

An Investigation into the Relationship between Birth-Order and Levels of Self-Efficacy and Motivation in Emerging Adulthood.

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ABSTRACT

The purpose of this study was to investigate the relationship between birth-order and levels of self-efficacy and motivation in emerging adulthood, and to discover whether gender differences exist between these variables. In a cross-sectional correlational design, 100 individuals, 39 males and 61 females participated in this study. A purpose-designed questionnaire, the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) and the Global Motivation Scales (Guay, Mageau & Vallerand, 2003), were compiled into an online booklet using <http://qualtrics.com>. The predictor variable was an individuals' birth-order (youngest, middle, oldest or only child) and the criterion variables were sub-scales of the Global Motivation Scale including intrinsic motivation towards knowledge, accomplishment and stimulation, and external, introjected and identified regulations and a-motivation, and also subscales of the General Self-Efficacy Scale which included perceived self-efficacy, goal-setting, effort investment, persistence and the ability to recover from various set-backs.

No significant relationships were found between birth order and self-efficacy, nor with birth-order and motivation. Therefore, the null hypotheses were accepted. However, it was found that only children scored the highest on both the General Self-Efficacy Scale and the Global Motivation Scale, while youngest children scored the lowest on both scales. This investigation did yield information that could be useful in future research with regard to limitations such as not accounting for twins in the demographic questionnaire. Although no significant results were found, there is existing research to support the null hypotheses.

INTRODUCTION

Birth-order is a widely studied concept in the field of psychological research. Alfred Adler was one of the first to integrate birth-order into his theories and eventually developed a theory on birth-order itself. Extensive research has been carried out on each specific placement of an individual within their family, for example youngest, oldest, middle and only children. According to numerous theorists, there is a significance related to the position an individual is born in relation to their siblings. Alfred Adler proposed that “each child born into a family contains a particular view upon themselves due to their position as well as the parents holding certain standards upon others based upon their positions (Adler, 2011). Adler later attributed certain traits to each position in the family, which have been researched and studied by various theorists and researchers since, both cross-sectional and longitudinal, such as Gates, Lineberger, Crocket & Hubbard (1988), Kidwell (1981, 1982) Salmon (2003) and Shanahan, Crouter, & Osgood (2008).

In more recent research, Maus (2013) claimed that self-esteem and motivation are influenced by birth-order position. More specifically, Maus stated that middle-born children had lower levels of self-esteem and motivation when compared to first-born and last-born children. Various traits have been attributed to an individual depending on their position in their family, which will be explored in this research project, with a firm focus on self-efficacy and motivation. Gender differences and the relationship between an individual’s self-efficacy and motivation will also be explored.

Birth Order Effects & Emerging Adulthood

Jeffrey Jensen Arnett's 'Emerging Adulthood Theory' guided the rationale for the choice of age of the participants of this study. Arnett proposed 'Emerging Adulthood' as the period that stretches from the late teens to the mid/late twenties, 18-25 years to be exact. Arnett saw this age span as a new period in an individual's life, a time for self-exploration, with mental characteristics that are quite distinctive (Arnett, 2007). Arnett explains that this age group can be characterised by the individual having a sense that they have reached adulthood, a feeling of no longer being an adolescent but being an adult only in some senses. Arnett explains that for many, emerging adulthood is a time when individuals experience a greater sense of well-being, fewer depressive symptoms and a rise in belief in oneself or self-efficacy. Numerous studies carried out have supported this theory such as Galambos, Barker & Krahn, 2006; and Schulenberg & Krahn, 2006. Furthermore, Arnett claimed that emerging adulthood is a time in which young adults can see the beneficial effects of social cognitive maturity, which he believes, allows them to obtain a greater understanding of themselves, their strengths, and their abilities (Arnett, 2007).

Birth Order Theory

Alfred Adler believed that each child in the family is treated differently, according to their position in the family. According to Ansbacher and Ansbacher (1956), Adler did not mean that birth-order affected a child's development, rather it was the unique events occurring

within the family structure that had vital implications for each child's development. Another key factor in the development of a child Adler believed, was the sex of siblings (Ryckman, 2008). For example, a boy who is raised in a family of girls, is likely to assert extreme masculinity, or take on the feminine traits of his sisters. In contrast, a girl raised in a family of boys, will acquire very masculine or very feminine traits, all depending on the type of events and experiences the child undergoes within the family. (Ansbacher & Ansbacher, 1956) Another element that must be taken into account when studying birth-order and its effects, is the spacing between each sibling. For example if in a family the 3rd and 4th born children are born much later than the 1st and 2nd born, the siblings parents may treat the younger children as if they were the 1st and 2nd born, and consequentially the younger children may act as though they are the older children. Thus, this may have implications for how each child develops within the family (Ryckman, 2008, Pg. 122).

Although the arguments of Ansbacher and Ansbacher (1956) are strong and sophisticated, the majority of researchers tend to favour simplistic chronological birth-order when studying the personality and character traits of each individual sibling. In depth research and studies have been carried out on what exactly separates and defines the traits of siblings regarding their placement within the family structure. Adler studied and described the characteristics and roles of each sibling, and many researchers have done so since his original theories also. According to Adler's theory, the eldest child quite clearly the centre of attention in the family, prior to the birth of the other siblings. At the birth of younger siblings, the eldest child takes on the "dethroned monarch" role, and then has divided attention from his or her parents and has to share affection that once completely surrounded them, with the other siblings. This in turn causes resentment and hostility (Ryckman, 2008). However, this totally depends on the treatment of the oldest child, for example, if the parents give adequate affection and

attention to the oldest child when a younger sibling is born, then they may take up the position of the responsible and protective older sibling, mimicking the role of a mother or father (Ryckman, 2008).

