate of the Second and Middle Born:

It has been observed in (E) Table 1, that among the birth order the second born were the lowest on extroversion and the middle born were the highest, and the last born were the next to highest. In view of this and as done in earlier cases, attempts have been made in this case also to compare the last born with the aggregate of the second and the middle born. These results are summarized in (E) Table 9(a), (b) and (C).

It is seen that only sex was significant; girls scored higher on extroversion (18.63) than boys (16.20) on the whole; and among each birth order the girls of second born and middle born together scored higher than boys of second born and middle born group. No other differences were observed significant. Since the aggregate of the second born (the lowest) and the middle born (the highest) averaged to be almost nearer to the last born (their score being between these two), as seen in results of (E) Table 1(a), it was natural that there would not be significant birth order differences in these two groups of comparison. Only sex as usual was significant.

(i) Comparison between the Last born  
and the Only Child Group:

It has been found earlier that the only child group (14.49) was not different from the other first born (16.10) as seen in (E) Table 3 (and therefore also not at all different from the total first born group (15.78), and that the first born (15.78) were not different even from the last born (17.05) as seen in (E) Table 8. However, looking to the order of standing of the three groups viz. only child (14.49), first born 15.78; or 16.10) and the last born (17.05); it was thought worthwhile to find out the statistical standing of the only child group in relation to the last born group. These results are presented in (E) Table 10 (a), (b) and (c). It is seen

that only the birth order was significant as expected from above reasoning; the last born were more extrovert (17.05) than the only children (14.49); and here too last born girls were more extrovert than only girls; there were no other significant differences.

### III Analysis for Comparison between Family Sizes

The preceding section has dealt with discussion of results enabling us to understand the comparative role of different birth order positions in extroversion level. This section is now devoted to study the role of different family sizes in extroversion of boys and girls of different birth order categories. The data of adequate member in each size were accordingly classified separately as data for boys and girls of varying possible family sizes from F1 to F6 at each birth order category, and the results have been presented in (E) Tables 11 to 14 (a), (b) and (c), following the same pattern of presentation and discussion as in earlier chapters.

(E)	Table 11	(a), (b), (c)
	Table 12	"
	Table 13	"
	Table 14	"

The results have been discussed in the following paragraphs to study the contribution of family size at each birth order separately.

(a) Role of Family Size  
within the First-born:

The results in (E) Table 11 (a), (b) and (c) reveal the contribution of the family size to the extroversion level of the first-born boys and girls. It is observed that only the family size was a significant factor. Neither sex nor its interaction with family size was found significant.



Group XI : First Born Böys Vs. First Born Girls.

Sex Vs. Family Size.

(E) Table 11 (a) Showing Mean Scores of each group

Family Size	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
F1	50	14.36	50	14.62	100	14.49
F2	60	14.30	60	9.98	120	12.14
F3	35	13.65	35	15.62	70	14.64
F4	35	13.74	35	16.42	70	15.08
F5	35	17.46	35	21.51	70	19.48
F6	35	20.20	35	23.80	70	22.00
Total	250	15.41	250	16.15	500	15.78

(E) Table 11 (b) Showing Analysis of Variance for above data.

Sources	df	SS	MS	F ratio	Sig.
Sex	1	68.44	68.44	0.527	Not Sig.
Family Size	5	5548.59	1109.71	8.54	Sig. at .01
SxF	5	1201.34	240.26	1.85	Not Sig.
Within	488	63346.87	129.80		
Total	499	70165.24			

(E) Table 11 (c) Showing Results of Least Gap Differences Test  
Family Size-wise

Groups	Boys	Girls	Sig.
F1 Vs. F2	Not Sig.	Sig. at .01	Not Sig.
F1 Vs. F3	Not Sig.	Not Sig.	Not Sig.
F1 Vs. F4	Not Sig.	Not Sig.	Not Sig.
F1 Vs. F5	Not Sig.	Sig. at .01	Sig. at .05
F1 Vs. F6	Sig. at .05	Sig. at .01	Sig. at .01
F2 Vs. F3	Not Sig.	Sig. at .01	Not Sig.
F2 Vs. F4	Not Sig.	Sig. at .01	Not Sig.
F2 Vs. F5	Not Sig.	Sig. at .01	Sig. at .01
F2 Vs. F6	Sig. at .05	Sig. at .01	Sig. at .01
F3 Vs. F4	Not Sig.	Not Sig.	Not Sig.
F3 Vs. F5	Sig. at .05	Sig. at .01	Sig. at .01
F3 Vs. F6	Sig. at .01	Sig. at .01	Sig. at .01
F4 Vs. F5	Sig. at .05	Sig. at .01	Sig. at .01
F4 Vs. F6	Sig. at .01	Sig. at .01	Sig. at .01
F5 Vs. F6	Sig. at .05	Not Sig.	Not Sig.

