CHAPTER I

INTRODUCTION

Fueled by new evidence, there has been renewed interest about the effects of family size and birth order on numerous psychological variables. The underlying causal mechanisms for such effects remain unsettled. Although many social, emotional, economical, and familial (parenting and sibship) reasonings in the forms of theories have been proposed and empirically tested, nothing conclusive has yet been arrived at. Interest on the effects of birth order, family compositions and family resources on children’s overall development has been re-invigorated by several recent studies (Black, Devereux & Salvanes, 2005; Conley & Glauber, 2006; Doncel, Sainz, & Sanz, 2012; Gary-Bobo, Picard & Prieto, 2006; Hotz, & Pantano, 2013; Price, 2008) which present new empirical evidence of birth order effects. Further, much of the recent criticisms have also debated whether family size and birth order should be evaluated between individuals or within families. With research agendas so frequently built around empirical findings having much less consistency, the modest amount of effort put forth to explain the effect of family size and birth order on the various outcome variables related to the young adults is in itself quite challenging. Thus, the overarching tenet of the present study is to explore the underlying reasons for the unresolved issue/debate as to what is leading to the psychological, cognitive, familial relationships and career choice changes in the young adults- family size, birth order, or the both of them when seen in unison.

Understanding the Effects of Family Size

Family size is a variable of great interest and curiosity to those who study children. Empirical studies have consistently found a negative association between family size and children’s various outcomes i.e. Intelligence, personality attributes, educational attainment, mental health conditions, parent-child/familial relationship, and career choice patterns. Broadly, five theoretical frameworks/orientations have been posited to explain the negative relationship between family size and birth order
on various aforementioned outcome variables. *Dilution theory* (Blake, 1989) suggests that as the number of siblings increase, fewer resources (parental, familial, love, attention) are available to facilitate the development of each child. A second obvious type of dilution concerns that of the parents’ material resources i.e. the ability to provide personal living space, specialized medical facilities, excellent reading material, continuous and advanced schooling, etc. The *quality-quantity model* by Becker and Lewis (1973) posits that as the quantity increase, the quality each child receives in terms of parental resources divides and decreases. Moreover, it appears that being brought up in a large family versus a small one dilutes youngsters' sense of urgency about playing and associating outside of the family group, thereby making youngsters from large families more parochial and limited in their understanding of a variety of social roles (Heise & Roberts 1970).

Additionally, Zajonc (1975) in the *confluence model* has suggested that children are born into intellectual environments that affect intelligence. As families increase in size, the overall IQ of the family drops, the reason being that the overall intellectual level of the home might be more "childlike" in large families than in small ones. The *social learning theory* (Bandura, 1977) suggests that the cognitive processes, observational/vicarious learning, and the modeling behaviors of children develop in accordance with the family size they come from. Children from small size families have lesser of such experiences while children from larger families will have them in abundance. The *attachment theory* (Bowlby, 1958) suggests that smaller families have close knit and stronger bonds with their offsprings as compared to large families. Increased family socialization and father involvement, increased family size is also associated with more authoritarian parenting, which, in turn can negatively impact a child’s self-esteem, self–differentiation, and ego-identity.

Majority of the empirical work on family size is in relation with the psychological outcome variables like intelligence, personality, and educational attainment but lately other varied psychological variables such as depression, self-esteem, parenting practices, career choices, etc. has also been probed.
In the realm of intelligence, the explanation of negative relationship between family size and intelligence has largely been explained in terms of mature family environment and resource dilution (in terms of finances, emotional support, attention, care, and love) in larger families (Belmont & Marolla, 1973; Breland, 1974; Claudy, Farrell, & Dayton, 1979; Kanazawa, 2012). As far as depression and anxiety are concerned, most of the studies indicated that children from large families are more susceptible to depression and anxiety and explanations offered are in terms of resource dilution, confluence model, and social learning theory as explained in the earlier section. Further, negative sibling domination and low family cohesion are noteworthy markers of depression and anxiety in large size families and are absent in small size families (Barker, 2011; Reinherz, Paradis, Giaconia, Stashwick, & Fitzmaurice, 2003). In the research literature of self-esteem, it is divulged that the young adults from smaller families are higher because as parents usually have more economic, emotional, intellectual, and psychological resources to devote to each child, which in turn boosts to their self-esteem. In large families, such resources are stretched to the limit. Children in the small families get more individual attention and are treated as creative entities in their own right. On the contrary, children in large families are treated as cogs in a group (Williams, 2013). As far as the empirical evidence on parent child relationships are concerned, small size families are believed to be more cohesive, loving, protecting and close knit as the parents tend to focus all of their resources on the single child. Parental use of corporal punishment becomes more common as family size increases (Nye et al., 1970) Also, male adolescents from small families accept parental authority more fully than do youth from large families (Smith, 1971). The career choices of the college students from small size families, where parents want their children to excel, go in the direction of preferring medicine or white collar jobs; while the children from medium size families, with parents wanting successful children was more represented in Engineering. The children from large size families, where parents tend to give freedom of choice to their children, are towards studying Journalism and Fine Arts (González-Pinto et al., 2003).
Understanding the effects of Birth Order

If family size bears a negative relationship with cognitive abilities, mental health conditions, parent-child relationship, and career choice patterns, then is their effect mitigated on an average, by birth order? Various theoretical orientations lend support and try to verify this query. Adler (1870-1937) proposed a theoretical paradigm regarding the personality make-up of children in regard to the birth order they are born in. First born will be leaders, middle will be mediators, and the youngest will most often be the babies, but if more than three years separate the siblings from each other, these typical generalizations no longer apply. Focusing on the resource dilution theory (Blake, 1989), the share of family resources in form of psychological, social, and financial, that each child will receive is likely to differ across birth order. Given that parents have these resources in abundance for the first born, will receive these more than the subsequent children who have to live with and compete for the reduced resources and parental attention. The confluence model (Zajonc, 1975) posits that those predicting negative effects relate to greater devolvement of responsibility to lower birth order children, resulting into lower IQs as the birth orders increase; and the simple fact that mothers are older when they have higher than lower birth order children. Also, the’ family niche’ concept by (Sulloway 2007) purports that sibling differences arise in part because of the different roles that children adopt within the family system as per their birth orders.

Empirical studies on the present study variables have found mixed results on birth order and broadly offer theoretical and observational explanations.

Intelligence researches have concurred that purposive difference in better parental treatment as the parents tend to reflect their ambitions and dreams from the early borns than the later borns. Secondly, patterned circumstantial differences over the family life cycle reduce the parents’ physical capacity to monitor the behavior of the later borns. Lastly, the children of only and first birth order may be uniquely favored or disfavored in terms of parental attention, interaction, and resources. All the above reasons lead to greater intellectual stimulation, motivation for the elder borns than the later borns. Hence the differences in intellectual ability.
depression and anxiety have indicated that depression is higher in the only and first borns and least in the middle borns (Gates, Lineberger, Crockett, & Hubbard, 1988; Putter 2003). Only and first borns are more susceptible to depression because of higher expectations, extra attention, overprotection, and a sudden loss of the status of being an only child. These children are raised in stressful, anxious and controlled environment which may lead to depression and anxiety. The middle borns are brought up in relaxed environment, have to display diplomacy, are realistic, and independent which may buffer them from falling prey to anxiety and depressive tendencies. The youngest child will be susceptible to depression and anxiety as they may have a fear of the world, a hidden fear of being teased by the older siblings; and develop weak decision making skills due to being overprotected by older siblings and not considered experienced enough (Morales, 1994). Further, research supports that the middle borns’ self-esteem is low because they are in a constant conflict with the older siblings in order to gain power while simultaneously being envious of younger siblings due to the attention they receive from parents. The self-esteem of first borns may be high because of individualized attention, appreciation and motivation from parents as they aspire to fulfill their dreams from the first borns. Also, the last borns may have lower levels of self-esteem due to lack of attention or appreciation from a parent or significant others.

In context to the parent child relationship, mothers tend to be more affectionate and interact more with the only and early borns than the later borns (Keating, 2009; Price, 2008; Yixin, 2007). It has been speculated that this could be experienced because new parents are overly anxious about their first children and also give individualized attention. Later borns do not receive as extensive attention as first borns and feel less appreciated, loved and protected. Ordinal position in the family may play a role in the type of occupations/career one chooses. First borns are overwhelmingly more interested in intellectual and cognitive aspects of the society than later borns. One reason could be because parent’s ambitions are on the first child. For, e.g. if they are doctors, they would want the first child to become a doctor too. In addition, the only child resembles the first borns in this aspect of birth order due to the fact that they interact with parents more frequently in comparison with other children and are likely to show interest in academic pursuits like management, accounting,
finance, chemistry, physics, medicine or law. In contrast the later borns are creative, use imagination and prefer occupations like painters, artists, other performing arts etc. Lastborns are expected to become artists, musicians, and photographers (Herrera et al., 2003). Middle borns are high on interpersonal relations, and have the ability to please and successfully interact with a variety of people. They tend to prefer the fields of psychology, sociology, social work, etc.

Research debate on Family Size and Birth Order

Before discussing the new findings, it will help to explain why decades of research that seemed to show birth order effects was in fact flawed but simple. Birth order is intricately related to family size. Of the some 65,000 scholarly researches about birth order index by Google scholar the vast majority suffer from the problem making the research difficult to interpret. Many of the few remaining studies fail to show significant effects. It is popularly believed by social scientists that birth order influences personality, intelligence, mental health, educational attainment, parent-child relationships, and choice of career path amongst others. But if we look hard at the evidence for birth order influencing the various psychological variables, the evidence is not nearly as strong as one might imagine; and in fact the other factors have a much larger effect on the outcome variables (Wang et al. 2013).

One important factor that comes into the studies of birth order is the size of the family. Any family with children can have a first born child but only large families have a third born, fourth born, and so on. If one is comparing a first born with the third, then one has to control for family size. A child from a two-kid family has a 50 percent chance of being a firstborn, whereas a child from a five-kid family has only a 20 percent chance of being a firstborn. Another big factor in birth order studies is the differences between first born to later born; and these differences can go away only when one controls for family size. It seems like that there is something about family size that influences the psychological makeup. Maybe it’s the socio economic status, emotional support, peer interaction; maybe people from large families don’t have as much in the way of resources and so they become rebellious, and more prone to trying new ideas and new things. These two caveats in the studies get in the way of really
understanding how birth order influences various outcome variables— if at all. And it turns out that family size is a much larger determinant of various psychological outcomes.

The research literature in context to birth order has been, as the saying goes, ‘data driven’. The research findings have been subject to a wide variety of biases that, in turn, have produced many, varied and conflicting birth order ‘effects’. Blake, (1989) in his book ‘family size and achievement’ has outlined various confounding factors in the research and analysis of birth order, i.e. prevalence fallacy, differential parental life period effects, absence of controls for sibsize, parental background differences by birth order, differences in child spacing, and age truncation bias. Two other possible confounders also need to be controlled to meaningfully interpret the negative relation of family size with various psychological outcomes, i.e. the negative association of family size with socioeconomic characteristics of the parents, and the possibility that large families are more prevalent among genetically less able couples.

Thus, the facts presented above explicate that we have numerous theoretical orientations for family size and birth order on psychological outcomes, though conflicting in nature. We have also no systematic clear cut researches for expecting such effects as proposed in theories. Moreover, birth order effects in empirical data also suggest that such effects are probably the effect of various confounders. Thus keeping in cognizance the modern Indian perspective and the changed societal and familial structure, the present study was undertaken to explore the effects of family size and birth order on cognitive, familial, and career choice patterns. The present empirical work also proposes to control some of the major confounders as illustrated in the literature through the selection of sample and statistical techniques.

KEY CONSTRUCTS

The following section caters to the definitions and theoretical orientations of family size and birth order. To avoid repetitions of presentation of theories explaining family size and birth order, a separate section has been made explaining them together.
1.1 Family Size

Family size, sometimes synonymously used with ‘sibship size, ‘has been studied as an aspect of social stratification and the sociology of family for decades. The negative effect of size of sibship on educational attainment is well established. Indeed, there are well-established relationships between size of sibship and many outcomes: intellectual development, academic achievement, educational attainment, occupational attainment, personality, mental health, fertility plans, parent–child interactions, family finances, and family contacts (Kuo & Hauser, 1997)

1.1.1 Defining family size

Family size can be defined as the number of children in the family in which a person grows up. There may be different family sizes comprising of one, two, three or more than three children. As the family size increases, parent’s focus, time, money and attention on each child would divide amongst the siblings in contrast to the smaller family size in which lesser number of children would be comparatively better nurtured and concentrated upon (Fahey, Keilthy, & Polek, 2012).

Family size is a significant factor in child development, but must be considered as only one part of a larger picture, however. The size of a family has a significant effect on the interrelationships among its members and can play a major role in the formation of a child's personality (Psychology Encyclopedia, 2014).

1.1.2 Effects of different Family Sizes on children/adolescents:

While discussing about the impact of various family sizes on its children, the first and foremost point that pops up in the mind of a person is privacy of life. Privacy—a couple can get their privacy in their own house in small and medium size families, whereas it tends to get lesser as the family size increases (e. g. large size family). Secondly, focusing on the modernization, westernization, and urbanization of the Indian society, financial stability is one crucial factor. One can be financially strong because of limited expenses. There is less number of people in a small size family and hence less expenses. As the family size increases, the finances dilute and
divide, thus making the financial condition comparatively weaker for the large size family. The third aspect worth mentioning here is **Freedom**. Today’s generation knows what is good and bad for them and has enough analytical power so they don’t like to restrict themselves. Instead, they want their freedom so that they can do and achieve whatever they want in their life, which varies as per the family size. Fourthly, there is an **Ease in moving** in a small size family, where the parents tend to manage the single child and face fewer problems while shifting a house. While in a medium and large size family, the parents need to see the children’s current educational condition/position and then decide accordingly. Fifthly, **Avoidance of stress and discomfort** is a practice prevalent in a small and medium size family, but as the family size increases, it brings with itself stress and discomforts as the quality of life drops.

Further, there is **No care or minimal attention** if the parents are working and children suffer from any small or big disease. One then needs to deal with it alone as they don’t have elders and other family members to take care of. This is more prevalent in a small size family while in a medium and large size family, the presence of sibship provides the children with the much required care and attention. The **parenting styles** also tend to vary in terms of different family sizes whereby small size families tend to be very conducive and provide protective parenting to their children, the medium size families have a balanced mix of authoritarian and permissive parenting styles. In a total contrast, the large size family tends to vary in terms of the upbringing of different birth orders. Another important factor is of **Security and safety**. Considering the rise of crime in the society, people tend to feel insecure for their children in a small size family. There are a number of cases of robbery and murders and many of them take place in small size families, as it is easier to grab someone who lives alone in a house or with lesser number of people; whereas here the medium and large size families have an edge. Moreover, **Support** plays a crucial role in binding a family together. In a small size family, if there is an argument between the couple, there is no one to support any one of them. They have to deal with their problem alone without any support. Sometimes due to the modernity/broad-mindedness and ego clashes, the fight results in divorces or separations.
because there was no one to pacify the couple and make them understand the basics of a relationship. Whereas in a medium and large size family, the children tend to act as support systems and pacifiers who intervene between the parents and help them re-bond (“the advantages and disadvantages of nuclear family”, 2013).