Ranking Birth-Order

In birth-order research, four predominant methods of ranking birth-order are utilised. Broad claims exist regarding the way in which birth-order can effect development (Mills & Mooney, 2013). Through empirical studies, researchers have compiled and categorised these effects by studying certain aspects of psychological functioning such as motivation, education, mental illness, behavioural issues, relationships and generalised characteristics of personality (Eckstein et al, 2010). Although there has been an abundance of interesting findings with regards to birth-order, many issues exist relating to research on this topic. Sulloway (1996) stated that birth-order is not the reason for sibling differences, rather variables that are connected to birth-order differences than birth order itself, such as status within the family, gender and age, all affect sibling differences. Hartshorne, Salem-Hartshorne and Hartshorne (2009), reviewed the claims made and research carried out by Sulloway and built on his findings, by suggesting other methods of ranking birth-order that did not contain such methodological flaws. In a review of birth-order research, four methods of ranking birth-order were identified; Adlerian, dichotomous, serial and continuous methods (Hartshorne, Salem-Hartshorne & Hartshorne, 2009).

The Adlerian method as previously mentioned, ranks birth-order as oldest child, middle child, youngest child or only child – this is the most commonly used method of ranking by

researchers (Mills & Mooney, 2013). Hartshorne et al (2009), criticise this method as it does not take into account family size, and state that being the youngest child in a family of fifteen is substantially different than being the youngest child in a family of two. However according to Mills and Mooney (2013), the Adlerian method can be appraised as it does emphasise the effects on an individual from being first, middle, last or only born in their family. The second method used, dichotomous ranking, divides siblings into two groups referred to as 'later-borns' and 'first-borns'. This method has been used by a handful of researchers such as Sulloway (1996) and has proved successful due to the advantage of this method being able to compare first-borns, who have experienced parental benefits solely by themselves, and later-borns, whom have only ever experienced shared parental resources (Beer & Horn, 2000). However, this method does not take into account critical information such as the effects of being a last-born child instead of being ranked as a second-born, as well as reverting back to the Adlerian method of ranking when a family consists of only three children, making this method inconsistent (Beer & Horn, 2000).

The serial method of ranking ranks siblings in chronological order, for example first born equals 1, second born equals 2 and so on. Many researchers have used this method such as Bjerkedal, Kristensen, Skjeret, and Brevik (2007), however, this method also fails to take into account experiential differences, as well as not emphasising the importance of the position of the youngest child (Hartshorne, 2009). Finally, the continuous method divides the number of older siblings an individual has, by the amount of siblings they have in total. This means that a middle child in a family of three children would have a ranking of $\frac{1}{2}$. Using this method means that all siblings are placed at an equal distance from one another within a range of 0-1 (Hartshorne et al, 2009). The continuous method is the least frequently used method of ranking birth-order and is described by many researchers as the most sensitive method as

parametric analysis can be carried out on the data, which is more accurate than non-parametric analysis (Howell, 2004).

Characteristics of Oldest Children

According to Paulhus, Trapnel & Chen (1999), the eldest child or “pacemaker” (Ansbacher & Ansbacher, 1956; Maddi, 2001) tends to be more diligent, conscientious and achievement-oriented in comparison to later born children, as well as having higher motivation levels. They tend to also be more respectful of authority as they undergo a loss of power and authority within their own family setting at the time of a birth of a younger sibling. In this sense, the eldest child tends to be more conforming to societal norms, and this may be why parents form a subtle preference towards the first-born (Keller & Zach, 2002). M.E. Fakouri (2003), of Indiana State University, carried out a study that supported Adler’s claims of the eldest child being most conforming and respectful of authority. Fakouri explained that they emphasise the importance of rules and laws, and tend to be higher achievers than later-borns. This is also supported by research carried out by Bartlett (1966) and Rothbarth (1971), who claim this is due to differential treatment by the parents early in life. Both Adler and Eckstein et al (2010) agree that other traits attributed to first-borns include; intelligent, highly responsible, obedient, stable, as well as low levels of emotion and creativity.

Characteristics of Middle Children

With regard to the middle child or children, Adler proposed that they see the oldest child as a rival, or as a competitor that must be defeated in order to gain the attention of the parental figures. Adler also claimed that the middle children tend to set themselves unachievably high goals and standards, and develop alternative talents in order to win the affection of their parents, and ultimately this will set them up for failure (Ryckman, 2008). Fakouri found that middle-born children have a lower need for achievement and motivation than first-borns, and this, he suggested, may be due to higher parental expectation and quality of child-parent interaction with first-born children. (1979) Adler explains that the development of the middle child is dependent on how they are treated by the first-born, and as previously mentioned, set themselves unachievable goals to avoid the risk of outdoing and upsetting the older sibling. This is dependent however, on the relationship between these two siblings – if there is a strong, supportive relationship, then there will be a low level of competitiveness between the first-born and middle-borns (Maltby, Day & Macaskill, 2010). According to Eckstein et al (2010), middle-born siblings tend to be more envious of other siblings success and achievements, as well as being the least bold and talkative.

