

THE IMPACT OF BIRTH ORDER ON THE PERSONALITY TRAITS OF KCA UNIVERSITY  
STUDENTS IN NAIROBI COUNTY, KENYA.

WAGEMA N. THUNGU

21/09179

MASTERS OF ARTS IN COUNSELLING PSYCHOLOGY

KCA UNIVERSITY

2025

THE IMPACT OF BIRTH ORDER ON THE PERSONALITY TRAITS OF KCA UNIVERSITY  
STUDENTS IN NAIROBI COUNTY, KENYA.

BY

WAGEMA N. THUNGU

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE AWARD OF MASTER OF ARTS COUNSELLING  
PSYCHOLOGY OF KCA UNIVERSITY

OCTOBER, 2025

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

Student Name: Wagama Newton Thungu Reg, No. 21/09179

Sign: \_\_\_\_\_ Date: 18/10/2025

I do hereby confirm that I have examined the master's dissertation of [Wagama Newton] And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

Sign: \_\_\_\_\_ Date: 18/10/2025

## THE IMPACT OF BIRTH ORDER ON THE PERSONALITY TRAITS OF KCA UNIVERSITY STUDENTS IN NAIROBI COUNTY, KENYA.

### ABSTRACT

Personality is the culmination of an individual's thoughts, emotions, and behaviour. Research has indicated that some factors influence the environment, including birth order. This study aimed to examine the impact of biological birth order on personality traits among university students in Nairobi County. The study objectives were to find out the impact of birth order on the agreeableness of university students in Nairobi County, to determine the impact of biological birth order on the openness of university students in Nairobi County, to find out the impact of biological birth order on the conscientiousness of university students, to find out impact of biological birth order on extraversion of university students in Nairobi county and to determine the impact of biological birth order on neuroticism of university students in Nairobi county. This study was guided by the use of the Big Five model, a personality theory upheld by psychologists at the time. The research targeted 200 university students in Nairobi County, specifically at KCA University. The study employed a survey research design, with the targeted respondents and sample size including university students enrolled in KCA University within Nairobi County, totaling 200 respondents.

A stratified sampling technique was used, and the data collected were analyzed using the SPSS package. Findings were presented in tables and figures. Studying the impacts of birth order on personality was essential, as it helped young adults understand and appreciate the differences in personality within their family setups. The study found significant variations in personality traits among university students, particularly when considering their birth order. Firstborns were generally found to score higher on traits such as conscientiousness and openness, while later-born children displayed higher levels of agreeableness and extraversion. The research also revealed that birth order played a subtle but important role in shaping key personality aspects, influencing how students interacted with others and approached academic and social challenges. These findings contributed to a deeper understanding of how family dynamics might influence individual personality development and provided valuable insights for both personal growth and family relationships.

### ACKNOWLEDGEMENT

I thank God for enabling me to reach this far successfully. I thank my supervisor, Dr. Priscilla Gachigi, for her commitment and guidance through this research process. I have learned a lot from the wisdom that she has shared as she guided me through the study.

## TABLE OF CONTENTS

[DECLARATION](#)i

[ABSTRACT](#)ii

[ACKNOWLEDGEMENT](#)iii

[DEDICATION](#)vi

[LIST OF FIGURES AND TABLES](#)vii

[OPERATIONAL DEFINITION OF TERMS](#)viii

[CHAPTER ONE](#)1

[INTRODUCTION](#)1

[1.0 Background of the study](#)1

[2.0 Statement of the problem](#)6

[3.0 Purpose of study](#)8

[4.0 Objectives of the study](#)8

[2.5 Summary](#)37

[3.0 Introduction](#)39

[3.1 Research design](#)39

[3.2 Research location](#)40

[3.3 Study population](#)40

[3.4 Sampling procedures and sample size](#)41

[3.5 Data collection, instruments, and procedure](#)43

[3.5.1. Questionnaire](#)43

<a href="#"><u>3.5.2 Data Analysis Technique Presentation</u></a>	44
<a href="#"><u>3.5.3 Ethical considerations</u></a>	44
<a href="#"><u>CHAPTER FOUR</u></a>	46
<a href="#"><u>4.1 Introduction</u></a>	46
<a href="#"><u>4.2 Demographic data of the sample</u></a>	46
<a href="#"><u>4.3 Results presentation</u></a>	49
<a href="#"><u>CHAPTER FIVE</u></a>	65
<a href="#"><u>FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND</u></a>	65
<a href="#"><u>5.0 Introduction</u></a>	65
<a href="#"><u>5.1 Summary of research findings</u></a>	65
<a href="#"><u>5.1.1 The impact of biological birth order on openness of university students in Nairobi County</u></a>	65
<a href="#"><u>5.1.2 The Impact of biological birth order on the conscientiousness of university students in Nairobi County</u></a>	65
<a href="#"><u>5.1.3 The impact of birth order on extraversion of university students in Nairobi County</u></a>	66
<a href="#"><u>5.1.4 The impact of birth order on agreeableness of university students in Nairobi County</u></a>	66
<a href="#"><u>5.1.5 The impact of biological birth order on neuroticism of university students in Nairobi County</u></a>	67
<a href="#"><u>5.2 Conclusions of the study</u></a>	67
<a href="#"><u>5.3 Study Recommendations</u></a>	68
<a href="#"><u>5.5 Suggestions for further research</u></a>	69
<a href="#"><u>Appendix 1</u></a>	75
<a href="#"><u>Appendix 2: Budget</u></a>	78
<a href="#"><u>Appendix 3: Timelimes</u></a>	79

## DEDICATION

I dedicate this to all the people who did not give up on me, especially my family and supervisor, who encouraged me amidst various challenges along the way.

## LIST OF FIGURES AND TABLES

[Figure 1.1: Conceptual Framework](#)37

[Table 3.4: Stratum Total](#)42

[Table 4.2: Biological birth order](#)46

[Table 4.3: Response Rate](#)47

[Table 4.4: Gender of respondents Gender of respondents](#)47

[Table 4.5: Correlations](#)48

[Table 4.6: The relationship between birth order and personality](#)49

[Figure 2.2: Respondents age bracket](#)48

## OPERATIONAL DEFINITION OF TERMS

Personality: is the culminating result of an individual's thoughts, emotions, and behaviour

Conscientiousness defines one's ability to control one's impulse to advance goal-directed behaviour.

Agreeableness refers to how an individual tends to treat connections with other people.

Openness refers to an individual's willingness to try new things.

Neuroticism refers to the general emotional stability of a person through how they see the world.

Natural birth order: comprises the order in which children in a particular family are born.

Biological birth order: the placement into which one was born, that is, a firstborn, middle child, lastborn, or only child.

Psychological birth order is the role one perceives as being within one's family.

## CHAPTER ONE

### INTRODUCTION

This chapter presents the background of the study, the problem statement, the objectives of the study, the research questions, the significance of the study, the assumptions that are guiding the study, and the scope and limitations of the study.

#### 1.0 Background of the study

Researchers and the general public have been studying the relationship between biological birth order and personality (Adler, 1927). Personality is the culmination of an individual's thoughts, emotions, and behaviour (Pappas, 2017). Various researchers have sought to investigate the various personality traits exhibited by individuals within society. Some researchers have resulted to attributing aspects such as environment as the main contributing factor to personality traits. Other researchers have identified various categorizations of personality traits, such as the four personality types. The four personality types consist of personality types A, B, C, and D ("Understanding the 4 Personality Types: A, B, C, and D | Hire Success®" n.d.) . This particular categorization seeks to offer a broad categorization of the various personality traits. Another categorization of personality traits employed by various research offers four major categorizations. The categorizations include average, reserved, role models, and self-centred; this particular categorization offers a broader perspective on uncovering personality traits (Holohan, 2018). This study will examine the impact of birth order on the Big Five personality; the vital reason

for focusing on the Big Five personality traits is to gain a diverse yet narrowed scope for expanding research.

The Big Five personality traits are specific; each trait is narrowed down to a specific set of characteristics. The spectrum is also broad in the sense that it offers five different traits that will help form a grounded platform for investigating birth order. This research seeks to enculturate birth order and personality; using the Big Five personality trait spectrum, it offers a broad array for attribution that will seek to encompass the first, middle, and last born of a family (Holohan, 2018). The big five personalities are openness, conscientiousness, extraversion, agreeableness, and neuroticism. Researchers agreed on the five as the essential traits. The Big Five model focuses on conceptualizing traits as a spectrum as individuals lie between rather than extreme ends. Conscientiousness defines one's ability to control one's impulse to advance goal-directed behaviour (Grohol, 2019). Agreeableness refers to how an individual tends to make connections with other people (Ackerman, 2017). Openness refers to an individual to try new things. Neuroticism refers to the general emotional stability of a person through how they see the world (Lim, 2020).

Alfred Adler, a humanist psychologist, argued that every individual in a family structure is an independent being from a holistic perspective (Adler, 1927). Various views of the world, paired with interactions with the world, shape the person's personality. Interactions among other members of the family, as well as the placement in the family, play a part in influencing individual character (Adler, 1927). Natural birth order comprises the order in which children in a particular family are born (Jocelyn, 2019). For example, in a family of three, the first child will be the

firstborn, the second child will be the middle child, and the third child will be the last born. The firstborn child, depending on the environment, may exhibit the following characteristics: reliability, conscientiousness, cautiousness, achievers, and control. The middle child may exhibit the following characteristics depending on the ground: they may be people-pleasers, thrive on friendships, and be peacemakers. The last child may tend to be an attention seeker, fun-loving, outgoing, and manipulative (Jocelyn, 2019).

Previous researchers have tried to investigate the influences of birth order on individual personality traits. Birth order is the order in which an individual is born into the family (Pappas, 2017). Adler, a renowned philosopher and psychiatrist, was one of the first to research the impact of birth order and personality. According to Adler, various aspects influence a person's character other than birth order, such as the immediate environment. Adler classified birth order into two parts: biological birth order and psychological birth order. Biological birth order is the placement into which one was born, that is, a firstborn, middle child, lastborn, or only child (Leman, 2009). Psychological birth order is how one perceives the role they play within their family (Adler, 1927).

In 1874, Francis Galton, the last born in the family with nine siblings, analysed a sample of English scientists (Rohrer, Egloff & Schmukle, 2015). Galton suspected that the eldest son received preferential treatment from the parents. The special treatment given by the parents resulted in the firstborns growing to be more intellectually. In 1927, Adler, a second-born, extended the view of Galton. Adler believed that firstborns were privileged as well as burdened by neuroticism. Later

borns are deemed as lacking empathy (Rohrer, Egloff & Schmukle, 2015).

After Adler and Galton's empirical studies were carried out to find out if biological birth order affects personality (Rohrer, Egloff & Schmukle, 2015), the study found that firstborns had higher intelligence than later borns. Seventy years after Adler, researcher Frank Sulloway introduced the Family Niche theory of birth order. Sulloway argued that occupying a niche in a family reduces inter-sibling competition. Birth order highlights the differences in age, size, and power as being determinants of niches occupied in a family. The family dynamics were assumed to aid in creating personality differences between siblings. (Rohrer, Egloff & Schmukle, 2015).

In a 2017 study, Rohrer found that birth order does not affect personality (Rohrer, Egloff & Schmukle, 2015). Empirical research on intelligence and birth order has shown a decline from the firstborns down to the lastborns. Rohrer found that birth order had no effects on extraversion, emotional stability, conscientiousness, and imagination. The researcher found that the birth order affected intellectual development (Rohrer, Egloff & Schmukle, 2015).

A study conducted by Sandra E. in 2017 in Sweden on recruiting military males between the ages of 18-20 years to measure personality using standardized psychological evaluation (Sandra E, 2017). Tests were conducted, and their findings revealed that men with higher scores were considered emotionally stable, persistent, socially outgoing, willing to assume responsibility, and could easily take the initiative. The middle-born and the lastborn children were given scores lower than the firstborns, meaning they were not as emotionally stable, less socially outgoing,

and not as persistent as the firstborns (Sandra E, 2017). This study focused mainly on males, in particular military men.

A study done by Rupali S in 2016 on participants from Pt. Deendayal Upadhyay Joint Hospital in Moradabad district in India is for people between 20 and 30 years of age on birth order, personality, and mental health. The study aimed to explore the possible effect of birth order personality and mental health. The results proved that the differences in the person tested revealed that the eldest born scored low on social, ambitions, and confidence, using the Fisher scale, in their personality trait. The middle and youngest born scored very low on social, confident, and ambitious on their personality traits (Rupali S, 2016). This study, however, was limited to the influence of birth order on mental health.

A correlative study was done among secondary students in Akure in Southwestern Nigeria on birth order and education performance (Fanyi, 2014). The aim was to determine how birth order influences academic performance. The findings revealed that the firstborn child was likely to perform better than the middleborn and the lastborn. The above findings were a result of maximum attention given to the firstborn and high expectations from the family on the firstborn to guide other siblings to academic success. In most Nigerian families, parents put more effort into training the first child, which may affect the development of the other children if the parents are not cautious. This study was, however, limited to exploring academic success and how it varied among siblings (Fanyi, 2014).

A study was conducted in Tanzania among 183 second-year students from the

College of Dodoma on the connection between siblings' birth order interaction and self-esteem development (Nhandi, 2017). Using the Rosenberg standardized self-esteem questionnaire test, the findings revealed that birth order and social environment influenced self-esteem. The birth order of college students and the family environment are critical in facilitating students' career specialization. Firstborns have high self-esteem. Hence, they were more altruistic in their careers than the middle-born and lastborn. The interaction between the birth order and social environment contributed to the personality of the firstborns exhibiting high scores of self-esteem due to maximum parental attention, love, and care that the latter did not receive. The study focused on the influential role of the social environment and birth order in attributing personality traits. It, however, offers a narrow scope in exploring varying personality traits; this is because it zones down on self-esteem (Nhandi, 2017).

Wamalwa and Burns (2017) examined how gender and birth order influence intra-household schooling decisions and children's educational attainment in Kenya. Their findings indicated a negative effect of birth order effects on private enrolment, relative grade attainment, and completed years of education. They also noted that familial wealth significantly impacts the propagation of birth order effects that they observed.

A study done by Gabriel Chege in 2017 sought to investigate the impact of birth order on procrastination among college students in Eldoret town (Chege, 2017). In a study comprising a sample of sixty students, thirty males, and thirty females, the research concluded that there was a relationship between birth order

and procrastination. Among the firstborn, procrastination was almost non-existent. Most of the procrastinators were the last born. Only a few of the middle class were identified as procrastinators.

