A Study on Ideology in Relation to Values and Intelligence among Postgraduate Students

*A Dissertation Submitted in Partial Fulfilment of the
Requirements for the Award of the Degree of*

Master of Arts
in
Education

By
Meghana Baasri
(Reg. No. 1426204)

Under the Guidance of
Prakasha G S
Assistant Professor

CHRIST UNIVERSITY
UNIVERSITY
BENGALURU, INDIA
Declared as Deemed to be University under Section 3 of UGC Act 1956

School of Education

CHRIST UNIVERSITY
BENGALURU, INDIA
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Dissertation entitled 'A Study on Ideology In Relation To Values and Intelligence among Postgraduate Students' by Meghana Baasri, Reg. No. 1426204 is approved for the award of the degree of Master of Arts in Education.

Examiners:

1. _____   _____

2. _____   _____

3. _____   _____

Supervisor:

_____   _____

Chairman:

_____   _____

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DECLARATION

I, Meghana Baasri, hereby declare that the dissertation, titled 'A Study on Ideology In Relation To Values and Intelligence among Postgraduate Students' is a record of original research work undertaken by me for the award of the degree of Master of Arts in Education. I have completed this study under the supervision of Dr Prakasha G. S., Assistant Professor, School of Education.

I also declare that this dissertation has not been submitted for the award of any degree, diploma, associateship, fellowship or other title. It has not been sent for any publication. I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

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Date: …………………

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Meghana Baasri

Reg. No. 1426204

School of Education

Christ University, Bengaluru

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CERTIFICATE

This is to certify that the dissertation submitted by Meghana Baasri (Reg. No. 1426204) titled 'A Study on Ideology in Relation to Values and Intelligence among Postgraduate Students' is a record of research work done by her during the academic year 2014-2016 under my supervision in partial fulfilment for the award of Master of Arts in Education.

This dissertation has not been submitted for the award of any degree, diploma, associateship, fellowship or other title. It has not been sent for any publication or presentation purpose. I hereby confirm the originality of the work and that there is no plagiarism in any part of the dissertation.

Place: Bengaluru

Date: …………………

<div align="right">

Dr. Prakasha G. S.

Assistant Professor

School of Education

Christ University, Bengaluru

</div>

Signature of the Head of the Department

School of Education

Christ University, Bengaluru

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ABSTRACT

The present study attempted to study ideology with regard to values and intelligence in postgraduate students. The sample consisted of 161 postgraduate students pursuing four different courses of study – M.A. English Literature, M.Sc Psychology, M.Sc Sciences and M.Com – in various colleges in Bangalore city. The study utilised three tools for data collection – the Reactionism-Radicalism Scale by Prof. Rajamanickam, the Comprehensive Value Scale by K. G. Agarwal and the Culture Fair Test of Intelligence by Cattell and Cattell. Descriptive and inferential statistics were used to analyse the data obtained. It was found that there was a positive correlation between ideology and values (strong) and between ideology and intelligence (moderate). The study also revealed that there were significant differences in ideology and values across demographics – i.e. gender, course of study and type of management of the institution. While significant differences in intelligence were found between male and female students, there were no differences in intelligence across other demographics – i.e. course of study and type of management of the institution. No interaction effect was found between values and intelligence, but the analysis showed that there was a main effect. Additionally, values and intelligence, both individually and combined, were found to be predictors of ideology in postgraduate students.

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CHAPTER I

INTRODUCTION

1.1   Background of the study

Many educationists and leaders across the world insist that education is the key to success on both, the personal level and the professional level. An example of this is the words of Dr. Martin Luther King (1947):

> "*We must remember that intelligence is not enough. Intelligence plus character-- that is the goal of true education...The broad education will, therefore, transmit to one not only the accumulated knowledge of the race but also the accumulated experience of social living.*"

Higher education, vital for India, and is considered as a powerful tool that can be used to transform the population into a knowledge-based one in the 21st century. Further, it is also estimated that by 2020, India will require as much as forty million universities to cater to and accommodate the growing student population. (Ernst and Young, 2011) However, despite impressive growth, India's higher education gross enrolment ratio (GER) is 18%, well below the global average of 27%. (British Council, 2014)

Even with the vast population in India, a large percentage of the population barely complete high school. Despite this fact, the higher education sector in the country has witnessed a rapid growth in the number of universities (or university-level) and colleges in the post-independent era. The number of students who enrol for graduate and postgraduate studies (both, in India and abroad) is also increasing rapidly. (www.mhrd.gov.in) The higher education sector prepares students for their professional lives, developing their intellectual capacities and their technical skills, but little education is given to help more open, adaptive value systems (in terms of inward and outward orientation.)

A responsible citizen is one who is an agent of change, taking a stand against social injustices. Also implied by the term is the idea that a responsible citizen displays pro-social

behaviours and one's behaviour is influenced by his/ her values. If a person has inculcated humanitarian values, the chances are high that the person is sensitive to injustices occurring in society and often speaks out against such actions. A joint endeavour of responsible citizens can lead to much-needed change in society.

Many educational institutions (schools and colleges, both) have moral education and value education as a part of their schooling; many texts prescribed are also often loaded with hidden contexts and meanings. What is required is for the institution to bring to front these important lessons, ideas and themes.

Schools and higher education institutions are also seen as integral to the functioning of society. In schools and the texts prescribed, students are exposed to different concepts and ideas that also help shape their ideologies. The school plays a big role in this shaping. The policies of the school, the kind of education they impart (like neoliberal education, education for sustainability, etc.) can influence the ideologies of the student as they mature. Once developed, the students' ideologies are relatively permanent. Entering the professional world, the students need to be responsible – personally, professionally and socially – and their ideologies influence their thoughts, behaviours and actions.

Thus, the educational institution can be perceived as the common setting, where a student has the potential to develop their intellectual capacity, as well as their value systems and ideologies. After all, education itself is not neutral or value-free.

1.2   Ideology

In *Ideology: An Introduction*, Terry Eagleton describes ideology as having a variety of meanings. These include the process of production of meanings, signs and values in social life, that which offers a position for a subject, an action-oriented set of beliefs, as well as the process whereby social life is converted to a natural reality.

Meighan and Harber in their work *A Sociology of Educating* define ideology as an interlocked set of broad ideas and beliefs that demonstrate in both, conversation and behaviour. They further affirm that these ideologies are perceived as 'the way things really are' and are often taken for granted among those who subscribe to these beliefs.

According to Dumont, ideology "commonly designates a more or less social set of ideas and values." (Dumont and Pocock, 1957: 11)

The concept of ideology is ambiguous. It can be defined in various terms. It can also be used to refer to ideas that operate at different levels in society as well. Taken for granted, these ideologies are rarely challenged on the basis of its underpinnings – until it comes into conflict with an individual's personal philosophies and values.

1.2.1 Personal Ideology

Personal ideology in particular refers to an individual's own philosophy with regard to how their life should be and the forces that influences human living. An individual develops his/ her own ideological beliefs in their late adolescence or early adulthood. The experiences of an individual growing up, and the political, economic and social events influences whether a person develops left-wing or right-wing ideologies.

Once developed, this system of beliefs is relatively permanent over time. It is a myth that individuals become more conservative as they age. In fact, studies have revealed that individuals become more liberal as they grow older, a result of often becoming more mellow and tolerant. (Danigelis, N. L., Hardy, M., and Cutler, S. J., 2007)

1.2.2 Theories related to Ideology

Many studies have been conducted with regard to ideology. The results of such endeavours have resulted in experts arguing that individuals with conservative political ideologies have lower levels of intelligence, when compared to more liberal individuals. Conservative beliefs, researchers claim, reflect cognitive rigidity and an unwillingness to accept the new. In support of this, Stankov (2009) cited evidence that people with more conservative views tend to score lower on IQ tests and have lower levels of education.

A third possibility is that the cultural context of the time can have an impact on what ideologies are acceptable to intelligent people. Originally proposed by Hans Eysenck, an alternative theory suggests that higher intelligence is associated with avoidance of extreme

views. Hence, people with higher levels of intelligence are considered to be moderate (neutral) in their views.

Woodley's cultural mediation hypothesis theorises that highly intelligent individuals are better at detecting and espousing values that are normative at the time (Woodley, 2010). Woodley further argues that, since the 1960s, post-materialist values have become normative among intellectuals in much of the world. Hence, apparent associations between left-liberal views and intelligence may reflect the prevailing Western values.

1.2.3 Importance of Ideology

Ideology has the power to transform society. Ideologies seek to change society at a pace that allows for progress, without affecting the societal stability, and causing stagnation or status quo. While liberalists may be pro-change, conservatives may be against it. Liberalists advocate change in all spheres of their life and in society. Conservatives prefer to stick to things as they currently, as they believe that the present is a product of what has worked in the past. While members from both ends of the spectrum advocate the restraining of the power of the government, violent uprooting of institutions that are already established, a necessity of balance in society, what is truly required to help a country develop and transform is a unique balance between these views, as well as an adaptation and application of intelligently chosen (and tested) methods to allow society to move towards progress.

1.2.4 Ideology in Educational Institutions

In educational settings, an instructor inadvertently can transmit their own ideologies to students, indoctrinating the students with their own personal ideologies. Unintentional as it may be, institutions and instructors need to take it upon themselves to help students develop their own ideologies that can help them in the future, as well as help them become socially productive members of society. A well-developed set of ideology can help the student achieve success in all spheres of life.

1.2.4.1   Ideology in Higher Education Classrooms:

The role of ideology in the higher education classrooms is a recurrent issue of debate. Common public opinion is that academics are a liberal elite. Peer review studies in the United States have revealed that three out of every four professors in the higher education system are actually liberalists.

Kelly-Woessner and Woessner (2008), based on student self-reports and unmeasured learning outcomes, found that students who recognize instructors having similar ideologies and views put more effort into the instructor's class. Students showed higher levels of learning from politically similar instructors, and less enthusiasm for classes taught by instructors with dissimilar views.

1.2.5 Popular Research Findings:

Many past studies also show that women are more liberal than men, blacks are more liberal than whites, and that the effect of childhood intelligence on adult ideology is twice as large as the effect of either sex or race.

1.3   Values

Values are general principles that guide action, and can be conceptualised at the individual and the group levels. On an individual level, values are internalised moral beliefs or social representations that people perceive as the rationale for their actions. On a broader note, values can be perceived as cultural scripts or ideals that are held common by a group of people. Different social systems have different value sets which distinguish one society from another. The group social mind usually always has varying moral components as well.

1.3.1 Values and the Individual and Group Levels

At the individual level, values can be explained simply as an internalisation of socio-cultural goals that impose a means to self-regulation of impulses, such as to reduce or eliminate conflict with one's society. While individuals can vary in the set of values and

beliefs they possess, the overriding need to fit into society makes an individual modify and adapt their value systems to reflect some, if not all the values embedded in mainstream societal culture.

Judgment, preference and action are usually explained in terms of values. Individuals adopt values as part of socialization into a family, group and society. Once taken on, values are assumed relatively fixed over time. Our values stem from many things, including family traditions, life experiences, culture, and according to Kanazawa (2010), intelligence.