Characteristics of Youngest Children

The last-born or youngest child is universally known as “the baby” – and is said to dictate most of the family’s attention. A common belief surrounding the youngest child is that they

are spoiled and pampered (Ryckman, 2008; Maltby et al, 2010). According to Mairet (1964), this can result in the last-born developing as an individual whom is highly dependent on others both within the family and outside the family, and needs continuous support and protection. The youngest child also has an excessive desire to succeed, however failure is often the result (Ryckman, 2008). Maddi (2001), argues this point, and explains that the pacemakers – older siblings – drive development of the youngest sibling, whom never has to experience the loss of attention to a younger child or “successor”. Maddi goes on to explain that the youngest child is usually a secure individual, as he or she is surrounded by love and affection from everyone in the family structure. However, Adler explains that the traits and characteristics of each sibling are dependent upon the type of atmosphere within the family. For example, if there is a co-operative, respectful, trustful and understanding atmosphere, the oldest child will not react badly to their “dethronement” – a central idea in Adler’s birth-order theory - but instead will try to nurture and aid the development of the younger sibling (Maddi, 2001). In a birth-order study carried out by Eckstein et al (2010), youngest children were found to have the highest levels of social interest/agreeableness, and were said to be more artistic than scientific.

Characteristics of Only Children

Only children are individuals that do not have any siblings. By definition, they are considered first-born and share characteristics with both the youngest and oldest children (Eckstein et al, 2010). Sibling rivalry does not exist for only children and similarly to the youngest child they are said to be the centre of attention, depending on whether or not their birth was a planned

event. If the child experiences dislike or lack of admiration by others in later life, they will experience difficulty due to the amount of unspoiled and uninterrupted attention bestowed upon them by the parents in early life (Ryckman, 2008). Studies have found that, together with the oldest child, only children have the highest intelligence levels and the most need for achievement. They also prove to be the most selfish, least cooperative and least trusting (Eckstein et al, 2010). Although Adler made these character assumptions upon the placement of siblings within their family, he also stressed the importance of Individual Psychology and its 'golden rule'; Everyone can be different, and there is no such thing as "one-size-fits all". Instead Adler believed that the placement of an individual in their family is an important tool, when combined with other factors such as gender, culture and ethnicity, community structures and family values, help to obtain "an environmental context to a client's subjective understanding of the world" (Ansbacher & Ansbacher, 1956). Eckstein et al (2010) also noted that with many birth-order studies a limitation is that they are categorised ordinally rather than psychologically, which results in a loss of psychological constructs.

Birth Order Effects on Motivation

When studying and researching birth-order, a common theme is the effect, if any, birth-order has on variables such as self-efficacy and motivation. Many studies have explored this and have related lower to higher levels of self-efficacy and motivation, correlating to an individual's placement within the family structure. In a study carried out by Snell et al (1989) on the relationship between birth-order and achievement motivation in men and women, it was hypothesised that birth-order is associated with achievement motivations, and are unique to sibling placement in the family structure. Prior to the study, Snell also claimed that

achievement motivations relating to first-born, middle-born, last-born and only borns could be due to developmental factors. Snell anticipated that only children would have the highest levels of motivation. In this study, Snell et al also explored gender differences in relation to birth-order and motivation. The study was carried out on 1,979 participants who completed the WOFO (Heimreich & Spence, 1978) questionnaire measuring achievement motivation. The results of the study strongly supported the hypotheses that both women's and men's birth-order position affected their levels of achievement motivation. It was found that last-borns had a low work-load mastery achievement pattern with regard to achievement motivation. Snell et al explained this may be due to parental practices in relation to later borns, and that later borns may have exposure to low standards of behaviour. It was also found that only children have a unique achievement motivation pattern also – with male only borns showing a low work-high competitiveness configuration and female only borns showing a high work-high competitiveness configuration. Snell et al (1989) explained that these results are due to family structures, the presence or absence of siblings, child-rearing methods and gender values.

In 2010, Eckstein et al carried out a review of 200 birth-order studies. Eckstein explained that the huge volume of research on birth-order can overwhelm, and so he put 154 birth-order studies into categories in an attempt to make sense of the vast amount of information. The aim of this study was to compile recent research carried out on birth-order and construct a study that was representative of both psychological and ordinal birth-order research, which could also show significant results. Eckstein et al built on Light and Smiths similar study that was carried out in 1971, by means of only showing studies that had a significant difference in birth-order. The results found that first-born children were highly motivated and high achievers; this was shown in 12 of the studies researched. First born children were not found

to have significantly high or low self-efficacy levels, as only 4 studies showed first borns with high self-efficacy. With regard to middle borns, there was no significant results found in relation to self-efficacy and achievement motivation. Only-children showed high levels of achievement motivation, and also were most likely to go to college. Last-born children had low levels of achievement motivation, as well as low levels of self-efficacy as shown in 4 of the studies that were reviewed. The research findings in Eckstein's 2010 review appeared to support Alfred Adler's birth-order theory.

Birth-Order Effects on Self-Efficacy

Guastello & Guastello (2002), carried out a study which aimed to investigate birth order trends in relation to five traits, which were; IQ and achievement motivation, responsibility, sociability, emotional stability and self-efficacy. It was hypothesised that oldest and only children are more likely to have higher IQs and achievement motivation due to higher scores in SAT exams and also overrepresentation in college and university. The sample in this study consisted of 527 undergraduate Psychology students, 149 of which were male and 386 were female. This was a longitudinal study in which the data was collected over a number of years, and the participants filled out a demographic questionnaire and the GPP (Gordon Personal Profiles). The results showed that only children and first-borns did in fact excel in the area of IQ and achievement motivation. In contrast to many other studies carried out on birth-order, the sample used in this study allowed the researchers a high level of control over variables such as family income, ethnicity, culture and the educational and marital status of parents. The sample used was much larger than samples used in other similar studies however the female to male ratio was not evenly distributed. It was recommended that future research on this topic would benefit from comparing sibling from the same family, and whether birth-

order influences the differences in personality and traits (Guastello & Guastello, 2002). However, there is currently very little research existing on the relationship between self-efficacy and birth-order.

