

## A Study on Birth Order and Sense of Overall Responsibility in Undergraduate Students of Lahore, Pakistan

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Birth order has been viewed as an important variable in personality studies. Previous empirical research findings have revealed mixed results when investigating the association between different birth orders and personality traits, such as the sense of personal and social responsibility. The present research study examined the relationship between birth orders and a sense of overall responsibility, where overall responsibility has two components: personal and social responsibility. It was hypothesized that there is a statistically significant difference in the sense of personal and social responsibility between different birth orders. The sampling population consisted of 274 participants enrolled in an undergraduate program in Lahore, and the sampling technique used was non-probability convenience sampling. The method for this cross-sectional quantitative study employed the Overall Responsibility Scale (ORS), which includes subscales: the Personal Responsibility Scale (PRS) and the Social Responsibility Survey (SRS). For data analysis, one-way ANOVA (analysis of variance) was conducted on both scales against birth order groups, including first, middle, and last, using Statistical Package for Social Sciences (SPSS). The results revealed that there was no statistically significant difference in PRS (Personal Responsibility Scale) scores for the three groups (first, middle, last):  $F(2, 257) = 0.380, p = .684$ . Similarly, there was no statistically significant difference in SRS (Social Responsibility Scale) scores for the three groups:  $F(2, 258) = 1.084, p = .340$ . Furthermore, ANCOVA used gender and age as covariates, revealing no significant difference among the three groups regarding overall responsibility.

**Keywords:** Birth Order, Personal Responsibility, Social Responsibility, Overall Responsibility, Personality.

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### Introduction

Adler saw child development through the lens of its social milieu. The child's social field included their parents, siblings, and others who shared the same living environment. In his view, birth order and ordinal position serve as a guide for placing the child in relation to siblings and adults. Birth order is a reality of a child's place in a social system. According to Adler, this place produces an impact that is frequently evident even in adulthood; it influences the adult personality (Adler, 1964, as cited in Shulman & Mosak, 1977). This research deals with the relationship between birth order and a sense of personal and social responsibility. According to Adler's theory, the firstborn is frequently a firm believer in authority and the rule of law and is, consequently, more responsible. The second child is more inclined to follow another's direction. The middle child is susceptible to abuse or injustice. They are concerned about losing their share. The youngest sets out to overtake the others and is highly ambitious. If they decide not to pursue it, they remain dependent. The only child is often friendly and engaging (Adler, 1964, as cited in Shulman & Mosak, 1977).

Similarly, Sulloway (1999) claimed that birth order has a firm and continual influence on children's character traits. He suggested that firstborns are more assertive, comparatively less

open to diverse views, and more earnest than later-conceived children. Using the conceptual framework of the Family Niche Theory of birth order and qualitative analysis, he argued that the first-borns are most likely to exhibit dominant behavior and lack agreeableness, which later makes them more rigid and less likely to work together with others as a team due to their lack of cohesion.

The most consistent finding is the propensity for the firstborn of the same sex to favor an earlier age for the child's acceptance of responsibilities in contrast to the latter born of the same sex. One potential reason for this tendency is that it incorporates expectations that the firstborn has about their behavior, indicating a serious, thoughtful attitude toward responsibility. The firstborn has more serious, ethically responsible views than the second born (Harris & Howard, 1968). For Black, Grönqvist, & Öckert (2018), early-born males are more emotionally stable, persistent, socially extroverted, prepared to undertake the responsibility, and capable of taking initiative than later-born men. Children born earlier are likelier to work in jobs involving leadership and high social ability.

*Literature Review*

According to Sulloway (1996), birth order plays a significant role in an individual's personality. He proposed that the eldest born are more conscientious and neurotic than their younger siblings (cited in Marini & Kurtz, 2011). Firstborns are considered more responsible in their achievements and tasks as they have a self-perception of being a responsible person and the pressure of being a perfect example for their siblings (Saher et al., 2022).

In their article examining birth order and extraversion, Saher, Khan, and Saleem (2022) discussed the characteristics of lastborns compared to firstborns. Leman (2000, as cited in Saher, Khan, and Saleem, 2022) believed that the last-born children tend to be more loving, compassionate, attention-seeking, and persistent, while the first-borns are more diligent, organized, serious in attitude, and authoritative. Through Leman's (2000, as cited in Saher, Khan, and Saleem, 2022) listing of personality traits, it appears that while the first-borns' personality characteristics are more congruent with possessing a sense of personal responsibility, the last-borns' traits seem to exude that they possess a greater sense of social responsibility.

