

# Birth Order and Personality: A Study Among the Mizo Population

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*Abstract- "The present study was conducted among 265 Mizo samples to determine the effect of birth order on personality. Primarily, the history of research into birth order as a determinant of personality was discussed and critically analyzed. Then, other possible underlying factors such as the family dynamics and pre-dispositions which may influence personality such as gender, family size and socio-economic status were also included in the discussion. Adler's birth order theory was tested using data from a survey of 265 Mizo individuals and examined for the effect of birth order on personality traits as measured by the NEO-FFI. Significant main effects were found only for gender on conscientiousness, socioeconomic status on, extraversion and conscientiousness while no significant two-way interaction effects of the demographic variables were found for the personality traits. A significant three-way interaction effect was found between gender, family size and birth order only on the personality domain of conscientiousness. The limitations and suggestions for improvement of the study are also discussed."*

*Index Terms- Birth Order, Personality, Gender, Family Size, Socio-economic Status, Mizo, NEO-FFI*

## I. INTRODUCTION

The impact of birth order on personality has long captivated the curiosity of both scientists and the general public. Galton (1874) researched a group of English scientists and determined that firstborns, especially males, do well academically because they got preferential treatment from their parents. In the late 1800s and early 1900s, Alfred Adler extended the psychology of birth order to personality traits half a century later. According to Adlers, comparable personality traits denominate the traits in most firstborn children, youngest children and middle children; that is, first-born, middle-born, and youngest as well as the only child across different families will share basically similar characteristics. In Adler's assessment of each child, a person's attributes were found to be largely influenced by their birth

position: The eldest children are dominant, comparatively conservative, and strive to assist their parents; middle children are often more complacent while the youngest children are ambitious and yet spoiled; and only children relish the attention they receive as being the only child.

Research and reviews of researches on the impact of birth order on personality revealed that there is little or no relationship between birth order and personality (Eckstein, 2000; Ernst & Angst, 1983). Yet, due in large part to Sulloway's work, birth order as a personality factor has gained renewed interest among psychologists and the general public. Sulloway (1996) insisted, in his book *Born to Rebel*, that personality is formed from a Darwinian struggle among children for parental attention. Each child finds a particular niche based on his/her birth order and first-borns receive the most undivided attention from their parents and are more likely to uphold the status quo, whereas later-borns are likely to rebel as parental attention shifts down-wind.

Sulloway's findings (1996) was largely met with criticism from contemporary psychologists. For example, Spitzer & Lewis-Beck were largely critical of the way he handled his data (Spitzer & Lewis-Beck 1999). Also, no significant link was found between the Big Five personality traits of extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience by Jefferson, Herbst and McCrae (1998), while Forland, Korsvik and Christophersen (2012) found, in retrospect, that birth order does not predict on who would become radicals among a sample of 1246 individuals while finding no 'extrafamilial effects of birth order'.

Despite these findings, birth order and personality has remained a hot topic not only in pop psychology, but within the realms of psychology as well. Firstly,

this may be due to the inherent semi-logically reasonability of the tenets of the theory. For example, to rationalize that the oldest child will be more conservative by virtue of his/her way of being an early child and the youngest child being rebellious by his/her nature of distance from the parents is fundamentally appealing to people. Secondly, the Barnum effect explains how we tend to be personally biased towards traits that are applicable to the general population. In fact, Jefferson, Herbst and McCrae (1998) found that people who are –in cognizance-aware of the birth order of a person tend to observe that person as having some typical feature characteristic to people with such a birth order (a cognitive bias of sorts). Moreover, findings from smaller studies report the effect of birth order on personality traits and other psychological domains. For example, findings from studies conducted by Paulhus, Trapnell and Chen (1998), and van der Leune (2009) found results consistent to Sulloway's theory.