1.2 Birth Order

The study of birth order was started over a century ago by Sir Francis Galton. Sir Francis Galton was a 19th century British anthropologist, geographer, and statistician. In his research, he concluded that first born and only born children become well known English scientists (Kluger, 2011). This is because most of the nations, including England, still followed the custom of primogeniture. Primogeniture is when the first born son inherits the family fortune. Many families in today’s world will put their first born son on a pedestal compared to their other children like families did in the past.

1.2.1 Defining Birth Order:

Birth order is the rank or order of a person by age among his or her siblings (Reber & Reber, 2001). It is defined as a person’s rank by age among his or her siblings. Birth order is often believed to have a profound and lasting effect on psychological development. This assertion has been repeatedly challenged by researchers, yet birth order continues to have a strong presence in pop psychology and popular culture. Birth order is one of the many things that affect the way we carry ourselves and how we interact with our surroundings (Leman, 2005).

1.2.2 History of Birth Order

Sigmund Freud was the first psychotherapist to say, “A child’s position in the sequence of brother and sisters is of very great significance for one course of his later life.” Freud, his mother’s undisputed favorite and a typical firstborn was conscious of his social status, openly disdainful of ‘das Volk’ (the people), and valued power and authority over his fellow men. Adler, a later born discounted Freud’s ‘firstborn’ notion of the Oedipus complex (with his undue emphasis upon parent- child
relations); pioneered in discovering the psychological implications of birth order (i.e. sibling- sibling interactions); and saw his patients as victims of their struggle for greater power (the fate of the younger sibling)

Later, Adler (1870-1937) proposed a theoretical paradigm regarding the personality make-up of children in regard to the birth order they are born in. First born will be leaders, middle will be mediators, and the youngest will most often be the babies, but if more than three years separate the siblings from each other, these typical generalizations no longer apply. Researches after Adler’s proposition have also helped support the belief that how one is placed and treated in one’s family can have a lifelong effect on one’s behavior.

1.2.3 Theories and Models of Family Size

- The quantity/quality model :

Becker and Lewis (1973) showed that quality and quantity of children interact in such a way as to make it possible, with reasonable elasticity values, to observe the negative relationship between income and number of children that we observe empirically. A key element of the model is an interaction between quantity and quality in the budget constraint that leads to rising marginal costs of quality with respect to family size; this generates a tradeoff between quality and quantity. Becker and various co-authors originally formulated this model to explain how rising incomes, by raising the demand for quality, could lead to declining fertility, even when children are not inferior goods. The negative reinforcing mechanism between quantity and quality also plays a central role in macro growth models with endogenous fertility where higher fertility leads to less human capital investment and lower levels of growth (Becker & Barro 1988), (Becker, Murphy & Tamura 1990), (Moav 2005). Despite the pre-eminence of the quantity-quality model in many empirical and theoretical papers, establishing a causal relationship between family size and other psychological factors has been surprisingly challenging. The key challenge is to correct for selection - that is, allow for the fact that parents who choose to have more children may be inherently different from those who choose to have fewer children. But is this tradeoff real? In particular, is it true that having a larger
family has a causal effect on the “quality” of the children? Or is it the case that families who choose to have more children are (inherently) different, and the children would have done worse regardless of family size? These are certain factors that make the theory worth speculating and thus more researches on family size need to be conducted to verify the actual impact.

Social learning theory:

Social learning theories argue that children fail to learn law-abiding behavior if their parents provide antisocial models and/or fail to react to their transgressions in an appropriate, consistent, and contingent fashion. Social learning theory integrated behavioral and cognitive theories of learning in order to provide a comprehensive model that could account for the wide range of learning experiences that occur in the real world. As initially outlined by Bandura and Walters in 1963 and further detailed in 1977, key tenets of social learning theory are as follows: cognitive process, vicarious reinforcement, modeling, reinforcement, and reciprocal determinism. They are also the ways of learning in different family sizes.

The varying family sizes i.e. small, medium and large, determine the amount of exposure that the children have and as a result the learning that takes place. The environment provided by the family highly determines the amount of observatory and learning experiences that they get. The children coming from different family sizes thus tend to gain this learning in different contexts.

1.2.4 Theories and Models of Birth Order

Adler (1870- 1937):

Adler (1870–1937), an Austrian psychiatrist, and a contemporary of Sigmund Freud and Carl Jung, was one of the first theorists to suggest that birth order influences personality. He argued that birth order can leave an indelible impression on an individual's style of life, which is one's habitual way of dealing with the tasks of friendship, love, and work. Adler (1928) discussed the dethronement of the oldest child, who for a while has sole claim upon his parents' attention, but is eventually "dethroned" by the coming of a younger brother or sister. After his dethronement, the oldest fights to restore his place of preeminence and importance in his parents' eyes
and among his siblings (Adler, 1928). It is viewed in terms of two factors—monopolization of parents' attention and dethronement by a newborn baby. The oldest monopolizes his parents during the early years of his life, but is dethroned. The middle never has a monopoly over his parents' attention, but is replaced by a younger sibling as the focal point of that interest. The youngest is never dethroned, and during the last few years before he leaves home is likely to have his parents to himself, following the exodus of his older siblings. The only child, of course, is never confronted with sibling competition. The result of this somewhat stylized description is that in terms of parental attention and interests the only child and the youngest are much alike. The same is true of the oldest and middle, the difference being that dethronement is likely to be a greater shock to the oldest, since he had monopolized his parents for a time. The dethroned should, thus, find themselves more independent and perhaps more competitive than the "never dethroned."

Adler (1908) believed that in a three-child family, the oldest child would be the most likely to suffer from neuroticism and substance addiction which he reasoned was a compensation for the feelings of excessive responsibility "the weight of the world on one's shoulders" (e.g. having to look after the younger ones) and the melancholic loss of that once supremely pampered position. Younger and only children may be pampered and spoiled, which can also affect their later personalities. Youngest children would tend to be overindulged, leading to poor social empathy. Consequently, the middle child, who would experience neither dethronement nor overindulgence, was most likely to develop into a successful individual yet also most likely to be a rebel and to feel squeezed-out. Additional birth order factors that should be considered are the spacing in years between siblings, the total number of children, and the changing circumstances of the parents over time.

- Characteristics of different birth orders:

  The only- born: The only child is automatically stigmatized. When asked to describe personality characteristics of an only child, many people will respond negatively, indicating the presupposition that only children are spoiled brats. However, research conducted by Falbo (Brophy, 1989), a psychologist known for work in the area of birth order, indicates otherwise. Falbo found that Chinese only
children fared no worse in personality or achievement than their counterparts with siblings. However, only children are also often seen as high-achieving, motivated, and successful (Brophy, 1989). Only children usually want to be adults, and so don’t relate to peers very well. When they become adults, they often believe they’ve finally “made it” and can now relate better to adults as peers. During their formative years, only children live primarily in the world of adults. They must learn how to operate in the big people’s world as well as how to entertain themselves. Thus they often become very creative in their endeavors. (Dinkmeyer, McKay, & Dinkmeyer, 1978)

The first born: The first-borns often are high achievers and are very conscientious, reliable, and loyal. They’re also scholarly (not all the time, though) and feel better being in control of a situation. In the case of the first baby, while there’s a lot of excitement and anticipation on the parents’ part, there’s also a lot of pressure and demand from them to be the best. This can result in two basic types: compliant and wanting to please, or strong-willed and aggressive. (It’s possible to have traits of both.) First-borns often have to grow up fast and become “little adults” before they’re ready. If the first is a female, she may be another “mother” to her siblings. If there’s a youngest brother, he may be “mothered” by sister—even through adulthood! With the oldest brother, however, it’s mutual respect and a friendly rivalry. Adler (1911) believed that first born children who later have younger siblings may have it the worst. These children are given excessive attention and pampering by their parents until that fateful day when the little brother or sister arrives. Suddenly they are no longer the center of attention and fall into the shadows wondering why everything changed. According to Adler, they are left feeling inferior, questioning their importance in the family, and trying desperately to gain back the attention they suddenly lost. The birth order theory holds that first born children often have the greatest number of problems as they get older.

The second or middle born: Second and middle-borns tend to be a bit opposite of first-borns. A middle child can be: a loner, quiet and shy, sociable, outgoing, friendly, laid-back, a peacemaker, aggressive, very competitive, or not at all. (Basically unpredictable.)
Although they’re far more outgoing than first-borns, middles are the most secretive. They’re also the most monogamous of all birth orders and have less hang-ups. (There’s not as much parental pressure to succeed.) In essence, they’re very balanced. They have excellent people-oriented social skills and often make great managers and leaders because they understand compromise and negotiation. Also, middle born children may have it the easiest, and interestingly, Adler was a middle born child. These children are not pampered as their older sibling was, but are still afforded the attention. As a middle child, they have the luxury of trying to dethrone the oldest child and become more superior while at the same time knowing that they hold this same power over their younger siblings. Adler (1911) believed that middle children have a high need for superiority and are often able to seek it out such as through healthy competition.

**The youngest or last born:** These are true “people persons” or life of the party. The babies are often charming, friendly manipulators who have a large desire to make their mark on the world. They’re also rather absentminded, and tend to have real highs and deep lows. They crave attention and are often the family clown or entertainer. People-oriented vocations are their forte. This group makes great salespeople. Last-borns can be cocky, however, and they don’t worry about the after-effects of their actions or decisions. While they’re uncomplicated and affectionate, they can also be rebellious, temperamental, spoiled, and impatient.

This birth order could benefit by learning to be neat, accepting more responsibility, be less self-centered, and admit their faults without blaming others. In addition, try not to hog the spotlight. The youngest children, like the first born, may be more likely to experience personality problems later in life. This is the child who grows up knowing that he has the least amount of power in the whole family. He sees his older siblings having more freedom and more superiority. He also gets pampered and protected more than any other child did. This could leave him with a sense that he cannot take on the world alone and will always be inferior to others (Dinkmeyer, McKay, & Dinkmeyer, 1978; Adler, 1911).
Frank Sulloway’s book Born to Rebel (1996) generated renewed interest in birth order and personality research by contending that firstborn children are more responsible, competitive, and conventional, while later borns are more playful, cooperative, and rebellious. Although Sulloway’s rationale of niche-picking within the family is compelling, the hypothesized relationships have received only marginal support using the big-five model of personality, which comprises the traits of neuroticism, extraversion, openness, agreeableness, and conscientiousness (Jefferson et al., 1998).

Within-family studies have yielded slightly more support for Sulloway’s theory (Paulhus, Trapnell, & Chen, 1999). Overall, studies of the relationship between birth order and personality have yielded very small effect sizes at best. Consequently, one can question whether birth order and personality effects either are noticeable in everyday life or possess significance for clinical practice. It is likely that birth order and personality effects are more apparent than they are real.

**Psychological Mechanisms**

Birth order is one influence among many that helps explain the effects of the non-shared family environment. At least five separate processes are associated with birth order within a family dynamics model: (1) differences in parental investment; (2) sibling dominance hierarchies; (3) niche specialization; (4) de-identification, or the tendency for siblings to strive to be different from one another; and (5) sibling stereotypes (Sulloway, 2007).

**Parental Investment**

Typically, differences in parental investment cause quadratic or U-shaped distributions in resources, with middle borns receiving fewer resources than firstborns or lastborns. Such U-shaped distributions result in part from what has been termed the “equity heuristic” and its counterintuitive consequences (Hertwig, Davis, & Sulloway 2002). The equity heuristic is a variant of resource-dilution theories and refers to the tendency for parents, in modern societies where resources are relatively abundant, to
treat their children equally. Unlike middleborns, firstborns and lastborns experience a period in which they are the only children living at home. As a consequence, the cumulative investment they receive from parents is greater than that allotted to middleborns, who generally obtain an equal share of resources divided among all the children who are present within the home. When a particular parental resource is allocated in childhood, such as financial resources for vaccinations, the equity heuristic predicts linear birth order trends in which firstborns are favored over their younger siblings. This is because younger children cannot equalize the acquisition of such resources at a later age, when older siblings have finally left the home, given that these resources are no longer developmentally relevant. In contrast to middleborns, lastborns benefit from another tendency in parental investment. As mothers reach the end of the reproductive careers, youngest children increasingly become the last child they will ever bear. Under parent-child relationships such circumstances, it is adaptive for parents to invest greater resources in youngest children, especially during the vulnerable stages of infancy and early childhood, because these offspring cannot be replaced (Rohde et al., 2003; Salmon & Daly, 1998). The tendency for parents to favor lastborns augments the typical U-shaped distributions that result from parents’ allocating resources according to the equity heuristic. In short, the only way for parents to be truly equitable to offspring on a cumulative basis is for them to systematically favor middleborns—something that other offspring would not readily tolerate.

Sibling Dominance Hierarchies

Siblings create dominance hierarchies based on age, size, and power. Both physically and verbally, firstborns can easily intimidate their younger brothers and sisters. As a result, they usually exert dominance over their siblings.

Several aspects of personality and behavior, as expressed within the family, reflect these differences in position within sibling dominance hierarchies.

Family Niches

Sibling differences arise in part because of the different roles that children adopt within the family system. These differing roles are fostered by genetic
disparities, and also by differences in sex and birth order. The resulting diversification of family roles exemplifies Darwin’s (1859) famous “principle of divergence.” As with competing species in nature, role specialization among children leads to a division of labor and reduces competition. Specialization also makes it harder for parents to compare the abilities of one child against those of another birth order (which generally benefits younger and less-experienced offspring). Ordinal position within the family is directly relevant to this process of sibling diversification because birth rank is inextricably linked with age and hence with opportunities for children to engage in age-specific tasks. Because of their greater age, for example, first-borns tend to occupy the niche of a surrogate parent, leading them to develop a sense of parent-like responsibility and to emulate other adult behaviors.

*De-identification*

Siblings often strive to differentiate themselves from one another, a process that has been called “de-identification” (Schachter, Gilutz, Shore, & Adler, 1978). This process extends to patterns of identification with, and attachment to, parents. If one child prefers one parent, for example, another child will often identify more closely with the other parent (Rohde et al., 2003; Schachter 1982). Such patterns of de-identification are expected to produce zigzag trends because each child seeks to maximize the process of differentiation from his or her closest siblings in age (Skinner & William, 1992).

*Birth-order Stereotypes*

Stereotypes associated with ordinal position appear to reinforce, and perhaps to foster, some of the behavioral differences observed among siblings. Stereotypes generally build upon real differences that are widely observed and culturally sanctioned. Such stereotypes are well documented in the literature on birth order (Baskett, 1985; Musun-Miller, 1993; Nyman, 1995). It is generally believed, for example, that firstborns tend to be more intellectually oriented than their younger siblings, are more conscientious in their work habits and studies, and attain higher levels of professional status in life. These stereotypes correspond closely with observed differences by birth order (Herrera, Zajonc, Wieczorkowska, & Cichomski, 2003).
Physiological Theory

In his review of several theories relating birth order and educational attainment, Bayer (1967a) points out that physiological theory have been used to account for contradictory findings regarding intelligence of offspring and maternal health. On the one hand, the young mother is said to provide a "richer uterine environment" for her earlier-born children than for her later-born. The fetus receives more nutriment from a young mother who has experienced few pregnancies, the result being greater health and intelligence among earlier-borns. On the other hand, another view holds that each subsequent pregnancy is easier on a woman, with less trouble in labor and less likelihood of the need for forceps in delivery, with their possibly damaging effects on the newborn. Such being the case, each subsequent child should have a better opportunity of being born with maximal health or intelligence, given his or her genetic makeup.