Sex-wise

At F1	:	B - G	:	Not Sig.
At F2	:	B - G	:	Sig. at .01
At F3	:	B - G	:	Not Sig.
At F4	:	B - G	:	Not Sig.
At F5	:	B - G	:	Sig. at .01
At F6	:	B - G	:	Sig. at .05

Group XII : Sex Vs. Family Size -

Second Born Boys Vs. Second Born Girls

(E) Table 12 (a) Showing Mean Scores.

Family Size	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
F3	31	16.38	41	22.73	72	20.00
F4	67	9.03	67	15.62	134	12.32
F5	27	9.29	26	14.30	53	11.75
F6	25	16.72	24	15.87	49	16.30
Total	150	11.88	158	17.29	308	14.65

(E) Table 12 (b) Showing Analysis of Variance for above data

Source	df	SS	MS	F ratio	Remarks
Sex	1	2253.07	2253.07	70.85	Sig. beyond .01
Family Size	3	3361.73	1120.57	35.23	Sig. beyond .01
SxF	3	256.84	85.61	2.69	Not Sig.
Within	300	9542.88	31.80		
SS	307	15414.52			

(E) Table 12 (c) Showing Results of Least Gap Difference Test  
Family Size-wise

Groups	Boys	Girls	Sig.
F3 Vs. F4	Sig. at .01	Sig. at .01	Sig. at .01
E3 Vs. F5	Sig. at .01	Sig. at .01	Sig. at .01
F3 Vs. F6	Not Sig.	Sig. at .01	Sig. at .01
F4 Vs. F5	Not Sig.	Not Sig.	Not Sig.
F4 Vs. F6	Sig. at .01	Not Sig.	Sig. at .05
F5 Vs. F6	Sig. at .01	Not Sig.	Sig. at .01

Sex-wise

At F3	:	B - G	:	Sig. at .01
At F4	:	B - G	:	Sig. at .01
At F5	:	B - G	:	Sig. at .01
At F6	:	B - G	:	Not Sig.

Group XIII :

Middle Born Boys Vs. Middle Born Girls

Sex Vs. Family Size.

(E) Table 13 (a) Showing Mean Scores

Family Size	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
F4	30	20.66	30	19.70	60	20.18
F5	55	16.45	40	21.42	95	18.54
F6	92	21.47	85	20.67	177	21.09
Total	177	19.78	155	20.67	332	20.19

(E) Table 13 (b) Showing Analysis of Variance for above data.

Source	df	SS	MS	F ratio	Sig.
SS Sex	1	66.59	66.59	2.72	Not Sig.
SS Family size	2	399.79	199.89	8.16	Sig. at .01
SxF	2	548.37	274.18	11.20	Sig. at .01
Within	326	7981.13	24.48		
Total	331	8995.88			

(E) Table 13 (c) Showing Results of Least Gap Difference Test

Family Size-wise

Groups	Boys	Girls	Total
F4 Vs. F5	Sig. at .01	Not Sig.	Sig. at .05
F4 Vs. F6	Not Sig.	Not Sig.	Not Sig.
F5 Vs. F6	Sig. at .01	Not Sig.	Sig. at .05

Sex-wise

At F4	:	B - G	:	Not Sig
At F5	:	B - G	:	Sig. at .01
At F6	:	B - G	:	Not Sig.

Group XIV :

Last born Boys Vs. Last born Girls

Sex Vs. Family Size

(E) Table 14 (a) Showing Mean Scores.

Family Size	Boys		Girls		Total	
	No.	Mean	No.	Mean	No.	Mean
F2	32	11.21	31	12.67	63	11.61
F3	27	14.74	21	12.28	48	16.29
F4	25	17.00	24	17.45	49	17.22
F5	42	19.57	31	21.77	73	20.50
F6	32	17.90	31	19.90	63	18.88
Total	158	16.31	138	17.92	296	17.05

(E) Table 14 (b) Showing Analysis of Variance for above data

Sources	df	SS	MS	F ratio	Sig.
SS Sex	1	182.47	182.47	2.49	Not Sig.
Family Size	4	2972.63	743.15	10.15	Sig. at .01
SxF	4	128.31	32.07	0.43	Not Sig.
Within	286	20926.02	73.16		
Total	295	24209.43			

(E) Table. 14 (c) Showing Results of Least Difference Gap Test  
Family Size-wise

Groups	Boys	Girls	Total
F2 Vs. F3	Sig.at .05	Not Sig.	Sig. at .01
F2 Vs. F4	Sig. at .01	Sig. at .01	Sig. at .01
F2 Vs. F5	Sig. at .01	Sig. at .01	Sig. at .01
F2 Vs. F6	Sig. at .01	Sig. at .01	Sig. at .01
F3 Vs. F4	Not Sig.	Sig. at .01	Not Sig.
F3 Vs. F5	Sig. at .01	Sig. at .01	Sig. at .01
F3 Vs. F6	Sig. at .05	Sig. at .01	Not Sig.
F4 Vs. F5	Not Sig.	Sig. at .01	Sig. at .05
F4 Vs. F6	Not Sig.	Not Sig.	Not Sig.
F5 Vs. F6	Not Sig.	Not Sig.	Not Sig.