1.3.2 The Importance of Values

The idea of values and ideologies being a crucial aspect in defining one's character and strength is an idea that is acknowledged by many. In one of his prayer meetings, Mahatma Gandhi said:

> *"Your beliefs become your thoughts,*
> *Your thoughts become your words,*
> *Your words become your actions,*
> *Your actions become your habits,*
> *Your habits become your values,*
> *Your values become your destiny."*

Taken at face value, these words highlight the importance of one having a good belief system that can in turn influence one's actions and help form their values as well. In turn, these values influence one's future actions, which shape their destiny.

In India, many authors have produced works that highlight their roles as social critics. Their literary masterpieces are aimed at inducing social change in society. For instance, for Munshi Premchand, literature was a powerful means of educating public opinion, promoting in his writing social evolution and the idea of equal opportunities for all. Other novels, such as Arundhati Roy's *The God of Small Things* and Chetan Bhagat's *Revolution 2020*, also highlight the degradation of values and morals in their own ways.

Many-a-times, teachers do not perceive themselves as teachers of value as well. Arguments that teachers do not claim expertise about value indoctrination, of their job being

training in a specific subject, etc. are popular. Yet, one thing that cannot be denied is that many students perceive their teachers as role models and adopt similar values and beliefs as possessed by those teachers that they admire.

Values are important to human action, and it makes is a reasonable assumption that highly educated individuals have a highly educated or developed set of values. An educated person should be able to think about their own values critically and make value judgements about their own values, ideologies and morals.

While an individual's values develop throughout their life, higher education can play an important role in this. For an educated person, engaging with values drives him/ her toward larger concerns and concerns on wholly different levels. It can make an individual reflect on this/ her own values, about which values to are more important, how he/ she lives and eventually about trying to make sense of their own values. Higher education is the driving force that can motivate and equip the students to engage with their values.

1.3.3 Values in the Educational Setting

In the educational setting, educating students about healthy values helps students develop their own set of moral codes. They learn to show concern for others, and in the process also learn to reflect on their experiences, and look for meanings and pattern in such experiences. In addition, students also learn to respect some core common values, such as justice and honestly. In the long run, a good (i.e. positive) set of values helps individuals make judgements that are socially responsible and become accountable for their actions and decisions.

Students often learn many of their values in the educational setting. Teachers, here, become role models, and students who idolise a teacher may often mould their values keeping in mind the teachers' values. In addition, the values of students may also stem from the hidden curriculum in text books. The media is another source based on which students' value systems develop.

1.3.3.1   Values in Higher Education

One of the purposes of higher education is to cultivate in the young adults a discipline of values, so that he is able to serve society as well. In a world where liberalisation, privatisation and globalisation have become important elements, the importance of having a sound, pro-social system of values is much-needed to help develop one's society.

The higher education institutions need to make an attempt to help students develop positive and pro-social values through means such as community service, values inculcation, analysis of values and resulting consequences, action learning, etc. to help them become socially responsible human beings.

1.4   Intelligence

The approach to understanding intelligence is popularly based on psychometric testing. The first developed intelligence test was the Binet-Simon test, which lead to the concept of mental and chronological ages being a ratio of IQ. After this, much research was conducted on intelligence and intelligence testing, leading to the development of many testing methods, tools and theories to explain intelligence.

1.4.1   Spearman's *g*

Charles Spearman was the first to propose the existence of *g*, a general intelligence component, in the early twentieth century. According to Spearman (1927), the factors of intelligence fall under two factors – general (i.e. *g*) and specific (*s*). *g* was found to have positive correlations with different intelligence tasks and tests. The construct of *g* was found to be pervasive in all the aspects of intelligence, and was thus given more importance. Specific factors are narrower in scope when compared to the general factors. The *g* factor was interpreted to be the core of human intelligence, which influenced the success of performance in all cognitive tasks, thereby creating a positive manifold (a trend for intelligence tests to have positive correlations, depicted in Fig 1.1). Full-scale IQ scores from intelligence test batteries that have high correlation with *g* factor scores are deduced to be an estimate of g.

The idea of *g* still being an important predictor that influences test performance is still a dominant concept in the field of psychometrics. Despite having received much criticism, the *g* theory is still an intelligence theory benchmark, and many of the other theorists and researchers compare their intelligence theories and constructs with the *g* model. According to Jensen (1992), the theorem of indifference of indicator proposed by Spearman is still used to explain high correlations among different intelligence tests today.
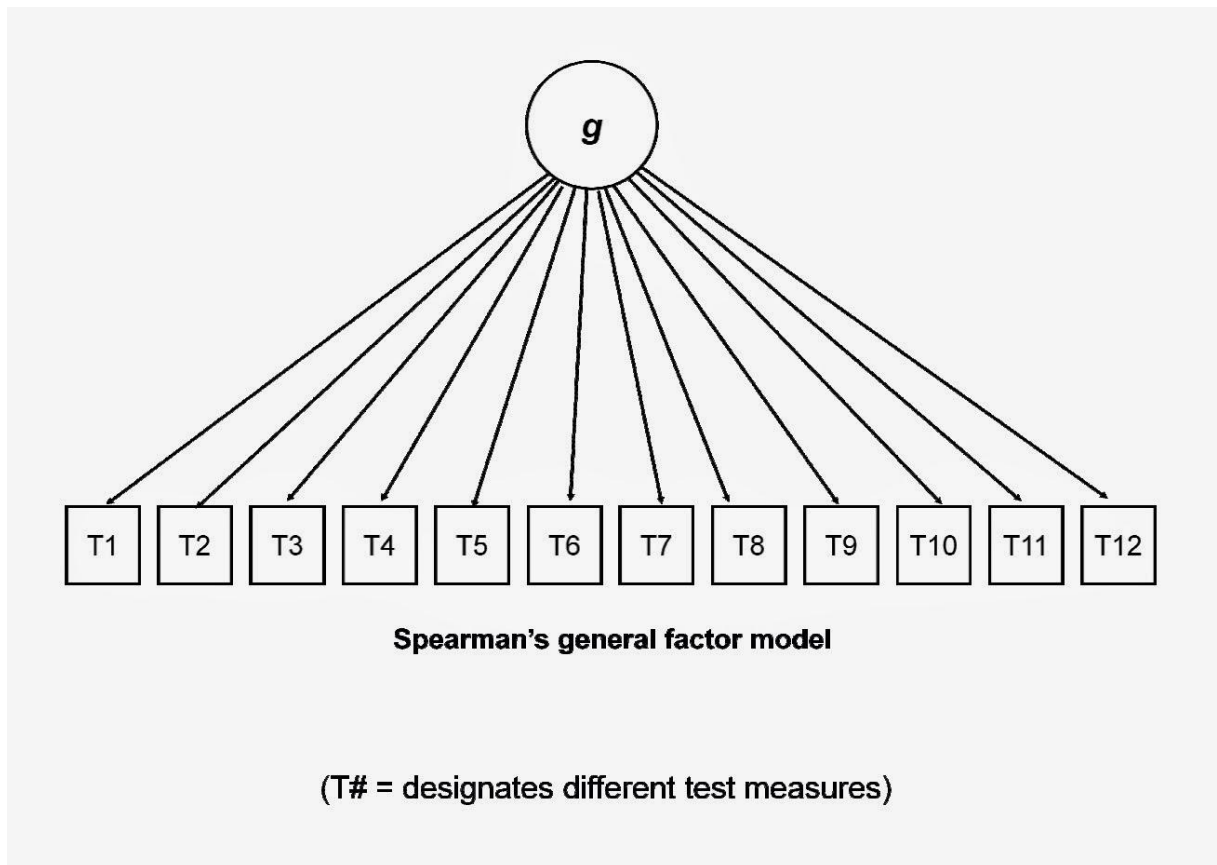
Figure 1.1: Indicating the positive manifold according to Spearman

Source: Kevin McGrew, Evolution of CHC Theory of Intelligence and Assessment (2009)

1.4.2 Thurstone's Multi-factor Theory

Thurstone, in juxtaposition to Spearman's theory of *g* factor, in 1941 proposed a multi-factor theory on intelligence. According to Thurstone, intelligence consists of seven different factors – verbal meaning (V), word fluency (W), number (N), memory (M), perceptual speed (P), space (S), and inductive reasoning factor (I). These primary factors, also called as Primary Mental Abilities (PMA), each have different mental operations that form a

group. However, according to Thurstone did not recognise the existence of a general factor that affects the PMA, like *g*.
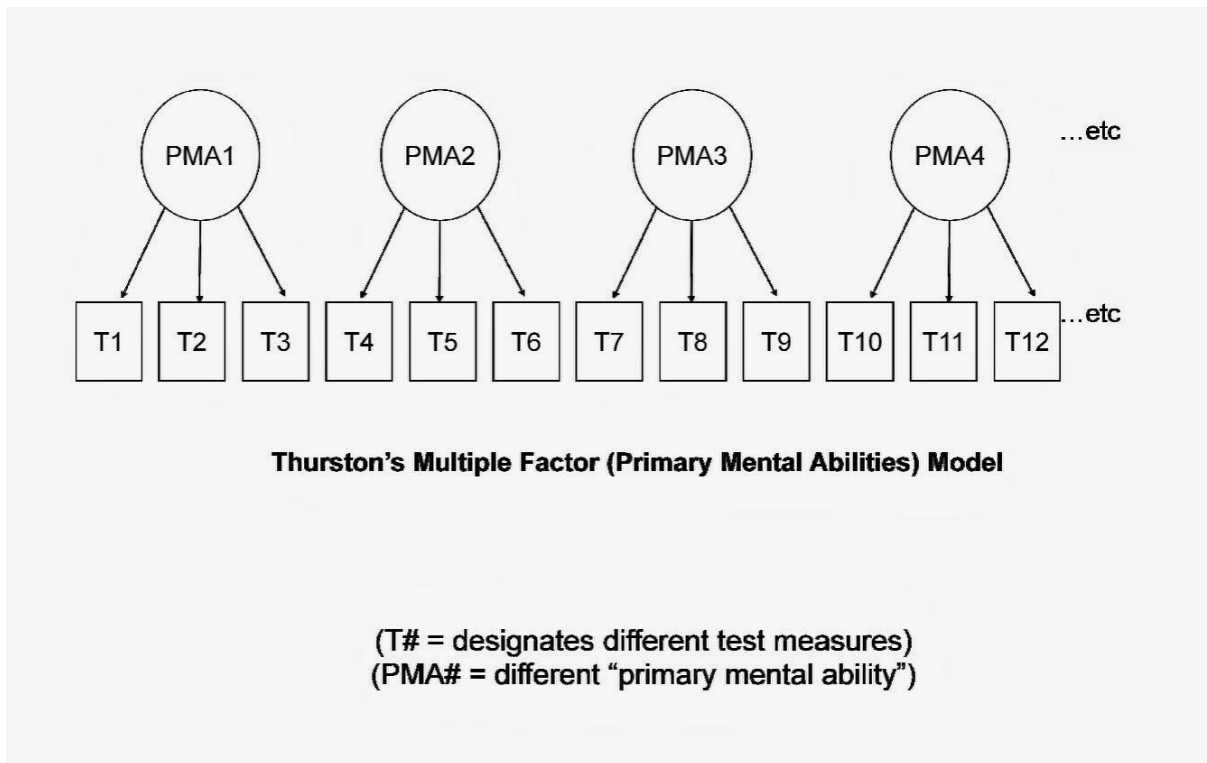
Figure 1.2: Indicating Thurstone's Multiple Factor Theory

Source: Kevin McGrew, Evolution of CHC Theory of Intelligence and Assessment (2009)

1.4.3 Cattell and Horn's Theory of Intelligence

Cattell and Horn, in the 1970s, developed a theory proposing a hierarchy of factors that influenced intelligence. At the top of this hierarchy is *g*, under which there are ten broad categories, further divided into seventy narrower abilities. Cattell and Horn define eight broad cognitive ability factors: Fluid Reasoning (Gf), Comprehensive Knowledge (Gc), Visual Processing (Gv), Auditory Processing (Ga), Processing Speed (Gs), Short-term Memory (Gsm), Long-term Retrieval (Glr) and Quantitative Ability (Gq). The core of Cattell and Horn's theory is the concept of crystallised and fluid intelligence.