Gender Differences in Self-Efficacy Levels

There is much research supporting the role of gender as a significant predictor of self-efficacy in individuals. In a study carried out by Choi (2004), three different levels of self-efficacy; general, academic and course specific – were examined in 215 undergraduate participants. The participants were required to complete three measures of self-efficacy as well as the sex-role measure. It was found that results were consistent with those of previous studies, supporting existing theory that males score higher on self-efficacy scales – self-efficacy shared 30% of the variance with males and only 5% was shared with females. This finding is in line with studies carried out by Bryant and Fuqya (1997) and Matsui (1994). The results of this study indicate that masculinity is a stronger predictor of self-efficacy than femininity.

Gender Differences in Levels of Motivation

In a study carried out by Hornbostel (2003), it was hypothesised that males develop higher levels of achievement motivation than females. However, Hornbostel proceeds to explain that in studies where gender differences, age and birth-order are being studied, predictions can be complicated due to these variables interacting with each other. 150 students aged 18-25 from colleges the St Louis area, participated in this study and were required to complete a

demographic questionnaire as well as a scale measuring achievement motivation. It was found that gender differences were a statistically significant predictor of achievement motivation, with males scoring significantly higher on the achievement motivation scale.

Rationale

It is hypothesised that there will be a relationship between an individual's birth order, and their levels of self-efficacy and motivation. It is also hypothesised that there will be gender differences in the relationship between an individual's birth order and their self-efficacy and motivation levels, and also that there will be a relationship between an individual's motivation and self-efficacy levels. A large amount of studies have been carried out on birth-order in relation to motivation, however the volume of studies and research carried out on birth-order and self-efficacy is much less, and there is little to no literature or studies available at present which explore the relationship between motivation and self-efficacy. The aims of this study are to explore the relationship between birth-order, motivation and self-efficacy, and also to explore if gender differences exist in relation to the variables. This study will employ the Adlerian method of ranking birth-order.

The main hypotheses of this study are:

H1. A significant relationship will exist between an individual's birth order and their levels of motivation in emerging adulthood.

H2. A significant relationship will exist between an individual's birth order and their levels of self-efficacy in emerging adulthood.

H3. There will be statistically significant gender differences in levels of self-efficacy in emerging adulthood.

H4. There will be statistically significant gender differences in levels of motivation in emerging adulthood.

METHOD

Materials

All instruments in this study were online-administered questionnaires, through <http://www.qualtrics.com>. An online questionnaire booklet was given to each participant (see appendix). The online booklet included a cover page, a purpose designed questionnaire and two published questionnaires. The Global Motivation Scale (GMS-28) (Guay, Mageau & Vallerand, 2003), assesses an individual's global motivation towards general behaviours in their life as a whole. The General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) assesses perceived self-efficacy in a general sense and also aims to assess coping with daily obstacles as well as assessing ability to adapt after stressful life events are experienced.

The purpose-designed questionnaire consisted of 3 questions, and elicited the demographic information; age, gender and birth-order (oldest, middle, youngest or only child).

The Global Motivation Scale (GMS-28) (Guay, Mageau & Vallerand, 2003).

This scale was designed to assess an individual's global motivation toward general behaviours in their life as a whole. The scale consists of seven constructs which are as follows; there are 28 items in total and 4 items per 7 constructs. The 28 items were assessed on a 7-point sub-scale (1 being 'does not correspond accordingly, 4 being corresponds moderately and 7 being corresponds completely). Participants were instructed to rate each item according to the statement, "In general I do things" - corresponding generally to the reasons why they do things.

According to Vallerand et al (1992), with regards to reliability of the scale, internal consistencies of the subscales were tested using a Cronbach's Alpha in which values varied from .83 to .86. The findings from the Cronbach's Alpha were extremely similar to those obtained when testing the original version of the scale where values varied from .76 to .86. These results provided strong support for the internal consistencies of the subscales.

The General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995)

This scale was designed to assess an individual's perceived self-efficacy as well as their ability to cope with daily obstacles and problems faced, while also assessing their ability to adapt after a stressful life event has taken place. The scale was designed for the adult population but is not suitable for those under the age of 12 years. The scale consists of 10 items and participants are instructed to rate each item on a 4-point sub-scale (1 = Not at all true, 2 = Hardly true, 3 = Moderately true and 4 = Exactly true). The scale does not consist of

any reverse-score items and can also be used as a general indicator of quality of life. Perceived self-efficacy consists of goal-setting, effort investment, persistence and the ability to recover from various set-backs and the items on this scale were designed to measure an optimistic self-belief that one can carry out said tasks.

With regards to reliability, the scale is uni-dimensional. When a sample was taken from 23 countries, Cronbach's alpha test scores ranged from .76 to .90, with the majority of participants scoring in the upper .80's (Scholz et al, 2001). In various correlational studies, criterion-related validity is noted in which positive coefficients existed with favourable emotions and satisfaction with work, as well as dispositional optimism. The General Self Efficacy has a number of strengths; it can be used for a wide aspect of applications, it has been used successfully internationally for 3 decades and it does not only predict self-efficacy scores but can be used as a predictor of quality of life at any point. The predominant weakness of this scale is the issue of the scale not being adequately able to measure specific changed in behaviour (Rimm & Jerusalem, 1999).