Birth order, in light of Sulloway's (1996, 2010) dictations, should indicate the typical roles that siblings specifically play within the family structure will translate into stable personality differences between siblings based on birth order and expressed in terms of the Big Five personality traits, the standard taxonomy of personality. Therefore, the current study incorporates the five broad dimensions: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness which are also thought to demonstrate the effects of the gender, family socioeconomic condition and family size of the individuals as well.

#### Objectives:

Given the literature on the impact of birth order, socioeconomic status of the family and family size on the development of personality traits, the current study aims:

- (i) to study the independent effects of the selected variables on the personality domains as measured by the NEOFFI, viz. neuroticism, extraversion, openness to experience, agreeableness and conscientiousness

- (ii) to study the interaction effects of the independent variables mentioned on the five dimensions of personality

#### Hypothesis:

Based on the objectives based on the theoretical foundations, the following hypotheses were framed:

- (i) Birth order, socioeconomic status of the family and family size will exert significant effects on personality outcomes
- (ii) The selected variables will have significant interaction effects on the personality domains

## II. METHODS

#### Sample:

The sample consists of 100 Mizo adult males and 165 Mizo adult females within the age range of 18 - 71. The participants were randomly selected from different sections from the rural and urban areas of Mizoram. Majority of the participants reported that they belong to middle-middle class (74.70%) in socio-economic status.

#### Measures:

The test material also consisted of a background demographic sheet incorporating locality, gender, age, number of brothers and sisters, and birth order. The birth orders of the participants were categorized as: First born, only child, middle children and youngest (including the second) based on an Adlerian classification of birth order.

#### Psychological Measures:

NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992b):

This is a personality inventory consisting of 60 items of the Big Five Model: Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness to Experience (O). The test is for use with adult (17+) men and women without overt psychopathology and adolescents. Each item is answered on a five point scale ranging from "strongly agree" to "strongly disagree" and gives the participants' domain levels.

## III. PROCEDURE

Participants were approached from different places and settings within Aizawl and were informed about the purpose of the study. Consent was obtained prior to participation. The questionnaires were completed individually. A total of 303 responses were received. However, only 256 were retained for analysis, as a number of responses were incomplete. The remaining responses were coded and prepared for statistical analysis.

#### IV. RESULTS

A summary of the demographic information of the participants is listed in Table 1(a). The socioeconomic status of the families are based on the incomes (per annum) of the family as given in the Central Statistical Organisation's Economic Survey (2019-2020); the family size are based on the sibling size and the demographic categories are self explanatory as listed.

		N	%
Gender	Male	100	37.7%
	Female	165	62.3%
Socio-economic Status	Low Income Family (less than 50 K)	14	5.3%
	Lower Middle Income Family (50 K – 74,999)	45	17.0%
	Middle Middle Income Family (75 K – 99,999)	198	74.7%
	Upper Middle Income Family (1 lakh–2 lakhs)	8	3.0%
Family Size	Large Family (5 or more child family)	86	32.5%
	Medium - Sized Family (3 – 4 child family)	138	52.1%
	Small Family ( 1 – 2 child family)	41	15.5%
Birth Order	Only Child	8	3.0%
	First/Early Born	95	35.8%
	Middle Born	84	31.7%
	Youngest/Last Born	78	29.4%

Table 1 (b) on the other hand reveals the mean scores and standard deviations of each comparison group on the personality dimensions of the NEOFFI

Table 1(a): Demographic variables of the participants

Table 1 (b): Mean scores and standard deviations of each comparison group on the personality dimensions of then NEOFFI