In their study, Paulhus, Trapnell, and Chen (1999) asked the participants to compare themselves and their siblings to different personality traits. Amongst four sets, firstborns were found to be the highest in conscientiousness and achievement, while the later born were more defiant, independent, and agreeable. It was concluded that firstborns have a specific position in their family. The oldest child usually indulges in outstanding efforts to please parents through conventional ways such as academic achievement and showing a sense of responsibility (Paulhus et al., 1999). Conscientiousness refers to the qualities and behavioral patterns that enable an individual to feel responsible for oneself and the community in which they live. It is highly appreciated in many cultures and connects with various beneficial, socially desirable results (Kern, 2020). Hence, we find this personality trait linked to our definitions of responsibility.

One explanation for differences in the sense of responsibility between siblings could be the variability in their treatment by their parents. Occasionally, parents might treat a child differently, not because of the child's personality or characteristics but because of the traits of their siblings. If parents find the firstborns tough to deal with, they may think the next child would be comparatively easier. Subsequently, they develop a different attitude toward the next child, which can ultimately result in sibling differences in personality traits like responsibility and maturity (McHale et al., 2012, as cited in Kamran, 2016).

In her article, Kamran (2016) discusses how siblings with higher birth rank have parents as role models; hence, they are expected to have greater responsibility and maturity. Firstborns are also often subject to parents' trial and error parenting and, consequently, learn handling and coping skills over time.

Moreover, children's family environment directly impacts the personality traits they develop, such as intellect, extraversion, and responsibility. Often, firstborn children keenly show traits such as introversion and maturity for their age in comparison to their siblings. This may be because they spend more time with their elders, so they inherit similar personality traits. They are often motivated to the point of perfection, especially in matters such as academic achievement, and are seen as brighter than their siblings. They are exposed to interference and excessive protection by their parents (Collins, 2006).

Social stereotypes regarding birth rank add-in and even alter their social reality. A study found that those with higher birth orders achieve more reverent occupations and complete more years of education. It was found that some personality traits of the highest birth rank include intelligence, stability, obedience, and responsibility (Herrera et al., 2003).

The current literature has been observed to need to thoroughly validate and explain the relationship between birth order and social responsibility among individuals. Thus, more updated, valid, and reliable studies must be conducted on the variable of interest to have a comprehensive and self-explanatory conceptual and theoretical framework. However, some studies from the past have explained the same phenomenon with different socio-demographic variables. One of these studies is the extensive research on social workers by Lackie (1984), who examined the relationship between learned responsibility and order to birth among the targeted population. The aim was to explore the family patterns that ultimately lead the person to choose social work as their career choice.

Lackie (1984) observed through extensive investigation that the patterns of upbringing, sibling relationships, and parental experiences significantly contribute to an individual's professional development. People who feel loved and taken care of and who have the sense of secure parenting in their past had the feeling of being the "good" child always and wanted to give it back to the community. Two-thirds of the sample reported that their parents never detached from their children and maintained an optimal distance from them during their upbringing. These individuals were the ones that played a good role among the siblings as well and had a measurable amount of independence in making decisions and taking up responsibilities. To get the same validation and recognition outside the family, many had opted for community service and had high levels of social responsibility to fulfill the needs of others. However, birth order alone cannot explain these traits and choices, but other aspects, such as self-esteem, gender, family system, etc., also have a significant role.

Despite the vast amount of literature suggesting an effect of birth order on personality, a meta-analysis by Rohrer, Egloff, and Schmukle (2015) concluded that no birth order effects on the main five-factor models of personality (i.e., extraversion, conscientiousness, etc.). However, the same authors did find that the IQ scores of the first-born and last-born populations were significantly different, with elder siblings being more intelligent and choosing high-profile career choices (Rohrer et al., 2015).

In the current study, we hypothesized that birth order has a significant relationship with social responsibility. We based this hypothesis on several pillars. First, there is significantly less research on birth order effects in Asian countries, where economic difficulties are usually higher than in Western countries. Because of this difference, it is assumed that the burden on the firstborn to educate the siblings might be higher. Research conducted by Sen, Kumar, and Ramadass (2019) supports this assumption, concluding that first-born children act as "surrogate parents" for their siblings. They are socially responsible and high achievers. Moreover, first-born children are more emotionally stable than the latter-born, which might be due to their heightened sense of responsibility (Sen et al., 2019).