Personality traits such as procrastination, responsibility, emotional stability, and persistence significantly influence university students' academic and social outcomes. These traits are shaped by various factors, including birth order, which affects individual development through family dynamics and parental attention. Studying the relationship between personality traits and birth order among university students is essential to understand behavioural differences and support diverse learning needs. As students transition into adulthood, identifying how birth order influences their personality can help educators and counsellors design tailored interventions, foster personal growth, and enhance academic success, making it a relevant and impactful area of psychological research. There is a problem in society in exploring how firstborn, middleborn, and lastborn differ in extraversion, agreeableness, openness, conscientiousness, and neuroticism. This aspect has yet to be fully exhausted and explored. The mentioned studies were specific in investigating the influence of birth order on responsibility, procrastination, emotional stability, and persistency; however, they left a loophole on the impact birth order has on the Big Five personality traits. This study will investigate the impact of biological birth order on personality.

## 2.0 Statement of the problem

As students face increasing academic pressures and identity challenges, recognizing the impact of family dynamics on their personality development becomes crucial.

Despite extensive literature on birth order, limited research specifically targets university populations within diverse cultural contexts. This study aims to fill that gap by exploring how birth order contributes to personality differences among university students, offering insights for tailored educational and psychological support. The problem in the study is understanding how biologically related siblings differ in key personality traits—such as extraversion, openness, conscientiousness, agreeableness, and neuroticism—and how birth order impacts these differences. Previous research, particularly Frank Sulloway's (1996) meta-analysis of birth-order studies, suggests correlations between firstborn status and traits like conscientiousness, neuroticism, and extraversion, while later-born siblings tend to score higher in agreeableness and openness. However, while these findings offer insight, they do not fully capture the family dynamics that might influence personality development and the extent to which birth order and other familial factors play a role in shaping personality traits across different sibling groups. While prior studies, like Sulloway's (1996), offer foundational insights, the issue remains underexplored in modern contexts, particularly in diverse populations. There is a need to further explore how birth order affects the development of key personality traits and whether additional family dynamics, such as parental treatment, social interactions, and cultural background, play a more significant role than previously considered. This study seeks to fill the gap in current research and contribute to a more comprehensive understanding of family dynamics and personality formation.

In Nairobi County, Kenya, where diverse family structures and cultural dynamics prevail, many individuals seek to understand the causal factors behind

personality differences among siblings. This quest for understanding is vital for both psychological practice and personal development in the region. For instance, Rohrer, Egloff, and Schmukle (2015) argue that although birth order effects on personality may be minimal, subtle influences on intellectual development and personality traits exist and deserve local contextual exploration. Similarly, Mukangi (2010) highlights that in the Kenyan context, conscientiousness tends to be higher among firstborns, suggesting cultural factors may interplay with birth order in shaping personality. This study will investigate the correlative influence of biological birth order on personality traits, as discussed by Kevin Leman in *The Birth Order Book*. By focusing on university students in Nairobi County, this research aims to provide localized evidence on the relationship between birth order and personality. Understanding these effects will help clarify the ongoing debate and provide practical insights into how personality affects individuals' approaches to life, work, and study, thereby emphasizing the importance of examining birth order influences within this specific cultural and geographical setting.

None of the reviewed research used the five traits to investigate the effects of birth order on personality. The data from previous studies is inconsistent in determining if biological birth order and personality are related. The topic has been of much debate over time, and there are multiple studies on the issue, and the results are mixed. This study will address the biological birth order of the Big Five personalities. Previous studies have yielded an array of possibilities on how birth order influences varying personality traits. This study will narrow its scope and investigate the implications of birth order on the Big Five personality traits in young

adults. Through extensive research and data collection, it will seek to explore how extraversion, neuroticism, agreeableness, openness, and conscientiousness are influenced by biological birth order.

### 3.0 Purpose of study

The purpose of this study is to investigate the impact of biological birth order on the Big Five personality traits among university students.

### 4.0 Objectives of the study

The objectives of the study will be:

- 1) To find out the impact of birth order on the agreeableness of university students in Nairobi County.
- 2) To determine the impact of biological birth order on the openness of university students in Nairobi County.
- 3) To find out the impact of biological birth order on the conscientiousness of university students in Nairobi County.
- 4) To find out the impact of biological birth order on the extraversion of university students in Nairobi County.
- 5) To determine the impact of biological birth order on neuroticism of university students in Nairobi county.

## Hypothesis

There is a significant relationship between an individual's birth order and their personality traits (agreeableness, openness, conscientiousness, extraversion, and neuroticism).

1. Hypothesis 1: There is a significant relationship between biological birth order and the level of agreeableness among university students in Nairobi County.
2. Hypothesis 2: There is a significant relationship between biological birth order and the level of openness among university students in Nairobi County.
3. Hypothesis 3: There is a significant relationship between biological birth order and the level of conscientiousness among university students in Nairobi County.
4. Hypothesis 4: There is a significant relationship between biological birth order and the level of extraversion among university students in Nairobi County.
5. Hypothesis 5: There is a significant relationship between biological birth order and the level of neuroticism among university students in Nairobi County.

## 5.0 Significance of the study

Studying the influence of birth order on personality is essential since it may help young adults understand and appreciate the differences in personality within their family setups. It may be influential in helping young adults and the older population, in general, to attribute their personality traits to their birth order.

It may also be influential for young adults to further understand more about themselves by learning the Big Five personality traits. Personality determines one's approach to life and other aspects of work, and it is essential to know if birth order affects personality.

The study may also help future researchers by providing a platform for further research on the topic. Additionally, it may offer a basis for entertaining critiques of the study. This study is important since it may prove pivotal in exploring how Big Five personality traits manifest and are different among biological siblings.

#### 7.0 Limitations of the Study

The study focuses on the impact of biological birth order on the Big Five personality traits, namely, neuroticism, agreeableness, extraversion, conscientiousness, and openness of university students in Nairobi County. In particular, the study will focus on the Big Five personality traits to help avoid ambiguous results. The independent variable in this study is personality and the Big Five personality traits, while the dependent variable is biological birth order. The location is narrowed down to universities in Nairobi County mainly because it has a wide array of universities within the region; it will provide an array of participants during data collection. Nairobi County is convenient since all the participants of this research reside within the county.

#### 8.0 Assumptions of the study

Some assumptions were developed for this study. The study will assume that all respondents and participants used in this research will be highly cooperative. The study also assumes that the target population will be easily accessible for the

research and will provide the required set of data for the study.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter will highlight the concepts reviewed and of relevance to the study. It will review past literature on the impact of biological birth order on the personality traits among various university students. The review was done on readily available literature, especially the ones that are available online.

#### 2.1 Theoretical framework

Using the Big Five model, personality is organized into five key traits: openness, conscientiousness, extraversion, agreeableness, and, most often, what is called neuroticism (shortened to OCEAN) (Ambachew,2006). Using this model is significant for the current study since it helps us organize and examine how a person's place in the family lineup can shape a few specific personality features. The study uses the Big Five framework to judge each personality trait individually and also as a group to find out if being born earlier or later affects personal traits. Applying this theory, the study points out that personality is not simply a few categories but actually ranges from little to much of each trait in individuals. By considering different positions on the spectrum, the researchers are able to examine small differences in personality traits among university students according to their birth order. As recent research concludes, firstborns often display more conscientiousness or neuroticism, whereas later-born children reflect more agreeableness or openness. Generally, the Big Five model is accepted and well-studied, which gives the study an appropriate and strong

basis for exploring personality differences connected to birth order.

## 2.2 Review of related studies

### 2.2.1 Birth order

The question of whether birth order influences various developmental outcomes, including educational success, has been a subject of substantial interest in psychological and sociological research. Birth order effects have been linked to personality traits, academic motivation, and achievement, though findings across studies have often been mixed. Several studies have explored how birth order influences academic success, with some highlighting significant effects while others suggest that the relationship is minimal or shaped by other variables such as family dynamics, socioeconomic status, and parental expectations.

One of the most comprehensive studies in this area was conducted by Esposito, Kumar, and Villaseñor (2020), who explored birth order and educational outcomes in Mexico using data from a national census of two million people. The study sought to determine how birth order affects educational attainment and whether these effects differ across various socioeconomic statuses. The authors found that firstborn children generally performed better academically, and this advantage was amplified for male firstborns, especially when they had younger sisters. This finding may be linked to the gender roles and expectations that are often more stringent for girls in traditional settings. In families with greater economic resources, firstborns' educational outcomes were notably higher, suggesting that wealth can amplify birth order effects. However, the study also found that while firstborns were advantaged, the advantage decreased in

households with lower wealth or relative deprivation. This indicates that the impact of birth order on education is not universal but contingent upon a family's financial and social situation. The study highlights the importance of considering the socioeconomic context when assessing birth order effects on educational outcomes (Esposito, Kumar, & Villaseñor, 2020).

In contrast, Ambachew (2006) conducted a study in Ethiopia that examined birth order's effects on academic achievement, motivation, and personality traits. Using a survey design, Ambachew administered self-report questionnaires to 160 participants (104 male and 56 female) from a Social Science College. The questionnaires assessed participants' academic motivation, personality traits, and academic achievement, with an emphasis on birth order as a significant factor. The results revealed a statistically significant relationship between birth order and both personality traits and academic achievement motivation. Firstborns exhibited higher levels of academic motivation, which Ambachew attributed to the higher expectations placed on them by their parents. This aligns with earlier findings that suggest firstborns are often expected to be role models for younger siblings, a responsibility that may drive them to perform better academically. Additionally, firstborns were characterized by more assertive and dominant personality traits, which could facilitate academic success. These findings are consistent with those of other studies suggesting that birth order influences not only academic outcomes but also behavioral traits that contribute to educational success (Tarekegn, 2006).

However, Leman (2009) suggests that the influence of birth order is not solely related to individual characteristics but also to family dynamics and parental

involvement. Leman posits that firstborns often experience greater pressure from their parents, leading them to develop stronger academic abilities due to the higher expectations placed upon them. However, these expectations can also lead to stress and anxiety, which may negatively affect their overall well-being. On the other hand, later-born children might not face the same pressures and might benefit from more relaxed parenting as parents gain more experience. This relaxed parenting style could encourage more creativity and independence in later-born children, but it may also mean that they are less academically driven. Leman's work highlights how family dynamics, in addition to birth order, play a crucial role in shaping educational outcomes. For example, later-born children may have fewer resources or less attention devoted to them compared to their older siblings, which can result in lower academic performance (Leman, 2009).

Another influential study was conducted by Falbo (2012), who performed a meta-analysis of over 30 studies on birth order and academic achievement. Falbo's analysis confirmed that while firstborn children generally outperform their siblings academically, the effect is relatively small. The meta-analysis showed that birth order effects were more pronounced in families with higher socioeconomic status and in academic settings where external achievement was highly valued. For example, firstborns are often given more attention and resources from parents, which can lead to better academic outcomes. However, the research also found that these advantages diminish in families with fewer resources, where later-born children may not have the same access to academic support. Falbo's work suggests that birth order effects on education are not deterministic but influenced by broader

family and societal factors. Furthermore, the study pointed out that family structure and parental involvement can sometimes negate the advantages typically associated with being a firstborn (Falbo, 2012).

Additionally, Sulloway (2001) took a different approach to studying birth order, proposing the "niche theory," which suggests that siblings adopt different roles or niches within the family based on their birth order. According to Sulloway, firstborns are more likely to be assertive, conscientious, and achievement-oriented because they are given leadership roles early in life. Later-born children, on the other hand, may develop more creative and unconventional approaches to problem-solving, often as a way of differentiating themselves from their older siblings. These differing roles can influence not only their personalities but also their academic approaches and success. Sulloway's theory of sibling niches underscores the idea that birth order impacts education by shaping how children perceive themselves in relation to their siblings and their parents' expectations. Thus, birth order does not operate in isolation but interacts with other familial and social factors to shape educational outcomes (Sulloway, 2001).

In addition to these studies, Kohn, Carmichael, and McClelland (2006) further explored how parental education and involvement could mediate birth order effects. Their research found that firstborn children tend to have parents who are more involved in their education, which can boost their academic performance. This involvement might be due to the fact that parents often see their firstborn as a "test case" for their parenting and educational strategies. In contrast, later-born children may not receive the same level of parental attention or academic support, as parents

may already have established routines and educational practices that are not as focused on the younger siblings. The study illustrated that birth order effects are intertwined with parental strategies and the overall family structure, making it clear that birth order alone cannot explain academic achievement.

The literature on birth order and educational outcomes is diverse and complex. While many studies suggest that firstborn children tend to perform better academically due to higher parental expectations and increased responsibilities, other factors such as socioeconomic status, family dynamics, and parental involvement are crucial in shaping the educational success of children. Studies by Esposito, Kumar, and Villaseñor (2020), Ambachew (2006), Leman (2009), and Falbo (2012) all provide valuable insights into how birth order affects academic motivation and achievement, though their findings highlight the need for a nuanced understanding that incorporates broader family and social contexts. Future research could further investigate the interplay between these factors and the long-term effects of birth order on educational outcomes across different cultural and socioeconomic groups.

### 2.2.2 The impact of birth order on Openness

The study of birth order's influence on personality traits has been a subject of considerable interest in psychology. One specific trait that has drawn attention is Openness to Experience, which is one of the Big Five personality traits. Openness refers to the extent to which individuals are willing to engage in new experiences, entertain new ideas, and explore different perspectives. This trait has been linked to a range of behavioral outcomes, including creativity, intellectual curiosity, and

adaptability. Studies exploring how birth order affects Openness have found that this relationship is complex and context-dependent, with differing results across various cultural and familial contexts.

One key study on the impact of birth order on Openness was conducted by Gordon Menzies, Olena Stravrunova, and Oleg Yerokhin (2016), who examined personality traits in Australia. The researchers used data from the Household Income and Labour Dynamics in Australia (HILDA) survey, which offers a rich dataset containing detailed information on individuals' family backgrounds and personality traits. Their findings revealed a significant relationship between birth order and Openness, with firstborns exhibiting lower levels of Openness compared to their middle-born and last-born siblings. Specifically, firstborns were found to be less open to new experiences and ideas, and they were less likely to engage in risky behaviors, such as entrepreneurial ventures, compared to later-born children. This trend could be attributed to the greater responsibility and higher expectations placed on firstborns, which may foster more cautious and conventional approaches to life. In contrast, later-born children, who might experience less pressure and more relaxed parenting, were more open to novelty and change. This research adds an important dimension to understanding birth order's effect on personality, though it is based on Australian data, and the cultural context may differ from other regions, such as Kenya, where this study will be conducted (Menzies et al., 2016).