		Neuroticism		Extraversion		Openness		Agreeableness		Conscientiousness	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Gender	Male	22.24	6.31	23.47	4.25	26.11	4.55	22.44	3.66	28.10	6.04
	Female	24.32	7.37	22.53	4.64	25.48	4.02	22.63	3.55	29.35	6.19
Socio-economic Status	Lower	29.79	5.63	26.00	4.13	24.36	4.13	20.43	2.21	25.14	5.40
	Lower Middle	23.31	6.27	21.62	4.12	25.13	4.06	22.02	3.70	28.33	6.53
	Middle Middle	23.10	7.13	22.91	4.54	26.06	4.26	22.83	3.58	29.48	5.90
	Upper Middle	24.63	7.41	23.75	4.17	23.13	3.56	22.50	4.11	23.50	7.35
Family Size	Large Family	23.52	7.62	22.80	4.86	25.47	4.30	23.09	3.61	28.45	6.18
	Medium - Sized Family	24.02	6.71	22.72	4.23	25.89	4.38	22.30	3.63	28.97	5.70
	Small Family	21.90	6.86	23.59	4.71	25.68	3.59	22.29	3.36	29.44	7.55
Birth Order	Only Child	24.13	4.64	25.50	4.99	24.25	5.68	23.75	3.92	30.75	5.95
	First/Early Born	23.51	7.60	22.58	4.87	25.73	4.23	22.81	3.62	28.73	6.00
	Middle Born	23.80	7.01	23.01	3.95	26.64	4.03	22.30	3.58	29.18	6.58
	Youngest/Last Born	23.22	6.69	22.85	4.57	24.87	4.14	22.41	3.55	28.54	5.96

The means and standard deviation, as well as the skewness and kurtosis of the measured variables of the Neuroticism, Extraversion, Openness to

Experience, Agreeableness, and Conscientiousness) sub-scales of NEO-FFI are presented in Table 2.

Table 2: Participants' scores on the NEOFFI

Domain	N	Range	Mean	S.D.	Skewness		Kurtosis	
					Statistic	S.E.	Statistic	S.E.
Neuroticism	265	4 – 44	23.53	7.05	-.003	.15	.003	.30
Extraversion	265	11 – 34	22.88	4.51	-.099	.15	-.314	.30
Openness	265	16 – 38	25.72	4.23	.271	.15	-.107	.30
Agreeableness	265	12 – 33	22.56	3.59	-.090	.15	.308	.30
Conscientiousness	265	13 – 45	28.88	6.16	-.041	.10	.063	.30

Table 3 (a) demonstrates the main effects of the demographic variables for a non null hypothesis with a .05 level of significance on the domains of personality as measured by the NEOFFI. Significant main effects were found for gender on conscientiousness ( $F = 6.19, p = 0.014$ ), socioeconomic status (Socio) on neuroticism ( $F =$

$3.41.19, p = 0.018$ ), extraversion ( $F = 3.95, p = 0.009$ ) and conscientiousness ( $F = 4.97, p = 0.002$ ) while no significant main effects were found for family size (Size) and birth order (Order) on the five personality traits.

Source		Type III S.S.	Df	Mean Sq.	F	Sig.	Partial $\eta^2$
Gender	Neuroticism	176.66	1.00	176.66	3.70	0.056	0.016
	Extraversion	12.02	1.00	12.02	0.62	0.432	0.003
	Openness	23.37	1.00	23.37	1.37	0.244	0.006
	Agreeableness	1.72	1.00	1.72	0.14	0.706	0.001
	Conscientiousness	218.82	1.00	218.82	6.19	0.014	0.027
Socio	Neuroticism	488.66	3.00	162.89	3.41	0.018	0.043
	Extraversion	229.90	3.00	76.63	3.95	0.009	0.050
	Openness	24.73	3.00	8.24	0.48	0.695	0.006
	Agreeableness	60.49	3.00	20.16	1.66	0.176	0.022
	Conscientiousness	526.94	3.00	175.65	4.97	0.002	0.062
Size	Neuroticism	21.76	2.00	10.88	0.23	0.796	0.002
	Extraversion	54.34	2.00	27.17	1.40	0.249	0.012
	Openness	60.97	2.00	30.49	1.78	0.171	0.016
	Agreeableness	2.96	2.00	1.48	0.12	0.885	0.001