A study on siblings and birth order found that the eldest children become responsible when their siblings are born (Reimelt et al., 2021). Parents tend to be stricter with their firstborn children because they are role models for their younger siblings. Specifically in Asian cultures, fathers are stricter with their firstborn, as they are dominant in the household and are responsible for making decisions. They have more control over their children and want them to be perfect. Furthermore, the firstborn is expected to act in the same manner as their parents while interacting with their siblings (Lynn et al., 2014).

A study on the perception of the sibling relationship and birth order compared among Asian American and European American emerging adults reported that eldest children feel intense stress to set an example for their younger siblings, take care of them, take on responsibilities of their parents, and be

self-reliant. Apart from these similarities between Asian Americans and European Americans, Asian Americans were happy having siblings who are less rigid in Asian practices (Wu et al., 2018).

However, such a view is disputed by other accounts. Some scholars are inclined to say that parents are too protective and indulgent of their firstborn, which inhibits initiative and self-sufficiency or independence among firstborns (Roberts, 1938, as cited in Adams, 1972). Like the oldest, the only child is the firstborn, and Roberts (1938, as cited in Adams, 1972) compares their dependency and fondness for their mothers. Therefore, it is likely that such an indulgent attitude will undermine the responsible inclinations of firstborn children.

Therefore, in the current research, we aimed at (i) determining whether firstborn differ from the subsequently born children in the amount of personal and social responsibility.

### Variables and Hypothesis

In this study, the birth order is the criterion variable, whereas the sense of responsibility is the outcome. Birth order is operationalized as the ordinal position for placing the child in relation to siblings and adults. These positions are the first, second, middle, youngest, and only child (Adler, 1964, as cited in Shulman & Mosak, 1977).

In Asian cultures, the eldest sibling has to be responsible for their sibling's actions. Parents pressure their first child to be a perfect individual and an example for their younger children. They have to be responsible for their social and moral education (Poonam & Punia, 2012). Hence, the cultural context of parent-child interactions also plays a crucial role.

The sense of overall responsibility was operationalized through its two components – personal and social responsibility. Personal responsibility is operationally defined as the feeling of accountability for one's choices and actions in connection with and related to others and the ability to control specific issues. Social responsibility refers to social and moral values and the ability to make socially beneficial decisions (Wray-Lake & Syvertsen, 2011, as cited in Arslan & Wong, 2022).

H1. *We expected a statistically significant difference in the sense of personal and social responsibility between different birth orders.*

### Method

#### Participant and procedure

The data was collected using the survey method by distributing Google survey forms online over two weeks. An online questionnaire comprising a consent form, social demographic section, Personal Responsibility Scale (PRS), and Social Responsibility Scale (SRS) was administered to the respondents. A non-probability convenience sampling

technique was employed for data collection.

The participants filled out a consent form after briefing them about the purpose and nature of the study. The researchers addressed any queries regarding the study, and the respondents were told about the time needed to complete the questionnaire. Respondents were thanked and were assured that the data shall only be used for research purposes and that complete confidentiality would be maintained.

The sample consists of 274 undergraduates ranging from 18 to 32 years of age. The sample consisted of 84 males, 186 females, and 4 non-binary individuals ranging from 18 to 32 years of age ( $M=21.86$ ,  $SD=2.09$ ). The sample had the highest number of 22-year-old individuals, with a frequency of 66. Most students were in their fourth (senior) year of an undergraduate program with a frequency of 115. Regarding birth order ( $M=2.13$ ,  $SD=.97$ ), the sample comprised 87 firstborns, 85 middle-born, 89 last-borns, 6 only children, and 7 twins. Most of the sample was from Forman Christian College ( $n=171$ ). However, students from other universities, such as Kinnaird College for Women University, Lahore Medical and Dental College, Beaconhouse National University, Lahore University of Management Sciences, and Foundation for Advancement of Science and Technology, participated in the survey.

#### Measures

*Social Demographics Section.* This section included questions about the participants' characteristics, such as age, gender, university name, and academic year.