Despite Horn arguing against the existence and influence of *g*, studies, through factor analyses, show that the various factors load on *g*. Research has also shown that the fluid

intelligence, i.e. Gf, has a standardised factor loading of 1.0, when a number of the broader abilities of Cattell and Horn's theory are loaded on one common g factor. This means that g and fluid intelligence are indistinguishable from one another.

Cattell-Horn *Gf-Gc* Hierarchical (no *g*) Model

(T# = designates different test measures)
(PMA# = different "primary mental ability")
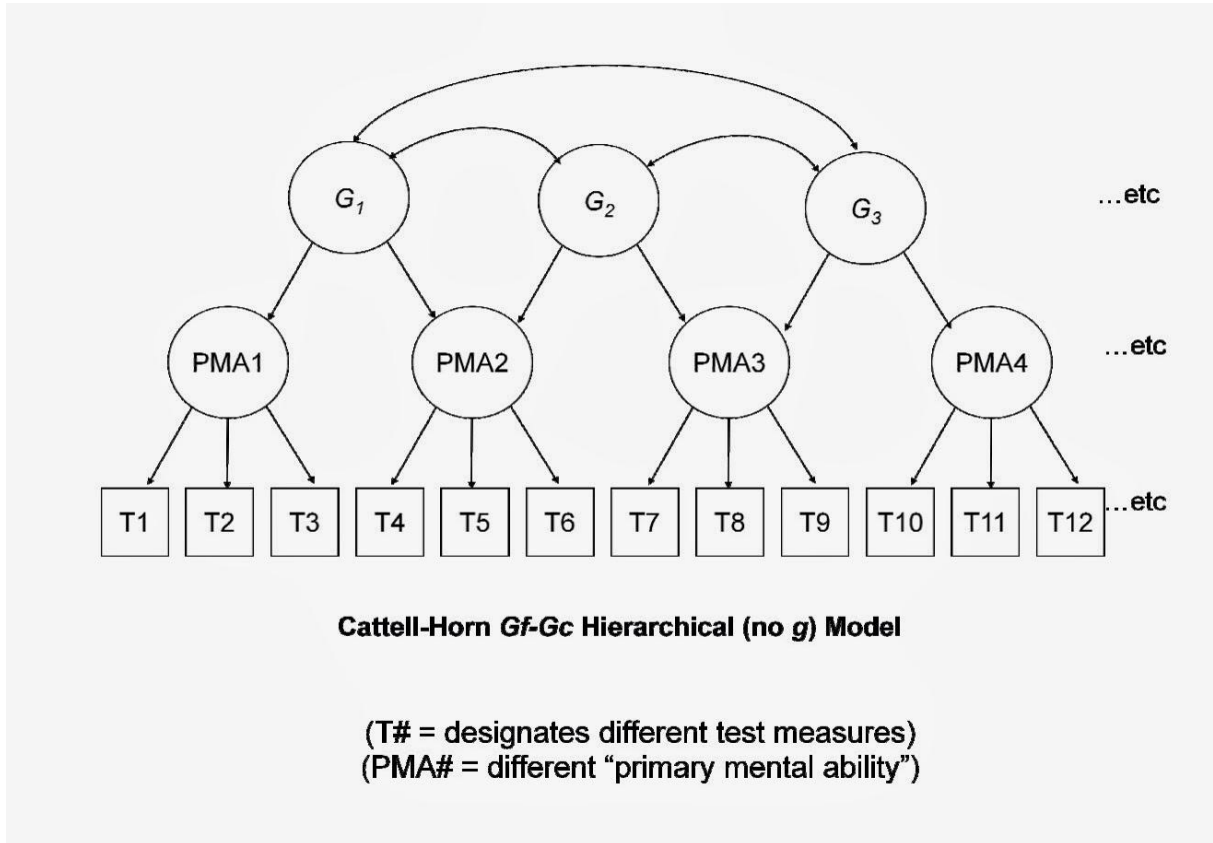
Figure 1.3: Indicating the hierarchy of factors according to Cattell and Horn
Source: Kevin McGrew, Evolution of CHC Theory of Intelligence and Assessment (2009)

1.4.4 Carroll's Theory of Intelligence

Carroll, in 1993, presented a factor analytic research with regard to human cognitive abilities. This theory, called as the three stratum theory, presented the structure of intelligence as a three-tier hierarchical model, i.e. general (Stratum III), narrow (Stratum I) and broad (Stratum II) factors. Carroll's study concluded that the theory presented by Cattell and Horn was the most similar theory to his. One of the primary differences between the two theories is the contention of g being a single (Carroll) or multiple general factors (Cattell and Horn).
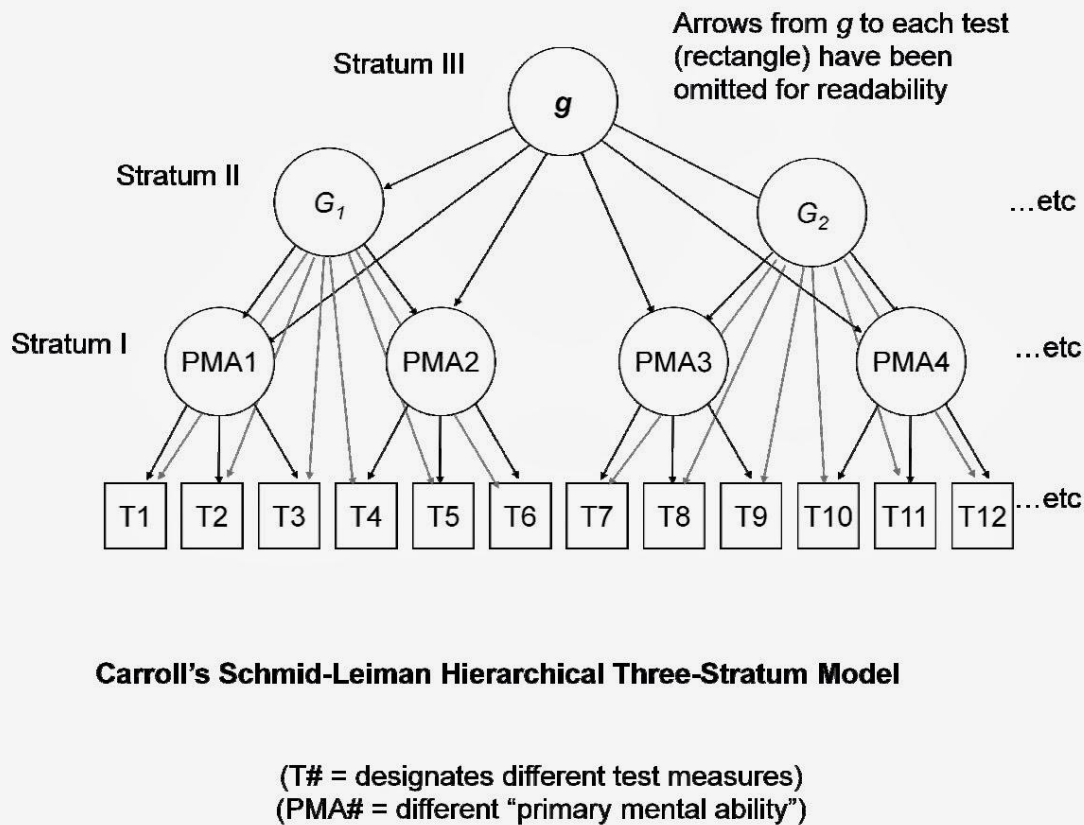
Figure 1.4: Indicating the Structure of Intelligence according to Carroll's Three-stratum Theory

Source: Kevin McGrew, Evolution of CHC Theory of Intelligence and Assessment (2009)

1.4.5 Cattell-Horn-Carroll (CHC) Theory of Intelligence

In the subsequent years, Cattell and Horn's theory and Carroll's theories of intelligence have been merged. Cattell-Horn-Carroll theory, or the CHC theory, is the first theory that is based on consensus believed to present an empirically validated, comprehensive taxonomy of cognitive elements. This contemporary model of intelligence has become the most widely used in intelligence tests.

According to the CHC model, there are ten broad factors of intelligence – Fluid Intelligence (Gf), crystallised Intelligence (Gc), Quantitative Knowledge (Gq), Reading And Writing (Grw), Short-term Memory (Gsm), Visual Processing (Gv), Auditory Processing (Ga), Long-term Storage And Retrieval (Glr), Processing Speed (Gs) And Decision Speed/