	Conscientiousness	53.94	2.00	26.97	0.76	0.468	0.007
Order	Neuroticism	46.57	3.00	15.52	0.33	0.807	0.004
	Extraversion	108.02	3.00	36.01	1.86	0.138	0.024
	Openness	79.94	3.00	26.65	1.56	0.201	0.020
	Agreeableness	90.50	3.00	30.17	2.49	0.061	0.032
	Conscientiousness	97.16	3.00	32.39	0.92	0.434	0.012

Table 3 (b) demonstrates the two-way interaction effects of the demographic variables for a non null hypothesis with a .05 level of significance on the domains of personality as measured by the NEOFFI.

No significant two-way interaction effects were found for any of the demographic variables on the personality traits.

Table 3(b): Tests of two-way between-subject interaction effects							
Source	Type III S.S.	df	Mean Sq.	F	Sig.	Partial $\eta^2$	
Gender * Socio	Neuroticism	140.77	3.00	46.92	0.98	0.401	0.013
	Extraversion	26.48	3.00	8.83	0.46	0.714	0.006
	Openness	79.15	3.00	26.38	1.54	0.205	0.020
	Agreeableness	47.39	3.00	15.80	1.30	0.274	0.017
	Conscientiousness	173.38	3.00	57.79	1.63	0.182	0.021
Gender * Size	Neuroticism	6.13	2.00	3.06	0.06	0.938	0.001
	Extraversion	60.50	2.00	30.25	1.56	0.213	0.014
	Openness	10.49	2.00	5.24	0.31	0.736	0.003
	Agreeableness	28.26	2.00	14.13	1.17	0.313	0.010
	Conscientiousness	70.14	2.00	35.07	0.99	0.373	0.009
Gender * Order	Neuroticism	131.73	3.00	43.91	0.92	0.432	0.012
	Extraversion	4.10	3.00	1.37	0.07	0.976	0.001
	Openness	24.95	3.00	8.32	0.49	0.692	0.006
	Agreeableness	16.73	3.00	5.58	0.46	0.710	0.006
	Conscientiousness	328.69	3.00	109.56	3.10	0.028	0.039
Socio * Size	Neuroticism	206.48	4.00	51.62	1.08	0.366	0.019
	Extraversion	101.00	4.00	25.25	1.30	0.270	0.023
	Openness	20.63	4.00	5.16	0.30	0.877	0.005
	Agreeableness	55.98	4.00	13.99	1.16	0.331	0.020
	Conscientiousness	176.22	4.00	44.06	1.25	0.293	0.022
Socio * Order	Neuroticism	334.37	6.00	55.73	1.17	0.325	0.030
	Extraversion	52.71	6.00	8.78	0.45	0.843	0.012
	Openness	147.26	6.00	24.54	1.43	0.202	0.037
	Agreeableness	130.05	6.00	21.67	1.79	0.102	0.045
	Conscientiousness	90.97	6.00	15.16	0.43	0.859	0.011
Size * Order	Neuroticism	23.27	2.00	11.64	0.24	0.784	0.002
	Extraversion	64.50	2.00	32.25	1.66	0.192	0.014

	Openness	98.43	2.00	49.21	2.88	0.058	0.025
	Agreeableness	21.10	2.00	10.55	0.87	0.420	0.008
	Conscientiousness	167.46	2.00	83.73	2.37	0.096	0.021

Table 3 (c) demonstrates the three-way interaction effects of the demographic variables for a non null hypothesis with a .05 level of significance on the domains of personality as measured by the NEOFFI. No significant three-way interaction effects were

found for any of the demographic variables on the personality traits other than the interaction between gender, family size and birth order on conscientiousness ( $F = 8.70, p = 0.004$ ).