Previous studies have assessed two related ideas - the hygiene hypothesis and the birth order effect (Karmaus, & Botezan, 2002). The hygiene hypothesis suggests that exposure to infections after birth (due to transmission from older siblings or other children), may influence the development of the immune system along a non-allergic (T helper 1; Th1) pathway, leading to a reduced risk of asthma and other allergic diseases. Although still under investigation, the hygiene hypothesis may explain observed associations between family size, birth order, day-care attendance, and the risk of asthma and allergy. According to the hygiene concept, the effect of birth order is through sibling hierarchy, where the younger child is prone to infection from the older sibling and hence is at lower risk of atopy.

Sibling Influence Theory

The most recent and insistent exponents of sibling influence have been Sutton-Smith and Rosenberg, in their book The Sibling (1970). Finding, in their own researches, that the sex and power of one's sibling has considerable influence upon one's own personality, the authors conclude that "regardless of parents, the sibling-sibling interactions are intrinsically responsible for many of the established sibling
behavior and personality differences.” By their own admission, the authors are concerned in their book to "counteract too many years of overemphasis on the importance of parent-child influences alone" (Sutton-Smith & Rosenberg, 1970). Much of the continuing influence which molds personality comes not from parents but from siblings acting as role models for, or competitors with, each other. Nevertheless, as we have said, this is a partial theory, accounting more for later-born than for first-born or only-child development. "It is conceivable that child-child influences are as important as parent-child influences are with later-born children, but it is not conceivable that they are as important with first-born and only children" (Sutton-Smith & Rosenberg, 1970).

Alan E. Stewart (2012) distinguished between “actual” birth order, or ABO (the numerical rank order into which you are born in your family of origin) and “psychological” birth order, or PBO (self-perceived position in the family). One’s actual birth order need not have the same impact on an individual as the birth order one believes one has. Actual and psychological birth order can deviate for a number of reasons, including illness of one child, size of family, and degree of separation between siblings. Your role in the family based on your age may not be same as the role you have come to occupy. One’s perceived niche in one’s family plays a larger role in influencing the adult one becomes than the actual timing of one’s birth. Thus, Stewart’s study shows that one is not fated to live out a life dominated by the accident of the timing of one’s birth. One can’t change their actual birth order, but one can change the way they think about their role in the family.

1.2.5 Combined Theories of Family Size and Birth order

Resource dilution theory:

The Resource Dilution Model, proposed by Blake (1981) and elaborated by Downey (2001) offers a simple explanation both for the higher IQ scores of firstborn children and the overrepresentation of firstborns among the college population and the eminent. The resource dilution theory, assumes that family resources are ‘finite’. Blake (1981) describes three types of finite family resources: (1) settings, which refer
to “types of homes, necessities of life, and cultural objects (like books, pictures, music);” (2) opportunities, which include “specific chances to engage the outside world;” and (3) treatments, which include “personal attention, intervention, and teaching” (Blake, 1981). Dilution theory asserts that these resources are divided by the number of children in a family and the quality of their life drops as the family expands. Researchers on only children have occurred that since only child does not compete with siblings for scarce economic and interpersonal resources, their status as the only recipient of family assets is conducive to their education opportunities, physical health, as well as their general well-being (Falbo, 1987; Falbo & Polit, 1986). The three assumptions are explained as follows:

1. "Parental resources are finite." Resources include money, personal attention and cultural objects such as books. Parents do have discretion as to how they use their resources, but they cannot necessarily create more when they are needed.

2. "Additional siblings reduce the share of parental resources received by any one child." Parents can devote 100% of their resources to an only child or a firstborn who's siblings have not yet arrived. Parents with more than one child must divide their resources accordingly. For example, parents who can afford to send one child to college may not be able to send two children. This may offer one explanation for the overrepresentation of firstborns in the college population (Schachter, 1963).

3. "Parental resources have an important effect on children's educational success." It is assumed that the relative richness of the environment affects cognitive development. Further, opportunity for higher education is a factor in the achievement of eminence. Eminent individuals (especially in scientific and technical fields) almost always attended college (Schachter, 1963). (The quotes in 1-3 above are from Downey, 2001).

Whereas the negative view on only children assumes that absence of siblings deprives singletons of interactive opportunities with the other children and thus, hinders their normal development, sibling interaction may not always be constructive.
Qualitative research reports that only children view negatively sibling fights and they feel grateful for not having to live through these conflicts during their growing up years (Roberts & Blanton, 2001). Absence of siblings does not necessarily translate into a deprivation of the social world. Cousins, friends, and playmates provide ample opportunities for children’s interaction. Research has provided mounting evidence on parents as gatekeepers in their management of children’s peer world, such as by initiating, arranging, monitoring, and facilitating their children’s contacts with potential friends (Ladd, 1992; Parke et al., 1989). Consistent with the resource dilution model, parents of singletons, with their undivided parental resources such as attention, time and energy devoted to their only children, are likely to be in a better position to influence their children’s choice of conventional friends than parents of multiple children.

➢ Confluence Model

The Confluence Model proposed by Zajonc & Markus (1975) and Zajonc (1976, 2001) explains the firstborn IQ advantage in terms of the ever-changing intellectual environment within the family. They provided a mathematical model of the effect of birth order and family size on IQ scores. This theory suggests that children are born into intellectual environments that affect intelligence—first born children are born into adults-only families, all others are born into mixed adult/child families. As families increase in size, the overall IQ of the family drops; children from larger families do have slightly lower IQs. The last child in the family is denied the opportunity to tutor younger children, and there is a slight "extra" decrement for being the youngest child in a family. These effects are theoretically important, but the size of the effects is fairly small (amounting to a range of about 3 IQ points). This model states that because firstborns mainly have adult influences around them in their early years, they will spend their initial years of life interacting in a highly intellectual family environment. This effect may also be observed in siblings who, although later born, have a sibling at least five years senior with no siblings in between. These children are considered to be "functional firstborns". The theory further suggests that firstborns will be more intelligent than only children, because the latter will not benefit from the "tutor effect" (i.e. teaching younger siblings).
It uses a simple mathematical formula to compute the relative advantages and disadvantages of these factors:

1. Firstborns do not have to share their parents' attention, so they benefit from their parents' complete absorption in the new responsibility. Laterborn children never experience this advantage. Moreover, additional siblings automatically limit the amount of attention any of the siblings get-and this includes the firstborn. This would explain the Belmont and Marolla (1973) finding that firstborns from smaller families have higher IQs than firstborns from larger families.

2. Firstborn children are exposed to more adult language. Laterborns are exposed to the less mature speech of their siblings. This may affect their performance on the verbal scales of intelligence tests. Moreover, the linguistic environment becomes increasingly less mature as more children enter the family. This also gels with the finding that children in larger families have lower IQ scores.

3. As more children enter the family, the general intellectual environment becomes less mature. This would explain why firstborns and older children from large families have lower IQs than firstborns and older children from smaller families.

4. Firstborns (and older siblings in general) often have to answer questions and explain things to their younger siblings. It is believed that the act of tutoring helps the older children to cognitively process information. Further, teaching others may improve their verbal abilities. Except in very rare cases, youngest siblings do not get the opportunity to tutor their brothers and sisters. This is the reason why only children do not tend to have higher IQs than firstborns.

Zajonc's theory has been criticized for confounding birth order with both age and family size, and with one other sibling score higher on tests of verbal ability than laterborns and children with multiple siblings (Polit, & Falbo, 1988). This observation does support a conclusion, more modest than the confluence model's stronger claims that smaller families lead to children with higher test scores. However, when the
metanalysis tested more specific claims by comparing firstborns against the members of the other groups also occupying the upper performance tier (i.e., singletons and children with one and only one sibling), it found that firstborns do not enjoy any advantage over the members of the other groups, suggesting that either a) firstborns do not enjoy any advantage not also enjoyed by those other groups' members or at least b) to whatever extent firstborns do enjoy unique advantages, members of the other upper-tier groups enjoy offsetting advantages not shared by firstborns.

- **Attachment theory:**

  Attachment theory (Bowlby, 1958/1969/1982), describes the dynamics of long-term relationships between humans. Its most important tenet is that an infant needs to develop a relationship with at least one primary caregiver for social and emotional development to occur normally. Attachment theory explains how much the parents' relationship with the child influences development. Attachment theory is an interdisciplinary study encompassing the fields of psychological, evolutionary, and ethological theory. Research by developmental psychologist Mary Ainsworth in the 1960s and 70s reinforced the basic concepts, introduced the concept of the "secure base" and developed a theory of a number of attachment patterns in infants: secure attachment, avoidant attachment and anxious attachment (Bretherton, 1992). A fourth pattern, disorganized attachment, was identified later. The theoretical reasoning regarding children’s development is informed by the attachment theory which is based on parent-infant relations and views ‘security’ as a central dimension in influencing children’s healthy development. The theory posits that the primary goal of an infant attachment system is to obtain and keep the caregiver at the time of need. A child’s confidence grows from his/her felt security, which is a fundamental feeling of the environment as safe, others as loving and self as valuable (Cox & Harter, 2003). The higher levels of parental responsiveness, attention, and concern for their only children are expected to lead a greater sense of security, which facilitates children’s development of intellectual competence, psychological confidence, and mature behavioral patterns.
1.3 INTELLIGENCE:

Intelligence is an abstract word which is much easier described than defined. Intelligence derives from the Latin verb *intelligere*, to comprehend or perceive. A form of this verb, *intellectus*, became the medieval technical term for understanding, and a translation for the Greek philosophical term *nous*. This term was however strongly linked to the metaphysical and cosmological theories of teleological scholasticism, including theories of the immortality of the soul, and the concept of the Active Intellect (also known as the Active Intelligence). Intelligence has been defined in many different ways, including the abilities, but not limited to, abstract thought, understanding, self-awareness, communication, reasoning, learning, having emotional knowledge, retaining, planning, and problem solving. It can also be more generally described as the ability to perceive and/or retain knowledge or information and apply it to itself or other instances of knowledge or information creating referable understanding models of any size, density, or complexity, due to any conscious or subconscious imposed will or instruction to do so.

1.3.1 Defining Intelligence:

- Intelligence is the “judgment, otherwise called "good sense," "practical sense," "initiative," the faculty of adapting one's self to circumstances ... auto-critique (Binet, 1916)
- “Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment (Wechsler, 1944).”
- Intelligence is often referring to other’s intelligence by unfolding people as smart, sharp, bright, brilliant and many more (Baron & Kalsher, 2002).
- The American Psychological Association (APA) has defined intelligence as the “ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, and to overcome obstacles by taking thought” (Wood, Wood & Boyd, 2004).
• The ability to learn about, learn from, understand, and interact with one’s environment is termed as intelligence (Bainbridge, 2007).

1.3.2 Theories of intelligence:

➢ Spearman’s general intelligence factor or $g$:

The psychologist Charles Spearman (1904) early in the 20th century carried out the first formal factor analysis of correlations between various test tasks. He found a trend for all such tests to correlate positively with each other, which is called a positive manifold. Spearman found that a single common factor explained the positive correlations among test. Spearman named it $g$ for "general intelligence factor". He interpreted it as the core of human intelligence that, to a larger or smaller degree, influences success in all cognitive tasks and thereby creates the positive manifold. This interpretation of $g$ as a common cause of test performance is still dominant in psychometrics. An alternative interpretation was recently advanced by van der Maas and colleagues. Their mutualism model assumes that intelligence depends on several independent mechanisms, none of which influences performance on all cognitive tests. These mechanisms support each other so that efficient operation of one of them makes efficient operation of the others more likely, thereby creating the positive manifold.

➢ Cattell-Horn-Carroll Theory

Many of the broad, recent IQ tests have been greatly influenced by the Cattell-Horn-Carroll theory (1941, 1965, 1993). It is argued to reflect much of what is known about intelligence from research. A hierarchy of factors is used. $g$ is at the top. Under it there are 10 broad abilities that in turn are subdivided into 70 narrow abilities. The broad abilities are:

- **Fluid Intelligence (Gf)**: includes the broad ability to reason, form concepts, and solve problems using unfamiliar information or novel procedures.
- **Crystallized Intelligence (Gc)**: includes the breadth and depth of a person's acquired knowledge, the ability to communicate one's knowledge, and the ability to reason using previously
learned experiences or procedures. **Quantitative Reasoning (Gq):** the ability to comprehend quantitative concepts and relationships and to manipulate numerical symbols. **Reading and Writing Ability (Grw):** includes basic reading and writing skills. **Short-Term Memory (Gsm):** is the ability to apprehend and hold information in immediate awareness and then use it within a few seconds. **Long-Term Storage and Retrieval (Glr):** is the ability to store information and fluently retrieve it later in the process of thinking. **Visual Processing (Gv):** is the ability to perceive, analyze, synthesize, and think with visual patterns, including the ability to store and recall visual representations. **Auditory Processing (Ga):** is the ability to analyze, synthesize, and discriminate auditory stimuli, including the ability to process and discriminate speech sounds that may be presented under distorted conditions. **Processing Speed (Gs):** is the ability to perform automatic cognitive tasks, particularly when measured under pressure to maintain focused attention. **Decision/Reaction Time/Speed (Gt):** reflect the immediacy with which an individual can react to stimuli or a task (typically measured in seconds or fractions of seconds; not to be confused with Gs, which typically is measured in intervals of 2–3 minutes).

- **Thurstone’s primary mental abilities:**

  Psychologist Louis L. Thurstone (1887-1955) offered a differing theory of intelligence. Instead of viewing intelligence as a single, general ability, Thurstone's theory focused on seven different "primary mental abilities." The abilities that he described were: **Verbal comprehension**--the ability to define and understand words. **Word fluency**--the ability to produce words rapidly. **Number**--the ability to solve arithmetic problems. **Space**--the ability to visualize relationships. **Memory**--the ability to memorize and recall. **Perception**--the ability to see differences and similarities among objects. **Reasoning**--the ability to find rules.

  After deciding that these seven factors made up intelligence, Thurstone rearranged the existing subtests and devised some new ones. He referred to these sets as: "Tests of Primary Mental Abilities," which he used to investigate the question as to whether there was such a thing as "general" intelligence. His Tests of Primary
Mental Abilities were administered to a large group of children, and correlations were computed between scores on the various tests.

Gardener’s theory of multiple intelligences:

Howard Gardner’s theory of multiple intelligences (1983) is based on studies not only of normal children and adults but also by studies of gifted individuals (including so-called "savants"), of persons who have suffered brain damage, of experts and virtuosos, and of individuals from diverse cultures. This led Gardner to break intelligence down into at least eight different components: logical, linguistic, spatial, musical, kinesthetic, interpersonal, intrapersonal, naturalist and existential intelligences. He argues that psychometric tests address only linguistic and logical plus some aspects of spatial intelligence. A major criticism of Gardner's theory is that it has never been tested, or subjected to peer review, by Gardner or anyone else, and indeed that it is unfalsifiable.