Reaction Time (Gt). These factors fall under the Stratum II of the CHC theory. Stratum I comprises of the narrower abilities that are similar to Carroll's original model.
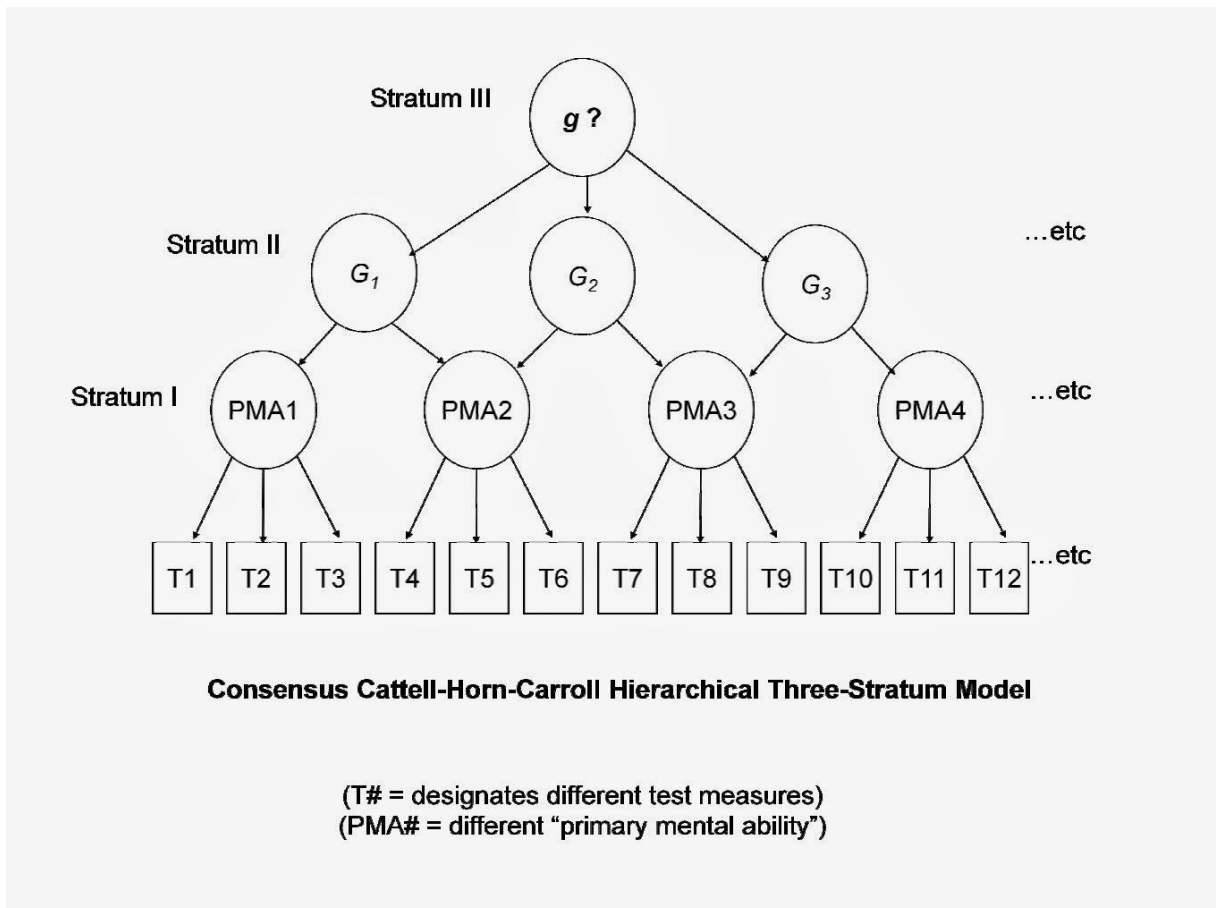
Figure 1.5: Showing the Taxonomy of Cognitive Abilities According to the CHC model
Source: Kevin McGrew, Evolution of CHC Theory of Intelligence and Assessment (2009)

Further theories that explained intelligence were Gardner's Theory of Multiple Intelligences, Sternberg's Triarchic Theory, Piaget's Theory of Cognitive Development and more. Emotional intelligence was also found to be a component of intelligence by many researchers. However, most theories disregard/ dispute the existence of g.

Intelligence is believed to be associated with cognitive performance. It includes the speed at which information is processed mentally, the time taken for inspection, the time taken to react, the attention, etc. Research in behavioural genetics has revealed that g, as a

construct, is heritable., taking into account biological correlates, such as brain size. The construct is also believed to be a significant predictor of individual differences, influencing social outcomes in education and employment as well.

1.5   Need for the Study

In the Indian scenario, few or no studies have been conducted with regard to ideology, values and intelligence, as well as the relationship between these variables.

For a person to be able to develop holistically, not only do they require having a more accepting ideology, but also have a strong pro-social value system. (Rim, 1993) People with neutral/ liberal ideologies have the ability to adapt to changes better than conservatives. On the other hand, people with good value systems could also have better ideologies (Graham et. al., 2009) and IQs than people with lower systems, probably as a result of better education or status in society (Kanazawa, 2010; Hodson and Busseri, 2012).

Both these variables can influence a person's intelligence, which (combined) determines how a person can deal with problems, reason and make sound decisions. Therefore it becomes important to determine whether there exists a relationship between ideology, intelligence and values, and the degree of the relationship as well.

Leftist (i.e. liberalists) and rightist (i.e. conservatives) beliefs in India have manifested itself it the political system. Since many political parties represent the interest of the people, party leaders affirm that they maintain the ideology of the party supporters in particular. (Masum and Haque, 2105) In such a situation, it becomes important to know how this would impact Indian society, especially with regard to the leaders' intelligence and value systems. Since such systems develop and strengthen in the formative years (late adolescence or early adulthood) of an individual, looking into the ideology of students can give researchers better insight to help them predict outcomes.

The present study aims at studying the ideology of postgraduate students and its relationship with their values and intelligence in colleges in Bangalore.

1.6   Statement of the Problem

To study ideology in relation to values and intelligence among postgraduate students

1.7   Objectives of the Study

- To determine the relationship between ideology and intelligence among postgraduate students.

- To determine the relationship between ideology and values among postgraduate students.

- To determine the differences in ideology in postgraduate students across demographics.

- To determine the differences in values in postgraduate students across demographics.

- To determine the differences in intelligence in postgraduate students across demographics.

- To determine the main and interaction effect of intelligence and values on ideology among postgraduate students.

- To determine whether intelligence is a predictor of ideology among postgraduate students.

- To determine whether values are a significant predictor of ideology among postgraduate students.

- To determine whether intelligence and values are predictors of ideology among postgraduate students.

1.8   Scope of the Study

In the present study, only postgraduate students in Bangalore are included in the representative sample. The representative sample includes postgraduate students pursuing a

pre-determined set of courses of study. The study will investigate the relationship between ideology, values and intelligence, as well as the interaction between the variables as well as the degree to which the independent and demographic variables can predict the prevalence of the dependent variable, i.e. ideology.

The results of the present study can be widely adapted and applied to help students become more politically aware, more involved in society and develop strong value systems that are pro-social. Schools and institutions can help students be more open and perceptive, i.e. more liberal, which can in turn not only helps them live better lives, but also helps them become self-fulfilled and more productive citizens. With pro-social values, behaviour and knowledge, individuals can have positive impacts on society, develop more mature relationships and hone their cognitive skills as well.

1.9   Limitations of the Study

- The sample of the present study was limited to only a few colleges in Bangalore.
- The sample size in the present study is less than 1% of total population.
- The sample was conducted only among postgraduate students.
- The sample of the study was limited in terms of the demographic variables studied – i.e. gender, course of study (four) and type of management of the institution.
- Only a few variables were considered for the study.

1.10 Resume to the Succeeding Chapters

The current chapter highlighted the basic aspects concerning the variables being studied, and offered a brief introduction to each of the variables. Chapter II presents in brief previous studies conducted with regard to ideology, values and intelligence. Chapter III delineates the methodology adopted in the present study. The data analyses and the results of the study are explained in Chapter IV.

CHAPTER II

REVIEW OF RELATED LITERATURE

A study of related literatures is essential when conducting a research. The perusal allows the researcher systematise and make purposeful the process of investigation. The researcher can also gain understanding about the recent developments and the latest trends in the area of study. The review of related literature also helps the researcher identify a research problem, as well as identify whether the chosen problem has already been investigated by other researchers, as well as which aspect of the area requires further input through empirical means. This chapter serves to review the literature related to the dependent and independent variables of the present study. Studies conducted on ideology, values and intelligence were reviewed for this purpose.

2.1 Reviews of International Literature

Chambers, Schlenker, and Collisson (2013) conducted a research titled "Ideology and Prejudice: The Role of Value Conflicts" to test whether prejudice is derived from perceived similarities and dissimilarities in political ideologies (the value-conflict hypothesis) across three diverse samples. Study 1 concluded that conservatives had less favourable impressions of groups that were identified as liberal, but more favourable impressions than liberals had of conservatives. In Studies 2 and 3 symmetrical preferences were found, with liberals and conservatives each liking attitudinally similar targets. The amount of prejudice was similar for liberals and conservatives, and the race of the target group had no effect. In all three studies, very similar patterns were discovered, even after controlling for individual differences on prejudice-related dimensions (like system justification, modern racism, social-dominance orientation, etc.). The patterns support strongly the value-conflict hypothesis and indicate that prejudice exists on both sides of the political spectrum.

Hodson and Busseri (2102) in the study "Bright Minds and Dark Attitudes: Lower Cognitive Ability Predicts Greater Prejudice through Right-Wing Ideology and Low Intergroup Contact" put forth and tested mediation models that proposed that lower cognitive

ability can predict greater prejudice, an effect that was mediated through the endorsement of right-wing ideologies (social conservatism, right-wing authoritarianism) and low levels of contact with out-groups. Analyses of large-scale, nationally representative data sets ($N = 15,874$) from the UK were conducted, and the researchers found that lower levels of general intelligence (g) in childhood predicts greater degrees of racism in adulthood, and this effect was largely mediated through conservative ideology. Results of the study suggested that cognitive abilities play a critical, though underappreciated, role in the formation of prejudice.

Kanazawa, in 2010, conducted an investigation titled "Why Liberals and Atheists are More Intelligent." The researcher reported that the origin of preferences and values is a theoretical solution that is still unresolved. Data from National Longitudinal Study of Adolescent Health (Study 1) and the General Social Surveys (Study 2) was analysed to test the Savanna-IQ Interaction Hypothesis, which suggests that individuals with higher levels of intelligence are more likely to acquire and adopt novel values and preferences but that intelligence has no effect on the acquisition and adoption of familiar values. Results show that intelligence significantly increases liberalism and atheism.

In a study conducted in 2009 by Graham et. al. titled "Liberals and Conservatives Rely on Different Sets of Moral Foundations," an attempt was made to look into how and why moral judgements differed across a political spectrum. The authors developed several methods to measure how people use moral intuitions. The study was conducted in four parts. Results showed that liberals displayed greater levels of endorsement across the four studies, while conservatives displayed an equal level of endorsement across all five of the foundations studied. The results are useful in understanding the intractability and nature of moral disagreements.

Rim (1993) conducted a study titled "Social Interest, Ethical Ideology, and Values," in which the researcher made an attempt to replicate the findings of J.E. Crandall on intelligence, values and extraversion. The sample consisted to 120 males, aged between 21 and 28. The tools used in the study were the Social Interest Scale (SIS), Eysenck Personality Questionnaire, and Rokeach Value Survey. Results of the study showed that SIS scores above the median on social interest scored higher in idealism and believed to be absolutists. Individuals scoring high on the SIS with high social interest were found to be situationists. Contrary to Crandall's findings, the researchers also found that individuals with low SIS and low social interest to score higher on verbal interest tests. Another finding of the study was

that there was no relation between extraversion and social interest. In keeping with Crandall's findings, the researchers also found that the same values preferred by high social interest SIS scorers appeared, like concern for others, while those preferred by low SIS scorers was more self-cantered.

Michaud et. al. (2009) presented a paper titled "The Relationship between Cultural Values and Political Ideology, and the Role of Political Knowledge," in which they explained that cultural theory not only maintains the four world views of fatalism, hierarchicalism, individualism and egalitarianism, but also can be used to portray people and societies. They used a survey method to examine egalitarianism and individualism in an attempt to understand their belief systems. The researchers found that individuals with lower knowledge of politics had less coherent worldviews. In contrast, individuals with higher levels of political knowledge were more egalitarian and individualistic. The researchers also presented their findings on a continuum liberal-conservative continuum.