*Personal and Social Responsibility Scales.* The PRS and SRS are 4-item self-report measures, each developed to assess the overall responsibility of individuals (Sheldon et al., 2018, as cited in Arslan & Wong, 2022). All items of the scales are scored using a 5-point Likert scale, ranging from 1= strongly disagree to 5= strongly agree (e.g., "I discipline myself to make the best use of my time doing meaningful things" and "I am accountable for all my decisions and actions"). Pre-existing research cited evidence supporting the scales' adequate internal reliability estimates.

### Results

A one-way between-groups analysis of variance (ANOVA) was conducted to explore the relationship between birth order and an individual's sense of responsibility and social sense of responsibility, respectively, as measured by the Overall Responsibility Scale (ORS). The test was conducted using SPSS version 25. Initially, subjects were divided into five groups according to birth order (First; Middle; Last; Twin; Only Child). Due to a low number of respondents, Twins, and Only Child were excluded from the final analysis. Hence, the sample size dropped from 274 to 259 because of this exclusion criteria.

**Table 1.** Birth Order Differences Among Students Regarding Personal Responsibility and Social Responsibility.

| Variable                | M     | SD   | 95% CI |       | F (2, 258) | p   | SS    |
|-------------------------|-------|------|--------|-------|------------|-----|-------|
|                         |       |      | Lower  | Upper |            |     |       |
| Personal Responsibility |       |      |        |       | .38        | .68 | 8.87  |
| First                   | 15.25 | 2.23 | 14.78  | 15.73 |            |     |       |
| Middle                  | 15.42 | 2.52 | 14.87  | 15.96 |            |     |       |
| Last                    | 15.70 | 4.81 | 14.68  | 16.71 |            |     |       |
| Social Responsibility   |       |      |        |       | 1.08       | .34 | 10.84 |
| First                   | 17.08 | 2.14 | 16.63  | 17.54 |            |     |       |
| Middle                  | 17.28 | 2.02 | 16.85  | 17.72 |            |     |       |
| Last                    | 16.79 | 2.51 | 16.26  | 17.32 |            |     |       |

Note. SS = Sum of Squares, p = significance value.

The ANOVA analysis revealed no statistically significant difference at the  $p > .05$  level in PRS (Personal Responsibility Scale) scores for the three groups:  $F(2, 257) = 0.380, p = .684$ . Similarly, no statistically significant difference at the  $p > .05$  level in SRS (Social Responsibility Scale) scores for the three groups:  $F(2, 258) = 1.084, p = .340$ . ANCOVA used age and gender as covariates to check for possible influence on the dependent variable, the sense of overall responsibility. The results revealed no significant difference concerning birth order, even after controlling the effects of gender or age.

### Discussion

Our hypothesis that birth order will affect social and personal responsibility levels did not receive support based on the collected data. These results are consistent with Rohrer, Engloff, and Schmukle's (2015) findings on the effect of birth order on personality, which did not find any birth order differences in four personality traits extraversion, emotional stability, agreeableness, and conscientiousness. Whereas that study was based on three large national panels from USA, UK, and Germany (each including at least 4500 participants), our smaller sample size study was conducted in Pakistan.

Whereas the null results of Rohrer, Engloff, & Schmukle (2015) could have been explained through the fact that all three countries are highly developed, and families rely less and less on elder siblings to take care of the little ones through the extensive use of alternative systems (e.g., after schools, babysitting, a reduced degree of poverty, etc.), our results could bring to light other potential accounts. One such account is the idea that such effects are short-lasting, given that our sample consisted of students who most likely were assessed many years after they were in the position of taking care of the younger siblings.

Likewise, our results align with those of Khan et al. (2018) obtained on a sample of 148 3<sup>rd</sup> and 4<sup>th</sup>-year medical students in Pakistan. They investigated whether there is any statistically significant relationship between birth order, the big five personality factors, and academic performance. They found, too, no statistically significant difference across the birth order in personality factors of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism.

However, our results contradict the findings of many studies already discussed in the introductory section, which suggested that birth order plays a vital role in determining personality traits such as personal responsibility. This suggests that future studies that address this issue should consider potential moderators such as the age of participants (i.e., early-adolescents vs. adults), the distance in age between positions (i.e., there might be a different dynamic in a family with two children if there is one year, five years, or ten years difference between the siblings), the economic status (i.e., there is another adult that takes care of both children or the little one is raised by the older one).