Linguistic Intelligence: The kind of ability exhibited in its fullest form, perhaps, by poets. Logical-Mathematics Intelligence: Is logical and mathematical ability, as well as scientific ability. Howard Gardner believed Jean Piaget may have thought he was studying all intelligence, but in truth, Piaget was really only focusing on the logical mathematical intelligence. Spatial Intelligence: The ability to form a mental model of a spatial world and to be able to maneuver and operate using that model. Musical Intelligence: Leonard Bernstein had lots of it; Mozart, presumably, had even more. Bodily-kinesthetic intelligence: The ability to solve problems or to fashion products using one's whole body, or parts of the body. For example, dancers, athletes, surgeons, craftspeople, etc. Interpersonal Intelligence: The ability to see things from the perspective of others, or to understand people in the sense of empathy. Strong interpersonal intelligence would be an asset in those who are teachers, politicians, clinicians, religious leaders, etc. Intrapersonal Intelligence: A correlative ability, turned inward. It is a capacity to form an accurate, veridical model of oneself and to be able to use that model to operate effectively in life.
Sternberg’s triarchic theory of intelligence:

Sternberg (1988, 1997) proposed the triarchic theory of intelligence to provide a more comprehensive description of intellectual competence than traditional differential or cognitive theories of human ability. The triarchic theory describes three fundamental aspects of intelligence. Analytic intelligence comprises the mental processes through which intelligence is expressed. Creative intelligence is necessary when an individual is confronted with a challenge that is nearly, but not entirely, novel or when an individual is engaged in automatizing the performance of a task. Practical intelligence is bound in a sociocultural milieu and involves adaptation to, selection of, and shaping of the environment to maximize fit in the context. The triarchic theory does not argue against the validity of a general intelligence factor; instead, the theory posits that general intelligence is part of analytic intelligence, and only by considering all three aspects of intelligence can the full range of intellectual functioning be fully understood.

Sternberg (1988, 1997) focuses on just three main components:

- **Practical intelligence** -- the ability to do well in informal and formal educational settings; adapting to and shaping one's environment; street smarts;
- **Experiential intelligence** -- the ability to deal with novel situations; the ability to effectively automate ways of dealing with novel situations so they are easily handled in the future; the ability to think in novel ways;
- **Componential intelligence** -- the ability to process information effectively. This includes metacognitive, executive, performance, and knowledge-acquisition components that help to steer cognitive processes.

More recently, the triarchic theory has been updated and renamed the **Theory of Successful Intelligence** by Sternberg. Intelligence is defined as an individual's assessment of success in life by the individual's own (idiographic) standards and within the individual's sociocultural context. Success is achieved by using combinations of analytical, creative, and practical intelligence. The three aspects of
intelligence are referred to as processing skills. The processing skills are applied to the pursuit of success through what were the three elements of practical intelligence: adapting to, shaping of, and selecting of one's environments.

➢ **Guilford's Structure of Intellect Model**

According to Guilford's Structure of Intellect (SOI) theory (1988), an individual's performance on intelligence tests can be traced back to the underlying mental abilities or factors of intelligence. SI theory comprises up to 150 different intellectual abilities organized along three dimensions—Operations, Content, and Products.

**Operations**: SOI includes six operations or general intellectual processes:
- **Cognition**—The ability to understand, comprehend, discover, and become aware of information;
- **Memory recording**—The ability to encode information;
- **Memory retention**—The ability to recall information;
- **Divergent production**—The ability to generate multiple solutions to a problem; creativity;
- **Convergent production**—The ability to deduce a single solution to a problem; rule-following or problem-solving;
- **Evaluation**—The ability to judge whether or not information is accurate, consistent, or valid.

**Contents**: SOI includes three broad areas of information to which the human intellect applies the six operations: **Figural** - Concrete, real world information, tangible objects -- things in the environment. It includes visual—Information perceived through seeing, auditory—Information perceived through hearing and kinesthetic—Information perceived through one's own physical actions; **Symbolic**—Information perceived as symbols or signs that stand for something else; e.g., Arabic numerals or the letters of an alphabet, musical and scientific notations; **Semantic**—Which is concerned with verbal meaning and ideas. Generally considered to abstract in nature; **Behavioral**—Information perceived as acts of people. (This dimension was not fully researched in Guilfords project and remain theoretical and is generally not included in the final model that he proposed for describing human intelligence.)
**Products:** As the name suggests, this dimension contains results of applying particular operations to specific contents. The SOI model includes six products, in increasing complexity: **Units**—Single items of knowledge; **Classes**—Sets of units sharing common attributes; **Relations**—Units linked as opposites or in associations, sequences, or analogies; **Systems**—Multiple relations interrelated to comprise structures or networks; **Transformations**—Changes, perspectives, conversions, or mutations to knowledge; **Implications**—Predictions, inferences, consequences, or anticipations of knowledge.

1.3.3  **The Nature versus nurture debate:**

In the heyday of eugenic IQ testing in the 1920s there was no evidence for the heritability of IQ. It was just an assumption of the practitioners. Today that is no longer the case. The heritability of IQ is now a hypothesis that has been tested on twins and adoptees. The results really are quite startling. No study of the causes of intelligence has failed to find a certain and often substantial heritability. What varies from study to study is the amount that can be attributed to heritability.

➢ **Evidence in favor of nature:**

Evidence from family studies provides the main supporting evidence from which arguments about the relative roles of genetics and environment are constructed. A large number of the study of twins reared apart was undertaken by Thomas Bouchard of the University of Minnesota starting in 1979. He collected pairs of separated twins from all over the world and reunited them while testing their personalities and IQs. Other studies at the same time concentrated on comparing the IQs of adopted people with those of their adopted parents and their biological parents or their siblings. Put all these studies together, which include the IQ tests of tens of thousands of individuals, and the table looks like this: Same person tested twice 87%, Identical twins reared together 86%, Identical twins reared apart 76%, Fraternal twins reared together 55%, Biological siblings reared together 47% (studies show that reared apart about 24%), Parents and children living together 40%, Parents and children living apart 31%, Adopted children living together 0%, Unrelated people
living apart 0% (Ridley, 1999). A meta-analysis of 9 family studies was conducted by Daniels, Devlin and Roeder (1997): it included 212 correlations and produced very similar results to those quoted by Matt Ridley. These authors conclude that heritability can account for 48% of the variation in IQ. The highest estimates have come from reviews of research by Herrnstein & Murray, 1994 (74%) and Eysenck (80%). A safer bet is probably to sit on the fence - 50:50!

Heritability indices, however, are not pure measures of genetic inheritance - they included prenatal environmental influences, (e.g. whether the mother smokes, what she eats, etc.) and the postnatal material environment. Thus these heritability indices are likely to overestimate the role of genetics. It must be noted, however, that heritability is not pure genetic influence as the pre and postnatal environments must be taken into account. Heritability estimates based on comparing correlations between IQs of monozygotic (identical) twins reared together with IQs of dizygotic (fraternal) twins and siblings are likely to overestimate the genetic component because monozygotic twins share more similar environments - both in the womb and out.

- **Evidence in favour of Nurture**

"Give me a dozen healthy infants & my own specific world to bring them up in, & I'll guarantee to take any one at random & train him to become any type of specialist I might select - doctor, lawyer, artist, merchant, chef & yes, even beggar & thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors." - Watson, 1924.

This was a famous quote in the heyday of behaviorism, when the child was considered to be a 'tabula rasa' (blank slate) onto which anything could be sculpted through environmental experience. This would be a 100% environmental view, but virtually no psychologists would accept such an extreme position today.

- **The flynn effect: are we getting smarter?**

In the 1980s, a NZ-based political scientist, James Flynn, noticed that IQ was increasing in all countries all the time, at an average rate of about 3 IQ points per
decade i.e. the average IQ across the world has risen over 1 standard deviation (i.e. 15 points) since WWII - predominantly due to environmental effects. As a result, new norms continue to be used to rescale IQ tests to '100'.

![Figure 1: The Flynn Effect.](http://www.wilderdom.com/personality/L4-1IntelligenceNatureVsNurture.html)

Could this be due to diet? Possibly but IQ scores are still rising just as rapidly in well-nourished western countries. Could it be schooling? Interruptions to schooling only have temporary effects on IQ. Importantly, it is those tests that test abstract reasoning ability that show the steepest improvements. One researcher, Ulric Neisser suggests that the Flynn effect is due to the way we are being saturated with sophisticated visual images: ads, posters, videogame and TV graphics etc - rather than written messages. He suggests that children experience a much richer visual environment than in the past and that this assists them with visual puzzles of the kind that dominate IQ tests.

The evidence for the rise in IQ comes from: Adoption studies, Nutrition studies, and Educational intervention studies.

1.3.4 Intelligence, family size and birth order

Debates on the relationship between family size, birth order and intelligence are surrounded by ambiguity and controversies. Some believe that the older sibling has the upper hand (Kristensen & Bjerkedal, 2007); where else others deem the youngest to be brighter (Carey, 2007). Yet, others have found no relationship between birth order and intelligence (MacCallum et al., 2007). It is believed that smaller families tend to possess greater intelligence as compared to larger families (Anastasi, 1956; Higgins, et al., 1962), thus implying that as the family size increases, intelligence tends to start decreasing. According to the confluence model, firstborns are born into a family that consists entirely of cognitively mature adults; second borns are born into a family that consists of 67% cognitively mature adults; third borns are born into a family that consists only of 50% cognitively mature adults. Hence, the higher their birth order, the less cognitively stimulating the children’s family environment. Similarly, the resource dilution model points out that the parents’ material resources, energy, and attention are all finite, and thus the more children there are in the family, the less of each resource necessarily accrues to each child. The higher-order offspring (laterborns) are therefore expected to suffer from such relative lack of resources in the family and thus to attain lower intelligence, among other things. In sharp contrast, the admixture hypothesis (Page & Grandon, 1979; Rodgers, 2001; Rodgers, Cleveland, van den Oord, & Rowe, 2000) suggests that the apparent birth-order effect on intelligence is a methodological artifact of using between-family (cross-sectional) data to infer within-family dynamics. It explains the correlation between birth order and intelligence across individuals by the fact that (a) less intelligent parents are more likely to have a larger number of children and (b) higher birth-order children necessarily come from larger families, whereas children from smaller families have greater representation among lower birth-order children. For example, fourth borns necessarily come from families with four or more children, whereas firstborns can come either from families with one or two children or families with five or six children. Given the preponderance of families with a small number of children, such families are over represented in samples of first- and second borns. Thus, if there is a negative correlation between parental intelligence and their number
of children, then it can create a statistical association between birth order and intelligence among children across families (Kanazawa, 2012). Apart from that, in terms of birth order, first-born and only-born children also tend to attribute others’ work accomplishment to the internal locus of control. This gives them the extra strive for higher achievement as compared to later-born (Phillips & Phillips, 1994 as cited by Guastello & Guastello, 2002). First-borns might score higher on measures of intelligence, because, at some point in their lives, they were only children who were the sole recipients of their parents’ attention. Younger siblings might earn better grades, because they received mentoring from first-borns who already had to tackle certain subjects, the researchers say. Also, later born children might feel extra pressure to be competitive, and might try to out-do their older siblings in the hopes of gaining extra attention from parents. The youngsters might also be more open to new experiences, because they "see the obstacles that their older siblings have overcome and therefore feel more secure in challenging themselves."

1.4 Mental Health Conditions:

Mental health describes a level of psychological well-being, or an absence of a mental disorder. From the perspective of 'positive psychology' or 'holism', mental health may include an individual's ability to enjoy life, and create a balance between life activities and efforts to achieve psychological resilience. Mental health can also be defined as an expression of emotions, and as signifying a successful adaptation to a range of demands.

The World Health Organization (2014) defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". It was previously stated that there was no one "official" definition of mental health. Cultural differences, subjective assessments, and competing professional theories all affect how "mental health" is defined. There are different types of mental health problems, some of which are common, such as depression and anxiety disorders, and some not so common, such as schizophrenia and bipolar disorder.
Most recently, the field of Global Mental Health has emerged, which has been defined as ‘the area of study, research and practice that places a priority on improving mental health and achieving equity in mental health for all people worldwide’ (Patel & Prince, 2010).

In the present study, the mental health conditions are being studied under the guidelines of Liu, Munakata, & Onuoha (2005). They comprise of General Health, Depression, State- Trait Anxiety, Self- Esteem, Interpersonal Dependency, Youth Stressors, and Love Awareness. In this research, we are taking up depression, state-anxiety, trait-anxiety, and self-esteem, which are discussed as ahead:

1.4.1 Depression:

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behaviour, feelings and physical well-being. Depressed people may feel sad, anxious, empty, hopeless, helpless, worthless, guilty, irritable, or restless. They may lose interest in activities that once were pleasurable, experience loss of appetite or overeating, or problems concentrating, remembering details or making decisions; and may contemplate or attempt suicide. Insomnia, excessive sleeping, fatigue, loss of energy, or aches, pains or digestive problems that are resistant to treatment may be present.

1.4.1 (A) Defining Depression

The World Health organization (2014) defines depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration. Depression can be long-lasting or recurrent, substantially impairing an individual’s ability to function at work or school or cope with daily life. At its most severe, depression can lead to suicide. When mild, people can be treated without medicines but when depression is moderate or severe they may need medication and professional talking treatments.”

The Diagnostic and Statistical Manual of Mental Disorders defines a depressed person as experiencing feelings of sadness, helplessness and hopelessness.
In traditional colloquy, feeling "depressed" is often synonymous with feeling "sad", but both clinical depression and non-clinical depression can also refer to a conglomeration of more than one feeling. There exist different forms of depression and depression can manifest itself in different grades of severity. In general, depressive feeling is an emotion that is universally experienced by virtually everyone at some time in life. Depressive feeling can also manifest itself as a special symptom in different mental or somatic disorders (Aalto-Setälä et al., 2002).

The current list of symptoms that should be considered for a diagnosis of major depression is presented in Table. As noted, only five symptoms are required for a diagnosis, yet individuals can experience more than this minimum in increasingly severe cases. Diagnostically, at least one of these symptoms must include pervasive sadness or loss of interest, although this requirement could be refined in future versions of the DSM on the basis of recent and future research (Zimmerman et al., 2006). Also, the diagnosis requires a minimum of 2 weeks of symptoms, although the length of a given episode of depression can extend over a considerably longer timeframe (years, in some instances).

1.4.1 (B) Types of Depression

The ICD-10 Classification of Mental and Behavioral Disorders (WHO, 1997) reviews the categories of mild, moderate and severe depression when diagnosing an initial depressive episode. Further depressive episodes are classified under categories of recurrent depressive disorder.

Major depression

Major depression is also called clinical depression or unipolar depression. These symptoms are based upon the ICD-10 Classification of Mental and Behavioral Disorders (WHO, 1997).

Typical symptoms: Depressed mood, loss of interest and enjoyment, and reduced energy

Common symptoms: Reduced concentration and attention, reduced self-esteem and self-confidence, ideas of guilt and unworthiness, bleak and pessimistic view of the future, ideas or acts of self-harm or suicide, disturbed sleep, diminished appetite.
The severity is based upon the number of symptoms and the effect this has upon the individual’s daily living. These symptoms will have been experienced for a period of at least 2 weeks.

**Dysthymia**

Dysthymia is a more chronic but milder depressive order than major depression. It is more prevalent in women than in men and also is more likely to occur in the older person.

**Common symptoms:** Depressed mood for most of the day for at least 2 years, Presence of at least two of the following: poor appetite, insomnia, low energy or fatigue, poor concentration and difficulty in making decisions, feelings of hopelessness, absence of mania.