Participants

The participants of this study (n=100) consisted of randomly selected males (n=39) and females (n=61) aged 18-25 years. Participants were asked to complete the online booklet via email or social networks (e.g. Facebook), as this was the most suitable way of obtaining participants of the target age group. Snowball sampling was used, in which existing

participants of the study were asked to recruit new participants among their peers or classmates whom were within the optimum age group to complete the online booklet. Participants were informed that the survey was completely anonymous, and by completing the survey they were consenting to participating in the study, prior to completing the online booklet. Participants were also informed that in the unlikely event of certain questions in the survey arousing negative feelings for them, they may withdraw participation at any time, and were also given a list of various relevant websites and helplines to visit if needed. Finally, participants were informed that once the survey had been submitted, participation could not be withdrawn as the surveys were anonymous. The mean age of participants was 22.

Design

The design of this study was a cross-sectional design. The criterion variable was motivation and self-efficacy scores and the predictor variable was birth order (oldest, middle, youngest or only child). Participants engaged in self-report method on completing the online questionnaire booklet.

Procedure

An online questionnaire booklet containing a cover letter, a short purpose-designed questionnaire, the General Self-Efficacy Scale, and the Global Motivation Scale, was administered to participants through snowball sampling via email and social networks. Participants could not proceed to the next page of the online booklet without fully completing the previous page. Participants were asked prior to completing the questionnaire to recruit peers, family members and class mates within the correct age bracket to participate in the study also. After the target number of participants was reached (n=100), the data was then downloaded and inputted into IBM SPSS Statistic 21. The participants were assured of complete confidentiality of the elicited information in the questionnaire. Data analysis was then carried out on the obtained data.

RESULTS

The total number of participants in this study was 100 (n=100), 61 females and 31 males. The mean age of participants was 22, with the age group ranging from 18-25 years. Participants included 31 youngest children, 21 middle children, 37 oldest children and 11 only children. The mean scores for the General Self-Efficacy Scale were; lowest score was youngest children mean=31.61 (SD=4.44), middle children mean=32.71 (SD=2.76), oldest children mean=32.43 (SD=3.53) and highest score was only children mean=33.45 (SD=3.58). The mean scores for the Global Motivation Scale were; youngest children mean=134.09 (SD=22.26), middle children mean=132.28 (SD=10.34), oldest children mean=123.29 (SD=20.15) and highest score was again only children mean=143.27 (SD=18.05). The mean score for males on the General Self-Efficacy Scale was 33.05 (SD=3.54), and the mean score for females was 31.90 (SD=3.76). The mean score for males on the Global Motivation Scale was 130.56 (SD=16.53), and the mean score for females was 130.83 (SD=21.85).

Chart 1.1: Birth Order Categories

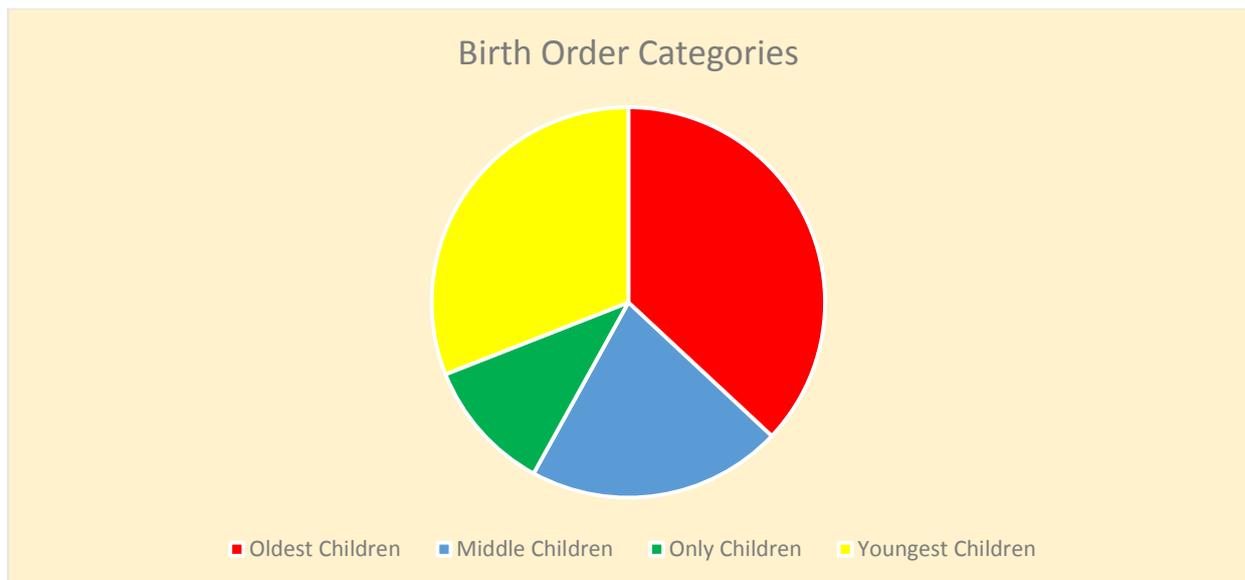


Table 1.1: Descriptive Statistics

| | Age of Participants | Gender | Birth-Order |
|---------------|----------------------------|---------------|--------------------|
| Mean | 22.13 | 1.61 | 2.28 |
| Median | 22 | 2 | 2 (Middle) |
| Mode | 22 | 2 | 3 (Oldest) |

A one-way analysis of variance (ANOVA) was conducted to examine the relationship between birth order and self-efficacy. Participants were divided into four groups depending on their position within their family (youngest, oldest, middle or only child). There was no statistically significant difference at the $p < 0.05$ level in LOT scores for the four birth order categories. The difference in mean scores between the categories was very small, with youngest children scoring lowest, mean= 33.45 (SD=3.58), and only children obtaining highest scores, mean=33.45 (SD=3.58).