We should highlight that although some personality traits, such as conscientiousness, intersect with the construct of responsibility (individual and social), they overlap partially, as little research has studied the role of birth order on an individual's responsibility.

Another study proclaimed that the effect of birth order could only be observed within the family and might not be seen in other settings (Harris, 2000). The current study did not control for the within-family effect. Therefore, different designs, such as paired samples, could control for the family environment account.

Nonetheless, some authors, such as Marini and Kurtz (2011), argued that birth order might affect some parts of the personality that cannot be measured through self-reported

questionnaires. In an older study (MacDonald, 1969) that involved electric shock, firstborns were more responsible about keeping their experimental appointments. Firstborn males were least likely, later-borns were more likely, and firstborn females were most likely to express a desire to withdraw from the experiment before the shocks were administered (MacDonald, 1969). Overall, this study helps establish that all firstborns are different and that birth order does not affect personality in a vacuum.

Finally, it is essential to consider cultural aspects when addressing such an issue. The landscape of birth order studies varies substantially in the Pakistani context. Therefore, when investigating differences in the sense of responsibility and birth orders in the Pakistani setting, it is imperative to consider familial structures and culture. In one study that examined birth order and psychiatric morbidity at the outpatient clinic of Liaquat University Hospital Hyderabad, Zain et al. (2014) suggested that the first child is typically expected within one year of marriage. Therefore, the family is highly surveillant of the couple, placing additional emphasis on the firstborn. Particularly in Pakistani society, rural families favor the birth of a male child. Hence, different family structures and cultural contexts result in varied experiences of birth order and gender.

Besides the already mentioned limitations, there are additional areas for improvement in the current study. The sample was collected online, which might have affected the quality of the results. We recommend that future researchers collect data offline to acquire more accurate responses with a supervised survey process and to reach a more representative population for Pakistan (i.e., young adults with lower educational levels, etc.). Furthermore, the data collected from the undergraduate sample mainly represented the students at Forman Christian College & University, which lacks generalizability to the entire population. Research that follows should focus on a broader and more proportionate sample for all birth order groups.

Additionally, the current study has used self-reported measures, which may compromise validity. This is particularly the case when studying the sense of responsibility in individuals, which is heavily influenced by social conformity and socially desirable tendencies. Future research could use qualitative or mixed methods to avoid masked responses while providing more holistic information. The quantitative method also needs more richness and narratives, which may be crucial for understanding multi-faceted experiences of birth order.

Lastly, the current research only focused on the level of responsibility. Future research can also consider additional factors such as cultural differences, upbringing, environmental differences, and ethnicity of the individuals.

Despite the above limitations, the present research assessed the role of birth order on an individual's overall level of responsibility. It is an essential addition to the literature on birth order effects as limited data explores the lack of significance between birth order and a sense of responsibility. We recognize the limited literature available in the Pakistani context and hope that this study paves the way for future research in the local context.

On a larger scale, the results of the present study can be used to conduct further empirical studies, which will focus on the attitudes and gender-based differences within the levels of responsibility of individuals and other factors that affect the levels of responsibility, such as socio-economic background, varying family systems, and ethnicity. We believe our findings open additional avenues of research to understand what factors genuinely impact one's sense of responsibility. Suppose future research concludes that a sense of responsibility is nurtured. In that case, we hope counselors and academic bodies use the information to devise an educational environment that helps foster increased responsibility amongst students. Similarly,

gender and cultural dimensions can be researched further to create more equitable academic settings that can facilitate individuals' decision-making. We advocate for a transformational approach to empower individuals while reasserting their autonomy.

In conclusion, our study suggests that birth order does not significantly impact individuals' overall sense of responsibility. Whereas this finding contradicts most previous literature, and in line with other prior studies, it opens up a new avenue of exploration of the understudied variables of birth order and

overall responsibility. This is especially important in the Pakistani context, where literature on birth order is minuscule. We presume from our findings that birth order does not exist in a vacuum. Multiple factors may play a role in determining one's sense of responsibility, such as gender, culture, varying family systems, and socio-economic backgrounds. Our findings further highlight that there are still many loose ends to understanding the impact of birth order better. Future researchers can bring the factors mentioned above to focus and study their impact alongside birth order.

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