In a related study, Ninette van Aarde, Deon Meiring, and Brenton M. Wiernik (2017) performed a meta-analysis of 33 studies examining the relationship between the Big Five personality traits and job performance across the world. Their research

included data from over 6,700 individuals and aimed to explore how traits like Openness influence performance in the workplace. The results of the meta-analysis showed that Openness to Experience was positively correlated with higher performance in job-related tasks, particularly in environments that require adaptability and creativity. Individuals who scored higher on Openness were better able to adjust to changes within their organizations and more receptive to innovation. This finding underscores the practical implications of Openness in real-world contexts such as employment. However, the study did not focus on a specific age group, and it is possible that age-related factors (such as early career stages or life experiences) could influence the degree to which Openness impacts job performance. Although this study focused on workplace settings, it provides valuable insight into how Openness, as a personality trait, can be relevant in understanding broader outcomes, such as success in academic or professional environments. However, the study's lack of focus on specific age groups may have limited its ability to fully capture the nuances of personality development, particularly during adolescence and early adulthood (van Aarde et al., 2017).

A more localized study conducted by Ratemo and Kay (2020) explored the relationship between birth order and marital communication patterns in conflict resolution among women in Nakuru West Constituency, Kenya. The study's population comprised 152,257 women, and a sample of 384 respondents was selected using a stratified random sampling technique. Data was gathered using a structured questionnaire, with primary data being supplemented by secondary data from online county records. The findings revealed a strong positive relationship

between birth order and communication patterns in marital conflict resolution. Specifically, middle-born and last-born women were found to rank higher on Openness, demonstrating greater receptiveness to new ideas and perspectives in resolving conflicts. These women were more likely to approach marital disagreements with an open mind and were more flexible in their problem-solving strategies. This aligns with earlier findings suggesting that later-born children tend to be more open to new experiences. The study's focus on marital communication patterns offers a unique perspective on how birth order influences interpersonal dynamics, though it focused exclusively on women, leaving a gap in understanding how birth order might affect male personality traits. Furthermore, this study suggests that birth order can influence personality traits that are not only relevant to personal growth but also to social interactions and relationship management (Ratemo & Kay, 2020).

Expanding on the impact of Openness, Sulloway (2001) proposed a theory of sibling niches that could help explain the variation in Openness across birth order. According to Sulloway's Niche Theory, siblings carve out unique roles within the family dynamic to minimize conflict and competition. Firstborns, often seen as natural leaders and responsible individuals, tend to develop traits that align with traditional expectations, such as conscientiousness and cautiousness. In contrast, later-born children, who are less constrained by these expectations, are more likely to adopt novel approaches, take risks, and express their creativity. These differing roles within the family contribute to differences in personality traits such as Openness. Later-born children, feeling less pressure to conform to strict family

roles, may exhibit higher levels of Openness as they explore new ideas, behaviors, and social roles. This theory helps explain why later-born children might be more inclined toward creativity, innovation, and flexibility, qualities often associated with high Openness (Sulloway, 2001).

Further reinforcing this argument, Leman (2009) also contributed to the understanding of birth order's influence on personality, including Openness. Leman's research suggests that firstborn children often take on leadership roles within the family, a position that may limit their willingness to explore uncharted territory. Meanwhile, later-born children, who are less burdened by the expectations of leadership, may develop a more open, exploratory approach to life. Leman's work indicates that the characteristics of Openness may be more pronounced in middle and last-born children, who have more freedom to explore different aspects of life without the burden of setting an example for others.

These studies, along with others, suggest a clear pattern that birth order plays a significant role in shaping personality traits, including Openness. Firstborns, often tasked with taking on greater responsibility and adhering to higher expectations, tend to score lower on Openness compared to later-born children, who experience more relaxed parenting and are often encouraged to explore new ideas and experiences. However, it is important to note that while birth order may play a role in the development of Openness, other factors such as parenting style, socioeconomic status, and cultural context also contribute to the overall personality development of an individual.

The relationship between birth order and Openness is complex and influenced

by numerous factors. Studies such as Menzies et al. (2016), van Aarde et al. (2017), and Ratemo & Kay (2020) provide valuable insights into how birth order may affect personality traits, particularly Openness to new experiences. While firstborns tend to be less open and more cautious, later-born children are generally more open, creative, and flexible. These findings suggest that birth order can influence not only academic and career success but also interpersonal relationships and conflict resolution. Further research, particularly in diverse cultural and familial contexts, will be essential to fully understanding how birth order shapes personality traits such as Openness across the lifespan.

### 2.2.3 The impact of biological birth order on the Conscientiousness

Research on the relationship between birth order and personality traits has revealed interesting patterns, particularly in relation to conscientiousness, a trait defined by an individual's degree of organization, discipline, responsibility, and goal-oriented behaviors. Several studies have explored how birth order impacts conscientiousness, with findings suggesting that firstborn children tend to exhibit higher levels of conscientiousness than their later-born siblings. This pattern is observed across various studies, conducted in different geographical and cultural contexts, contributing to a growing understanding of how birth order shapes personality traits.

One of the studies that explored birth order and conscientiousness was conducted by Healey and Ellis (2007) in New Zealand. They sent out 750 mailed questionnaires to participants on the South Island, ultimately receiving 237 responses, 174 of which were correctly completed. Their research required that firstborn and second-born siblings be between 18 months and 5 years apart and

raised in the same household. The study's findings revealed that firstborn siblings scored significantly higher on conscientiousness compared to their second-born siblings. These results suggest that firstborn children, due to their higher levels of responsibility and greater parental expectations, tend to develop more disciplined and goal-oriented behaviors than their later-born siblings. Firstborns often face the challenge of being role models for their younger siblings, which might foster the development of conscientious traits. While the study was conducted in New Zealand, its findings have broader implications, especially in societies where firstborns are generally expected to assume leadership roles within the family. However, the context of New Zealand differs from other regions, such as Kenya, where the study being proposed will be conducted. Thus, while the results of Healey and Ellis are valuable, their applicability to different cultural settings and educational contexts needs further exploration.

In another study, Fasina (2015) explored the relationship between birth order and academic performance among secondary school students in Akure, Nigeria. Fasina surveyed 240 students aged between 14 and 16 years using standardized questionnaires and random sampling. The study found that firstborns were more likely to score higher on conscientiousness, which in turn contributed to better academic performance. This relationship could be attributed to the fact that firstborn children often receive more attention from their parents, particularly in their early years. The increased parental involvement and expectations may push firstborns to be more responsible, disciplined, and focused on their academic tasks. Consequently, firstborns are often more motivated to achieve academically, with

conscientiousness serving as a key predictor of academic success. Fasina's study provides important insights into how birth order can affect academic outcomes, but it focused primarily on the academic performance of secondary school students. In contrast, the study being proposed will examine university students, who may experience different pressures and expectations in their academic and social environments. University students, especially those at the undergraduate level, encounter unique challenges that are not the same as those faced by secondary school students. Therefore, it is crucial to assess whether the same relationship between birth order and conscientiousness applies at the university level.

Another study conducted in Nairobi, Kenya, by Mukangi (2010) examined the relationship between birth order and conscientiousness in the context of substance-related disorders. Mukangi's study involved 28 male participants who were undergoing rehabilitation in a private center. The participants' ages ranged from 18 to over 50, with the majority being between 31 and 40 years old. Interestingly, the study revealed that those who rated themselves as psychological firstborns exhibited higher levels of conscientiousness. These participants were characterized by greater self-discipline and a more responsible approach to their behavior, which aligns with the traits associated with conscientiousness. In contrast, those who did not identify as psychological firstborns demonstrated lower levels of conscientiousness. Mukangi's study focused specifically on individuals with substance-related issues, and it suggested that the traits of conscientiousness could be protective against risky behaviors, such as substance abuse. This finding aligns

with previous research showing that conscientious individuals tend to make more prudent decisions and are less likely to engage in harmful behaviors. Although the study sheds light on the link between birth order and conscientiousness, it primarily focused on a clinical population, making its results less generalizable to the broader population, such as university students. The current study will aim to explore how birth order affects conscientiousness in a non-clinical group, specifically among university students in Kenya.

The findings from these studies indicate that firstborns generally exhibit higher levels of conscientiousness compared to their later-born siblings. This difference in conscientiousness can be attributed to various factors, including the greater parental expectations placed on firstborns. Firstborn children are often required to assume leadership roles within the family, a responsibility that can promote the development of more disciplined and organized behaviors. These children are typically the focus of their parents' educational efforts, with a significant amount of attention directed toward ensuring their success. As a result, firstborns are often more goal-oriented and responsible, traits that are integral to conscientiousness.

However, while firstborns tend to score higher on conscientiousness, later-born children often develop different strategies to carve out their own identities within the family structure. According to Sulloway's (2001) Niche Theory, siblings tend to adopt unique roles to reduce competition and conflict. Firstborns, who are often expected to be responsible and disciplined, take on more traditional roles within the family, displaying higher levels of conscientiousness. On the other hand,

later-born children, who are less burdened by these expectations, may develop greater creativity and openness to new experiences. These later-born children might be less focused on strict responsibility and more inclined toward exploring new ideas, often exhibiting characteristics that reflect higher levels of Openness rather than conscientiousness. This theory suggests that while firstborns may be more conscientious, later-born children may excel in other traits, such as creativity and risk-taking, which are not the focus of the present study but are important to consider in the broader context of personality development.

Moreover, Adler's Birth Order Theory also provides an explanation for the relationship between birth order and conscientiousness. According to Adler, the firstborn child is often placed in a leadership role, leading to a strong sense of responsibility and control. These traits align with the characteristics of conscientiousness, such as reliability and self-discipline. Firstborns typically take on more responsibility in family settings, which may explain why they are more conscientious than their younger siblings. In contrast, younger siblings may develop more relaxed personalities, often adopting traits that allow them to differentiate themselves from the firstborn, leading to variations in conscientiousness levels.

The cultural and familial context also plays a significant role in shaping the relationship between birth order and conscientiousness. In cultures where there is a strong emphasis on hierarchy, firstborn children may experience even greater expectations from their parents. In contrast, in more egalitarian societies, the difference between firstborns and later-borns in terms of conscientiousness may be less pronounced. For example, in Kenya, where extended family dynamics and

community values play a significant role, firstborns may feel pressured to live up to expectations not only from their immediate family but also from the broader social network. These pressures could amplify the conscientiousness of firstborns, making them more likely to develop traits associated with discipline and responsibility.

Overall, the relationship between birth order and conscientiousness appears to be influenced by multiple factors, including parental expectations, family dynamics, and cultural context. While firstborns tend to score higher on conscientiousness, later-born children may exhibit greater openness or creativity. The current study aims to build upon the existing literature by focusing on university students in Kenya, where the academic environment and family dynamics may differ from those in other countries, such as New Zealand or Nigeria. By examining how birth order influences conscientiousness among university students, the study will provide valuable insights into the development of personality traits in this particular cultural and educational context.

#### 2.2.4 The Impact of biological birth order on the extraversion

The relationship between birth order and personality traits has been an enduring subject of interest for researchers across the globe. Among the many personality traits affected by birth order, self-esteem, life satisfaction, extraversion, and introversion have been particularly studied. The research suggests that birth order

plays a significant role in shaping these traits, although the impact may vary depending on cultural context, family dynamics, and the age group being studied. Several studies have been conducted to examine the influence of birth order on these traits, including studies in Scotland, Tanzania, and Kenya. The results of these studies provide valuable insights into the relationship between birth order and personality traits, but they also highlight how varying contexts can produce different outcomes.

One of the significant studies that have contributed to the exploration of birth order's impact on personality, self-esteem, and life satisfaction was conducted by Johnson (2014) in Dublin, Scotland. Johnson aimed to investigate the controversial definition of birth order and its effects on self-esteem, life satisfaction, and personality among individuals aged 18-40 and those over 40. Using an online survey, Johnson gathered data from 200 participants, focusing on questions regarding participants' birth order, appearance, self-esteem, life satisfaction, and age. The data was then analyzed to determine the correlations between birth order and various personality traits, including extraversion, self-esteem, and life satisfaction.

The study found that life satisfaction was positively correlated with extraversion, suggesting that people who scored high on extraversion tended to report higher levels of life satisfaction. Interestingly, Johnson's research did not find a direct correlation between birth order and life satisfaction, but it did reveal that firstborns were often more likely to be introverted and displayed a more serious approach to life, whereas later-borns were more likely to exhibit extraverted

tendencies. This pattern reflects the more traditional view that firstborns take on more responsible, leadership roles in the family, which could lead to a more serious, cautious approach to life, potentially affecting their self-esteem and life satisfaction. Meanwhile, later-born children, who might be afforded more freedom and less responsibility, may develop more sociable and extraverted personalities.

Johnson's study provided important insights into the relationship between birth order, personality, and life satisfaction, though it focused primarily on self-reported data from a relatively small sample, which may limit its generalizability. The study was conducted in Scotland, so its cultural context might differ significantly from other regions, such as Kenya, where the proposed study will be carried out. The social expectations and family dynamics in Scotland might not align with those in Kenya, making it important to explore whether the patterns observed in Johnson's study hold true in different cultural settings.

Another significant study that explored the relationship between birth order and self-esteem was conducted by Nhandi (2017) in Tanzania. Nhandi's study aimed to examine how birth order influences self-esteem among second-year undergraduate students at the University of Dodoma. The research included a total of 183 students from two distinct colleges: the College of Health Sciences and the College of Informatics and Virtual Education. Participants were asked to complete Rosenberg's Standardized Self-Esteem Scale, and the data were analyzed using descriptive statistics such as percentages and frequencies.