These symptoms affect the person’s ability to function socially and in the workplace (American Psychiatric Association, 1995).

**Manic depression or bipolar disorder**

Manic depression is also known as bipolar disorder where a person has high- and low- mood-swings. Bipolar disorder or manic depression causes major depressive episodes and is shown when the person displays extreme alterations in mood between mania and deep depression. Mental symptoms of depression experienced by people with manic depression include the following: feeling unhappy, loss of interest, loss of enjoyment, tiredness, loss of self-confidence, irritability, tiredness and agitation, feeling hopeless and inadequate, thoughts of suicide, lack of confidence, inability to make simple decisions (Walsh, 2009).

Physical symptoms of manic depression experienced include the following: early waking, loss of appetite, loss of weight, constipation, and reduction in libido. The person feels unable to continue functioning with their daily routine and also finds it difficult to maintain contact with other people. Because of these feelings, it is extremely difficult for individuals to maintain employment and as a result relationships often break down. If left untreated or undiagnosed, depression can lead to suicide.
1.4.1 (C ) Theories of Depression:

- Neurobiological Theories

Neurobiological theories include genetic, neurotransmitter, neurohormonal, and biological rhythm theories. Other, less prominent, biological theories, such as the viral theory, have been proposed. Those theories have generally arisen out of research on animals and humans using the scientific method of observation, generation, and evaluation of data.

- Genetic Theories: Studies of twins have been effective for researching the role of genetic factors in the cause of diseases, including depression. Many studies have confirmed a genetic predisposition in most forms of depression. For example, if one parent has a major depressive disorder, the risk to the offspring has been found to be 25 to 30 percent. If both parents have a mood disorder and one is bipolar, the risk of a mood disorder in the offspring may be as high as 50 to 75 percent (Ainsworth, 2000).

- Neurotransmitter Theories: These theories generally hold that depression is caused by abnormalities in or inadequate levels of one or more neurotransmitters. Neurotransmitter research has focused largely on the effects of the chemicals on the activity of regions of the brain and the resulting displays of mood and behavior (Schildkraut, 1965).

- Neurohormonal Theories: Some hormones have significant effects on brain function, and when they are present in abnormally low or high levels they may have deleterious effects. A common example involves the depressed mood and slowing of thought processes often experienced by people whose thyroid glands do not produce sufficient thyroid hormone. The result can be a severe depression that has all the negative effects of other severe depressions, including increased risk for suicide. On the other hand, thyroid abnormalities are not present in all individuals with severe depressive episodes (Ainsworth, 2000).

- Biological Rhythm Theories: Abnormalities in biological rhythms are among the most consistent experiences in depression. Changes in sleep patterns, for
example, are frequently the first sign of a major mood disorder. People with depression commonly either experience insomnia or else sleep excessively (hypersomnia). Polysomnography demonstrates that the progression of sleep stages in them is disrupted. One of the most common changes found in depressed individuals is the tendency to enter REM sleep (and presumably begin dreaming) more quickly after they fall asleep than do non-depressed people. They also exhibit increased frequency of eye movements during REM sleep (Ainsworth, 2000).

- **Social Rhythm Theories:** They suggest that social relationships, regular working habits, or the routine of life tend to support the stability of biological rhythms and the total biological entity, a condition known as homeostasis. Disruption of social relationships, work, or life routines therefore tends to destabilize biological rhythms such as sleep and temperature cycles and appetite patterns. The resulting disruptions of neurobiological processes can potentially lead to the thought, emotional, and behavior changes associated with depression (Ainsworth, 2000).

1.4.1 (D) Treatment/Therapies Of Depression

- **Behavioral therapies:**
  - Lewinsohn (1974) and his colleagues developed a brief (12session), where patients are taught relaxation skills, cognitive self-management, stress management skills, and provided feedback as a means of reducing the intensity and frequency of aversive events and to increase their rate of engaging in pleasant activities.
  
- **Social Skills Training:** Similar to Lewinsohn’s focus on interpersonal skills, Becker and his colleagues (1985) developed treatment programs where the hypothesized mechanism of action is centered around a person’s ability to engage in those activities that would facilitate the quantity and quality of social interactions in order ultimately to increase the amount of response-contingent positive reinforcement.

- **Rehm’s Self-Control Therapy:** Rehm (1977) focuses on training in the three major deficit areas. For example, patients are taught to (a) maintain a daily
record of positive experiences and their associated mood, (b) develop specific, overt, and reachable goals concerning positive activities, and (c) identify reinforcers and to administer these rewards to themselves upon successfully achieving a goal.

- **Interpersonal Model:** The IPT was originally developed by **Klerman** and his colleagues (Klerman, Weissman, Rounsaville, & Chevron, 1984). The IPT therapist identifies which particular problem area is salient for a given patient and attempts to help depressed patients by (a) facilitating the mourning process, (b) encouraging the patient to explore potential options to change a relationship associated with interpersonal disputes, (c) facilitating the patient’s adjustment to new interpersonal situations, and/or (d) reducing the patient’s social isolation and encouraging experimentation with new social relationships. Significant evidence exists in support of IPT’s efficacy as a treatment for depression (Markowitz et al., 1992) (Nezu, 2002).

- **Cognitive Therapies**
  - **Nezu’s Problem-Solving Therapy:** Borrowing from a transactional problem-solving model of stress (Nezu & D’Zurilla, 1999), Nezu and his colleagues conceptualized that deficits or dysfunctions in problem solving can exist in any of the major skill domains: problem orientation (i.e., set of generalized orienting responses regarding problems in living and one’s ability to cope with such problems), problem definition and formulation, generation of alternatives, decision making, and solution implementation and verification (i.e., ability to optimally carry out a solution, monitor its effects, troubleshoot if solution is not effective, and self-reinforce if outcome is satisfactory).
  - **Beck’s Cognitive Therapy:** The most prevalent cognitive model of depression is that posited by Beck, Rush, Shaw, & Emery, (1979) and is composed of three key elements: (a) negative cognitive triad, (b) negative schemas, and (c) cognitive distortions. The cognitive triad consists of three patterns of negative ideas and attitudes that characterize depressed individuals and includes negative views of the self, the world, and the future. Depression-prone individuals tend to respond to their environment in a fixed, negative manner.
involving specific distortions responsible for the way the depression-prone individual perceives and interprets new experiences in a logically inaccurate manner. Cognitive errors include arbitrary inference, selective abstraction, overgeneralization, magnification/minimization, personalization, and dichotomous thinking.

1.4.1 (E) Depression, family size, and birth order

The Mental health conditions, comprising of depression, anxiety, and self-esteem, in relation to family size and birth order have always been an area of curiosity. In terms of family size, conditional statistics indicate that family characteristics are relevant in determining depression risk. Differences in prevalence rates of depression were observed as a result of marital status, responsibility of being a parent, degree of responsibility within the family, and also family size. In the latter case, the rate of depression decreases as the family size increases. Prevalence of depression is absurdly high among small size families (Santos, Kawamura, & Kassouf, 2012). Birth order explanations posit that the only child has a need to be the focal point, the oldest takes on the role of a surrogate parent, and the youngest takes pleasure in being the baby of the family (Tramontana, 2009). Research has demonstrated that due to higher expectations that are placed on the oldest child in a family, first-borns experience more guilt, anxiety, and difficulty in coping with stressful situations (Santrock, 2002). Parents of a culturally diverse background may have different way of parenting and have different expectations compared to the typical western family. Gender differences can also play a role, especially for multicultural backgrounds. Trying to be a good role model for younger siblings may also be pressurizing. Studies done by Ndetei and Vadher (1982), and Grosz (1968) have shown results of the first-born showing signs of depression than middle and youngest children.

According to Adler, the first born is more susceptible to depression because of high expectations of parents and suddenly losing the attention due to another sibling being born. The youngest child may have a fear of the world and decision making due to being overprotected by older siblings and not being considered experienced.
enough. However, Adler states that the middle child has it made. He/she is neither dominated by older siblings nor experiences the sudden loss of attention. Most of the empirical work has reported first-borns to be more anxious and depressed, having higher self-esteem. One reason could be the Resource Dilution Theory (Blake, 1981) which asserts that the familial resources are divided by the number of children in a family and the quality of their life drops as the family expands. Thus, small size families should be expected to have the least depressive tendencies whereas the large size families should have the maximum depression. But here birth order plays a crucial role, and depending upon the birth order characteristics, depression is spread over different birth orders. The only child in a small size family might be more prone to depression due to the lack of sibship, whereas the middle born of a large size family could be more prone to depression because of being ignored and squeezed out. Several of the personality attributes of first-born children include traits such as intelligent, obedient, stable, and responsible (Herrera et al., 2003). Also, the last borns are attributed with having less depressive symptoms.

1.4.2 ANXIETY:

Anxiety is a psychological and physiological state characterized by cognitive, somatic, emotional, and behavioral components. These components combine to create an unpleasant feeling that is typically associated with uneasiness, apprehension, fear, or worry. Anxiety is a generalized mood condition that can often occur without an identifiable triggering stimulus. Another view is that anxiety is "a future-oriented mood state in which one is ready or prepared to attempt to cope with upcoming negative events" suggesting that it is a distinction between future vs. present dangers that divides anxiety and fear. Anxiety is considered to be a normal reaction to stress. It may help a person to deal with a difficult situation, for example at work or at school, by prompting one to cope with it. When anxiety becomes excessive, it may fall under the classification of an anxiety disorder.

1.4.2 (A) Defining Anxiety

According to the American Psychiatric Association (2013), anxiety is an emotion characterized by feelings of tension, worried thoughts and physical changes
like increased blood pressure. People with anxiety disorders usually have recurring intrusive thoughts or concerns. They may avoid certain situations out of worry. They may also have physical symptoms such as sweating, trembling, dizziness or a rapid heartbeat.

According to American Psychiatric Association (2013), Diagnostic and Statistical Manual of Mental Disorders (Fifth ed.), Anxiety is not the same as fear, which is a response to a real or perceived immediate threat; whereas anxiety is the expectation of future threat.

According to Mohan (2002) the age of anxiety has escalated into a century of stress beckoning the psychologists and therapists from world over to try to make twenty first century a period of optimism through stress management. Anxiety may disrupt normal life functions, sleep, eating, bowel movements, and concentration, serving as examples. Anxiety is also a feature of many mental health problems. Some of the therapeutic approaches may therefore be useful adjuncts in therapy. There are disorders in which anxiety is the central feature. This disorder may instigate, maintain, or exacerbate other disorders such as ulcers, headaches, seizures, and essential hypertension.

Barlow (2000) defines anxiety as "a future-oriented mood state in which one is ready or prepared to attempt to cope with upcoming negative events".

Csíkszentmihályi (1997) says, in positive psychology, anxiety is described as the mental state that results from a difficult challenge for which the subject has insufficient coping skills

1.4.2 (B) Components of Anxiety:

The Motor Component: The motor component of anxiety reactions reflects the basic behavioral choices facing all life forms capable of locomotion fight, flight or freeze. The responses of freeze and flight are the two most commonly associated with anxiety in our society and in diagnostic thinking but, in some cases at least, aggression seems to be a response generated out of fear of a perceived threat. The
motor response to an anxiety-provoking situation may be nothing more than restlessness or fidgeting, as evidenced by inability to sit still, excessive and unnecessary movements (such as pacing), or playing with objects (such as lapping a pencil, or twirling or fingering a bracelet).

The Cognitive/Affective Component: Cognitive component assumes that cognition and affect go hand in hand, with the cognition preceding and determining the affect. One can be anxious about a real tangible threat most bystanders would also identify, or the perception and attributions about the degree of risk may be unrealistic to most bystanders. This situation usually refers to a “phobic reaction”. Beck (1976) states that the-label phobia is warranted only when the person greatly exaggerates the probability of harm and experiences distress disproportionate to the real risk. Another common error is repetitive thoughts about danger (Beck, 1976). The subject has frequent verbal thoughts or mental images of the anxiety-provoking situation.

The Physiological Component: Anxiety can manifest itself in physiological functioning in various ways. The pattern seems to be idiosyncratic, different physiological subsystems being more or less likely to respond in anxiety provoking situations in different individuals (Selye, 1974). Psychoanalysis however points out that anxiety is very much linked to the subject’s unconscious and thus cannot be undone with simple behavioral changes.

1.4.2 (C) Theories of Anxiety

Clinicians working with anxiety disorders have been particularly interested in attribution and appraisal theories, with their intuitively appealing description of the relationship of cognitive processing to emotion. A number of individuals have considered creatively the role of cognition in anxiety, but the primary theorists in this area over the years have been Mandler (1984); Spielberger (1985); Sarason (1985); Beck (Beck, 1993; Beck & Emery with Greenberg, 1985; Beck & Clark, 1997); and, representing a constructionist viewpoint, Hallam (1985).
➢ **Mandler’s Interruption Theory**

Mandler (1975, 1984) highlights a process whereby ongoing cognitive activity is interrupted. This interruption produces a diffuse autonomic discharge. The autonomic discharge results in detailed appraisal of the source of the interruption, which is then evaluated either positively or negatively, depending on the results of the appraisal and the relationship of this appraisal to the intensity of the autonomic arousal. Naturally, if the arousal is very high, and the deduction as a result of the appraisal is that some sort of a threat to the individual is involved, then the resulting emotions will be fear and anxiety. The assumptions of this approach are that arousal is relatively undifferentiated, and that the burden of emotional formation is on the cognitive process of appraisal following the interruption.

➢ **Spielberger’s State–Trait Model**

A different model has been proposed and elaborated by Spielberger (1966, 1972, 1979, 1985). Spielberger is one of the few cognitive theorists who, as evidenced in his state–trait conceptualization, consider anxiety as a personality trait. **State anxiety** is considered to be a transitory emotional state, whereas the disposition to experience state anxiety frequently or to be “anxiety-prone” is considered a personality trait (trait anxiety). In the model external stressors as well as internal stimuli will be appraised in such a way as either to produce anxiety or not. In part, this appraisal will be a function of one’s level of trait anxiety. State anxiety reflects a transitory emotional state or a condition that is characterized by subjective, consciously perceived feelings of tension and apprehension, and heightened autonomic nervous system activity. It may fluctuate and can vary in intensity. In contrast, **trait anxiety** refers to a general tendency to respond with anxiety to perceived threats in the environment, and is a relatively stable characteristic of an individual. An individual with higher trait anxiety feels more threats in many situations than someone with low trait anxiety. In addition, anticipated failure or threats to self-esteem can be more devastating than threats to physiological condition. State–trait notions have proved useful in distinguishing common anxiety reactions
from more frequent, intense, and consistent anxiety, although the causes of these individual differences in trait anxiety are unknown. As with all appraisal theories, there is some difficulty in handling irrational anxiety.

➤ Beck’s Cognitive Schemata

A cognitive approach with a different emphasis from that of appraisal theory is advocated in the pioneering work of Beck (Beck et al., 1985; Beck, 1993; Beck & Clark, 1997). Beck recognizes emotions in general and anxiety in particular as complex bio-psychosocial responses with important evolutionary, biological, affective, and cognitive components. Beck fully appreciates the fact that most basic emotions are innate, survival-oriented responses to an environment that has changed greatly over the course of evolution. It is under conditions where emotions are inappropriate, exaggerated, or disordered that Beck begins to emphasize the importance of cognitive factors. Thus Beck’s theorizing is confined largely to instances where danger is misperceived or exaggerated. Information about one’s self, the world, and the future (the “cognitive triad”) is continually processed in a distorted way as dangerous. Consequently, states of anxiety are associated with (automatic) thoughts and images relevant to danger.