In an article titled "The Hypothesis: Why do people want what they want?," Satoshi Kanazawa (2014), an evolutionary psychologist, said that "General intelligence, the ability to think and reason, endowed our ancestors with advantages in solving evolutionarily novel problems for which they did not have innate solutions." He goes on to say that individuals with higher levels of intelligence have higher chances of recognising and understanding novels situations and entities (like values, preferences and lifestyles) better than individuals with lower levels of intelligence.

Furnham and Ahmetoglu (2014) in study called "Personality, Ideology, Intelligence, and Self-Rated Strengths" looked at individual difference correlates of self-rated character strengths and virtues. The sample of the study comprised 280 adults, who completed a short 24-item measure of strengths, a short personality measure of the Big Five traits and a fluid intelligence test. Analysis revealed that these factors correlated significantly with intelligence and personality. Intelligence, as well as neuroticism, was correlated negatively with all the virtues, while conscientiousness and extraversion were correlated positively with all the virtues. Structural equation modelling showed that personality and religiousness had moderated the effect of intelligence on the virtues. Openness and extraversion and were the largest correlates.

Rindermann and Woodley, in 2011, conducted a study on "Political orientations, intelligence and education." The sample comprised of 586 Brazilian individuals. The researchers used two tools to collect the data – Standard Progressive Matrices (SPM) and a tool to collect the demographic data. The researchers found that Individuals with higher IQs were found to be politically centre-right and/ or centrist. A path-analysis revealed that only intelligence had an impact on political centrality, while education promoted political orientations that non-centric. These results are discussed keeping in mind various theoretical models on the relationship between IQ and political attitudes.

2.2   Review of Indian Literature

In an opinion piece published in The Hindu, titled "The Missing Conservative intellectuals," (2015) the Sampath, G. reports that the liberals in India are themselves conservative. However, he goes on to report that there were alarmingly few, if no right-wing intellectuals in the country, even though at the time, the right-wing party was in power. The article emphasizes the need for more liberal intellectuals to protect India's democratic values.

Guha, R. (2015) published an article titled "In absentia: where are India's conservative intellectuals?" The author supports the view of Karl Mannheim, that liberalism as a philosophy of social action that is ideally future-oriented. The liberals we have in India, she reports, fall into two categories – those who are British liberals and those who profess to be liberal, but in actuality are conservative. The bottom line, according to the author, is that despite the abundance of liberals in India, the progress to be expected is missing in Indian society.

Pattnaik et. al. (2015) in "Personal Values as Predictor of Ethical Behavior of Managers" attempted to understand the personal values possessed by Indian managers and measuring its influence on the ethical behaviour. The sample consisted of 150 managers. The findings of the study revealed that materialistic orientation and self orientation were the major personal values which motivated managers to behave unethically. The findings of the study validated the results of some of the existing studies conducted in the international context.

In a paper titled "Importance of Human Values in Society," Dr. Debbarma, M. (2014) attempted to explore the need and importance in a global world. According to the researcher,

human values are a theory regarding which things are good, important and desirable in the world. He concludes the paper affirming that value-based education must be given importance not only in schools, but also in higher education institutions, because students tend to disregard tradition and prefer alternative models. The researcher also mentions that human values should be treated as a solution to global problems.

Verma, N. and Bawane, J. (2011) conducted a study "Personal Values Emerging among the Indian Graduate students: Study conducted in a selected city in Maharashtra," in which the researchers examined the personal values prevalent in college-going students. Demographic variables considered by the researchers were gender and discipline of study. The study revealed that the college students showed very high preferences for economic, and power values, and high preferences for aesthetic, and hedonistic values. Average inclination was noticed towards religious, and family prestige values, lower were seen for democratic, knowledge, and health values and lowest for social value.

Pradhan, G.C. (1992) in a study titled "Variation in the Development of Moral Judgement of School Students in Different Types of Schools in Relation to General Intelligence, Personal Values, Socio-Economic Status and Sex." The sample consisted of 2.642 students from Puri district. The tools used were the Defining Issues Test of James Rest, the Group Test of Intelligence for children by R.K. Tandon, Personal Values Questionnaire by Sherry and Verma and Socio-Economic Status Scale by Bhardwaj et.al. Results indicated that there was a correlation between moral judgement and intelligence, as well as between moral judgement and socio-economic status. The female students displayed more moral judgement than boys, and students in private and urban schools also showed more moral judgement when compared to government and rural school students. Moral judgement was also found to be correlated with the age of the students.

Kurian, G., and Sharma, N. K. (1988) in "Language and thought: A review of the meditational, cognitive, psycholinguistic, and neuropsychological perspectives and an attempted synthesis" present a theoretical view of intelligence. Approaching intelligence in terms of cognitive processes, the researchers suggest that a general developmental mechanism may show substantial modifiability and flexibility of intellectual abilities.

Ramalingaswami, in 1970 adopted the performance tests of the Wechsler Adult Intelligence scale (WAIS) for the Indian scenario. Data was collected from 604 literate

persons of Delhi aged between 15 to 45 years. The reliability of the adapted tests ranged from 0.89 to 0.91. Factor analysis of each subtest for each of the groups and for both sexes was done separately. A single common factor identified as 'g' was found in each analysis.

2.3   Overview of Reviews of Related Literature

In the Indian scenario, few or no studies have been conducted with regard to ideology, values and intelligence, as well as the relationship between these variables. The effect of ideology, values and intelligence separately, as well as the effect of values and intelligence on ideology are important aspects to examine when thinking and predicting future outcomes.

2.4   Conclusion of Reviews of Related Literature

Studies conducted on ideology are very few not only in the Indian context, but also the international context. There are many researches conducted examining the effect and influence of values and intelligence; however, few of these are conducted with regard to ideology – an important aspect of social living and life. Keeping this lack in mind, the researcher has reviewed articles in newspapers and magazines as well, to gather a better perspective on the independent variable, i.e. ideology.

The review of literature highlights a lack of sufficient research, with respect to ideology. The current research attempts to examine, thus, the ideology of postgraduate students with respect to their values (Chambers et. al., 2013; Michaud et. al., 2009) and intelligence (Hodson and Busseri, 2012; Kanazawa, 2010) in the Indian scenario, in an attempt to understand how the variable operates.

CHAPTER III
METHODOLOGY OF THE STUDY

3.1 Introduction

The current chapter includes the operational definitions of terms and concepts used in the study. The hypotheses for empirical validation have also been stated in this section. Also included are the sampling procedures, tools employed for the collection of data and the statistical techniques used for analyses.

The purpose of the research was to study ideology in relation to values and intelligence among postgraduate students. The researcher also intended to investigate the relationships between ideology, intelligence and values, and determine whether there were differences in the variables with regard to gender, course of study and type of management of the institution the student was studying in. The methodology of the study is discussed below.

3.2 Statement of the Problem

To study ideology in relation to values and intelligence among postgraduate students

3.3 Method of study

A survey method was adopted for the current study. The respondents were postgraduate students studying in Bangalore city. Three sets of standardised questionnaires were administered, the Reactionism-Radicalism Scale (developed by Prof. Rajamanickam, 1988), Comprehensive Value Scale (developed by K. G. Agarwal, 1999) and the Culture Fair Test, Scale III (developed by Cattell and Cattell, 1973). The field work was conducted for this research by personally visiting the institutions and collecting the data from the students pursuing a particular course of study. The data was collected from postgraduate students pursuing four different courses, studying in autonomous and affiliated institutions.

3.4   Operational Definitions

In the current investigation, the variables Ideology, Intelligence and Values have been defined as follows.

3.4.1 Ideology

Ideology can be described as a set of conscious and unconscious ideas which make up one's goals, expectations, and motivations. An ideology is a comprehensive normative vision, meaning that it is a set of standards that are followed by people.

According to the present study, the various dimensions of ideology are defined as follows:

i. <u>Conservatism</u> refers to the philosophy that also opposes change and innovation. Conservative people prefer the already established order and the security it thus provides. Conservatives are less extreme compared to reactionists.

ii. <u>Neutralism</u> refers to the policy or attitude of neutrality, non-involvement or non-alignment. It is a state of character of being uninvolved, and is used as a strategy for maximizing one's security, in a divided world.

iii. <u>Liberalism</u> refers to a stand of being 'liberal,' or being free, giving and generous is views, speech and action. It refers also to one's open-mindedness and a lack of bias and prejudice.

3.4.2 Values

Values are codes or general principles guiding action. Preference, judgment, and action can be commonly explained in terms of values.

3.4.3 Intelligence

Intelligence, here, refers to the existence of a general intelligence (g) that influences performance on mental ability tasks and measures. The idea is that this underlying form of intelligence influences the performance on cognitive tasks.

3.5 Variables of the Study

The following are the variables considered in the study:

- Dependent variable: Ideology: Reactionism, Conservatism, Neutralism, Liberalism, Radicalism

- Independent variables: Values

  Intelligence

- Demographic variables: Gender

  Course of study

  Type of management

3.6 Hypotheses of the study

Hypothesis 1: There is no significant relationship between ideology and intelligence among postgraduate students

Hypothesis 2: There is no significant relationship between ideology and personal values among postgraduate students

Hypothesis 3: There is no significant difference in ideology between male and female postgraduate students

Hypothesis 4: There is no significant difference in ideology among postgraduate students pursuing different courses of study

Hypothesis 5: There is no significant difference in ideology among postgraduate students studying in autonomous and affiliated institutions

Hypothesis 6: There is no significant difference in values among male and female postgraduate students

Hypothesis 7: There is no significant difference in values among postgraduate students pursuing different courses of study

Hypothesis 8: There is no significant difference in values among postgraduate students studying in autonomous and affiliated institutions

Hypothesis 9: There is no significant difference in intelligence among male and female postgraduate students

Hypothesis 10: There is no significant difference in intelligence among postgraduate students pursuing different courses of study

Hypothesis 11: There is no significant difference in intelligence among postgraduate students studying in autonomous and affiliated institutions

Hypothesis 12: The main and interaction effect of intelligence and values do not account for significant differences in ideology among postgraduate students

Hypothesis 13: Intelligence is not a significant predictor of ideology among postgraduate students

Hypothesis 14: Values are not a significant predictor of ideology in postgraduate students

Hypothesis 15: Intelligence and values are not significant predictors of ideology among postgraduate students

3.7   Sampling Design

All postgraduate students pursuing their higher studies in colleges (both, autonomous and affiliated) in Bangalore constituted the population of the study.

According to the AISHE (All India Survey on Higher Education) provisional report 2012-13, total enrolment in higher education was estimated to be 29.6 million, with 16.3

million male and 13.3 million female students. The total number of higher education colleges is 3671, and standalone institutions 11445 as of 2012-13.

According to the AISHE Population Projection Reports, 2015 and 2016, there will be a total of 7122040 individuals pursuing higher studies (aged between 18 and 23 years) by 2015-16, which will further increase to 7052447 by 2016-17. Karnataka has 3,098 colleges with 44 colleges for one lakh people. 885 of these colleges are located in the Bangalore district. (AISHE, 2010-11)

3.7.1 Sample of the Study

In the present study, a representative sample of 161 students was surveyed, pursuing various postgraduate courses (M.A. English, M.Sc Psychology, M.Sc and M.Com) in autonomous and affiliated colleges in Bangalore. The small sample size was selected based on the researcher's convenience and discretion.