Table 3(c): Tests of three-way between-subject interaction effects

Source		Type III S.S.	Df	Mean Sq.	F	Sig.	Partial $\eta^2$
Gender * Socio * Size	Neuroticism	11.78	2.00	5.89	0.12	0.884	0.001
	Extraversion	0.14	2.00	0.07	0.00	0.996	0.000
	Openness	27.94	2.00	13.97	0.82	0.443	0.007
	Agreeableness	3.76	2.00	1.88	0.15	0.857	0.001
	Conscientiousness	42.81	2.00	21.40	0.61	0.547	0.005
Gender * Socio * Order	Neuroticism	38.89	3.00	12.96	0.27	0.846	0.004
	Extraversion	31.47	3.00	10.49	0.54	0.655	0.007
	Openness	15.69	3.00	5.23	0.31	0.821	0.004
	Agreeableness	22.35	3.00	7.45	0.62	0.606	0.008
	Conscientiousness	167.93	3.00	55.98	1.58	0.194	0.021
Gender * Size * Order	Neuroticism	6.90	1.00	6.90	0.14	0.704	0.001
	Extraversion	0.47	1.00	0.47	0.02	0.877	0.000
	Openness	14.28	1.00	14.28	0.83	0.362	0.004
	Agreeableness	23.27	1.00	23.27	1.92	0.167	0.008
	Conscientiousness	307.73	1.00	307.73	8.70	0.004	0.037

A post hoc analysis for the socio-economic status of each income group is displayed in Table 4 for the scores on each personality trait. On the domain of neuroticism trait, significant mean differences were found between the low income and low-middle income groups ( $MD = 6.475, p = 0.013$ ) and between the low income and middle-middle income groups ( $MD = 6.690, p = 0.003$ ); on the domain of extraversion, there was a significant mean difference between the low income and low-middle income groups ( $MD = 4.378, p = 0.008$ ); and on conscientiousness, significant mean differences were found between the low income and middle-middle

income groups ( $MD = -4.337, p = 0.048$ ) and between the high-middle and middle-middle income groups.

Table 4: Tukey's HSD for multiple comparisons

Dependent	I	J	Mean Difference	Std. Error	Sig.	95% Confidence Interval
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Variable		(I-J)			Lower Bound	Upper Bound	
Neuroticism	Low	Low-Middle	6.475*	2.120	0.013	0.99	11.96
		Middle-Middle	6.690*	1.916	0.003	1.74	11.64
		High-Middle	5.161	3.070	0.336	-2.78	13.10
	Low-Middle	Low	-6.475*	2.120	0.013	-11.96	-0.99
		Middle-Middle	0.215	1.144	0.998	-2.74	3.17
		High-Middle	-1.314	2.658	0.960	-8.19	5.56
	Middle-Middle	Low	-6.690*	1.916	0.003	-11.64	-1.74
		Low-Middle	-0.215	1.144	0.998	-3.17	2.74
		High-Middle	-1.529	2.498	0.928	-7.99	4.93
High-Middle	Low	-5.161	3.070	0.336	-13.10	2.78	
	Low-Middle	1.314	2.658	0.960	-5.56	8.19	
	Middle-Middle	1.529	2.498	0.928	-4.93	7.99	
Extraversion	Low	Low-Middle	4.378*	1.360	0.008	0.86	7.89
		Middle-Middle	3.086	1.229	0.061	-0.09	6.26
		High-Middle	2.250	1.969	0.664	-2.84	7.34
	Low-Middle	Low	-4.378*	1.360	0.008	-7.89	-0.86
		Middle-Middle	-1.292	0.734	0.295	-3.19	0.61
		High-Middle	-2.128	1.705	0.597	-6.54	2.28
	Middle-Middle	Low	-3.086	1.229	0.061	-6.26	0.09
		Low-Middle	1.292	0.734	0.295	-0.61	3.19
		High-Middle	-0.836	1.602	0.954	-4.98	3.31
High-Middle	Low	-2.250	1.969	0.664	-7.34	2.84	
	Low-Middle	2.128	1.705	0.597	-2.28	6.54	
	Middle-Middle	0.836	1.602	0.954	-3.31	4.98	
Conscientiousness	Low	Low-Middle	-3.190	1.846	0.311	-7.96	1.58
		Middle-Middle	-4.337*	1.668	0.048	-8.65	-0.02
		High-Middle	1.643	2.673	0.927	-5.27	8.55
	Low-Middle	Low	3.190	1.846	0.311	-1.58	7.96
		Middle-Middle	-1.146	0.996	0.658	-3.72	1.43
		High-Middle	4.833	2.314	0.159	-1.15	10.82
	Middle-Middle	Low	4.337*	1.668	0.048	0.02	8.65
		Low-Middle	1.146	0.996	0.658	-1.43	3.72
		High-Middle	5.980*	2.175	0.032	0.36	11.60
High-Middle	Low	-1.643	2.673	0.927	-8.55	5.27	
	Low-Middle	-4.833	2.314	0.159	-10.82	1.15	
	Middle-Middle	-5.980*	2.175	0.032	-11.60	-0.36	