A one-way analysis of variance (ANOVA) was also conducted to examine the relationship between birth-order and motivation. Again, there was no statistically significant difference at the $p < 0.05$ level in LOT scores for the four birth order categories. There was a slightly larger difference however in mean scores between the categories however, with youngest children scoring lowest, mean=134.09 (SD=22.26), and only children scoring highest, mean=143.27 (SD=18.05).

Table 1.2: Tukey HSD for Motivation Scores.

| Position in Family (I) | Position in Family (J) | Mean Difference (I-J) | Significance |
|-------------------------------|-------------------------------|------------------------------|---------------------|
| Youngest Child | Middle | 1.81 | .987 |
| | Oldest | 10.79 | .099 |
| | Only | -9.17 | .520 |
| Middle Child | Youngest | -1.81 | .987 |
| | Oldest | 8.98 | .316 |
| | Only | -10.98 | .413 |
| Oldest Child | Middle | -10.79 | .099 |
| | Oldest | -8.98 | .316 |
| | Only | -19.97 | .015 |
| Only | Youngest | 9.17 | .520 |
| | Middle | 10.98 | .413 |
| | Oldest | 19.97 | .025 |

An independent samples t-test was conducted on the data in order to examine whether there were gender differences existing between participants' scores on the General Self-Efficacy Scale. There was no significant difference in scores for males and females $t(98) = .130$, $p > 0.05$. The difference in the means was also small in magnitude.

Table 1.3: Mean, Standard Deviation and Standard Error Mean for Self-Efficacy

| Gender | N | Mean | Standard Deviation | Standard Error Mean |
|---------------|----------|-------------|---------------------------|----------------------------|
| Male | 39 | 33.05 | 3.54 | .566 |
| Female | 61 | 31.90 | 3.76 | .481 |

Table 1.4: Scores for Self-Efficacy for Males and Females on T-Tests.

| | t | df | Sig. (2-tailed) |
|------------------------------------|----------|-----------|------------------------|
| Equal variances assumed | 1.52 | 98 | .130 |
| Equal variances not assumed | 1.54 | 84.67 | .126 |

Table 1.5: Mean, Standard Deviation and Standard Error Mean for Motivation

| Gender | N | Mean | Standard Deviation | Standard Error Mean |
|---------------|----------|-------------|---------------------------|----------------------------|
| Male | 39 | 130.56 | 16.53 | 2.647 |
| Female | 61 | 130.83 | 21.85 | 2.798 |

Table 1.6: Scores for Motivation for Males and Females on T-Tests.

| | t | df | Sig. (2-tailed) |
|------------------------------------|----------|-----------|------------------------|
| Equal variances assumed | -.066 | 98 | .947 |
| Equal variances not assumed | -.071 | 95.12 | .944 |

An independent samples t-test was also conducted on the data in order to examine whether there were gender differences existing between the participants' scores on the Global Motivation Scale. There was no significant statistical difference in scores for males and females $t(98) = .947, p > 0.05$. The difference in means was extremely small.

DISCUSSION

The aim of the current study was to investigate the relationship between birth-order and motivation and self-efficacy levels in emerging adulthood, as well as investigating whether gender differences exist in levels of self-efficacy and motivation. 100 participants took part in this study, including 61 females and 39 males. A one-way analysis of variance was conducted in order to explore the relationships between birth-order and self-efficacy and another was conducted to investigate the relationship between birth-order and motivation. Two independent samples t-tests were also employed in order to investigate whether gender differences existed in levels of motivation and in levels of self-efficacy in the participants.

The study consisted of participants completing an online questionnaire booklet consisting of a short demographic questionnaire which elicited information such as age, gender and birth-order, the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) and the Global Motivation Scale (Guay, Mageau & Vallerand, 2003). The first hypothesis predicted that

there would be a relationship between an individuals' birth order and their levels of motivation in emerging adulthood. The mean scores for the Global Motivation Scale were; youngest children mean=134.09 (SD=22.26), middle children mean=132.28 (SD=10.34), oldest children mean=123.29 (SD=20.15) and highest score was again only children mean=143.27 (SD=18.05). A one-way analysis of variance found that there was not a statistically significant relationship between the variables, and so the null hypothesis was accepted. This finding is not in line with previous research however, there are various factors that may have affected the results of this study, such as sample size and method of ranking.

Previous studies that explore the relationship between birth-order and an individuals' levels of motivation employed a much larger sample size, for example, Snell et al's 1989 study consisted of 1,979 participants, whereas this current study had a substantially smaller sample size of 100 participants (n=100). The results of Snell et al's 1989 study showed that youngest children scored lower on the achievement motivation scale, which was also found in the current study however no statistically significant results were found. Snell et al (1989) stated that the results obtained may have been due to various factors such as family structures, the presence/absence of siblings, child-rearing methods and gender values, which also may have affected the resulted obtained in the current study.