Sex-wise

At F2	:	B - G	:	Not Sig.
At F3	:	B - G	:	Not Sig.
At F4	:	B - G	:	Not Sig.
At F5	:	B - G	:	Not Sig.
At F6	:	B - G	:	Not Sig.



Looking to the significant role of only family size, it is observed that there was definitely a systematic general trend in increase of extraversion level with the increase in family size, as expected to be the case with children getting more extrovert with more company. The only exception is F1 which was more (14.49) than F2 (12.14), while in all other cases there had been increase with increase in family size. The lowest i.e. almost introvert group was formed by children of F2 and the highest i.e. most extrovert group came from F6. Almost similar was the case with the second born (lowest) as seen in (E) Table 1(a) earlier.

The results of detailed comparisons are given in (E) Table 11(c) for each sex and birth order level. Generally F, F2, F3 and F5 formed equal group, not mutually much different; similarly F5 and F6 formed higher equal groups on the whole, though among girls F2 stood lowest by itself, F1, F3 and F4 formed equal groups, and F5 and F6 were mutually equal. Still it can be concluded that generally there was on the whole a systematic significant trend for extraversion level to increase with the increase in family size.

(c) Role of Family Size Within  
the Middle-born:

The data to study the role of family size in extroversion of middle-born boys and girls from possible family sizes (viz. F4, F5 and F6) were analysed statistically and the results have been presented in (E) Table 13(a), (b) and (c) as usual. It is seen that sex was not significant, but family size and its interaction with sex were significant at .01 level. Thus, though girls were not significantly different from boys, they on the whole tended to be somewhat more extrovert (20.67) than boys (19.78). As regards the family size, F6 group was most extrovert, and F5 was the least. The details of significance for specific pairs are given in (E) Table 13(c). Only at F5, there were significant sex differences; and among boys, F4 was different (less) than F5 and F5 was different (more) than F6; other pairs were insignificantly different. This lack of similar trend with sex or family size accounts for significant interaction..

(d) Role of Family Size within  
the Last-born:

Finally, the data of the last-born children in different family sizes (F2 to F6) were analysed to find out the contribution of family size and sex, and results have been presented in (E) Table 14(a), (b) and (c) as usual. It has been found

that only the family size was a significant factor in this group; neither the sex nor its interaction with family size had any important say in the extroversion level of children of this group.

Now as regards the family size, it would be seen that there was again a somewhat systematic trend of increase in extroversion level of the last born as the family size increased, as it was a case with the first born, excepting the last one. F6 which is a little less than F5, being out of the trend; same was almost the case within boys and also the girls, both of which did not differ between themselves. All this accounts for lack of significance of sex effect as well as interaction effect, only family size effect, being significant.

#### SUMMARY OF RESULTS

The analysis of data on one of the personality traits, viz. introversion - extroversion state of subjects under study revealed the following findings :

Sex Variable:

1. On the whole, sex was a significant variable as far as extroversion was concerned; girls were more extrovert than boys on the whole.
2. In relation to the birth order, there were significant sex differences on the whole (girls scoring higher than boys on extroversion) only among the second-born, and not among any other birth order group; so also there were significant sex differences (girls always higher than boys) in case of comparisons between only child group and other later born group, and also between the last born and the aggregate of second and middle born; there were no significant sex differences in case of comparisons between other birth order groups.
3. Similarly in relation to the family size, there were significant sex differences on the whole also among the second born children only, and not at other orders in relation to family size.

Birth Order Variable:

4. Again it has been observed that the birth order was a significant variable on the whole;;there was specific trend of increase in extroversion with the

increase in birth order position, particularly on the whole.

5. Again in case of comparisons between first-born and later-born, (later-born being more extrovert than first born), between first born of mixed sexes and first born of same sex (same sex scoring higher), between the only child group and other later born groups, and between last born and only child group (last born scoring higher), there were significant birth order differences; there were no significant differences in case of comparison between other pairs of birth order.

Family Size Variable:

6. As regards the role of family size in extroversion level it was observed that family size was a significant factor contributing to extroversion among the first born; there was a systematic trend of increase in extroversion with increase in family size (except at F2 which was lowest or most introvert among F1 to F6).
7. Among the second born available children also, family size was a significant factor, but without any systematic trend (F6 being highest and F5 being the lowest among F3, F4 F5 and F6).

8. Similarly among the middle born available children also, family size was a significant factor, but without any systematic trend as in case of the second born (F6 scoring highest and F5 scoring the lowest among F4, F5 and F6).
9. Finally, among the last born children, the family size was again a significant factor with a general systematic trend of increase in extroversion level with increase in family size (excepting F6 which lesser than F5, F2 being the lowest or most introvert and F5 being the most extrovert, among children of family sizes from F2 to F6).