Table 3.1: Showing the descriptive statistics of the sample

		Management		Course			
		Autonomous	Affiliated	MA Lit	MSc Psych	MSc	M.Com
Gender	Female	45	71	45	20	23	28
	Male	0	45	0	15	14	16
Total		45	116	45	35	37	44

3.8   Tools of the study

The researcher adopted three sets of tools in the study to collect the data. The following is a description of each tool:

3.8.1 Reactionism-Radicalism Scale (Prof. Rajamanickam, 1988)

The Reactionism-Radicalism Scale was developed and standardised by Prof Rajamanickam in 1988. The tool was adopted for measuring the ideologies of postgraduate students.

Scoring Procedures

The scale consists of 60 statements (both, positive and negative), scored on a 5-point rating scale: Strongly Agree, Agree, Unable to Decide, Disagree and Strongly Disagree. The scale measures ideology under 6 different problem areas – Political issues, Economic problems, Social, sex and family, race, Community and tradition, Progressive education and Individual freedom.

Reliability

The scale was administered on a sample of 50 postgraduate students for the purpose of retesting the reliability of the Reactionism-Radicalism Scale, developed by Prof. Rajamanickam in 1988. According to George and Mallery (2003), the obtained Cronbach's Alpha value was 0.681 (N of items = 60) is found to display an acceptable level of internal consistency.

Table 3.2: Showing the Chronbach's Alpha for Reactionism-Radicalism Scale

Cronbach's α	Cronbach's α Based on Standardized Items	N of Items
0.681	0.632	60

3.8.2 Comprehensive Value Scale (K. G. Agarwal, 1999)

The Comprehensive Value Scale developed by K. G. Agarwal in 1999 was used to collect data with regard to the values of postgraduate students.

Scoring Procedures

The scale consists of 23 items (both, positive and negative), and is marked on a 7-point rating scale. Scores ranging from -3 to +3 are given based on the responses. The scale measure six types of values, namely, Refinement, Conscience, Stability, Power, Masculinity-Femininity, and Political ideology.

Reliability

The scale was administered on a sample of 50 postgraduate students for the purpose of retesting the reliability of the Comprehensive Value Scale, developed by K. G. Agarwal in 1999. According to George and Mallery (2003), the obtained Cronbach's Alpha value was 0.760 (N of items = 30) is found to display an acceptable level of internal consistency.

Table 3.3: Showing the Chronbach's Alpha for Comprehensive Value Scale

Cronbach's α	Cronbach's α Based on Standardized Items	N of Items
0.76	0.77	30

3.8.3 Culture Fair Test of Intelligence (Cattell and Cattell, 1973)

The Culture Fair Test of Intelligence (Scale III, Form A), developed by Cattell and Cattell in 1973, was used to collect data with regard to fluid intelligence from postgraduate students.

Scoring Procedures

The scale consists of 50 items, under 4 sub-tests. A stencil is used to score the items.

3.9   Statistical Procedures

Descriptive and inferential statistics were used in the present study for data analysis. A test of normality was conducted on the data obtained from the tools. Since the assumptions of normality were met, the following statistical procedures have been conducted on the data collected.

i.   Descriptive statistics include Mean, Standard Deviation – to determine the frequencies and distribution of the sample across demographics.

ii.   T-test – to test for significant differences in ideology, values and intelligence across gender and type of management of the institution.

iii.   ANOVA (One-Way and Two-Way) – to test for significant differences in ideology, values and intelligence with respect to course of study, and to determine the main and interaction effect of values and intelligence on ideology.

iv.   Correlation – to test the relationship between ideology, values and intelligence.

v.   Regression (Linear and Multiple) – to test whether values and intelligence were predictors of ideology.

3.10   Resume to the Succeeding Chapter

The next chapter presents the analyses of the obtained data, the relevant interpretation and the results and discussion.

CHAPTER IV

DATA INTERPRETATION AND ANALYSIS

The collected data was compiled and tested for normality. Ideology, intelligence and value scores were found to be normally distributed as assessed by the Shapiro-Wilks Test and inspection of the normal Q-Q plots. Subsequently, the data was analysed and interpreted to test the hypotheses of the study.
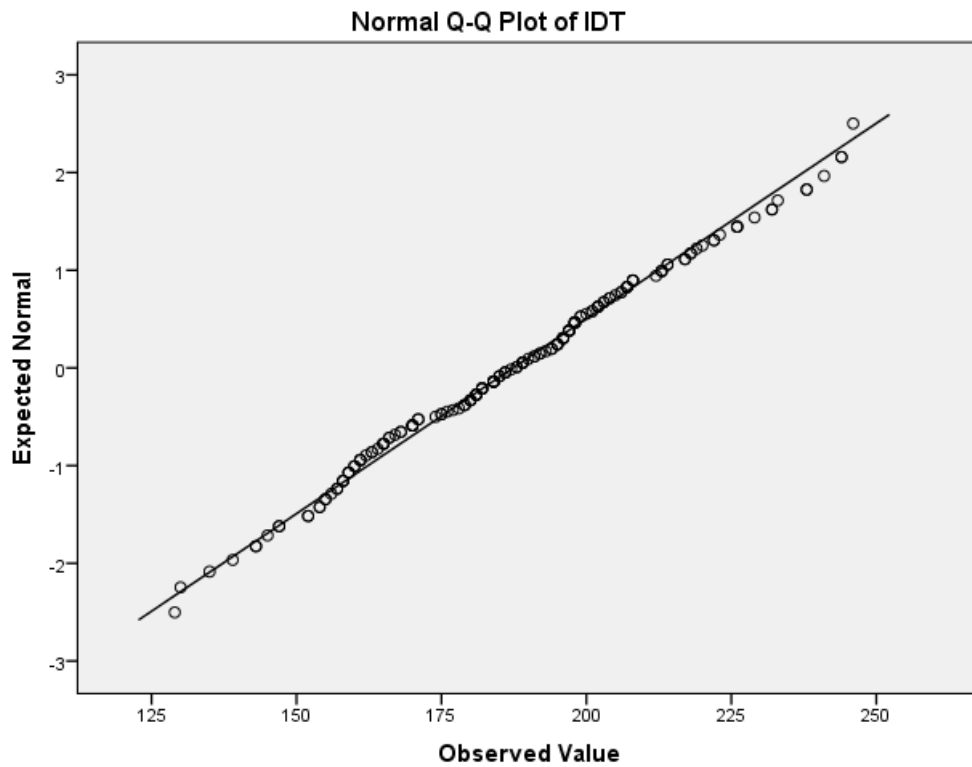
Figure 4.1: Showing the normal Q-Q plot for ideology scores
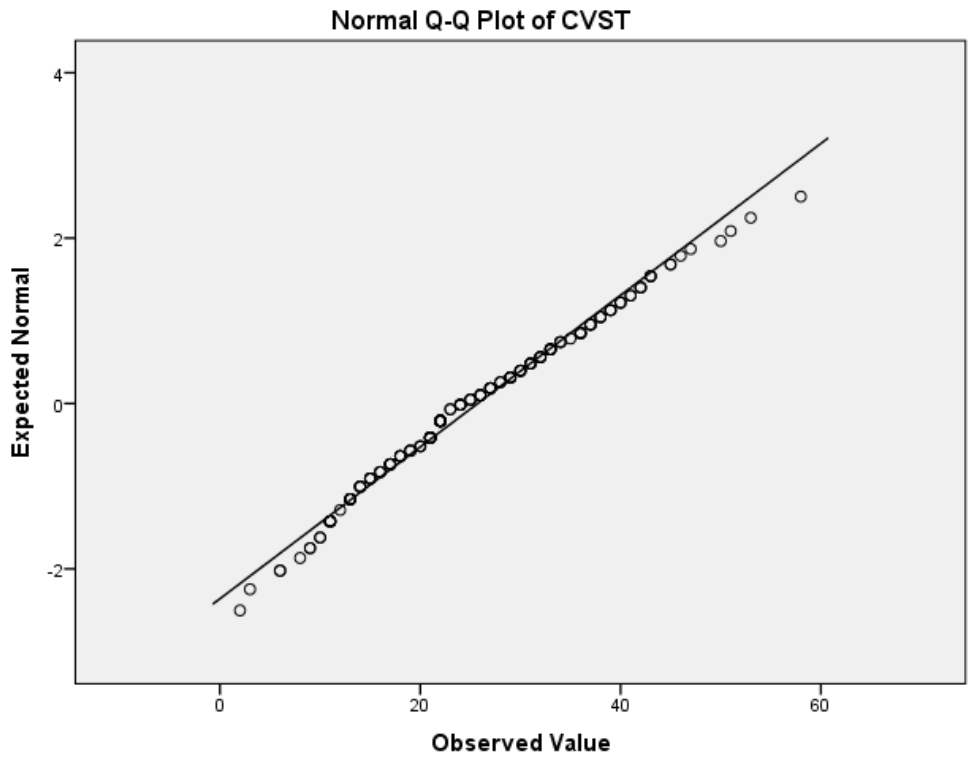
Figure 4.2: Showing the normal Q-Q plot for value scores
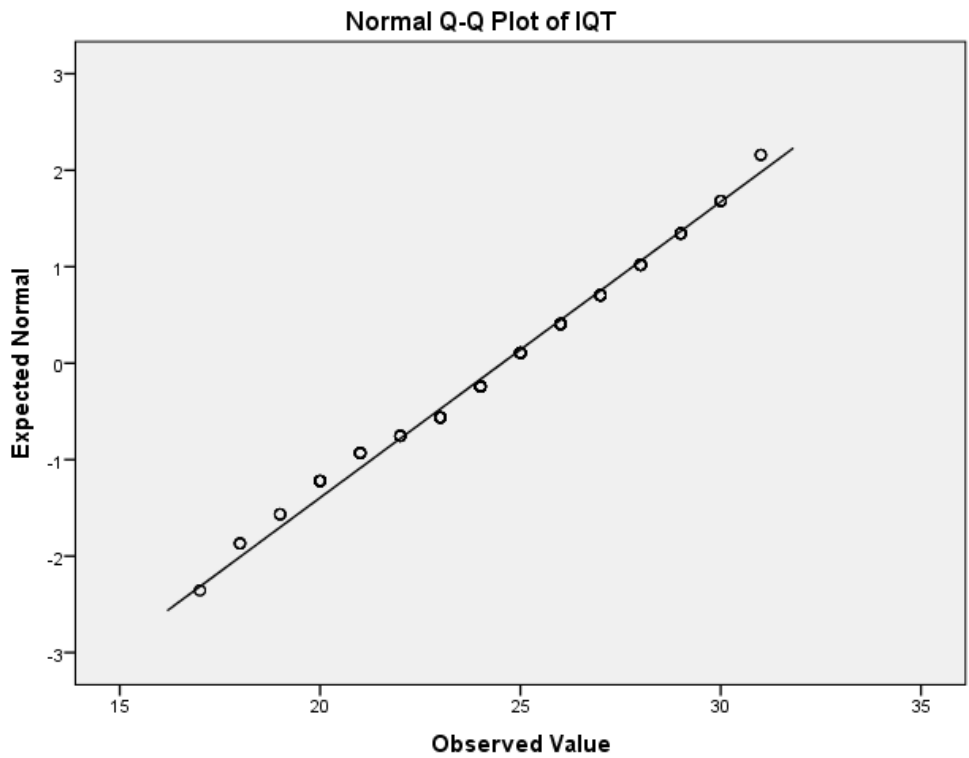
Figure 4.3: Showing the normal Q-Q plot for intelligence scores

H₀1: *There is no significant relationship between ideology and personal values among postgraduate students.*

Table 4.1: Showing Pearson product-moment correlation results

		Values
Ideology	Pearson Correlation	0.606*
	Sig. (2-tailed)	.001
	N	161

*correlation is significant at the 0.01 level (2-tailed)

A Pearson product-moment correlation coefficient was computed to assess the relationship between ideology and values. It was revealed that there was a strong, positive correlation between ideology and values in postgraduate students, $r = 0.606$ ($r>0.5$). More developed and/ or positive value systems are associated with more developed/ positive ideologies in postgraduate students.