The second hypothesis predicted that there would be a statistically significant relationship between an individuals' birth-order and their levels of self-efficacy in emerging adulthood. A one-way analysis of variance (ANOVA) was employed in order to investigate this hypothesis, and it was found that a statistically significant relationship between the variables did not exist. In existing studies exploring the relationship between birth-order and self-

efficacy, such as the study carried out by Guastello and Guastello (2002), statistically significant results were obtained in relation to levels of self-efficacy in only children and first borns, who scored higher than middle and last borns on the self-efficacy scale. Similar results were obtained in the current study, as only borns and first borns scored highest on the General Self-Efficacy Scale, however no statistically significant results were obtained. This may be due to the fact that the sample size in the Guastello and Guastello (2002) was again substantially larger than the current study, with 527 (n=527) participants. Also, the female to male ratio was extremely unevenly distributed at 386:149. As previously stated, little research has been carried out on the relationship between birth-order and self-efficacy to date, and it would be recommended for future research to accommodate self-efficacy in birth-order research. The design of this study was longitudinal and was carried out over a number of years which also may have contributed to the significant findings.

The third hypothesis being investigated in the current study was that there will be statistically significant gender differences in levels of motivation in emerging adulthood. An independent samples t-test carried out on the data obtained found no significant results. There was no significant difference in scores for males and females $t(98) = .130, p > 0.05$. Previous studies carried out on gender differences such as Hornbostel's 2003 study, have found statistically significant results in the relationship between gender and motivation. Hornbostel's study consisted of 150 participants (n=150), 96 males and 54 females. It was found that males scored significantly higher than females on the achievement motivation scale. The difference in male to female ratio in Hornbostel's study (2003), could have contributed to the statistically significant findings, as the current studies male to female ratio was 39:61. At this point there is little research regarding the relationship between gender and motivation levels, however Hornbostel (2003) emphasises the importance of accounting for three key variables;

age, gender and birth-order, when researching these variables as the relationship between the three variables contributes significantly to the results.

The final hypothesis aimed to explore the relationship between gender and levels of self-efficacy in emerging adulthood. An independent samples t-test was employed to investigate the relationship between these variables. No statistically significant results were found in scores for males and females $t(98) = .130, p > 0.05$. Although no statistically significant results were obtained in the current study, there is much research existing that supports the role of gender in levels of self-efficacy in individuals. For example, Choi (2004) carried out a study on 215 students, and found that self-efficacy shared 30% of the variance with males and only 5% of the variance with females. The findings of Choi's study were consistent with previous studies, such as Bryant and Fuqya (1997) and Matsui (1994), however all of these studies consisted of substantially larger sample sizes, which again, may have contributed to the statistically significant findings.

There were various limitations regarding the current study. The most predominant limitation as previously mentioned was sample size. The sample size in the current study was 100 ($n=100$), which made it difficult to obtain statistically significant results. Studies that did obtain statistically significant results with regard to the relationship between birth-order and self-efficacy had significantly larger sample size, for example Guastello and Guastello (2002), had a sample size of 527 participants ($n=527$). Snell et al's 1989 study exploring the relationship between birth-order and motivation employed a sample size of 1,979 participants ($n=1979$), and also obtained significantly significant results. With regards to gender differences in levels of motivation, Hornbostel (2003) utilised a sample size of 150

participants. Finally, Choi (2004) explored the relationship between gender and self-efficacy, and used a sample size of 215 participants while obtaining statistically significant findings.

The second limitation was the exclusion of twins in the current study. In the demographic questionnaire, there was no option present for twins, triplets etc., meaning they were not accounted for in the data obtained. This meant that participants whom were twins, triplets and so on, were forced to choose an option that was not true to their actual position within their family and this is considered to be a flaw in the current study. This also may have affected the findings of this study and contributed to the statistically insignificant results. According to Adler (1937), there tends to be one dominant twin, whom takes up the older child position. Adler also claimed that twins tend to be much closer than normal siblings. However, there is little to no recent research existing to support this point. The question arises; should twins be ranked according to their position in relation to their other siblings excluding their twin/triplets, or in relation to their other siblings including their twin/triplets? For example, if a set of twins were placed as first borns – had younger siblings – would the older twin rank as oldest child, and the younger twin as middle child, or would both be ranked as oldest children? This also evokes the question of which method of ranking birth-order should be employed, and whether different methods should be used for different family structures.

Many issues exist relating to methods of ranking birth-order, and the most effective method is unknown as there is little research at present regarding which method is most reliable. There are four methods that researchers have identified and categorised; Adlerian, dichotomous, serial and continuous (Hartshorne, Salem-Hartshorne & Hartshorne, 2009). The most predominant method of ranking is the Adlerian method and the current study employed this

method. However, flaws with each method exist, as each fails to measure a certain aspect of birth-order. A recommendation would be to combine several elements of each method in order to sufficiently and effectively rank each position within the family. The Adlerian method was chosen for the current study as it is the most widely and frequently used method of ranking birth-order, and little research is available on the validity and reliability of the dichotomous, serial and continuous methods.

It would be recommended that limitations regarding the inclusion of twins in birth-order studies and methods of ranking birth-order should be included in future research. After much research it can be concluded that a larger sample size yields statistically significant results, therefore in order to replicate this study it would be recommended to use more than 100 participants as well as using an equal ratio of male and female participants. The large difference in the ratio of males to females was not a true representation of the population. Studies that utilised a relatively equal ratio of males to females yielded statistically significant results.