The findings revealed that later-born children tended to have lower self-esteem compared to their firstborn counterparts. Nhandi suggested that the lower

self-esteem observed in later-born children could be due to the greater attention and higher expectations placed on firstborns, which could promote a sense of responsibility and self-assurance. In contrast, later-born children, who may feel less pressure to succeed, could experience lower self-esteem. This finding suggests that firstborns, with their role as “trailblazers” in the family, may develop stronger self-confidence and higher self-esteem, especially in academic and social settings. On the other hand, later-born children might develop traits such as extraversion as they attempt to differentiate themselves from their older siblings.

Although Nhandi's study focused specifically on self-esteem, the results are relevant to broader discussions about birth order's influence on personality. By linking birth order to self-esteem, Nhandi's study provides useful insights into how different positions in the family hierarchy can impact one's self-perception. However, Nhandi did not explore other aspects of personality, such as extraversion or conscientiousness, which are also influenced by birth order. Additionally, the study's focus on Tanzanian undergraduate students limits the applicability of its findings to broader age groups or non-student populations. The current study, conducted in Kenya, will address personality traits more comprehensively, considering other aspects of personality beyond just self-esteem.

A study conducted by Stephen, Jean, Loise, and Vincent (2017) in Nairobi, Kenya, explored the influence of sibling birth spacing on personality traits such as extraversion, introversion, and aggressiveness. The study utilized a correlation design and mixed methods approach, gathering data from 75 participants selected from three schools in Nairobi using a combination of purposeful and random sampling

techniques. The participants completed standardized questionnaires, and observations were also made regarding their personality traits.

The findings of the study indicated that children with close sibling spacing were more likely to exhibit extraverted behaviors, while those with widely spaced siblings were more introverted and less likely to engage in social activities. This suggests that the family environment and the closeness between siblings may play a crucial role in shaping personality traits like extraversion and introversion. Close sibling spacing may foster greater competition and social interaction, which could encourage extraverted behaviors, while widely spaced siblings might have more solitary experiences, potentially leading to introversion.

However, the study conducted by Stephen et al. (2017) was focused solely on extraversion, introversion, and aggressiveness, leaving other dimensions of personality unexplored. The current study will expand on this by investigating all Big Five personality traits – extraversion, neuroticism, conscientiousness, agreeableness, and openness to experience – and their relationship with birth order. By considering a broader range of personality traits, the current research will provide a more comprehensive understanding of how birth order influences personality in Kenyan university students. Additionally, the study by Stephen et al. was conducted among adolescents, whereas the current study will focus on adults, particularly university students, whose experiences and personality development might differ from younger adolescents.

The studies reviewed here highlight the diversity in research on birth order and personality, especially with respect to self-esteem, life satisfaction, and traits

like extraversion and introversion. While Johnson (2014) and Nhandi (2017) focus on self-esteem and life satisfaction, Stephen et al. (2017) focus on extraversion and introversion, and each study reveals unique insights. The key takeaway from these studies is that firstborn children tend to develop traits like extraversion or conscientiousness due to parental expectations, responsibilities, and early experiences, while later-born children may develop different strategies and traits, such as greater extraversion or creativity.

Despite the valuable insights provided by these studies, they also highlight the importance of cultural and contextual factors. For instance, the relationship between birth order and personality traits may differ in Kenya compared to Scotland or Tanzania, due to differences in family dynamics, educational systems, and societal expectations. The proposed study, conducted in Kenya, will examine these relationships among university students, a demographic that may experience unique academic, social, and familial pressures.

In conclusion, the impact of birth order on personality traits such as self-esteem, extraversion, and life satisfaction is a multifaceted area of research. Studies conducted in Scotland, Tanzania, and Kenya have provided valuable insights into how birth order influences these traits, although each study has its own limitations and focuses on different aspects of personality. The current study, which will focus on Kenya, aims to build on these findings by examining a broader range of Big Five personality traits among university students. This research will provide a more comprehensive understanding of how birth order influences personality in the Kenyan context and offer further contributions to the field of psychology.

### 2.2.5 The impact of biological birth order on the agreeableness

The impact of birth order on personality traits and other behavioral characteristics has been widely debated in the field of psychology. Understanding how birth order influences the development of personality is central to the study of family dynamics. Several theoretical frameworks have been proposed to explain these dynamics, and numerous studies have explored how birth order affects aspects such as agreeableness, procrastination, dominance, and academic achievement. This body of research emphasizes that while birth order plays a significant role, it is not the sole determinant of personality traits. Environmental factors, family dynamics, and the broader cultural context in which a person is raised all contribute to shaping personality. This expanded literature review explores key studies and theories on birth order, personality, and behavioral outcomes.

Sulloway's theory of Family Niche (1996), introduced in his book *Born to Rebel*, is one of the foundational frameworks in understanding birth order effects on personality. Sulloway's theory builds on Adler's findings and provides an evolutionary perspective on sibling dynamics. Sulloway suggests that siblings adapt to their roles within the family system by carving out "niches" that allow them to reduce rivalry and increase cooperation. This adaptation, according to Sulloway, enhances the survival or fitness of sibling relationships. In this context, birth order plays a crucial role in determining each sibling's niche. Firstborn children, being physically superior to their younger siblings, tend to exhibit more dominant behavior and are often less agreeable, according to Sulloway. This can result in firstborns assuming leadership roles within the family, which influences their personality

development. On the other hand, later-born children, who may not exhibit the same level of dominance, often develop traits like creativity and flexibility.

Sulloway's Family Niche Theory emphasizes that siblings' personalities are shaped not just by birth order but by the need to differentiate themselves within the family, much like Darwin's finches adapting to different ecological niches. This evolutionary perspective helps explain why birth order may influence traits like agreeableness, conscientiousness, and leadership tendencies, with firstborns more likely to be assertive and dominant, and later-borns often developing more cooperative, creative, or rebellious traits (Sulloway, 1996).

The idea of birth order affecting personality traits is not limited to theories alone but has been supported by empirical studies. One such study conducted by Ositoye, Adeyemi, and Onabarniro (2010) in Nigeria focused on the influence of birth order on academic achievement. Their research involved a sample of 300 students from six senior secondary schools, with 156 firstborns and 154 later-born students. The study found that firstborns were more agreeable than later-borns, a trait commonly associated with higher conscientiousness and academic success. Firstborns in the study also demonstrated higher levels of responsibility, suggesting that their position in the family might encourage traits such as diligence and organization, which are crucial for academic achievement. This study aligns with Sulloway's theory by emphasizing the differences in family dynamics between firstborn and later-born children. Firstborns, often subjected to higher expectations and greater responsibilities, may develop personality traits that contribute to their academic success, including agreeableness, discipline, and conscientiousness.

However, the study was limited to secondary school students in Nigeria, and its findings may not be directly applicable to university students, whose academic and social experiences differ significantly from those of secondary school students. The current study, which will focus on university students, aims to explore how birth order affects broader personality traits, including agreeableness, openness, and neuroticism, in a more mature and diverse population (Ositoye et al., 2010).

Another interesting area of study involves procrastination, which has been linked to birth order and personality traits such as agreeableness and conscientiousness. Gabriel (2015) conducted a study in Eldoret, Kenya, on the impact of birth order on procrastination among college students. Using an ex post facto design, the study surveyed 60 students—20 firstborns, 20 middle children, and 20 lastborns—at the KIM School of Management. The results indicated that lastborn children were more likely to procrastinate compared to firstborns and middle children. This tendency to procrastinate was associated with lower levels of agreeableness, which refers to the ability to get along with others and exhibit self-regulation. Procrastination is often linked to low conscientiousness, as individuals who procrastinate may struggle with time management, planning, and prioritization. According to the study, firstborns, who are more likely to be conscientious and responsible, were less prone to procrastination compared to their younger siblings. The study's findings suggest that personality traits like agreeableness and conscientiousness, which are influenced by birth order, may play a role in procrastination behaviors. Lastborn children, who tend to be less responsible and more spontaneous, are likely to exhibit procrastination, while firstborn children, who

have higher levels of conscientiousness, are more focused and organized. However, the study was limited to college students in Eldoret, and the current research, which will take place in Nairobi, will explore whether these patterns hold true in a different urban setting with a more diverse student population (Gabriel, 2015).

In addition to the studies mentioned above, Pilar Horner (2012) expanded on Sulloway's work by emphasizing the importance of the environment in shaping the effects of birth order on personality. Horner's work stresses that while birth order provides a framework for understanding sibling relationships, it is the broader environmental factors—such as parenting styles, socioeconomic status, and cultural norms—that ultimately influence how birth order shapes personality. For example, firstborn children may not only develop dominant behaviors due to their natural position in the family but may also experience stricter parental control, leading them to develop higher levels of conscientiousness. In contrast, later-born children, who may experience more lenient parenting, may develop greater openness and creativity. Horner's work suggests that birth order alone does not determine personality but must be considered alongside other environmental and contextual influences. This holistic view is important for the current study, which aims to examine how both birth order and environmental factors contribute to personality development in university students in Kenya.

The relationship between birth order and personality traits is not only confined to academic and social behavior but also extends to the formation of self-esteem. Studies have shown that firstborns tend to have higher self-esteem due to

the increased responsibility and validation they receive from parents. In contrast, later-born children may experience lower self-esteem due to less parental attention and fewer expectations. This discrepancy in self-esteem levels can contribute to differences in personality traits such as agreeableness and neuroticism. Firstborns, with their higher self-esteem, are more likely to develop stable and agreeable personalities, while later-borns, who may struggle with lower self-esteem, may develop higher levels of neuroticism. The current study will explore how these differences in self-esteem, driven by birth order, influence personality traits among university students in Kenya.

Furthermore, cultural factors play a significant role in determining how birth order affects personality traits. In collectivist cultures, where family and group harmony are highly valued, firstborn children may be expected to assume leadership roles, which can foster traits such as responsibility, leadership, and conscientiousness. In contrast, in individualistic cultures, later-born children may be encouraged to pursue personal interests and develop unique personalities, which can lead to traits such as creativity and openness. Understanding these cultural nuances is essential for studying birth order's impact on personality in Kenya, a country with a rich cultural diversity and complex family dynamics.

In conclusion, the relationship between birth order and personality is complex and multifaceted, influenced by both intrinsic factors like family dynamics and extrinsic factors like environmental influences. Theoretical frameworks like Sulloway's Family Niche Theory, combined with empirical studies on birth order and its effects on personality traits such as conscientiousness, agreeableness, and

procrastination, provide valuable insights into how birth order shapes personality. However, these effects are not deterministic, and other factors, such as family environment, parenting styles, and cultural context, must be considered to fully understand how birth order influences personality development. The current study, which will examine university students in Nairobi, aims to build on existing research by exploring the broader effects of birth order on personality, self-esteem, and academic behavior, contributing to a deeper understanding of how birth order shapes individual characteristics in diverse cultural contexts.

#### 2.3.6 The impact of biological birth order on neuroticism.

The question of whether an individual's birth order influences their life path has been a longstanding topic of research in psychology. Over the years, numerous studies have examined how birth order shapes personality traits such as neuroticism, agreeableness, extraversion, and conscientiousness, as well as its broader effects on life outcomes such as life satisfaction and academic achievement. While early research on birth order suggested significant effects on personality development, more recent studies have questioned whether these effects are robust across different populations and contexts. A closer look at both theoretical perspectives and empirical findings can shed light on how birth order may or may not influence personality, particularly in different cultural and institutional contexts.

Rohrer, Egloff, and Schmukle (2015) conducted a comprehensive study that sought to examine whether birth order influences personality traits such as neuroticism. The researchers utilized data from three large national panels: the United States (n = 5,240), the United Kingdom (n = 4,489), and Germany (n =

10,457), allowing for significant statistical power to detect even very minimal effects. By analyzing these datasets, the researchers aimed to answer the question of whether birth order has a noticeable effect on personality across multiple cultural contexts.

Their study found that birth order did not affect neuroticism, which was one of the key personality traits under investigation. Neuroticism is characterized by tendencies toward emotional instability, anxiety, moodiness, and a general tendency to experience negative emotions. The findings suggested that birth order, at least in relation to neuroticism, might not have as strong an impact as previously assumed. This study contributed to the ongoing debate in the field of psychology, especially as it challenged the idea that firstborns or later-borns are inherently more or less neurotic. While the findings of Rohrer et al. (2015) might be seen as diminishing the role of birth order in personality development, it is important to note that their study focused on a specific personality trait, and other factors, such as environmental influences, family dynamics, and culture, could still play crucial roles in shaping personality development.

The current study, which focuses on university students in Kenya, aims to examine whether birth order influences a wider range of personality traits, including those captured in the Big Five Personality Inventory, such as conscientiousness, openness to experience, extraversion, agreeableness, and neuroticism. The context of university students in Kenya provides a unique cultural setting that may differ from those examined by Rohrer et al. (2015), potentially leading to different results. Additionally, the current study will utilize primary data collected from

questionnaires, which allows for a more focused examination of how birth order influences personality in the Kenyan educational and familial context.

Onyishi, Okongwu, and Ugwu (2012) conducted a study in Nigeria that examined the relationship between personality, social support, and life satisfaction among 601 employees of the Nigerian Prisons Service. The study aimed to explore how personality traits predict life satisfaction, using instruments such as the Life Satisfaction Index-Short Form, the Big Five Inventory, and the Multidimensional Scale of Perceived Social Support. Their findings showed that neuroticism—a personality trait characterized by emotional instability and tendency toward negative emotions—was a significant predictor of life satisfaction, with lower levels of neuroticism being associated with higher life satisfaction.

This finding is important in the context of birth order research, as neuroticism is often linked with firstborns, who are typically seen as more anxious and more prone to perfectionism due to the higher expectations placed upon them by parents. However, the study focused on employees in a correctional facility, and it is unclear whether the findings would generalize to university students, who may face different pressures and life circumstances. The current study in Kenya will focus specifically on university students, who often navigate different social and academic pressures than employees in the workforce. By examining how birth order correlates with personality traits like neuroticism, the research will help clarify whether the patterns observed by Onyishi et al. (2012) are present in a younger population, such as university students, and whether they differ across cultural contexts, such as in Nigeria and Kenya.

In addition to studies on personality traits and their relation to life satisfaction, Wamalwa and Burns (2017) explored the impact of birth order on intra-household investments and educational outcomes in Kenya. Using data from the third round of the Uwezo Survey, which evaluates the literacy and numeracy skills of school-aged children, the study found that birth order influences educational outcomes, with firstborns generally having better educational performance. The study highlighted the educational advantage often experienced by firstborn children, likely due to the greater time and resources invested by parents in their education.