➤ Hallam’s Theory of Anxiety as a Personal Construct

Hallam’s (1985) approach emanates from a somewhat different tradition than do other theories of anxiety, but remains cognitive in its epistemological underpinnings. Basing his thinking on the work of the social constructivists, Hallam concludes that anxiety can never have scientific status, since it is essentially a multi-referential lay construct. Hallam’s conclusion about the nature of anxiety comes surprisingly close to Izard’s neo-evolutionary view. In the great tradition of constructivist thinking, Hallam suggests that anxiety (and panic) is basically a metaphor based on a construing of certain combinations of events by an individual. These events may include, but may not be limited to, a client’s beliefs, linguistic skills, purposes, and concurrent identity problems. The important question for
constructivists is what causes the individual to report anxiety. As Hallam (1985) points out, “the most positive contribution a social constructivist position has to offer is to dissuade researchers from regarding these real life problems as reflecting an underlying emotion of anxiety or, even less helpful, an anxiety disorder” (p. xiv).

1.4.2 (D) Anxiety, Family Size, and Birth Order

Anxiety is one of the most common psychiatric problems experienced by children and they appear to remain stable and problematic for many youths throughout childhood and adolescence. Anxiety when seen in unison with family size and birth order has always attracted thinkers and researchers. The large size families are believed to be having higher anxiety in their offsprings as compared to the small size families (Khan, Ahmad & Arshad (2006). First borns have been found to be low on trait-anxiety as compared to the third borns (Gates, Lineberger, Crockett, Hubbard, (1988). The Resource Dilution Theory (Blake, 1981) asserts that as the family size increases, the familial resources get diluted amongst the siblings and the quality of their life drops. Research has demonstrated that due to higher expectations that are placed on the oldest child in a family, first-borns experience more guilt, anxiety, and difficulty in coping with stressful situations (Santrock, 2002). Research done by Schachter has found that when placed in a high anxiety situation, first-born children experience more anxiety than later born children (Tramontana, 2009). Most of the empirical work has reported first-borns to be more anxious. One reason could be that being born into a certain birth order may predispose a person into having higher levels of anxiety. Trait anxiety is anxiety proneness and or frequency of the manifestation over a long period of time (May, 1977). Those experiences that have the most influence on raising the level of trait anxiety may date back to childhood and involves parent-child relations. Interestingly, trait-anxiety has genetic basis as it is the type of anxiety one is born with, and thus its hypothesis can be made only on physiological basis. Research suggests that when the second child is born, the first born may feel that his or her status is threatened and may react with anxiety and fear (Morales, 1994). Also, first-borns and only children are similar in their desire to
affiliate, but only children are found to be less anxious (Rosenburg & Sutton-Smith, 1970). First-borns are more likely to act in an anxious way when they are in a stressful situation. Relative to first and last born children, middle-children are believed to experience less interaction and receive less attention which might instill anxiety symptoms in them. Also, the last borns are attributed with having less anxiety symptoms.

1.4.3 SELF ESTEEM

Self-esteem, as a psyche's experience, has gone with human being since its beginning. People with a healthy level of self-esteem firmly believe in certain values and principles, and are ready to defend them even when finding opposition, feeling secure enough to modify them in light of experience, are able to act according to what they think to be the best choice, trusting their own judgment, and not feeling guilty when others don't like their choice, do not lose time worrying excessively about what happened in the past, nor about what could happen in the future. They learn from the past and plan for the future, but live in the present intensely.

1.4.3 (A) Defining Self Esteem

Hewitt (2009) purported that self-esteem is a term used in psychology to reflect a person's overall emotional evaluation of his or her own worth. It is a judgment of oneself as well as an attitude toward the self. Self-esteem encompasses beliefs (for example, "I am competent," "I am worthy") and emotions such as triumph, despair, pride and shame.

Schacter, Daniel, Gilbert, Daniel, Wegner, and Daniel (2009), proposed, “One's self-esteem is also closely associated with self-consciousness”.

Smith and Mackie, (2007) posits, “the self-concept is what we think about the self; self-esteem, is the positive or negative evaluations of the self, as in how we feel about it.”
According to Branden (2001), self-esteem is the sum of self-confidence (a feeling of personal capacity) and self-respect (a feeling of personal worth). It exists as a consequence of the implicit judgment that every person has of their ability to face life's challenges, to understand and solve problems, and their right to achieve happiness, and be given respect.

Rosenberg’s (1965) described it as a favorable or unfavorable attitude toward the self.

1.4.3 (B) Theories of Self-Esteem

- Socio-Cultural Approach (Rosenberg, 1965)

He defined self-esteem is defined as an attitude (either positive or negative) that we have about ourselves. Self-esteem is a product of the influences of culture, society, family and interpersonal relationships. The amount of self-esteem an individual has in proportional to the degree to which they positively measure up to a core set of self values. Rosenberg links self-esteem to anxiety and depression. Feelings/beliefs about worthiness are central to this approach.

“Feeling good” is actually one of the consequences of high self-esteem. High self-esteem expresses the feeling that one is “good enough”. People with high self-esteem feel good about themselves most of the time. On the other hand, those with low self-esteem do not feel good about themselves most of the time; they feel that they don’t matter and lack appreciation for who they are.

- Self-Actualization (Maslow, 1962)

Self-actualization is a term that has been used in various psychology theories, often in slightly different ways. The term was originally introduced by the organismic theorist Kurt Goldstein for the motive to realize one's full potential. Expressing one's creativity, quest for spiritual enlightenment, pursuit of knowledge, and the desire to give to society are examples of self-actualization. In Goldstein's view, it is the organism's master motive, the only real motive: "the tendency to actualize itself as fully as possible is the basic drive... the drive of self-actualization." (Goldstein, 1993).
Carl Rogers similarly wrote of "the curative force in psychotherapy - *man's tendency to actualize himself, to become his potentialities... to express and activate all the capacities of the organism.*" (Rogers, 1961). The concept was brought most fully to prominence in Abraham Maslow's hierarchy of needs theory as the final level of psychological development that can be achieved when all basic and mental needs are essentially fulfilled and the "actualization" of the full personal potential takes place, (Maslow, 1962) although he adapted this viewpoint later on in life, and saw it more flexibly (Rivera & Mark, 2006). Self-actualization can be seen as similar to words and concepts such as self-discovery, self-reflection, self-realization and self exploration.

Psychological health is not possible unless the essential core of the person is fundamentally accepted, loved and respected by others and by her or his self. Self-esteem allows people to face life with more confidence, benevolence and optimism, and thus easily reach their goals and self-actualize (Branden, 2001).

**Figure 2: Maslow's Hierarchy of Needs Pyramid**

Many early theories suggested that self-esteem is a basic human need or motivation. American psychologist Abraham Maslow, for example, included self-esteem in his hierarchy of needs. He described two different forms of esteem: the need for respect from others and the need for self-respect, or inner self-esteem (Maslow, 1987). Respect from others entails recognition, acceptance, status, and appreciation, and was believed to be more fragile and easily lost than inner self-esteem. According to Maslow, without the fulfillment of the self-esteem need, individuals will be driven to seek it and unable to grow and obtain self-actualization.

- **Humanistic Approach (Carl Rogers, 1959)**

  The greatest exponent of humanistic psychology exposed that the origin of problems for many people is that they despise themselves and they consider themselves to be invaluable and unworthy of being loved. Indeed, the concept of self-esteem is approached since then in humanistic psychology as an inalienable right for every person, summarized in the following sentence: Every human being, with no exception, for the mere fact to be it, is worthy of unconditional respect of everybody else; he deserves to esteem himself and to be esteemed (Bonet, 1997). The humanistic approach states that the self is composed of concepts unique to ourselves.

  **The self-concept includes three components:**

  Rogers (1959) believed that we need to be regarded positively by others; we need to feel valued, respected, treated with affection and loved. **Positive regard** is to do with how other people evaluate and judge us in social interaction. Rogers made a distinction between unconditional positive regard and conditional positive regard.

  **Unconditional positive regard** is where parents, significant others (and the humanist therapist) accepts and loves the person for what he or she is. Positive regard is not withdrawn if the person does something wrong or makes a mistake. The consequences of unconditional positive regard are that the person feels free to try things out and make mistakes, even though this may lead to getting it worse at times. People who are able to self-actualize are more likely to have received unconditional positive regard from others, especially their parents in childhood.
Conditional positive regard is where positive regard, praise and approval, depend upon the child, for example, behaving in ways that the parents think correct. Hence the child is not loved for the person he or she is, but on condition that he or she behaves only in ways approved by the parent(s). At the extreme, a person who constantly seeks approval from other people is likely only to have experienced conditional positive regard as a child.

Self worth (or self-esteem) – what one thinks about oneself. Rogers believed feelings of self-worth developed in early childhood and were formed from the interaction of the child with the parents.

Self-image – How one sees oneself is important forone’s good psychological health. Self-image includes the influence of our body image on inner personality. At a simple level, we might perceive ourselves as a good or bad person, beautiful or ugly. Self-image has an effect on how a person thinks feels and behaves in the world.

Ideal self – This is the person who we would like to be. It consists of our goals and ambitions in life, and is dynamic – i.e. forever changing. The ideal self in childhood is not the ideal self in our teens or late twenties etc.

Figure 3: Roger’s model of self-concept

The closer our self-image and ideal-self are to each other, the more consistent or congruent we are and the higher our sense of self-worth. A person is said to be in a state of incongruence if some of the totality of their experience is unacceptable to them and is denied or distorted in the self-image.

**Defense Mechanisms:** As we prefer to see ourselves in ways that are consistent with our self-image, we may use defense mechanisms like denial or repression in order to feel less threatened by some of what we consider to be our undesirable feelings. A person whose self-concept is incongruent with her or his real feelings and experiences will defend because the truth hurts.

- **Sociometer theory of self-esteem (Leary, 1999)**

  The sociometer theory was developed by Leary (1999) to explain the functions of self-esteem. A socio-meter is a measure of how desirable one would be to other people – this is influenced by one's self-esteem. They suggested that self-esteem has evolved to monitor one’s social acceptance and is used as a gauge for avoiding social devaluation and rejection.

  The socio-meter theory is strongly grounded in evolutionary theories which suggest that survival depends on social acceptance for reasons such as protection, reciprocal behaviors and most importantly reproduction. The monitoring of one’s acceptance via self esteem is therefore crucial in order to achieve these kinds of social interactions and be better able to compete for the social benefits of them.

  Sociometer theory maintains that self-esteem evolved to check one's level of status and acceptance in ones' social group. Self-esteem is the sum of attitudes which depend on perceptions, thoughts, evaluations, feelings and behavioral tendencies aimed toward ourselves, the way we are and behave, and our body's and character's features. In short, it's one self's evaluative perception. The importance of self-esteem lies in the fact that it concerns to ourselves, the way we are and the sense of our personal value. Thus, it affects the way we are and act in the world and the way we are related to everybody else. Nothing in the way we think, feel, decide and act escapes the influence of self-esteem.
1.4.3 (C) Self-esteem, family size and birth order

Self-esteem, in essence, is the evaluative element of the self-concept, in relation to others or his environment, whereby an individual appraises himself favorably or unfavorably. The socio-cultural approach purports that self-esteem is a function of the society, culture and the environment we live in. Considering that, the larger the family size, the less the parents will be able to promote conditions facilitating self-concept development in their children (Sears, 1970). Most of the empirical work has reported first-borns to be having higher self-esteem. The self-actualization theory contends that achieving one’s goals helps them enhance their self-esteem, and vice-versa. (Maslow, 1956). The first born enjoys a period of time where he does not have to compete with a sibling for parental attention. When the second child arrives, the oldest is usually able to use his/her higher developed social skills to compete more effectively for parental admiration. As a result of the privileged position the first born appears to occupy, the first born would tend to have a more positive self-concept (Sears, 1970). Relative to first and last born children, middle-children are believed to experience less interaction and receive less attention which negatively affects the self-esteem of this child. Also, the last borns are attributed with have higher self-esteem. Stacey (1976) stressed the importance of family life upon the individual's development in the following terms, "Parental values, attitudes and behavior, the organization of family life and family stability exert a fairly considerable influence on a child's self evaluation, aspirations and school performance." In respect of observational studies concerned with mother-infant interaction, Jacobs and Moss (1976) found that mothers spent less time in social affectionate and caretaking interaction with second borns compared with first borns, particularly so if the later born child was a female. This behavioral pattern is attributed to the fact that the novelty and excitement of rearing a second child is less attractive, the experience gained already with an earlier child has increased baby management in terms of confidence and reduced anxiety, and finally the competition from an older child now causes the mother to divide her attention between the two of them. Thus, it hints at the fact the parent-child relations could be a major contributor too, in the development of self-esteem of the young adults.
1.4.4 Parent-Child Relationship

From childhood through adulthood, parents are believed to be influential and important sources of support for their children. Though their roles and level of importance may shift as the child grows, parents frequently serve as a supportive base for the individual. The parent-child relationship has received much scholarly attention, through theories and empirical research. Though it has been examined from multiple perspectives, including developmental and social psychology, perhaps the most comprehensive frameworks for parent-child relationships is attachment and social support theory. The contributions of these two theories will be addressed first.

The parent-child relationship consists of a combination of behaviors, feelings, and expectations that are unique to a particular parent and a particular child. The relationship involves the full extent of a child's development. Of the many different relationships people form over the course of the life span, the relationship between parent and child is among the most important. The quality of the parent-child relationship is affected by the parent's age, experience, and self-confidence; the stability of the parents' marriage; and the unique characteristics of the child compared with those of the parent (Alfie, 2005).

1.4.4 (A) Definitions:

Parent Adolescent Relationship can be defined as a relationship that children and adolescents’ experience with their parents and is measured in terms of protecting, demanding, neglecting, indifferent, rejecting, symbolic and object reward and loving dimension (Rao, 1989).

Encyclopedia of Children's Health (2005) stated that the parent-child relationship consists of a combination of behaviors, feelings, and expectations that are unique to a particular parent and a particular child. The relationship involves the full extent of a child's development.

1.4.4 (B) Types of Parent-Child Relationships

There are different kinds of attachment relationships that can be put into different categories (Marlow, 2001; Hockenberry, 2012). These categories can
describe children’s relationships with both parents and childcare providers. Research has found that there are at least four attachment categories. The categories describe the ways that children act and the ways that adults act with the children. The strongest kind of attachment is called 'secure.' The way a parent or provider responds a child may lead to one of the four types of attachment categories. The way a child is attached to her parents also affects how she will behave around others when her parent is not around.

- **Secure relationships:**

  This is the strongest type of attachment. A child in this category feels he can depend on his parent or provider. He knows that person will be there when he needs support. He knows what to expect. The secure child usually plays well with other children his age. He may cry when his mother leaves. He will usually settle down if a friendly adult is there to comfort him. When parents pick him up from childcare, he is usually very happy to see them. He may have a hard time leaving childcare, though. This can be confusing if the child was upset when the parents left at the beginning of the day. It does not mean that the child is not happy to see the parents.