There was a strong correlation between the variables ($p < 0.01$), and therefore, the null hypothesis stating that "*There is no significant relationship between ideology and personal values among postgraduate students*" is rejected, and the alternative hypothesis is accepted, which states that "*There is a significant relationship between ideology and values in postgraduate students.*"

H₀2: *There is no significant relationship between ideology and intelligence among postgraduate students.*

Table 4.2: Showing Pearson product-moment correlation results

		Intelligence
Ideology	Pearson Correlation	0.575*
	Sig. (2-tailed)	.001
	N	161

*correlation is significant at the 0.01 level (2-tailed)

A Pearson product-moment correlation coefficient was computed to assess the relationship between ideology and intelligence. Analysis revealed that there was a moderate,

positive correlation between ideology and intelligence, $r = 0.575$, ($r > 0.5$), indicating that people with higher intelligence have higher levels of ideology as well.

There was a strong correlation between the variables ($p < 0.01$), and therefore, the null hypothesis stating that "*There is no significant relationship between ideology and intelligence among postgraduate students*" is rejected, and the alternative hypothesis is accepted, which states that "*There is a significant relationship between ideology and intelligence in postgraduate students.*"

H$_0$3: *There is no significant difference in ideology between male and female postgraduate students.*

Table 4.3: Showing independent-samples t-test results

	Gender	N	Mean	Std. Deviation	Levene's Test Sig	df	t	Sig (2-tailed)
Ideology	Male	45	159.44	13.466	0.010*	159	14.329	.001*
	Female	116	198.16	19.481				

*$p < 0.05$

An independent-samples t-test was conducted to compare the ideology between male and female postgraduate students. It was determined that there was homogeneity of variances for ideology scores obtained by male and female students, as assessed by Levene's test for equality of variances ($p = 0.01$, $p > 0.05$).

Results revealed that there was a significant difference between the ideology of male students (159.44 ± 3.16) and female students (198.16 ± 3.16), $t_{(159)} = 14.329$, $p = 0.001$. It was found that female students have higher levels of ideology, with a mean difference of 38.72 when compared to the mean scores of male students.
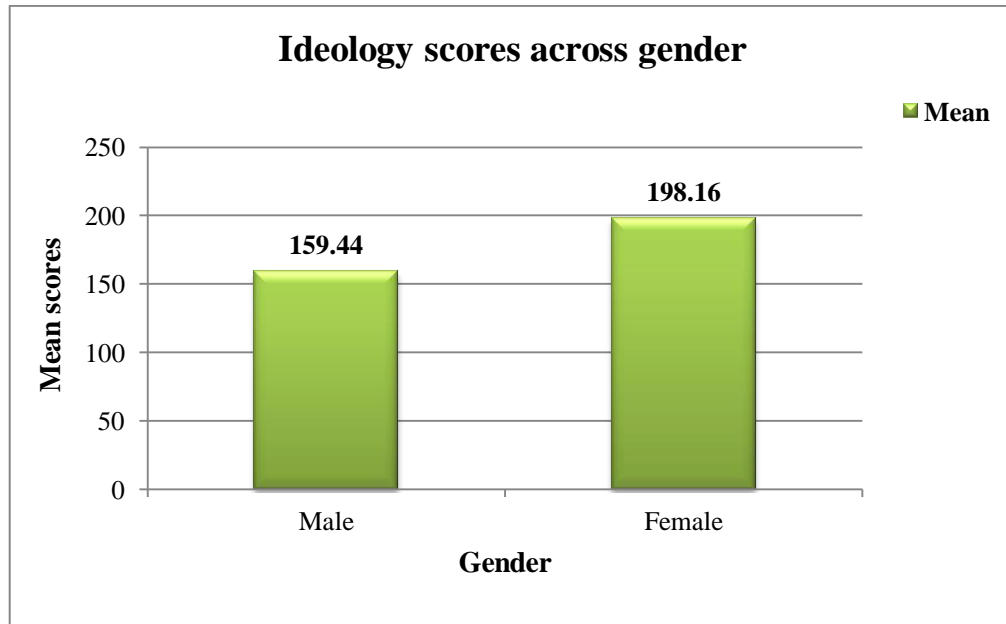
Graph 4.1: Indicating mean scores for ideology across gender

There was a statistically significant difference between means ($p < 0.05$), and therefore, we can reject the null hypothesis "*There is no significant difference in ideology between male and female postgraduate students*" and accept the alternative hypothesis, which states that "*There is a significant difference in ideology between male and female postgraduate students*."

$H_0 4$: *There is no significant difference in ideology among postgraduate students pursuing different courses of study.*

Table 4.4a: Showing descriptive statistics

	N	Mean	Std. Deviation	Std. Error
M.A. Eng	45	197.16	15.771	2.351
M.Sc Psych	35	180.57	26.800	4.530
M.Sc	37	186.03	28.205	4.637
M.Com	44	183.80	26.268	3.960
Total	161	187.34	25.029	1.973

The above table (4.4a) shows the descriptive statistics for ideology scores of postgraduate students across various courses of study. Levene's test for homogeneity of variances was violated, *Levene F* (3, 157) = 0.001 (*p*<0.05).

Table 4.4b: Showing one-way ANOVA results

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6555.597	3	2185.199		
Within Groups	93674.615	157	596.654	3.662	0.014*
Total	100230.211	160			

*p<0.05

The above table shows the one-way ANOVA results of the ideology scores across type of management. However, since equality of variances was not met, Welch's Robust tests of equality were conducted and interpreted to check for differences between the groups.

Table 4.4c: Showing the Robust tests of equality of means results

	Statistic[a]	df1	df2	Sig.
Welch	5.440	3	79.869	.002*

*p<0.05

a. Asymptotically F distributed.

The above table shows the results of the Robust tests of equality of means, computed since the equality of variances was violated. The results show that there is a statistically significant difference between at least one group and the other groups in terms of ideology, Welch's F (3, 79.869) = 5.440, *p* = 0.002.

Table 4.4d: Showing Post Hoc test results

	(I) Course	(J) Course	Mean Difference (I-J)	Std. Error	Sig.
Games-Howell	M.A. Eng	M.Sc Psych	16.584*	5.104	.011**
		M.Sc	11.129	5.199	.153
		M.Com	13.360*	4.605	.025**

	M.A. Eng	-16.584*	5.104	.011**
M.Sc Psych	M.Sc	-5.456	6.482	.834
	M.Com	-3.224	6.017	.950
	M.A. Eng	-11.129	5.199	.153
M.Sc	M.Sc Psych	5.456	6.482	.834
	M.Com	2.232	6.098	.983
	M.A. Eng	-13.360*	4.605	.025**
M.Com	M.Sc Psych	3.224	6.017	.950
	M.Sc	-2.232	6.098	.983

* Mean difference is significant at the 0.05 level. **$p<0.05$

A Games-Howell post hoc analysis was conducted in order to further determine which of the groups differed from the other groups. The results revealed that the changes in ideology between M.A. English and M.Sc Psychology students (16.584, $p = 0.011$) and between M.A. English and M.Com students (13.360, $p = 0.025$) were statistically different from one another.
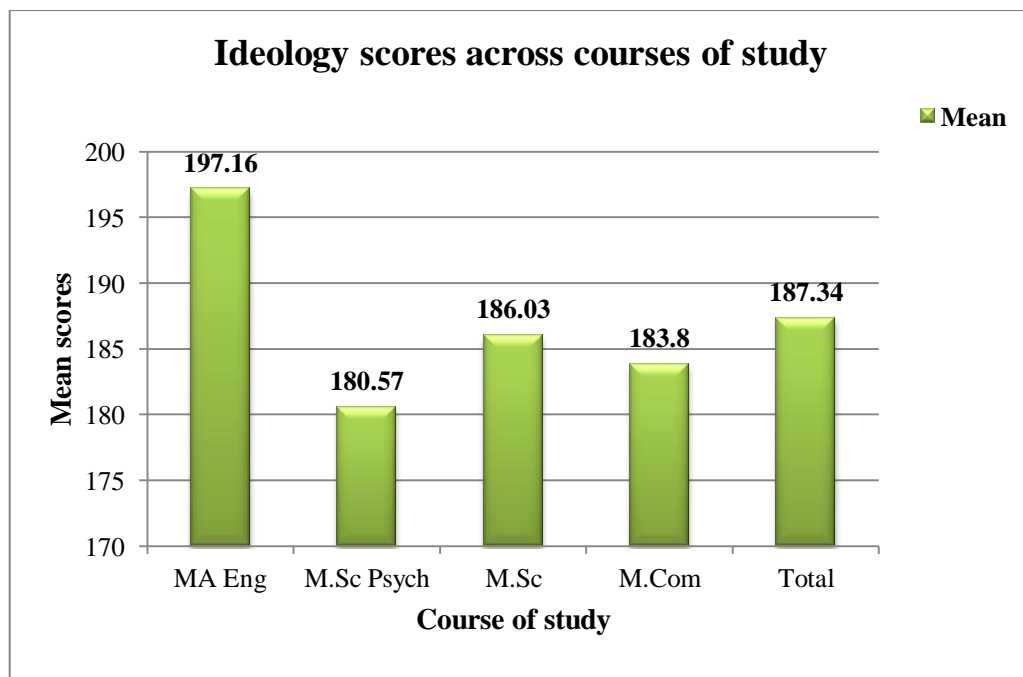
Graph 4.2: Indicating mean ideology scores across various courses of study
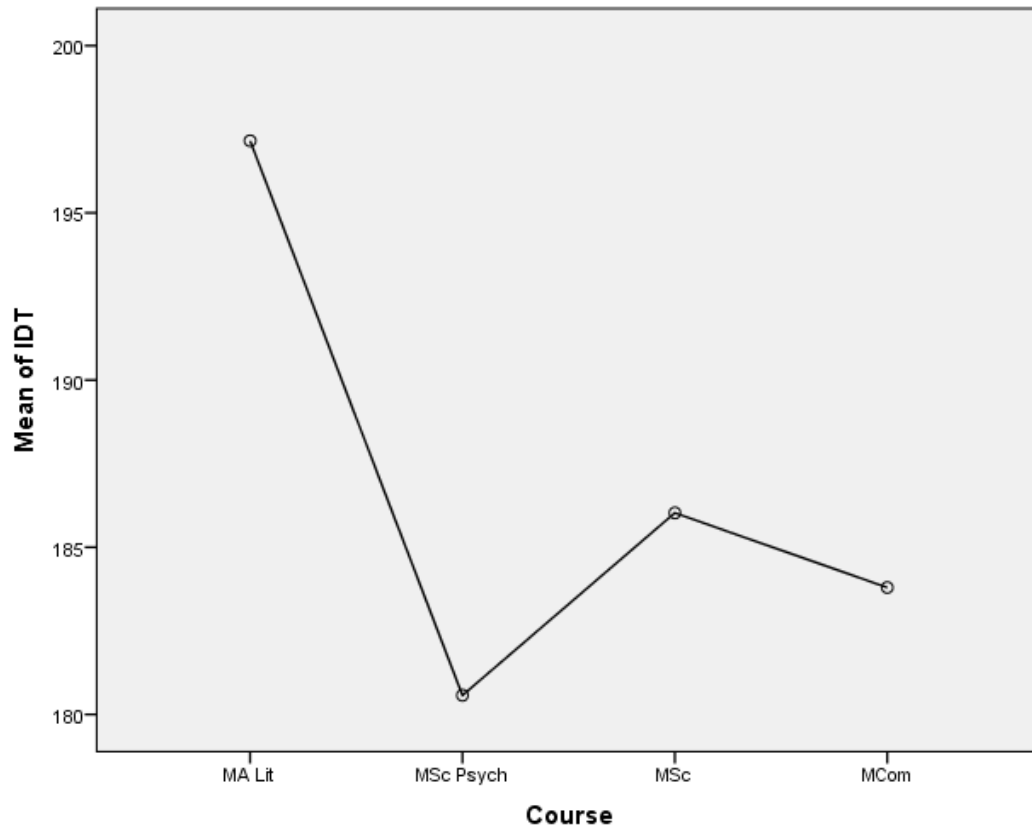
Figure 4.4: Showing the profile plot of ideology scores across course of study