However, Wamalwa and Burns (2017) did not address personality traits in their research. While they focused on academic outcomes, it is likely that personality traits such as conscientiousness, agreeableness, and neuroticism also play a role in educational success. Firstborns, who tend to score higher on conscientiousness, may be more likely to excel academically due to their disciplined approach to studying and greater responsibility for setting an example for their younger siblings. On the other hand, later-born children may exhibit higher levels of openness to experience or extraversion, traits that could foster creativity and social engagement but may not always translate into higher academic performance. The current study, which will focus on personality traits among university students, will expand on Wamalwa and Burns' research by examining the broader range of personality traits and how they correlate with academic success and overall life satisfaction among university students in Kenya.

Additionally, the study conducted by Sulloway (1996), which introduced the

Family Niche Theory, posits that siblings adapt to their roles in the family system by developing different personality traits to reduce conflict and increase cooperation. Firstborns often develop more dominant, responsible, and conscientious traits, as they are expected to be leaders and role models. Later-borns, who do not bear the same expectations, often develop traits such as creativity, openness, and a willingness to take risks. This theory provides a useful lens for understanding how birth order could influence personality traits like agreeableness, neuroticism, and conscientiousness, which are all relevant to both academic success and life satisfaction.

While studies like Sulloway's (1996) and Rohrer et al. (2015) argue that birth order has limited or negligible effects on personality, other research suggests that birth order still plays a significant role in shaping who we are, especially when considering the broader family dynamics, cultural expectations, and socio-economic factors that can influence the development of personality. For example, firstborns in some cultures may experience more pressure and higher expectations from their parents, leading them to develop higher levels of conscientiousness and a strong sense of responsibility, which could enhance their academic and professional outcomes. Later-born children, on the other hand, may experience more relaxed parenting styles, which could promote traits such as openness and extraversion, but might also be associated with higher levels of neuroticism due to less parental attention and guidance.

The evidence reviewed here points to the fact that while birth order may not have a one-size-fits-all effect on personality, it is clear that it plays a significant role

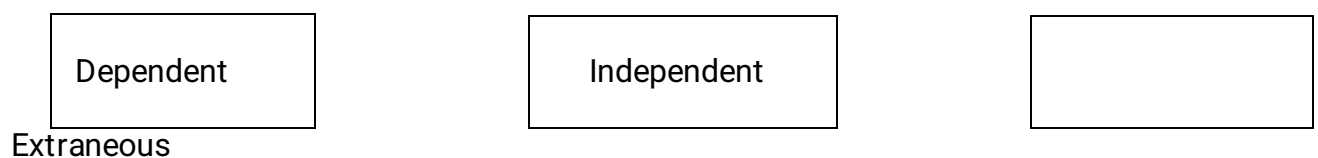
in shaping personality traits. However, it is equally important to recognize that birth order is only one of many factors influencing personality development. The current study, which will focus on university students in Kenya, aims to examine the effects of birth order on a broader range of personality traits while considering cultural, familial, and environmental factors. By exploring birth order's impact on personality in the Kenyan context, the study will contribute to the ongoing debate on how this factor influences personality and behavior in diverse cultural settings.

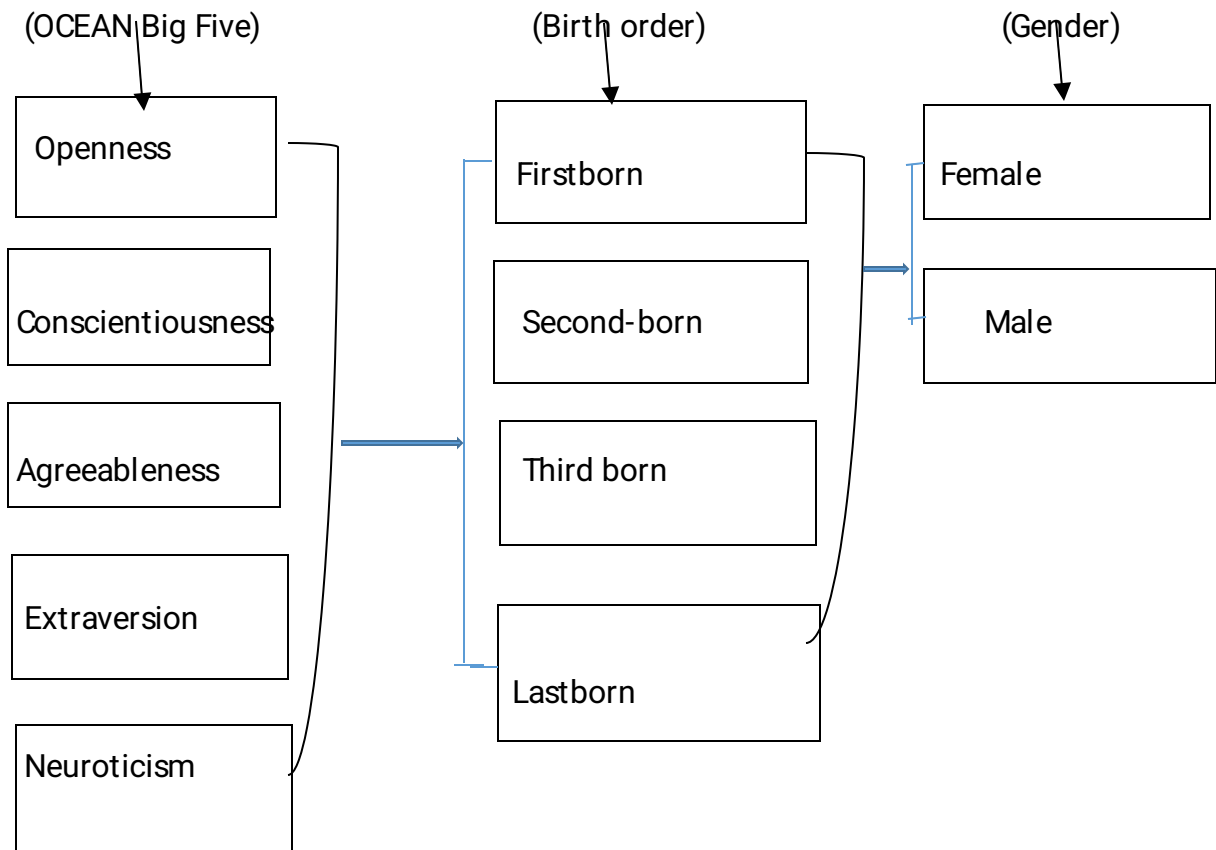
In conclusion, while many studies suggest that birth order may influence personality traits, such as neuroticism, conscientiousness, and agreeableness, it is essential to consider the context in which these studies are conducted. The cultural and environmental influences on birth order's effect on personality can vary significantly between different countries and populations. The current study at KCA University will add to this growing body of research by examining the relationship between birth order and personality traits among university students in Kenya, providing insights into how birth order influences personality within the unique Kenyan educational and familial context.

#### 2.4 Conceptual framework

FIGURE 1

Conceptual Framework





## 2.5 Summary

In this study, the independent variable is biological birth order, categorized into four levels: firstborn, second-born, middle-born, and lastborn. The dependent variables are the Big Five personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. This research investigates how different positions within the family structure, as defined by birth order, influence the development and expression of these personality traits among university students in Nairobi. It is based on the assumption that birth order shapes family dynamics and individual experiences, which may, in turn, affect personality formation. The aim is to identify patterns and correlations between specific birth order categories and the levels of each Big Five trait.



## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0 Introduction

The chapter will present the outline of the research methodology proposal for the study. The study is centered on the investigation of the impact of biological birth order on the Big Five personality traits. The methodology includes the research design, study variables, research location, sample population, sampling procedure, and size, data collection instruments and methods of data analysis, identity and reliability of research instruments, data analysis and presentation, along with the ethical considerations.

#### 3.1 Research design

A research design is a method that a researcher adopts to conduct a scientific study methodically. It is the overall synchronization of identified components and data that leads to a reasonable conclusion. The research design offers a systematic platform for the study of scientific problems. For this study, the study design will use the survey correlation design. According to (Jhangiani, 2019), correlation research is a form of non-experimental research where the researcher measures two variables and investigates the statistical relationship between the measured variables with little to no effort in controlling extraneous variables. In this case, the two variables that will be assessed are biological birth order and Big Five personality traits. This research design is highly practical; this is because the independent variable, which is the Big Five personality traits, will not be manipulated, and

therefore, we will seek to measure the influential role that biological birth order has on the development of the Big Five personality traits.

### 3.2 Research location

KCA University's main campus was selected as the research location due to its diverse student population, which reflects a wide range of backgrounds in terms of age, gender, ethnicity, and socioeconomic status. This diversity provides an ideal setting to study the impact of biological birth order on personality traits, as it allows for a more representative sample of university students in Nairobi County.

Additionally, the university has a sufficiently large student body, enabling the collection of a robust sample size to support statistical analysis. Based on preliminary observations, students at KCA University demonstrate varied family structures and cultural backgrounds, which are important factors that may influence birth order effects. Moreover, the university environment fosters academic and social interactions that could interact with personality development, making it a relevant context for exploring these relationships. These factors collectively justify choosing KCA University as the site for this study.

### 3.3 Study population

In the current study, the target population will consist of students enrolled at KCA University for at least one year. This population will include students from various schools and departments across the university. There will be no specific prioritization of any particular department or school; however, to begin, the study will initially focus on students from the Education, Arts, and Social Sciences department using the convenience sampling method. KCA University has a student

body of over 16,000 students, representing various schools and programs, making it an ideal candidate for this study. To ensure that the sample is representative and valid, the study will implement stratified random sampling. This will involve dividing students into categories based on their school or faculty and then selecting participants randomly from each group, ensuring the proportions are representative of the university's population.

By doing this, the study will encompass students from a variety of academic disciplines, genders, age groups, ethnicities, and other demographic characteristics. The goal is to include 200 students in total. This stratified sampling method will ensure that the findings are generalizable and reflect the different ways in which a student's position within their family may affect their personality traits, regardless of their school or program of study. The researcher will select proportionately from each school. This is because stratified random sampling ensures that each department or school is represented according to its size within the university. This method helps in capturing a broad and diverse range of students from various academic backgrounds, which enhances the validity and representativeness of the study findings.

#### 3.4 Sampling procedures and sample size

The study made use of a mixed-gender stratified random sampling method, targeting an average of 16,000 students. Stratified random sampling is a type of probability sampling in which the population is divided into strata or groups based on specific characteristics, such as having siblings in this case. Random sampling

was then conducted within each stratum to ensure that the sample reached the expected value of 200 students from KCA University. This method was employed to enhance the representativeness of the sample and eliminate sampling bias.

To ensure that only students with siblings were included, a screening question was incorporated at the beginning of the data collection process. The questionnaire began with a question asking participants if they had biological siblings and, if so, how many. This self-report method allowed the researchers to verify eligibility without infringing on participants' privacy. Students who confirmed having siblings proceeded to complete the full questionnaire, which assessed birth order and personality traits. This approach ensured that the sample included individuals relevant to the study's objectives while maintaining ethical standards and participant confidentiality.

The sample for the study consisted of students from the main campus of KCA University, selected through a stratified random sampling technique. This method was chosen to ensure that various subgroups within the university population—such as gender, year of study, or academic program—were adequately represented, thereby enhancing the generalizability and validity of the findings. Within each stratum, participants were randomly selected to eliminate selection bias and allow for more reliable statistical analysis. A total of 400 students were included in the sample, representing a diverse and balanced cross-section of the university's student population.

TABLE 1

Stratum Total

Stratum	Gender	Year of Study	Total
---------	--------	---------------	-------

			Students in Stratum
Male - Year 1	Male	Year 1	25
Female - Year 1	Female	Year 1	25
Male - Year 2	Male	Year 2	25
Female - Year 2	Female	Year 2	25
Male - Year 3	Male	Year 3	25
Female - Year 3	Female	Year 3	25
Male - Year 4	Male	Year 4	25
Female - Year 4	Female	Year 4	25
Male -	Male	Academic	25
Academic Program A		Program A	
Female -	Female	Academic	25
Academic Program A		Program A	
Male -	Male	Academic	25
Academic Program B		Program B	
Female -	Female	Academic	25
Academic Program B		Program B	

### 3.5 Data collection, instruments, and procedure

Primary data will be collected via a self-administered questionnaire to the sample size. The questionnaire will contain a mixture of both structured and unstructured questions. The questionnaire is ideal as it is confidential for the respondent and is

time-saving. The researchers will seek permission from the university and will assure the respondents that their data is for the sole purpose of the study.

### 3.5.1. Questionnaire

The study administered questionnaires to volunteer students from the University, incorporating both structured and unstructured sets of questions. The questionnaire was divided into two sections, Section A and Section B, each aimed at investigating the variables in the study. Section A focused on birth order, posing structured questions to explore how participants perceive their birth order position within the family. For example, one question in this section asked, "How would you describe what being a firstborn is?" This structured approach ensured that participants could clearly identify and describe their family role, providing valuable data on birth order.

Section B aimed to assess the Big Five personality traits, including openness, conscientiousness, extraversion, agreeableness, and neuroticism. For example, participants were asked, "Do you consider yourself outgoing?" To measure these traits, a Likert scale was used, where participants rated their responses as "strongly agree," "agree," "neutral," "disagree," or "strongly disagree." A total of 19 questions were included in this section to assess the presence of each of the Big Five traits.

The use of structured questions in both sections enhanced the validity and reliability of the study, ensuring that each variable was consistently measured across participants. The Likert scale, a widely used and well-established method for assessing attitudes and personality traits, further increased the viability of the study by providing quantifiable data for statistical analysis. By combining both structured questions and the Likert scale, the study ensured a clear and comprehensive

evaluation of how birth order correlates with the Big Five personality traits.

### 3.5.2 Data Analysis Technique Presentation

The data collected will be edited and analysed using the SPSS package version 21. Descriptive and inferential statistics will be used to analyse the data, and the findings will be presented in tables and figures.