\*. The mean difference is significant at the 0.05 level.

## V. DISCUSSION

In the current study, for each of the demographic variables, significant effects were found only for gender on conscientiousness, socioeconomic status on neuroticism (between the low income group and low-middle income groups, and between the low income and middle-middle income groups), extraversion (between the low income and low-middle income groups) and conscientiousness (low income and middle-middle income groups, and between the high-middle and middle-middle income

groups) while no significant two-way interaction effects of the demographic variables were found for the personality traits. A significant three-way interaction effect was found between gender, family size and birth order only on the personality domain of conscientiousness.

The findings for gender differences on the NEOFFI personality traits are mostly inconsistent with other researches (e.g. Feingold, 1994; Costa et al., 2001). However, Weisberg et al. (2011) observed that some measurements in the Big Five personality measures are discreetly gender-biased, with some items in the

scales diverging to the facets of male and female agencies. Moreover, the effect of socioeconomic status on personality is consistent with findings with other researches as well. For example, Heckman & Kautz (2012) found a positive association between socioeconomic status and conscientiousness, while neuroticism is negatively associated with income (Kajonius & Carlander, 2017). Moreover, it can be rationalized that, as Nandan and Saurabh (2016) described, investors high on openness to experience trait will be more likely take a higher risk than their counterparts, perhaps due to having more than enough to spare.

Birth order by itself does not seem to contribute to personality outcomes, according to the findings. This is consistent with findings from other researches; for example, Marini & Kurtz (2011) found no birth order differences for any of the five NEO-FFI scores with effect sizes (Cohen's *d*) less than .20 for all comparisons as was in the current study. Also, Rohrer et al. (2015) remarked that "birth order does not have a lasting effect on broad personality traits outside of the intellectual domain". On the other hand, when we include gender and family in addition to birth order for the analysis, the interaction effect of these three factors was significant for the samples.

We found no support for Sulloway's theory of birth order in the context of the sample drawn from the Mizo population. However, this study adds some insights into how family dynamics within a Mizo population may contribute to personality outcomes. Though, we are compelled to conclude that rather than due to parental attention, the financial resources of the family allocated to the child by way of their order of birth in the family may exert significant outcomes on the personality of the individual. Furthermore, being later born, and perhaps, being either male or female may impact the amount of financial support due to the rationing of resources in relation to the large family size.

Limitations of the study:

1. The study recruited 265 random samples from the Mizo population. The relatively small sample size

limits the generalizability of the findings. It is recommended that further studies should be based upon a much larger samples for more efficiency.

2. The socioeconomic status of the families studied was based on the total income of the family per year only. The authors recommend that further studies should incorporate not only the economic component, but include more of the social component, such as power, groups, skill and competence as well.
3. Psychological positions of the siblings was not considered in the study.
4. The study uses only a between-family design in the study. Employing a within-family design will provide us with a clearer picture of the internal dynamics of families.

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