  Over time, a securely attached child has learned that he can rely on special adults to be there for him. He knows that, if he ever needs something, someone will be there to help. A child who believes this can then learn other things. He will use special adults as a secure base. He will smile at the adult and come to her to get a hug. Then he will move out and explore his world.

- **Avoidant relationships:**

  This is one category of attachment that is not secure. Avoidant children have learned that depending on parents won’t get them that secure feeling they want, so they learn to take care of themselves. Avoidant children may seem too independent. They do not often ask for help, but they get frustrated easily. They may have difficulty playing with other children their age. They may be aggressive at times. Biting, hitting, pushing, and screaming are common for many children, but avoidant children do those things more than other children. Avoidant children usually do not build strong relationships with providers in their childcare setting. They don’t
complain when the parents leave them, and they usually do not greet them when the parents return. They know that the parents have returned, but it is almost like they want to punish them by ignoring them. They seem to try to care for themselves.

- **Ambivalent relationships:**

Ambivalence (not being completely sure of something) is another way a child may be insecurely attached to his parents. Children who are ambivalent have learned that sometimes their needs are met, and sometimes they are not. They notice what behavior got their parents’ attention in the past and use it over and over. They are always looking for that feeling of security that they sometimes get. Ambivalent children are often very clingy. They tend to act younger than they really are and may seem over-emotional. When older preschoolers or early-elementary children want an adult’s attention, they might use baby talk or act like a baby. Ambivalent children often cry, get frustrated easily, and love to be the center of attention. They get upset if people aren’t paying attention to them and have a hard time doing things on their own. Ambivalent children seem to latch onto everyone for short periods of time. They have a very hard time letting parents go at the beginning of the day, and the crying may last a long time.

- **Disorganized relationships:**

Disorganized children don’t know what to expect from their parents. Children with relationships in the other categories have organized attachments. This means that they have all learned ways to get what they need, even if it is not the best way. This happens because a child learns to predict how his parent will react, whether it is positive or negative. They also learn that doing certain things will make their parents do certain things. Disorganized children will do things that seem to make no sense. Sometimes these children will speak really fast and will be hard to understand. Very young children might freeze in their footsteps for no apparent reason. Most disorganized children have a hard time understanding the feelings of other children. Disorganized children who are playing with dolls might act out scenes that are confusing and scary. Disorganized children may be very hard to understand. They may seem very different from day to day. There are two types of disorganized
attachments: 1) **Controlling**-Disorganized, children who are controlling tend to be extremely bossy with their friends. 2) **Care giving**-Disorganized, children who are care giving might treat other children in a childish way, acting like a parent.

The parent-child relationship scale by Rao (1989) has been utilized for the present research. It measures the characteristic behavior of father and mother as experienced by their children on 10 dimensions. She has given the following 10 dimensions of parent behavior on which data can obtained separately for both-mother and father.

The parental behaviors can be described under the following dimensions: Demanding, indifferent, loving, neglecting, protecting, rejecting, symbolic reward and object reward, symbolic punishment and object punishment.

In the present research, we are studying the following attitudes:

- **Protecting (Pro):** The defending attitude overtly expressed in the acts of guarding, sheltering and shielding the child from situations or experiences perceived to be hostile, oppressing and harmful.
- **Rejecting (Rej):** Behavior evident in renouncing the child in aversion. The disposition is indicated in being disdainful and in outright refusal of the child.
- **Loving (Lov):** Expression of fondness, devoted attachment and amiableness shown to the child.

1.4.4 **(C) Theories of Parent- Child Relationship:**

- **Attachment Theory**

  Bowlby’s early work (1969) on attachment theory emphasized the role of the parent-child bond. Bowlby identified the early bond between an infant and its primary caregiver, often the mother, as vital to sustaining a sense of security and support for the child. As the parent and young child interact, an “internal working model” is formed, which serves as a basis for future relationships. This model is the child’s interpretation and understanding of how relationships work. For example, if the child feels her needs met by the primary caregiver or parents, she then feels safe in
exploring others and the world around her. On the other hand, if a child does not feel her needs are met, the child may give up on this relationship and rely only on herself. Carried forward, the child is then believed to approach other relationships with a similar style for interacting.

Ainsworth, Blehar, Waters, and Wall (1978) described three styles of attachment, or ways of interacting with others. A child with a secure style of attachment can separate from the caregiver and explore. In times of encountering stress, this child would seek out the caregiver for comforting, but with reassurance, feel secure in later returning to exploration. The avoidant child is not likely to seek out the caregiver when he or she is alone, exploring. Furthermore, this child then ignores a returning caregiver, not seeking comfort or support. With the third style, the ambivalent child, exploration is done tentatively. When faced with minimally stressful situations, this child seeks closeness to the caregiver.

➢ Social Support Theory

Social support theory is also helpful in understanding parent-child relationships. This focuses on specific functions served by the parent-child relationship, and it uses a more present oriented view of parents’ roles in the lives of their young adult children. From this theory, research has been conducted extensively on many different aspects of the total support network for an individual. Weiss (1974) proposed that a balance of six basic provisions provides a supportive base for an individual. These provisions include: attachment (sense of security), social integration (sharing concerns and interests), opportunity for nurturance (responsibility for others), reassurance of worth (value as an individual), reliable alliance (provide support), and obtaining guidance (provide advice or information). Through further categorization, Weiss defined assistance-related (reliable alliance and obtaining guidance) and non-assistance-related (reassurance of worth, opportunity for nurturance, attachment, and social integration) provisions.

Suggested by Weiss (1986), children need to relinquish attachment to parents in order to form their own families. This sets the stage for forming other secure
relationships beyond those with primary caregivers. However, Weiss maintains that the original attachment to caregivers remains important, especially in times of stress for young adults. Therefore, social support theory strengthens the view that parents are important in their children’s development—whether those children are infants or adults. This theory distinguishes between different dimensions of social support, which may influence various aspects of adjustment and functioning, identifies the functions served by relationships with parents during this period, and addresses the shifting of supportive functions from caregivers to other individuals of a support network. The focus on current functional aspects of parental support provides a means for understanding relationships between parents and their young adult children.

> **Bronfrenbrenner’s (1979) Model of the Ecology of Human Development**

This model is adapted to the parent-child association where the child is at the centre of the system and is surrounded by the Microsystem, which includes parenting factors, and the neighbourhood factors, which constitute the Mesosystem. The ecological paradigm began with Lewin’s Behavior = f (Person, Environment) model where humans are active and shape the environments in which they live. In the context of adolescent psychological development there are individual factors such as the child’s own propensity to consume substances and then the microsystem and then the mesosystem and these are the factors influencing the child’s behaviour. Thus the adolescent while growing up in the household has a core behaviour and then a peripheral component which is constantly adapting to the environment.

Steinberg et al. (1992) is the next study in this line of literature which focuses on these dimensions of Acceptance/Involvement, Strictness/Supervision, Psychology Autonomy Granting, Parental involvement in schooling, Parental encouragement to succeed, School Performance and School Engagement. Subsequent studies by Maccoby and Martin (1983) analyzed the parental behaviour through dimensions such as parental warmth, acceptance, involvement, parental control or strictness. Lamborn, Mounts, Steinberg and Dornbusch (1991) consisted of similar dimensions of Parenting Practices. The importance of the family with connection to the child’s social and cognitive development has been highlighted in child development and
family studies literature. The parent child interaction is characterized by two major parenting dimensions: nurturance (warmth and support) and control (supervision and discipline).

1.4.4 (D) Parent- Child Relationship, Family Size and Birth Order

The parent-child relationship is one of the longest lasting social ties human beings establish. Parents with multiple children in a larger family set-up, are less focused on one particular child, and maintain more obvious parent-child boundaries, as compared to the parents in a smaller family set-up are able to focus on the overall growth. Among the various causal factors that can influence parent- adolescent relationships are puberty, expanded logical reasoning, increased idealistic thought, and violated expectations, changes in schooling, peers, friendships, dating and movement towards independence. Several investigations have shown that conflict between parents and adolescents, especially between and mothers and sons, is the most stressful during the apex of pubertal growth (Steinberg, 1988). Nowadays, both in small and large size families, most of the fathers like mothers, indulge themselves in child rearing and actively participate in the welfare of the child, so children feel equally secured in the presence of both the parents, thus getting a healthy, positive and nurturing parent-child relationship. Also Parent-child relationship is partly determined by the parental investment within the dyad. However, parental investment decreases as sibship size increases, as coined by the resource dilution theory (Downey, 2001). The larger the family size, the lesser intimate the parent-child relationships become. The social support theory talks about the various styles and ways in which parent-child relationship offers support to children in a family. In terms of birth order, the firstborns, only children and second born children share a specific type of relationship with their parents, one that is characterized by heightened anxiety and attention.

Furthermore, parental anxiety motivates parents to have high-quality interactions with their children. Besides enjoying the relative security of parental preference in a pinch, firstborn children have always benefited from an early absence of sibling contenders for a share of parental investment. Even in the modern west,
where parental resources are presumably less stretched than in pre-modern societies, firstborn children still receive more parental caretaking and attention in infancy than later borns (Jacobs & Moss 1976). The only and later borns, specifically, are considered to be the most loved and pampered ones thereby sharing a close bond and an intimate parent child relationship. Moreover, as Sulloway (1996) goes on to note, a lastborn child has the advantage of being “the only member of the family to receive parental investment undiluted by the needs of a younger rival,” with the upshot being that “the losers in this Darwinian calculus are often middle children”. Kidwell (1981) in his study found that the middle born male respondent reports that his parents are considerably more punitive and less reasonable and supportive towards him than do either the firstborn or lastborn respondents. Also, according to the Attachment Theory (Bowlby, 1969/1982), the early relationship with caregivers is critical to children’s healthy development. Parents of only children (as well as the first born) are reportedly more responsive and attentive at their first experience of parenthood (Schachter, 1959).

1.4.5 Career Choice Patterns

Parsons (1909) believed that if people actively engage in choosing their vocations rather than allow chance to operate in the hunt for a job, they are more satisfied with their careers, employers’ costs decrease, and employees’ efficiency increases. These rather simple ideas are still at the core of most modern theories of career choice and development. Holland (1985, 1997) and, to an even greater degree, Dawis and Lofquist (1984) have made them the cornerstones of their theories.

Theorists and researchers have provided a series of definitions focusing on the main characteristics of the term, career.

1.4.5 (A) Defining Career

Career is defined by the Oxford English Dictionary as a person's "course or progress through life (or a distinct portion of life)". It can also pertain to an occupation or a profession that usually involves special training or formal education, and is considered to be a person’s lifework.
According to Super (1976), career can be recognized as, “The course of events which constitutes a life; the sequence of occupations and other life roles combine to express one’s commitment to work in his or her total pattern of self-development. . . Careers exist only as people pursue them; they are person-centered. It is this last notion of careers, ‘they exist only as people pursue them, ‘which summarizes much of the rationale for career guidance.” (p. 4).

According to dictionary.reference.com. (2012,) “The term career is used to describe an occupation or a profession that usually involves special training or formal education”.

According to the National Career Development Association (Sears, 1982), Career is the totality of work and leisure in which a person in his or her whole life.

1.4.5 (B) Defining Career Choice / Career Decision Making

Crites (1981), Super(1983) and Savickas (2001) defined Career Decision Making as the process by which individuals make career and educational decisions and contend that it is the main assessment task of career counseling. It examines how people make career decisions (decision-making style); the precursors that may influence or impede career choice (career indecision) and individuals’ beliefs that they can successfully accomplish, behaviors that will lead to desired outcomes (decision making self-efficacy beliefs).

According to Swanson and Achiardi (2005), career choice or career decision making is a process oriented construct that deals with how clients make career decisions or the circumstances surrounding those decisions. The clients’ standing on this construct influences their level of decidedness or indecision.

1.4.5 (C) Theories of Career Choice/ Career Decision Making:

Career decision-making theories provide “guidelines for collection, processing, and utilization of information in order to improve decision-making”. (Gati, 1990). In essence, they all offer an explanation on career development although differing in perspectives. Issacson and Brown (1993) stated that theories of career
choice and development are needed for three primary reasons. They: facilitate the understanding of the forces that influence career choice and development; stimulate research that will help us better clarify the career choice and development process; and provide a guide to practice in the absence of empirical guidelines.

The theories of career choice have often been broadly grouped as structural theories and developmental theories. The structural theories include trait and factor theories like Parson’s theory, Holland’s theory while the developmental theories include Ginzberg et al’s theory, Super’s theory and Gottfredson’s theory. These and some other theories are explained below.

➤ **Parson’s Trait and Factor Theory (1909)**

This theory has been the foremost influence on career interventions. It states that a choice of a vocation depended upon (1) an accurate knowledge of yourself, (2) thorough knowledge of job specifications, and (3) the ability to make a proper match between the two. Parsons wrote: "In the wise choice of a vocation there are three broad factors: (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitation; (2) a thorough knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; and (3) true reasoning on the relations of these two groups of acts" (Parsons, 1909/1989, p.5). The vision and efforts of parsons set in place a “structural framework” that represented the “roots of career development theory” (Brown & Brooks, 1996) as a first attempt to classify people into career- decided and career undecided.

➤ **Ginzberg et al’s Theory of Career Development (1951)**

Ginzberg first proposed the idea that occupational choice is a developmental process which occurs over a number of years. It postulated that occupational choice is largely an irreversible process characterized by compromise because people must balance interests, aptitudes, and opportunity. This compromise was between one’s wishes and possibilities. It outlined three distinct stages or periods in the career choice process, each having sub- stages. During the Fantasy stage (childhood before age 11), play gradually becomes work oriented and reflects preferences for certain types of
activities. The second period called *Tentative*, divided into four sub-stages (interest, capacity, values, and transition) lasts from ages 11 to 17. During the tentative period, the individual becomes more aware of work requirements, of his or her own abilities and values, and makes decisions regarding likes and dislikes. At the *Realistic* stage (ages 17 to young adult), there is further integration of perceived abilities and occupational interests, as the person first narrows his or her choices to a few possibilities and then makes a commitment by selecting a job or entering specialized training.

- **Roe’s Theory (1956)**

  Ann Roe, a clinical psychologist by training, became interested in career development through her research on personality traits of artists and eminent scientists. The focus of her theory is on possible relationships between career development and personality. The theory views the whole range of occupations in terms of their relationship to individual, differences in backgrounds, physical and psychological variable and experiences. From her findings Roe concluded that major personality differences exist between people who join diverse occupations. These differences centre on the type of interactions they have with people and things. Another conclusion she arrived at was that the personality differences that exist are partly the result of influences of child rearing practices (Roe & Lunneborg, 1990).

- **Modes Of Child Rearing**

  Roe proposed that the manner in which parents interact with the child is one of the major influences on the motivational intensity of the child. Different parental styles will produce distinctive behavior patterns in children. She conceptualized them as follows:

  a) **Emotional concentration** on the child. This could take the form of being either *overprotective* or *over-demanding*. The over-protective parent will fully and quickly satisfy the child's lower needs but may hesitate in gratifying the higher order needs of love and esteem, at the same time will reward behavior that is socially desirable. This type of interaction will make the child
to over emphasize the immediate or quick gratification of physiological
demands. These higher order needs could be a need to be loved, esteem, a
sense of belongingness. The over-demanding parents have many similarities to
over-protective parent.

b) **Avoidance** of the child, expressed either as emotional deprivation or neglect.
Roe put forward that parents who neglect merely the physical well-being of
the child were not causing as harmful an affect as those parents who neglected
the emotional needs of the child. This emotional rejection of the child leads to
slower emotional development, though it may not cause misproportioned
development.

c) **Acceptance** of the child, either causally or lovingly. The two accepting type of
parents will satisfy their children's needs at most levels in slightly different
ways and in varying degrees. The personality that develops in children of
accepting parents is capable of seeking gratification of needs at all levels.