### 3.5.3 Ethical considerations

Researchers plan on getting informed consent from KCA University's main campus so that they can conduct the study on the university premises. The authorization will be sought from the Department of Psychology at KCA University to conduct the study, as well as approval from the university's Institutional Ethical Review Board to ensure that all ethical standards are met. Additionally, clearance will be obtained from the National Commission for Science, Technology, and Innovation (NACOSTI) to comply with national research regulations. Participants will be fully informed that their involvement is voluntary and that the data collected will be used solely for research purposes, ensuring informed consent is maintained throughout the study. To protect participants' privacy and confidentiality, all personal identifiers will be removed, and respondents will be assigned unique codes or allowed to use initials or pseudonyms. The study will guarantee anonymity by ensuring that no identifying information can be linked to individual responses in the research data or reports. These measures will uphold participants' rights and foster trust in the research process. The researchers will use the collected data for analysis, and the questionnaires will be disposed of. The findings will be shared with the University.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION

#### 4.1 Introduction

In this chapter data is interpreted and presented, guided by objectives.

1. To determine the impact of biological birth order on the openness of university students.
2. To find out the impact of biological birth order on the conscientiousness of university students.
3. To find out the impact of birth order on the extraversion of university students in.
4. To find out impact of biological birth order on agreeableness of university students.
5. To determine the impact of biological birth order on neuroticism of university students.

#### 4.2 Demographic data of the sample

The demographic data of the respondents is presented in the table below.

TABLE 2

	BIOLOGICAL BIRTH ORDER	
Participants	Frequency	Percentage
First born	192	43.34%
Second born	86	19.41%
Later born	48	10.84%



TABLE 4

GENDER OF RESPONDENTS

Participants	Frequency	Percentage
Male	191	44.1%
Female	252	55.9%

Females readily agreed to participate in the study at a higher number compared to males. This results evidences findings that unveil the disparities in gender associated with participating in research. With the variations in gender, age still played a role in the number of participants who agreed to participate in the study.

FIGURE 2

RESPONDENTS AGE BRACKET

The age bracket 18-20 had 85 respondents, 21-23 age bracket had 108 respondents, and 24-26 age bracket had 195 respondents. The age bracket 27 and above had 55

respondents. One aspect remains clear and distant, the larger representation of students is aged 24-26 while the least are aged 18-20 proving that older students were more inclined to participate in the study compared to the year's students who are in their earlier years of school.

TABLE 5  
CORRELATIONS

Personality Trait	Firstborn	Second born	Later born	Lastborn
Openness	0.30	0.10	-0.05	-0.02
Conscientiousness	0.45	0.20	0.12	0.25
Extraversion	0.20	0.30	-0.10	-0.05
Agreeableness	0.35	0.25	0.10	0.15
Neuroticism	-0.15	-0.20	0.05	0.10

#### 4.3 Results presentation

TABLE 6  
RELATIONSHIP BETWEEN BIRTH ORDER AND PERSONALITY

Birth order	Openness		Conscientiousness		Extraversion		Agreeableness		Neuroticism	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%

First born	q	11.3	284	64.1%	q	6.8%	318	71.8%	q	9.9%	
Second born		265	59.8	74	16.7%	67	15.1	47	10.6%	262	59.1
Later born		76	17.2	50	11.3%	302	68.2	50	11.3%	73	16.5
Last born		52	11.7	35	7.9%	44	9.9%	28	6.3%	64	14.5

#### 4.3.1 Discussion of Results: Influence of Biological birth order on Openness personality trait among university students in Nairobi County

The outcome of the research reveals significant insights into the impact of birth order on the personality trait of openness to experience among university students. Specifically, the study found that second-born individuals scored the highest on openness, with 59.8% of second-born participants showing the highest levels of openness to experience. This was in contrast to firstborns, who scored the lowest on this trait. These findings highlight an important aspect of how birth order influences personality development, aligning with previous studies and theoretical frameworks that link birth order to distinct personality characteristics.

The observed pattern that second-borns scored highest on openness supports and extends the findings from van Aarde et al. (2017), who, in their meta-analysis of South African studies, found that middle-born employees ranked highest on the trait of openness. While second-borns and middle-borns occupy similar positions within

the family hierarchy, their increased exposure to familial dynamics, where they are not burdened with the same responsibilities and expectations as firstborns, may contribute to their higher levels of openness. In other words, second-borns may have more freedom to explore new ideas, be more flexible, and engage with novelty in ways that firstborns, who typically take on more leadership roles within the family, may not. This pattern suggests that the second-born position might foster a more open-minded, creative, and adaptive personality, which is a central characteristic of the openness to experience trait.

The research outcome also aligns with the Family Niche Theory proposed by Sulloway (1996), which posits that siblings carve out specific roles within the family to minimize competition and reduce conflict. According to this theory, firstborns tend to adopt more dominant, responsible, and rule-abiding behaviors because of the higher expectations placed upon them by their parents. In contrast, second-borns, who do not have the same level of responsibility and often face less pressure, may be more inclined to explore new experiences, challenge established norms, and express greater openness to experience. This distinction helps explain why second-born individuals in this study scored higher on openness compared to firstborns.

Additionally, the study's findings reflect the broader implications of birth order on personality traits beyond just openness. Firstborns are often seen as the “trailblazers” in the family and are expected to set an example for their younger siblings. This expectation can foster higher levels of conscientiousness, as firstborns are typically more focused on following rules, taking on leadership roles, and being reliable. On the other hand, second-borns, who may feel less pressured to take on

the role of the family leader, may exhibit more openness, which is characterized by creativity, curiosity, and adaptability. This contrast between openness and conscientiousness across birth order positions underscores the broader implications of how birth order affects a person's overall personality profile, influencing their behavior, decision-making, and even their academic and career success.

The relationship between birth order and openness also suggests that environmental and cultural factors play an important role in shaping personality traits. In cultures where the firstborn is expected to assume greater responsibility and leadership, firstborns may be more likely to develop traits such as conscientiousness, discipline, and a focus on tradition and order. Conversely, second-borns may experience more freedom to engage with new experiences, challenge conventions, and explore different ways of thinking, leading to higher levels of openness. Cultural variations in the roles assigned to firstborns and later-borns, as well as the specific parenting styles and family dynamics within different households, likely influence the degree to which these personality traits manifest.

In the context of the current study, which was conducted among university students at KCA University in Kenya, the findings suggest that second-born students may be more open to new ideas, experiences, and ways of thinking compared to their firstborn counterparts. This could be a result of their relative freedom from the leadership expectations that often accompany being the eldest child in the family. As university students are often at a stage in their lives when they are exploring new ideas and forming their own identities, the higher openness observed in second-born

individuals may contribute to their ability to adapt to the dynamic and evolving environment of university life. Their openness may make them more receptive to diverse perspectives, more likely to engage in creative problem-solving, and more willing to take intellectual risks traits that are beneficial in academic settings.

Moreover, the findings from the second-born group could have practical implications for understanding how birth order influences academic and social behaviors in university settings. Openness is strongly linked to creativity, critical thinking, and intellectual curiosity qualities that are essential for academic success. Given that second-born individuals in this study scored higher on openness, they may be better equipped to engage with complex, abstract concepts, approach academic challenges with a more flexible mindset, and contribute innovative ideas in group discussions and projects. This aligns with previous research indicating that higher levels of openness are associated with greater success in fields that require creativity, adaptability, and problem-solving.

However, while the study supports the general conclusion that second-borns exhibit higher levels of openness, it is important to consider the limitations of these findings. Firstborns, despite scoring lower on openness in this study, may still excel in other aspects of academic and social life, particularly in areas requiring conscientiousness, leadership, and organizational skills. Moreover, the findings of the current study are based on a specific population of university students, and these results may not be fully generalizable to other age groups, professional contexts, or cultural settings. Future research could further explore how birth order

influences not only openness but also other Big Five personality traits, such as conscientiousness, extraversion, and neuroticism, in diverse populations, including those from different regions, educational backgrounds, and family structures.

In conclusion, the outcome of the study provides strong evidence that second-born individuals tend to score higher on openness to experience compared to firstborns, reinforcing the idea that birth order can significantly influence personality development. The findings align with existing research, including the meta-analysis by van Aarde et al. (2017), and provide additional support for the Family Niche Theory, which suggests that siblings adapt to distinct roles within the family, with second-borns often taking on more creative, explorative, and open-minded personalities. These insights deepen our understanding of the intricate relationship between birth order and personality traits, particularly in the context of academic achievement, social interaction, and personal growth.

#### 4.3.2 Discussion of Results: Influence of Biological birth order on Conscientiousness personality trait among university students in Nairobi County

The results of the current study indicate that firstborns exhibit the highest levels of conscientiousness, with 64.1% of firstborn participants scoring the highest on this personality trait. In contrast, lastborns scored the least on conscientiousness. This finding aligns with several previous studies, suggesting that birth order plays a significant role in shaping the development of personality traits such as conscientiousness.

Conscientiousness is one of the Big Five personality traits and is defined by

characteristics such as self-discipline, responsibility, organization, and goal-orientation. Individuals high in conscientiousness are typically diligent, dependable, and careful in their decisions, while those lower in conscientiousness may display more spontaneous, less organized behaviors. The finding that firstborns score higher on conscientiousness can be attributed to several psychological and familial dynamics. One important explanation for this result is that firstborn children often assume more significant responsibilities within the family, both because they are the first to experience the expectations of their parents and because they are expected to set an example for younger siblings. This sense of responsibility can drive the development of conscientious behaviors, as firstborns often take on leadership roles and develop a strong sense of duty, organization, and reliability.

This finding is consistent with the research conducted by Amali Mukangi (2010), who studied the relationship between birth order and substance-related disorders in Kenya. Mukangi's study found that firstborns exhibited higher levels of conscientiousness compared to their later-born siblings. The study also suggested that firstborns' higher conscientiousness might contribute to their ability to make better decisions, which could protect them from engaging in risky behaviors, such as substance abuse. The higher conscientiousness observed among firstborns in both Mukangi's study and the current study may be linked to the role that firstborns often take in their family dynamics. Being the first child, they may face more structured parenting and higher expectations from their parents, which in turn fosters traits such as responsibility, discipline, and organization traits commonly associated with conscientiousness.

The role of parental attention and expectations is crucial in explaining why firstborns tend to score higher on conscientiousness. Research suggests that firstborn children often experience more focused parenting, as parents typically devote more time and resources to their first child. The higher levels of care and attention that firstborns receive can reinforce their sense of responsibility, as they are seen as role models for their younger siblings. In contrast, later-born children, such as lastborns, often receive less intense attention as parents' resources and time become more divided among the children. This difference in parental involvement could explain why lastborns tend to score lower on conscientiousness. Without the same level of expectation or responsibility placed upon them, lastborns may be less motivated to develop the same level of self-discipline, organization, and goal-oriented behaviors as firstborns.

Another factor that could explain the higher conscientiousness levels in firstborns is the family dynamics and how roles are allocated among siblings. According to Sulloway's Family Niche Theory (1996), siblings often adopt different roles within the family to reduce competition and increase cooperation. Firstborns, as the eldest siblings, often take on more mature roles and are expected to set an example for the younger children. This can lead to the development of conscientious traits such as organization, reliability, and leadership. As firstborns mature, they often carry the responsibility of guiding and teaching their younger siblings, which reinforces their conscientious behaviors.

In contrast, lastborns, who are often considered the "babies" of the family, are generally afforded more leniency and freedom from the high expectations placed on

their older siblings. This relative freedom may result in less emphasis on developing traits like conscientiousness. Lastborns often benefit from more relaxed parenting styles, as parents have already gained experience with the firstborn and may adopt a more permissive or less structured approach to raising subsequent children. As a result, lastborns may develop traits such as extraversion or openness, which are often associated with greater freedom to explore and experiment, rather than the focus on responsibility and discipline seen in firstborns.

Additionally, the findings in the current study contribute to the broader understanding of birth order's influence on personality development in different cultural contexts. While research on birth order and personality has been primarily focused on Western populations, studies like Mukangi's (2010) and the present one, conducted in Kenya, provide valuable insights into how cultural factors might shape the expression of personality traits. In Kenyan families, cultural values such as respect for elders and the importance of family hierarchy could further amplify the tendencies for firstborns to take on more responsible and conscientious roles within the family. These cultural influences might contribute to the stronger correlation between firstborns and conscientiousness observed in this study.

The current research underscores the importance of considering birth order as a factor in shaping not only personality traits like conscientiousness but also behaviors that are crucial in academic and professional success. The higher levels of conscientiousness among firstborns may contribute to their better organizational skills, higher academic performance, and greater career success. Firstborns may also be more likely to take leadership positions, both in their personal and professional

lives, due to their strong sense of responsibility and their ability to manage tasks efficiently.

In conclusion, the outcome of this study supports the idea that firstborns exhibit higher levels of conscientiousness compared to their later-born siblings. This finding is consistent with previous research, including Mukangi's study on substance-related disorders, and reinforces the notion that firstborns are more likely to develop traits such as responsibility, organization, and self-discipline due to the higher expectations placed on them within the family. While lastborns scored the lowest on conscientiousness, the study highlights the dynamic role that birth order plays in shaping personality traits and the broader implications this has on academic, social, and professional life outcomes. Further research could explore the relationship between birth order and other Big Five personality traits, such as extraversion, openness, and neuroticism, in order to deepen our understanding of how family dynamics influence personality development and behavior.

#### 4.3.3 Discussion of Results: Influence of Biological birth order on Extraversion personality trait among university students in Nairobi County

The study found that later borns were high on extraversion with 68.2 % while first borns were evidenced to score least on extraversion with the percentage of 6.8.

These findings seek to support previously published results and findings on the impact of biological birth order on extraversion. Research done by Daniel Nhandi in 2017 on birth order and self-esteem in Tanzania concluded that later borns are the most extraverted. This study supports our research findings in proving that later borns are highly extroverted. The next personality trait among the Big Five personality traits is agreeableness which will be discussed below.

#### 4.3.4 Discussion of Results: Influence of Biological birth order on Agreeableness personality trait among university students in Nairobi County

The findings from the present study, which revealed that firstborns scored the highest on agreeableness with 71.8% of firstborn participants ranking highest on this trait, while lastborns scored the least with only 6.3%, offer significant insight into how birth order influences personality. This significant disparity between firstborns and lastborns on agreeableness is consistent with existing research, particularly the study conducted by Gabriel (2015), which examined the impact of birth order on procrastination among college students in Eldoret, Kenya.