It can be concluded from previous studies regarding the relationship between birth-order and self-efficacy, birth-order and motivation, gender and motivation and gender and self-efficacy that there are significant relationships between the variables. However, the current study did not yield such results. This may be due to various factors that may have influenced and affected the data such as; the exclusion of a twin option in the demographic questionnaire, the sample size, the uneven ratio of males to females and the method utilised for ranking birth order. These can be seen as the disadvantages of the study. Although no statistically significant results were obtained, the recommendations could possibly be advantageous for

future research if included, and could yield statistically significant findings if correctly employed. The information obtained from the current study could also help to effectively eliminate flaws when constructing future research studies on the variables that were being explored.

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APPENDICES

APPENDIX 1: Cover Letter

Dear Participants,

I would like to take this opportunity to thank you for participating in my final year project. The title of my study is “Exploring the relationship between birth order, self-efficacy, and motivation in Emerging Adulthood.” The aim of the study is to explore whether there is a relationship between the position of an individual in their family, for example, oldest or youngest child, and whether this affects self-efficacy and motivation in 18-25 year olds.

Gender differences will also be examined. There are three parts to the questionnaire, the first will gain demographic information such as gender, age,

and birth order, the second section will measure self-efficacy and the final section will measure motivation. If you have any questions before, during or after completing the questionnaire, please do not hesitate to ask.

Many thanks,

Caoimhe Kavanagh

APPENDIX 2: Demographic Questionnaire

Please complete this page before proceeding to the next stage of the questionnaire.

(1) Age:

(2) Gender (Please circle): Male Female

(3) Please specify birth order:

(a) Youngest Child

(b) Middle Child

(c) Oldest Child

(d) Only Child

APPENDIX 3: General Self-Efficacy Scale

Please read the sentences below and select an answer for each statement which indicates how much the statement applies to yourself.

1 = Not at all true 2 = Hardly true 3 = Moderately true 4 = Exactly true

| | | |
|----------|--|--|
| 1 | I can always manage to solve difficult problems if I try hard enough. | |
| 2 | If someone opposes me, I can find the means and ways to get what I want. | |
| 3 | It is easy for me to stick to my aims and accomplish my goals. | |

| | | |
|-----------|---|--|
| 4 | I am confident that I could deal efficiently with unexpected events. | |
| 5 | Thanks to my resourcefulness, I know how to handle unforeseen situations. | |
| 6 | I can solve most problems if I invest the necessary effort. | |
| 7 | I can remain calm when facing difficulties because I can rely on my coping abilities. | |
| 8 | When I am confronted with a problem, I can usually find several solutions. | |
| 9 | If I am in trouble, I can usually think of a solution. | |
| 10 | I can usually handle whatever comes my way. | |

APPENDIX 4: Global Motivation Scale

Indicate to what extent each of the following statements corresponds generally to the reasons why you do different things.

| | | | | | | |
|--|---|---|-------------------------------|---|---|-----------------------------------|
| Does not correspond accordingly | | | Corresponds moderately | | | Corresponds completely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

In general, I do things . .

1. ... in order to feel pleasant emotions. 1 2 3 4 5 6 7

2. ... because I do not want to disappoint certain people. 1 2 3 4
5 6 7

3. ... in order to help myself become the person I aim to be. 1 2 3 4
5 6 7

4. ... because I like making interesting discoveries. 1 2 3 4 5
6 7

5. ... because I would beat myself up for not doing them. 1 2 3 4
5 6 7

6. ... because of the pleasure I feel as I become more and more skilled. 1
2 3 4 5 6 7

7. ... although I do not see the benefit in what I am doing. 1 2 3 4
5 6 7

8. ... because of the sense of well-being I feel while I am doing them. 1
2 3 4 5 6 7

9. ... because I want to be viewed more positively by certain people. 1
2 3 4 5 6 7

10. ... because I chose them as means to attain my objectives. 1 2 3 4
5 6 7

11. ... for the pleasure of acquiring new knowledge. 1 2 3 4 5
6 7

12. ... because otherwise I would feel guilty for not doing them. 1 2
3 4 5 6 7

13. ... for the pleasure I feel mastering what I am doing. 1 2 3 4
5 6 7

14. ... although it does not make a difference whether I do them or not. 1
2 3 4 5 6 7

15. ... for the pleasant sensations I feel while I am doing them. 1 2
3 4 5 6 7

16. ... in order to show others what I am capable of. 1 2 3 4 5
6 7

17. ... because I chose them in order to attain what I desire. 1 2 3 4
5 6 7

18. ... for the pleasure of learning new, interesting things. 1 2 3 4
5 6 7

19. ... because I force myself to do them. 1 2 3 4 5 6 7

20. ... because of the satisfaction I feel in trying to excel in what I do. 1
2 3 4 5 6 7

21. ... even though I do not have a good reason for doing them. 1 2
3 4 5 6 7

22. ... for the enjoyable feelings I experience. 1 2 3 4 5 6
7

23. ... in order to attain prestige. 1 2 3 4 5 6 7

24. ... because I choose to invest myself in what is important to me. 1 2
3 4 5 6 7

25. ... for the pleasure of learning different interesting facts. 1 2 3 4
5 6 7

26. ... because I would feel bad if I do not do them. 1 2 3 4 5
6 7

27. ... because of the pleasure I feel outdoing myself. 1 2 3 4 5
6 7

28. ... even though I believe they are not worth the trouble. 1 2 3 4
5 6 7

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APPENDIX 5: Debriefing / Personal Information Sheet

Thank you for your participation. I ensure you that there is complete confidentiality regarding your responses. If you have any further questions or would like to be informed of the findings of the current study, please do not hesitate to email me at 1

In the event that certain questions in this questionnaire have aroused negative feelings for you, please contact Samaritans at 1850 60 90 90 or email Samaritans; Jo@samaritans.org.