- **Description of the Occupational Groups**

To classify the whole range of occupations Roe devised a system of
classification. She first divided the occupations into eight occupational groups based
on the interests of people, indicating the primary focus of activity in the particular
occupational group (Roe, 1957). A description of each of the eight occupational
groups is as follows:

1. **Service**: These occupations are primarily concerned with serving and
attending to the needs and welfare of other persons (examples; Therapists Counsellor,
Social Workers, Detectives, Police Personnel, Taxi Drivers). 2. **Business Contact**: These occupations are primarily concerned with the face-to-face sale of commodities,
investments, real estate and services (Salesman, Public Relations Officer, Brokers,
and Insurance Agents). 3. **Organization**: These are the managerial and white collar
jobs in business, industry and government - the occupation concerned primarily with
the organization and efficient functioning of commercial enterprises and of Govt.
**Technology:** This group includes occupations concerned with the production, maintenance and transportation of commodities and utilities (Ship Captains, Chief Engineers, Applied Scientists, etc.).

5. **Outdoor:** This group includes the occupations primarily concerned with the cultivation, preservation and gathering of crops, marine and with animal husbandry. For example, Consulting Specialists, Architects, Scientists, Forest Rangers.

6. **Science:** These are the occupations primarily concerned with scientific theory and its application under specified circumstances other than technology (Research Scientists, Medical Specialists, and Medical Technicians).

7. **General Culture:** These occupations are primarily concerned with the preservation and transmission of the general cultural heritage. Here interest is in human activities rather than in individual persons (Justice of Supreme and High Court, Lawyers, Teachers, Scholars).

8. **Arts and Entertainment:** These occupations include those primarily concerned with the use of special skills in the creative arts and in entertainment (Creative artists, performers of skill, athletes, designers, conductor of music, interior decorators).

---

**Super’s Theory Of Career Development**

Super’s (1990) theory of career development is a “loosely unified set of theories dealing with specific aspects of career development, taken from developmental, differential, social, personality, and phenomenological psychology and held together by self-concept and learning theory” (p. 199).

**Life Stages and Career Maturity**

Career maturity generally increases but is only loosely associated with chronological age and school grade. The timing of transitions from one stage to another is a function of both an individual’s personality and abilities and his or her situation (Super, 1990, p. 237). Because Super’s concepts were constantly evolving, the following description of Super’s conception of vocational life stages is necessarily a composite from a variety of sources.

(I) **Growth (Ages 4 - 13).**

The growth stage involves forming an occupational self-concept. It includes four career development tasks. The label associated with each of these four tasks
changes in different summaries of Super’s work.1. Career concern includes acquisition of future orientation.2. Control consists of increasing personal control over one’s own life.3. Career conviction involves increasing confidence in one’s ability to do well at tasks and to make own decisions.4. Competence includes acquisition of competent work habits and attitudes.


Exploration involves fitting oneself into society in a way that unifies one’s inner and outer worlds. This information-seeking behavior moves the adolescent from occupational daydreams to employment in a job through three processes: 1. Crystallization occurs when the four tasks of the growth phase are completed and coalesce with occupational daydreams “into a publicly recognized vocational identity with corresponding preferences for a group of occupations at a particular ability level” (Super et al., 1996, p. 132). 2. Specification of an occupational choice requires the individual to explore deeply to sift through tentative preferences in preparation for declaring an occupational choice. “Translating private vocational self-concepts into public occupational roles involves the psychosocial process of vocational identity formation” (Savickas, 2002, p. 175). 3. Implementation/Actualization requires that the individual make a choice by converting ideas into actions that make it a fact. Actualizing a choice usually involves completing the necessary training and experiencing trial jobs in the specified occupation.

(III) Establishment (Ages 25 – 44).

The goal of the establishment years is to effect cohesion between one’s inner and outer worlds. The three vocational development tasks under establishment are: 1. Stabilizing -- making one’s position secure by assimilating organizational culture and performing job duties satisfactorily; 2. Consolidating -- demonstrating positive work attitudes and work habits, and cultivating good relationships with co-workers; 3. Advancing to higher levels of responsibility.

(IV) Maintenance (Ages 45 - 65).

Super (Super et al., 1996) refers to recycling through one or more of the life stages as mini-cycles (p.135). The three developmental tasks to be accomplished in
this stage in include: 1. **Holding** on to what one has achieved so far; 2. **Updating** skills and knowledge; and, 3. **Innovating** by doing tasks differently, doing different tasks, or discovering new challenges.

(V) **Disengagement (Over age 65).**

Disengagement includes the vocational development tasks of decelerating, retirement planning, and retirement living. Retirement planning “leads eventually to separation from occupation and commencement of retirement living with its challenges of organizing a new life structure and different life-style” (Super et al., 1996, p. 134).


Holland’s (1985) theory contends that every individual resembles one of six basic personality types, and as a result, manifest some of the behaviors and traits associated with that type. Holland’s (1985) theory is built on four basic assumptions: 1. In our culture, most persons can be categorized as one of six types: realistic, investigative, artistic, social, enterprising, or conventional. 2. There are six kinds of environments: realistic, investigative, artistic, social, enterprising, or conventional. 3. People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles. 4. Behavior is determined by an interaction between personality and environment. (pp. 2-4)

Holland determined six interest factors and named them as Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC)

Holland (1985) defines the types as follows: **Realistic** people have a preference for activities that entail the explicit, ordered, or systematic manipulation of objects, tools, machines, and animals. Realistic people have an aversion to educational or therapeutic activities. **Investigative** people have a preference for activities that entail the observational, symbolic, systematic, and creative investigation of physical, biological, and cultural phenomena in order to understand and control
such phenomena. Investigative people have an aversion to persuasive, social, and repetitive activities. **Artistic** people have a preference for ambiguous, free, unsystematized activities that entail the manipulation of physical, verbal, or human materials to create art forms or products. In addition, artistic people have an aversion to explicit, systematic, and ordered activities. **Social** people have a preference for activities that entail the manipulation of others to inform, train, develop, cure, or enlighten. Social people have an aversion to explicit, ordered, systematic activities involving materials, tools, or machines. **Enterprising** people have a preference for activities that entail the manipulation of others to attain organizational goals or economic gain. Enterprising people have an aversion to observational, symbolic, and systematic activities. **Conventional** people have a preference for activities that entail the explicit, ordered, systematic manipulation of data, such as keeping records, filing materials, reproducing materials, organizing written and numerical data according to a prescribed plan, operating business machines and data processing machines to attain organizational or economic goals.

➢ **Bandura’s Social Learning Theory Of Career Choice**

Social cognitive theory of behavior was developed by Bandura (1969) to explain the way personality and behaviors arise from an individual’s unique learning experiences and the effects negative and positive reinforcement have on these experiences. According to social cognitive or learning theory, three major types of learning experiences influence behaviors and skills that allow a person to function effectively in society. Bandura proposed that (a) instrumental learning experiences occur when an individual is positively or negatively reinforced for a behavior, (b) associative learning experiences occur when an individual associates a previously neutral event with an emotionally laden event, and (c) vicarious experiences occur when one individual observes the behavior of others or gains new information and ideas from other sources.

➢ **Krumboltz’s theory:**

Krumboltz’s theory (Mitchell & Krumboltz, 1996) built on the work of Bandura (1969, 1977) to develop his revised theory which “posits two major types of
learning experiences that result in individual behavioral and cognitive skills and preferences that allow people to function effectively in the world” (p. 234). First, is instrumental learning experiences which “occur when a person is positively reinforced or punished for the exercise of some behavior and the associated cognitive skills” (p. 234). Second, is associative learning experiences which “occur when people associate some previously affectively neutral event or stimulus with an emotionally laden event or stimulus” (p. 234). Within these factors, Krumboltz developed a number of testable propositions and determined that equal importance rests on the inverse influence of each.

➢ **Social Cognitive Career Theory**

Hackett and Betz (1981), and Multon, Brown, and Lent (1991), all worked to refine Bandura’s (1969) general theory on social cognition. The work in this area can be summarized with Lent et al.’s (1994) propositions: an individual’s occupational or academic interests at any point in time are reflective of his or her concurrent self-efficacy beliefs and outcome expectations. An individual’s occupational interests also are influenced by his or her occupationally relevant abilities, but this relation is mediated by one’s self-efficacy beliefs. Self efficacy beliefs affect choice goals and actions both directly and indirectly. Outcomes expectations affect choice goals and actions both directly and indirectly. People will aspire to enter (i.e., develop choice goals for) occupations or academic fields that are consistent with their primary interest areas. People will attempt to enter occupations or academic fields that are consistent with choice goals, provided that they are committed to their goal, and their goal is stated in clear terms, proximal to the point of actual entry. Interests affect entry behaviors, (actions) indirectly through their influence on choice goals. Self-efficacy beliefs influence career-academic performance both directly and indirectly through their effect on performance goals. Outcome expectations influence performance only indirectly through their effect on goals. Ability (or aptitude) will affect career/academic performance both directly and indirectly through its influence on self-efficacy beliefs. Self-efficacy beliefs derive from performance accomplishments, vicarious learning, social persuasion, and physiological reactions (e.g., emotional arousal) in relation to particular educational and occupationally relevant activities. As
with self-efficacy beliefs, outcome expectations are generated through direct and vicarious experiences with educational and occupationally relevant activities. Outcome expectations are also partially determined by self-efficacy beliefs, particularly when outcomes (e.g., successes, failures) are closely tied to the quality or level of one’s performance.

➤ **Gottfredson’s Theory of Compromise And Circumscription (1981)**

This theory, developed by Gottfredson in 1981, attempts to describe how career choice develops in young people. Many developmental theories focus on how an individual’s self concept develops with age. Compromise also focuses on the development of an individual’s view of the occupational choices available. The theory assumes that we build a cognitive map of occupations by picking up occupational stereotypes from those around us. Occupations are placed on this map using only a small number of dimensions: sex-type, prestige level and field of work. As young people build this map, they begin to decide which occupations are acceptable and which are unacceptable — those which fit with their own developing self concept and those which do not.

The first process is one of **Circumscription** — ruling out unacceptable options based on their perceived fit with ones developing self-concept. In the early stages this filtering process is quite crude and inaccurate, but it is lasting. The proposed stages of circumscription are: **Orientation to size and power** (age 3–5). Children become aware that adults have roles in the world. They realize that they will eventually become adults and take on roles for themselves. **Orientation to sex roles** (age 6–8). Children begin to categorize the world around them with simple concrete distinctions. They become aware of the more recognizable job roles and begin to assign them to particular sexes. They will start to see jobs which do not match their gender identity as unacceptable. **Orientation to social values** (age 9–13). By now children have encountered a wider range of job roles and are capable of more abstract distinctions. They begin to classify jobs in terms of social status (income, education level, lifestyle, etc.) as well as sex-type. **Orientation to internal, unique self** (age 14+). Until this point circumscription has been mainly an unconscious process. As
entry into the adult world approaches young people engage in a conscious search of the roles still remaining in their social space. In this process they use increasingly complex concepts such as interests, abilities values, work-life balance and personality to exclude options which do not fit with their self image and identify an appropriate field of work.

After circumscription has excluded options outside a perceived social and personal space, the next process is one of Compromise. In this stage, individuals may be inclined to sacrifice roles they see as more compatible with their self-concept in favour of those that are perceived to be more easily accessible. In this they are often limited by their lack of knowledge about how to access certain roles because of lack of information, lack of know-how and appropriate tactics, and lack of helpful social connections.

1.4.5 (D) Career Choice patterns, Family size, and Birth Order

A child’s ordinal position in the family may play a role in the type of occupations the child, and later as the adult, is predisposed for as a career. While the children from large size families tend to take up prestigious and authoritative occupations like that of a president, the children from medium size families tend to venture into fields like engineering. Further, the children from small size families preferred medicine as their occupational fields. The resource dilution theory posits that with an increase in the family size, parental resources dilute and divide amongst the siblings unequally, thereby making them choose their career path accordingly. The quality of parent-child relationships, open communication, support offered and trust, can influence exploring activities, vocational aspirations, future plans, the perception of barriers which may occur in choosing a career (Palos, & Drobot, 2010). According to Individual Psychology (Adler, 1946; Ansbacher & Ansbacher, 1956), an individual’s lifestyle develops in childhood as a result of their perceptions, thoughts, and behaviors first within the context of the family unit and then the outside world. Children begin to establish goals about how to maneuver in life in order to gain mastery or superiority over the world around them and depending on their degree of social adjustment, which comes from the family environment they grow up in, these
lifestyle goals may vary from very functional to dysfunctional for individuals (Herndon, 2012). In reference to birth order, there is a significant difference in the paths of the first born children and the later-born children of different family sizes. The first born child is overwhelmingly more interested in intellectual and cognitive aspects of society, then the later born child. In contrast, the later-born child is more likely to develop their artistic and creative capabilities in their career. In addition, the only child resembles the first born in this aspect of birth order. Due to the fact that they interact with parents more frequently in comparison with other children, they are more likely to show interest in academic pursuits. First born children and only children often pursue interests in typically prestigious and professional careers such as law or medicine. While middle borns go into professions like that of teaching, or bureaucracy, later-born children are more likely to invest themselves in a more creatively-oriented field in which they can utilize their imaginations (USA Today, 2002). Lastborns are expected to become artists, musicians, and photographers (Herrera et al., 2003). The career choice/decision making theories by Roe and Super describe well the mechanisms behind the different choices that various birth orders make. Bliss (1970) examined birth order and vocation in a sample comparing creative writers and scientists and found that a far greater percentage of first-born and/or only children were scientists rather than creative writers. Bliss’ Adlerian focus influenced him to conclude that perhaps firstborns were more conservative and traditional than later children, possessing less creative and artistic qualities. Holland emphasizes upon the various personality orientations that each birth order possesses and thus takes up the desired occupations.

Nowadays the field of counseling gets umpteen number of cases where atypical birth order characteristics arise, and it is then that we realize how imperative it is to analyze a case keeping in mind an individual’s family size and order of birth in his/her family. The birth order does imbibe in an individual, some traits that he carries within throughout his life and thus becoming an integral part, affect his personality. Therefore, we need to substantiate the utility of this concept. Although birth order is much-worked upon area which has always attracted the attention of psychologists, but family size combined with birth order presents an interesting area of research.
which has not been much dwelled upon, but would inculcate curiosity amongst the social theorists, psychologists, and thinkers.

While a substantial literature has documented a wide variety of family size and birth order effects on psychological factors like educational attainment, social skills, child anxiety, adolescent decision-making, parent-adolescent communication, coping strategies, etc, the present study has focused upon studying the intelligence, mental health conditions, parent-child relationship, and career choice patterns of young adults.

Keeping in mind the interface of family size and birth-order and their joint effects on the adolescent’s intelligence, mental health conditions, parent-child relationship, and career choice patterns, there is a dire need to look into the matter.