In Gabriel's study, the results clearly demonstrated that birth order plays a crucial role in shaping agreeableness. The study found that firstborns scored the highest on this trait, while lastborns scored the lowest. Agreeableness, one of the Big Five personality traits, is characterized by traits such as kindness, empathy, cooperativeness, and a willingness to get along with others. People high in agreeableness tend to be considerate, trusting, and helpful, while those low in agreeableness may be more critical, argumentative, or even antagonistic. The findings from both Gabriel's study and the present research suggest that firstborns tend to score higher on agreeableness due to their family roles and the responsibilities typically placed upon them.

In many families, firstborn children are often expected to assume leadership roles and act as role models for younger siblings. This responsibility could foster traits associated with agreeableness, such as cooperativeness and consideration for others, as they are required to maintain harmony within the family. Firstborns, who are generally the first to interact with their parents and engage with the world

outside the home, may also develop higher levels of social maturity early on, further contributing to their high scores in agreeableness. They are often exposed to more structured parenting and may be encouraged to develop traits like self-discipline, empathy, and a desire to please, which align with the characteristics of agreeableness.

On the other hand, lastborns, who are often seen as the "babies" of the family, may not be required to assume the same level of responsibility or leadership. Their position in the family often allows them to be the recipients of less strict parenting, which might contribute to a more independent and less conformist personality. Lastborns are generally afforded more freedom, and their behavior may not be as constrained by the same level of expectations that are placed on their older siblings. This could contribute to their lower scores on agreeableness, as they may develop more assertive, competitive, or self-focused behaviors, which may not align with the typical traits associated with agreeableness, such as cooperation and altruism.

The research conducted by Gabriel (2015) supports these observations, as it revealed a clear trend where firstborns exhibited higher levels of agreeableness and were less likely to procrastinate, while lastborns exhibited the opposite behavior. This finding is significant because it suggests that personality traits associated with agreeableness, such as self-control, cooperation, and social harmony, may play a role in reducing procrastination. Firstborns, who are often more conscientious and cooperative due to the role they play within the family, may be more adept at managing their time and responsibilities, which could contribute to their higher levels of agreeableness and lower levels of procrastination.

Furthermore, these findings have important implications for understanding how birth order can influence not only personality traits but also broader life outcomes, such as academic performance and social relationships. Since agreeableness is linked to positive social interactions, firstborns may find it easier to form and maintain harmonious relationships, both in their personal lives and in professional or academic settings. In contrast, lastborns, who may score lower on agreeableness, might experience challenges in certain social situations, as they may be perceived as more self-centered or less cooperative.

The significant difference observed in agreeableness between firstborns and lastborns in the current study aligns with broader psychological theories on family dynamics. For instance, Sulloway's Family Niche Theory (1996) suggests that siblings carve out different roles within the family to reduce conflict and increase cooperation. According to this theory, firstborns, who often take on more responsibility, develop traits that allow them to be effective leaders and caregivers, fostering higher levels of agreeableness. On the other hand, lastborns, who may experience less responsibility and enjoy greater parental leniency, may develop alternative strategies that are more self-focused, which could contribute to lower levels of agreeableness.

Additionally, cultural influences and parenting styles play an important role in shaping how birth order influences personality traits like agreeableness. In cultures where family hierarchy and respect for elders are emphasized, firstborn children may be expected to take on more mature roles, further reinforcing their conscientious and agreeable behaviors. In contrast, in cultures where individuality is

prioritized, later-born children may have more freedom to pursue their own interests and may not feel as compelled to adhere to traditional norms, which may result in lower agreeableness scores.

Overall, the present study's findings are consistent with existing research on the impact of birth order on personality traits, particularly agreeableness. The results suggest that firstborns tend to develop higher levels of agreeableness due to the greater responsibility and leadership roles they are expected to assume within the family. This aligns with the findings of Gabriel (2015) and further emphasizes the role of family dynamics and parenting styles in shaping personality traits. In contrast, lastborns exhibit lower levels of agreeableness, possibly due to their more permissive upbringing and lack of the same leadership expectations placed on firstborns. The findings of this study provide valuable insights into how birth order influences personality traits and contribute to a deeper understanding of how these traits shape individuals' social behaviors and academic or professional success.

#### 4.3.5 Discussion of Results: Influence of Biological birth order on Neuroticism personality trait among university students in Nairobi County.

The findings of the present study, which revealed that second-borns scored the highest on neuroticism (59.1%), while firstborns scored the least (9.9%), bring attention to a significant aspect of how birth order may influence personality traits. Neuroticism refers to a tendency to experience negative emotions such as anxiety, mood swings, and vulnerability to stress, and individuals high in neuroticism are often more prone to emotional instability. The fact that second-borns exhibited higher levels of neuroticism challenges some of the conclusions drawn in previous research, particularly a study by Rohrer, Egloff, and Schmukle (2015), which found

that birth order had no significant effect on neuroticism. The Rohrer et al. (2015) study analyzed large datasets from three countries (the United States, the United Kingdom, and Germany) and concluded that birth order had no impact on neuroticism. This conclusion is at odds with the findings of the current study, which clearly demonstrate a significant impact of birth order on neuroticism, with second-born individuals showing notably higher levels compared to firstborns.

The contrasting results between the present study and Rohrer et al. (2015) could be attributed to several factors, including differences in the study populations and cultural contexts. The current study was conducted among university students in Nairobi County, a specific population that may experience unique stressors and pressures, such as academic demands, social challenges, and the transition to adulthood. These factors could exacerbate emotional reactivity and vulnerability to stress, particularly among second-borns, who may feel a sense of competition or insecurity relative to their firstborn siblings. The findings from the current study suggest that second-borns are more emotionally sensitive, possibly due to the family dynamics and niche they occupy, which could make them more prone to higher levels of neuroticism compared to their firstborn counterparts.

In contrast, the Rohrer et al. (2015) study, which utilized a broad and diverse international sample, may have overlooked some of the contextual variables that are more relevant in the Kenyan context. For example, cultural factors such as parenting styles, family structure, and social expectations could play a crucial role in shaping how birth order influences neuroticism. In Kenya, where family roles and hierarchies can significantly affect personality development, second-borns may face different

pressures than in Western contexts, which might contribute to their higher neuroticism scores. Firstborns, on the other hand, who are often expected to take on leadership roles within the family, may develop greater emotional resilience due to the high expectations placed on them, making them less susceptible to neurotic tendencies.

One possible explanation for the higher neuroticism observed in second-borns is rooted in the family dynamics and the niche each sibling occupies, as proposed in Sulloway's Family Niche Theory (1996). According to this theory, siblings adapt to distinct roles within the family in order to minimize conflict and maximize cooperation. Firstborns, who typically take on more responsibility, may develop more emotionally stable behaviors, including better stress management and lower neuroticism, as they are accustomed to facing challenges head-on and leading by example. In contrast, second-borns, who may feel less pressure to take on the same responsibilities, might develop more emotional sensitivity, leading to higher neuroticism scores. The dynamic between firstborns and second-borns, where the former assumes more authority and leadership, could result in second-borns feeling overshadowed or less secure, contributing to emotional instability and heightened levels of neuroticism.

The findings also suggest that second-borns might experience greater emotional reactivity due to the family hierarchy and the comparative position they hold within the family. Second-borns may not only compete with their older siblings for parental attention but also feel the weight of trying to establish their own identity within the family. This constant comparison, particularly when it involves an

older sibling who often holds more authority or recognition within the family, could lead to feelings of insecurity and self-doubt, both of which are characteristic of neuroticism. These feelings may be exacerbated during the period of adolescence and early adulthood, when university students are forming their self-identity and trying to define their place in both the family and society.

Furthermore, the role of parental attention and expectations is also a significant factor in explaining the neuroticism observed in second-borns. In many families, firstborns often receive more focused attention and guidance from parents, as they are the first children to navigate life milestones. The relatively relaxed parenting style that second-borns often experience may lead them to develop traits such as greater independence but also a lack of emotional regulation, contributing to higher levels of neuroticism. Additionally, second-borns may not be under the same level of intense scrutiny or pressure, which could lead to more emotional responses to stressors, as they may not have developed the coping mechanisms that are often fostered in firstborns.

While the findings of the present study highlight that second-borns exhibit higher levels of neuroticism, it is important to consider that neuroticism is a complex personality trait influenced by a combination of genetic, environmental, and social factors. The family structure and dynamics play a significant role, but other factors, such as peer relationships, academic pressures, and socialization, also contribute to the development of neurotic tendencies. The higher neuroticism scores among second-borns in this study could therefore reflect not just their position within the family but also the specific challenges and stressors associated with their

stage in life.

In conclusion, while the study findings contradict the results of Rohrer, Egloff, and Schmukle (2015), which concluded that birth order does not impact neuroticism, the results of the present study offer a compelling argument for the role of birth order in shaping neuroticism. Second-borns, who score significantly higher in neuroticism compared to firstborns, may experience greater emotional sensitivity and reactivity due to family dynamics, parental expectations, and the challenges of finding their place within the family hierarchy. These findings emphasize the need for further research into how birth order influences personality traits like neuroticism, particularly in different cultural contexts and among specific populations, such as university students. Understanding the relationship between birth order and neuroticism can provide valuable insights into how family structures shape personality development and emotional well-being.

#### 4.4 Summary

In summary, this chapter presented the findings from a study on the impact of biological birth order on the Big Five personality traits among university students at KCA University, aligning with the study's objectives. The results revealed distinct patterns in how birth order influences personality traits such as conscientiousness, agreeableness, openness, extraversion, and neuroticism. Firstborns were found to score the highest in conscientiousness and agreeableness, reflecting their higher levels of responsibility, organization, and cooperativeness. These traits suggest that firstborns often take on leadership roles within the family, which encourages the development of qualities such as reliability, discipline, and a strong sense of duty.

However, firstborns also exhibited the lowest levels of openness and extraversion, which may indicate that their more structured upbringing leads to more reserved and less exploratory behaviors compared to their siblings.

In contrast, second-borns scored the highest in openness and neuroticism, suggesting that they are more open to new experiences but also more emotionally unstable. The higher openness among second-borns aligns with previous studies indicating that middle children often exhibit higher creativity, curiosity, and a willingness to embrace change. However, the increased neuroticism observed in second-borns could point to the emotional challenges they face in finding their niche within the family structure, potentially leading to higher levels of stress, anxiety, and emotional reactivity.

Lastborns, on the other hand, scored the highest in extraversion, indicating that they are more outgoing, sociable, and inclined to engage with others in social settings. This finding supports the notion that lastborns, often characterized as the “babies” of the family, may develop more social and assertive traits due to their less strict upbringing and the attention they receive from both parents and older siblings. However, lastborns also had the lowest scores in conscientiousness and agreeableness, suggesting that they may exhibit more spontaneous and less responsible behaviors, with a tendency to focus more on their personal desires and social interactions rather than on fulfilling duties and obligations.

These findings align with the study's objectives, which aimed to investigate how birth order affects the Big Five personality traits agreeableness, openness, conscientiousness, extraversion, and neuroticism among university students. The

study supports existing theories on the role of family dynamics and sibling positioning in shaping personality traits, with firstborns generally exhibiting higher levels of conscientiousness, agreeableness, and emotional stability. In contrast, later-borns, particularly lastborns, tend to display higher levels of extraversion and exhibit different patterns of neuroticism and openness.

Additionally, the demographic data indicated a predominance of females in the study, with the largest age group being 24-26 years. This demographic trend may reflect the typical university student population and could provide further insights into how gender and age influence personality traits in relation to birth order.

Overall, the study highlights the varying impact of birth order on personality traits among university students in Nairobi County. Firstborns generally exhibit higher levels of conscientiousness, agreeableness, and emotional stability, while later-borns, particularly lastborns, show higher levels of extraversion and greater emotional reactivity. These findings provide valuable insights into the influence of family dynamics on personality development and offer a more nuanced understanding of how birth order contributes to shaping personality traits across different birth positions

CHAPTER FIVE  
FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND  
SUGGESTIONS FOR FURTHER RESEARCH

5.0 Introduction

This chapter presents a summary of data findings on the impact of biological birth order on the personality traits among university students in Nairobi County. The chapter was structured into findings, conclusions and suggestions for further research.

5.1 Summary of research findings

5.1.1 The impact of biological birth order on openness of university students in Nairobi County

26.2 percent Respondents described themselves as outgoing, 17.6 percent agreed, 27.1 percent were neutral, 22.1 percent and 7.2 percent disagreed and strongly disagreed respectively. 20.1 respondents strongly agreed that they are assertive while 24.6 percent agreed, 20.9 percent were neutral and 22.5 percent and 11.7 percent disagreed and strongly disagreed respectfully. 40.2 respondents strongly agreed that they are reliable, 25.3 percent agreed, 22.1 percent were neutral and 12.4 percent disagreed. 17.2 percent respondents strongly agreed that they are cautious, 37.2 percent agreed, 7.7 percent were neutral and 23 percent and 14.9 percent disagreed and strongly disagreed respectively.

5.1.2 The Impact of biological birth order on the conscientiousness of university

#### students in Nairobi County

18.5 percent respondents strongly agreed that they are controlling, 20.5 percent agreed while 30.2 were neutral, 6.8 percent and 24 percent disagreed and strongly disagreed respectively. 17 respondents strongly agreed that they are attention seekers, 15 percent agree while 43 percent were neutral, 19 percent and 7 percent disagreed and strongly disagreed respectively. 29 percent respondents strongly agreed they were proactive, 26.2 percent agreed while 22.1 percent were neutral, 16 percent and 6 percent disagreed and strongly disagreed respectively. 15 percent respondents strongly agreed that they are manipulative 11 agreed, 23 percent were neutral, 15 percent and 37 percent disagreed and strongly disagreed respectively.

#### 5.1.3 The impact of birth order on extraversion of university students in Nairobi County

46 percent respondents strongly agreed that they are reliable, 25 percent agreed, 13 percent were neutral and 16 percent disagreed. 29 percent respondents strongly agreed that they are achievers, 25 percent agreed, 31 percent were neutral and 16 percent disagreed. 20 percent respondents strongly agreed that they were cautious, 35 percent agreed while 15 percent were neutral, 6 percent and 24 percent respondents disagreed and strongly disagreed respectively. 22 percent respondents strongly agreed that they are people pleasers, 18 percent agree while 19 percent were neutral, 23 percent and 18 respondents disagreed and strongly disagreed respectively.

#### 5.1.4 The impact of birth order on agreeableness of university students in Nairobi County

26 percent respondents strongly agree that they are peacemakers, 27 percent agree while 24 percent were neutral, 11 percent and 12 percent disagreed and strongly disagreed respectively. 24 percent respondents strongly agreed that they thrive on friendship, 29 percent agreed while 24 percent were neutral, 18 percent and 5 percent disagreed and strongly agreed respectively. 21 percent respondents strongly agreed that they are procrastinators, 25 percent agreed while 24 percent were neutral 22 percent and 8 percent disagreed and strongly agreed respectively. 28 percent respondents strongly agreed that they have high self-esteem 44 percent agreed while 20 percent were neutral, 8 percent respondents disagreed.

#### 5.1.5 The impact of biological birth order on neuroticism of university students in Nairobi County.

8 percent respondents strongly agreed that they have low self-esteem 22 percent agreed while 17 percent were neutral, 30 percent and 23 percent disagree and strongly disagree respectively. 25 percent respondents strongly agreed that they are emotionally stable, 17 percent agreed while 30 percent were neutral, 16 percent and 9 percent disagreed and strongly disagreed respectively. 21 percent respondents strongly agreed that they are shy, 26 percent agreed while 18 percent were neutral, 23 percent and 12 percent disagreed and strongly disagreed respectively. 23 percent respondents strongly agreed that they are anxious, 19 percent agreed while 22 percent were neutral, 20 percent and 16 percent disagreed and strongly disagree respectively.

#### 5.2 Conclusions of the study

According to the results of the research, the following conclusions are drawn which

meet the objectives of the research:

a) Based on the research findings majority of university students are outgoing.

University students also assertive, and reliable as it is required for interactions with fellow students. Majority of students are cautious during their interactions.

b) The study found out that ` students are controlling of others. Majority of students regard themselves as attention seekers based on a situation or career paths.

Students are also proactive as it is important during classes and in preparation for the job market. Majority of students are not manipulative.

c) University students are reliable to other students. University students are achievers hence they are in the university with a variety of academic and life goals.

University students are cautious during interactions with other students. Majority of the university students are people pleasers in scenarios where it can be beneficial for them.

d) University students are peacemakers in conflict University students thrive on friendships as they are essential during interactions at universities. Due to social and multiple academic commitments students are procrastinators. Students in university have a high self-esteem which is important for day to day interactions.

e) University students disagree that they have low self-esteem as social interactions in the university leads to high self-esteem. Majority of students are emotionally stable as it is important to face the demanding academic commitment. University students are shy when new in the school and when interacting with strangers. Majority of students especially in their first year are anxious during interactions with strangers.

### 5.3 Study Recommendations

Firstly, universities and students should collaborate to identify personality traits early on in a student's academic journey. By understanding their inherent personality traits, students can gain valuable insights into their strengths and areas for growth. This understanding will allow them to make more informed decisions about their future careers and academic choices. Tailoring academic pathways to align with students' personality traits can enhance their learning experiences, boost engagement, and improve long-term career satisfaction. Additionally, this process can help students identify fields of study and career paths that align with their natural tendencies, ultimately fostering personal and professional success.

Secondly, it is recommended that the subject of personality be introduced during the admission process into the university. By assessing personality traits early on, universities can provide students with a personalized academic and career roadmap from the start. This could include offering counseling services, career guidance, and courses that cater to different personality types. Incorporating personality assessments into the admission process would enable universities to guide students more effectively through their academic journey, helping them make decisions that align with their individual traits and long-term goals. This proactive approach would ensure that students are better equipped to navigate their studies and future careers, leading to greater overall satisfaction and success.

### 5.5 Suggestions for further research

Individual students undergo a significant transition as they move from the academic environment of university to the professional world. This transition is often

accompanied by various challenges and opportunities for personal growth, which may influence their personality traits over time. While university students are typically in the process of shaping their identities and adapting to academic and social pressures, their transition into the workplace introduces new responsibilities, expectations, and experiences that may further shape their personality. Therefore, it is essential to examine how personality traits evolve once students move beyond the university setting and enter the workforce.

The current study, which focuses on the Big Five personality traits among university students, provides valuable insights into the relationship between birth order and personality during a crucial developmental phase. However, it is equally important to explore how these traits may change as individuals age and encounter new life experiences. The shift from university life to the professional world may bring about changes in personality, particularly in areas like conscientiousness, agreeableness, and neuroticism. As individuals take on greater responsibility in their careers, develop long-term relationships, and navigate work-related challenges, their personality traits may become more defined or shift in response to these new demands.

A follow-up study that tracks the same individuals after they have transitioned into the workplace would offer valuable insights into whether and how personality traits change with age and life experiences. By comparing personality data collected during their university years with data gathered after entering the workforce, researchers can gain a deeper understanding of the long-term impact of work-life transitions on personality. This would help clarify whether personality

traits are fixed or malleable over time and provide a more comprehensive view of how age, career development, and life experiences contribute to shaping personality

## REFERENCES

About Us. (, 2020). Retrieved 7 October 2020, from <https://kiambu.go.ke/about-us/#2>

About Us. (, 2020). Retrieved 7 October 2020, from <https://kiambu.go.ke/about-us/#5>

Admin, A. (2020). More Information. Retrieved 7 October 2020, from

<https://www.kiambuassembly.go.ke/index.php/more-information>

Choices and Education Attainments in Kenya. Retrieved from <https://ideas.repec.org/p/ldr/wpaper/203.html>

Communication Patterns in Conflict Resolution among Women in Nakuru West  
Constituency, Nakuru County,

Kenya. Editon Cons. J. Psychol. Guid. Couns.2(1), 159-168.

Corinna Hartmann, S. (2019). Does Birth Order Affect Personality? Scientific American.

Retrieved 8 October 2020, from <https://www.scientificamerican.com/article/does-birth-order-affect-personality/>.

County integrated development plan 2018-2022 [EBook]. Kiambu. Retrieved from the  
county government of Kiambu. (, 2018).



387-390. <https://doi.org/10.2466/pr0.1970.26.2.387>

Healey, M., & Ellis, B. (2007). Birth order, conscientiousness, and openness to experience.

*Evolution And Human Behavior*, 28(1), 55-59. [https://doi.org/10.1016/](https://doi.org/10.1016/j.evolhumbehav.2006.05.003)

[j.evolhumbehav.2006.05.003](https://doi.org/10.1016/j.evolhumbehav.2006.05.003)

Hudek-Knezevic, J. (2016). The effects of birth order on five-factor personality traits in early

adolescents. Retrieved 12 February 2021, from [https://www.researchgate.net/publication/](https://www.researchgate.net/publication/315792820_The_effects_of_birth_order_on_five-factor_personality_traits_in_early_adolescents)

[315792820\\_The\\_effects\\_of\\_birth\\_order\\_on\\_five-](https://www.researchgate.net/publication/315792820_The_effects_of_birth_order_on_five-factor_personality_traits_in_early_adolescents)

[factor\\_personality\\_traits\\_in\\_early\\_adolescents](https://www.researchgate.net/publication/315792820_The_effects_of_birth_order_on_five-factor_personality_traits_in_early_adolescents)

Hertler, S. (2017). Beyond birth order: The biological logic of personality variation among

Siblings. *Cogent Psychology*, 4(1). <https://doi.org/10.1080/23311908.2017.1325570>

Holohan, M. (2018). Study finds 4 main personality types – which one are you?. TODAY.

Retrieved 6 January 2021, from [http://\(\"Understanding the 4 Personality Types: A, B, C, and](http://(\)

[D | Hire Success®\", n.d.\)](http://(\).

Johnson, S. (2014). Investigating the effects birth order has on personality, self-esteem,

satisfaction with life and age. Esource.dbs.ie. Retrieved 15 March 2021, from <https://>

[source.dbs.ie/bitstream/handle/10788/2254/hdip\\_johnson\\_j\\_2014.pdf?  
sequence=1&isAllowed=y.](https://source.dbs.ie/bitstream/handle/10788/2254/hdip_johnson_j_2014.pdf?sequence=1&isAllowed=y)

Lim, A. (2020). The Big Five Personality Traits. Retrieved 11 February 2021, from <https://www.simplypsychology.org/big-five-personality.html>

Menzies, G., Stavrunova, O., & Yerokhin, O. (2016). The Effects of Birth Order on Adult Outcomes: Evidence from Australia [Ebook]. Retrieved 15 March 2021, from [https://www.uts.edu.au/sites/default/files/2018-09/  
BO% 20on% 20adult% 20outcomes% 20full.pdf.](https://www.uts.edu.au/sites/default/files/2018-09/BO%20on%20adult%20outcomes%20full.pdf)

Onyishi, I., Okungwu, O., & Ogwu, F. (2012). Personality and Social Support As Predictors Of Life Satisfaction Of Nigerian Prisons Officers. Retrieved 16 March 2021, from [https://  
core.ac.uk/download/pdf/236414332.pdf.](https://core.ac.uk/download/pdf/236414332.pdf)

Ositoye, A., Adeyemi, M., & Onabarniro, A. (2010). Influence and Relationship of Birth Order and Secondary School Students' Academic Achievement. Scholars.fhsu.edu. Retrieved 16 March 2021, from [https://scholars.fhsu.edu/cgi/viewcontent.cgi?  
article=1537&context=alj.](https://scholars.fhsu.edu/cgi/viewcontent.cgi?article=1537&context=alj)

Nhandi, D. (2017). Siblings' Birth Order Interaction and Self-esteem Development: Forgotten Social Setting for e-Health Delivery in Tanzania? [EBook] (5th ed.). Department of

Social and Business Studies Education, the University of Dodoma: International Journal of Education and Research. Retrieved from <https://www.ijern.com/journal/2017/January-2017/05.pdf>

Pilar Horner, M. (2012). The Relationship of Birth Order and Gender with Academic Standing and Substance Use Among Youth in Latin America. PubMed Central (PMC). Retrieved 13 March 2021, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3375868/#:~:text=Adler's%20theory%20posits%20that%20different,Laird%20%26%20Shelton%2C%202006>).

Ratemo, J.O.; Kay, J. (2020). The Relationship between Birth Order and Marital

Rohrer, J., Egloff, B., & Schmukle, S. (2015). Examining the effects of birth order on personality. *Proceedings Of The National Academy Of Sciences*, 112(46), 14224-14229. doi: 10.1073/pnas.1506451112 [http://www.kiambu.go.ke/departments/REVISED\\_CIDP\\_20182022.pdf](http://www.kiambu.go.ke/departments/REVISED_CIDP_20182022.pdf)

Rohrer, J., Egloff, B., & Schmuke, S. (2015). Examining the effects of birth order on personality.

Retrieved 8 October 2020, from <http://www.pnas.org/content/112/46/14224>

Rohrer, J., Egloff, B., & Schmukle, S. (2015). Examining the effects of birth order on personality. *Proceedings Of The National Academy Of Sciences*, 112(46), 14224-14229. doi:

10.1073/pnas.1506451112

Stephen, A., Jean, N., Loise, M. and Vincent, M., 2017. Sibling Birth Spacing Influence on Extroversion, Introversion and Aggressiveness of Adolescents in Nairobi, Kenya. [online] [ijhssi.org](http://www.ijhssi.org/papers/v6(2)/version-2/C0602020612.pdf). Available at: <[http://www.ijhssi.org/papers/v6\(2\)/version-2/C0602020612.pdf](http://www.ijhssi.org/papers/v6(2)/version-2/C0602020612.pdf)> [Accessed 21 March 2021].

Tackett, J. (2017). Birth Order Has Little Effect on Narrow Personality Traits. Retrieved 12 February 2021, from <https://www.psychologicalscience.org/publications/observer/obsonline/birth-order-has-little-effect-on-narrow-personality-traits.html>

Tarekegn, A. (2014). Birth Order, Personality And Academic Achievement Motivation Among Addis Ababa University Social Science College Students. Etd.aau.edu.et. Retrieved 16 March 2021, from <http://etd.aau.edu.et/bitstream/handle/123456789/1333/Ambachew%20Tarekegn.pdf?sequence=1&isAllowed=y>.

Understanding the 4 Personality Types: A, B, C, and D | Hire Success®. Understanding the 4 Personality Types: A, B, C, and D | Hire Success®. Retrieved 6 January 2021, from <https://www.hiresuccess.com/help/understanding-the-4-personality-types>.

Van Aarde, N., Meiring, D., & Wiernik, B. (2017). The validity of the Big Five personality traits for job performance: Meta-analyses of South African studies. *International Journal*

Of Selection And Assessment, 25(3), 223-239. <https://doi.org/10.1111/ijsa.12175>

Wamalwa, F., & Burns, J. (2020). Gender and Birth Order Effects on Intra-household  
Schooling

Appendix 1: The questionnaire for the impact of biological birth order on the  
personality traits among university students in Kiambu County.

Kindly ensure that you fill out both sections of the questionnaire to the best of your  
ability.

Section A

Name.....

Gender .....

Age.....

1. What is your position in the biological birth order?

(i) First born

(ii) Second born

(iii) Later born.

(iv) Last born

Section B

Please find the table below and tick the box or category you associate with

Prompt	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
--------	----------------	-------	---------	----------	-------------------

Do you describe yourself as outgoing?

Do you describe yourself as assertive?

Do you describe yourself as reliable?

Do you describe yourself as cautious?

Do you describe yourself as manipulative?

Do you describe yourself as reliable?

Do you describe yourself as an achiever?

Do you describe yourself as cautious?

Do you describe yourself as a people pleaser?

Do you describe yourself as a peacemaker?

Do you thrive on friendship?

Do you describe yourself as a procrastinator?

Do you have high self-esteem?

Do you describe yourself as fun loving?

Do you describe yourself as  
emotionally stable?

Do you describe yourself as  
a problem solver?

## Appendix 2: Budget

Item	Estimated Cost (KES)
Questionnaire Development & Printing	2,000
Sampling & Data Collection (transport, etc.)	3,000
Incentives for Participants	1,000
Stationery & Office Supplies	1,500
Miscellaneous Costs (Communication, etc.)	2,500
Total Estimated Budget	10,000

### Appendix 3: Timelines

Activity	Timeframe
Literature Review	Jan-2025
Design and Development of Survey	Feb-2025
Sampling and Data Collection	Mar-2025
Data Entry and Preliminary Analysis	Apr-2025
Data Analysis	May-2025
Interpretation of Results	Jun-2025
Thesis Drafting	Jul-2025
Final Review and Revisions	August - September 2025
Submission	Oct-2025