The group means were statistically significantly different ($p < .05$) and, therefore, the hypothesis "*There is no significant difference in ideology among postgraduate students pursuing different courses of study*" is rejected and the alternative hypothesis is accepted, which states that "*There is a significant difference in ideology among postgraduate students pursuing different courses of study.*"

$H_0$5: *There is no significant difference in ideology among postgraduate students studying in autonomous and affiliated institutions.*

Table 4.5: Showing independent-samples t-test results

	Type of Management	N	Mean	Std. Deviation	Levene's Test Sig	df	t	Sig (2-tailed)
Ideology	Autonomous	45	197.16	15.771	0.001*	134.075	3.970	0.001*
	Affiliated	116	183.53	26.909				

*p < 0.05

38

An independent-samples t-test (table 4.5) was conducted to compare the ideology of postgraduate students studying in autonomous and affiliated colleges The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances for ideology scores obtained by students studying in autonomous and affiliated colleges, ($p = .001$, $p < 0.05$).

Results revealed that there was a significant difference between the ideology of postgraduate students studying in autonomous (197.16 ± 3.43) and affiliated (183.53 ± 3.43) colleges, $t_{(134.075)} = 3.970$, $p = 0.001$. It was found that students studying in autonomous colleges have higher levels of ideology, with a mean difference of 13.62 when compared to the students studying in affiliated colleges.
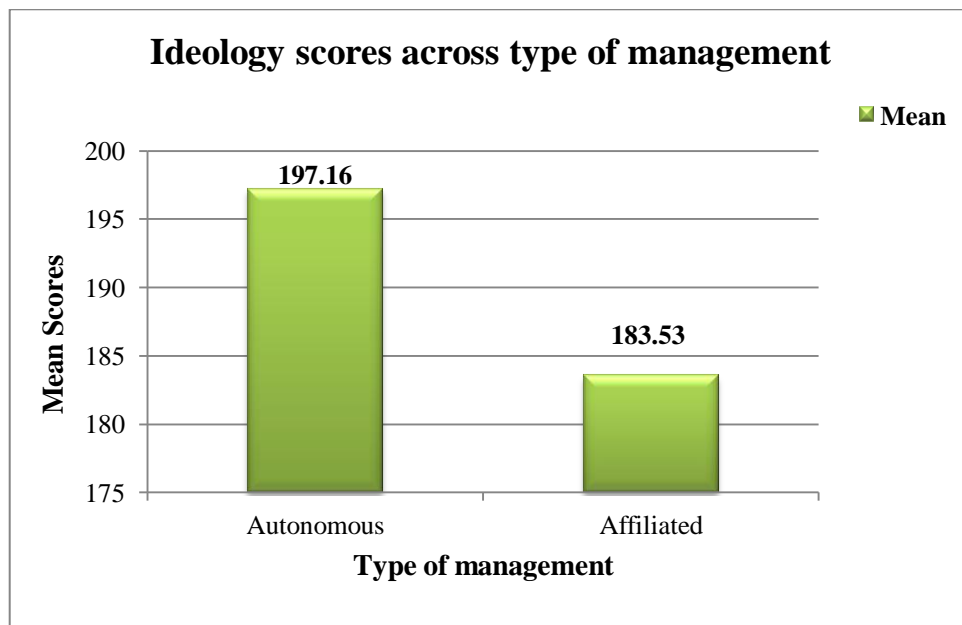
Graph 4.3: Indicating mean scores for ideology across type of management

There was a statistically significant difference between means ($p < 0.05$), and therefore, we can reject the null hypothesis "*There is no significant difference in ideology among postgraduate students studying in autonomous and affiliated institutions*" and accept the alternative hypothesis, which states that "*There is a significant difference in ideology among postgraduate students studying in autonomous and affiliated institutions.*"

H₀6: *There is no significant difference in values among male and female postgraduate students.*

Table 4.6: Showing independent-samples t-test results

|	Gender	N	Mean	Std. Deviation	Levene's Test Sig	df	t	Sig (2-tailed)
Values	Male	45	16.47	8.738	0.302*	159	7.899	.001**
	Female	116	29.32	9.459				

*p>0.05

An independent-samples t-test was conducted to compare the values of male and female postgraduate students. It was determined that there was homogeneity of variances for values scores obtained by male and female students, as assessed by Levene's test for equality of variances ($p = 0.302$, $p > 0.05$).

Results revealed that there was a significant difference between the values of male students (16.47 ± 1.63) and female students (29.32 ± 1.63), $t_{(159)} = 7.899$, $p = 0.001$. It was found that female students have more positive values, with a mean difference of 12.85 when compared to male students.
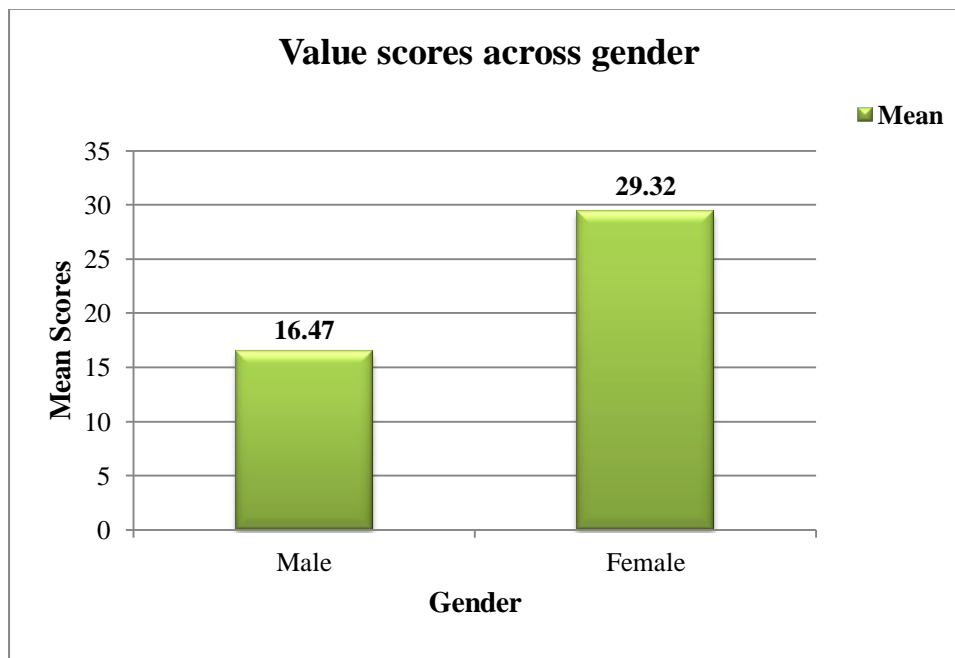
Graph 4.4: Indicating mean value scores across gender

There was a statistically significant difference between means ($p < 0.05$), and therefore, we can reject the null hypothesis "*There is no significant difference in values among male and female postgraduate students*" and accept the alternative hypothesis, which states that *"There is a significant difference in values among male and female postgraduate students."*

$H_0$7: ***There is no significant difference in values among postgraduate students pursuing different courses of study.***

Table 4.7a: Showing descriptive statistics

	N	Mean	Std. Deviation	Std. Error
M.A. Eng	45	30.76	8.536	1.273
M.Sc Psych	35	23.69	11.752	1.986
M.Sc	37	21.41	9.920	1.631
M.Com	44	25.84	11.396	1.718
Total	161	25.73	10.898	0.859

The above table shows the descriptive statistics for value scores of postgraduate students across various courses of study. Levene's test for homogeneity of variances was violated, *Levene F* (3, 157) = 0.034 ($p<0.05$).

Table 4.7b: Showing one-way ANOVA results

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1975.316	3	658.439		
Within Groups	17028.659	157	108.463	6.071	0.001*
Total	19003.975	160			

*p<0.05

The above table shows the one-way ANOVA results of the ideology scores across type of management. However, since equality of variances was not met, Welch's Robust tests of equality were conducted and interpreted to check for differences between the groups.

Table 4.7c: Showing the Robust tests of equality of means results

	Statistic[a]	df1	df2	Sig.
Welch	7.567	3	83.638	.001*

*p<0.05

a. Asymptotically F distributed.

The above table shows the results of the Robust tests of equality of means, computed since the equality of variances was violated. The results show that there is a statistically significant difference between at least one group and the other groups in terms of values, Welch's F (3, 83.638) = 7.567, $p = 0.001$.

Table 4.7d: Showing the post hoc test results

	(I) Course	(J) Course	Mean Difference (I-J)	Std. Error	Sig.
Games-Howell	M.A. Eng	M.Sc Psych	7.070*	2.359	.020**
		M.Sc	9.350*	2.069	.001**
		M.Com	4.915	2.138	.107
	M.Sc Psych	M.A. Eng	-7.070*	2.359	.020*
		M.Sc	2.280	2.570	.811
		M.Com	-2.155	2.626	.845
	M.Sc	M.A. Eng	-9.350*	2.069	.001**
		M.Sc Psych	-2.280	2.570	.811
		M.Com	-4.436	2.369	.248
	M.Com	M.A. Eng	-4.915	2.138	.107
		M.Sc Psych	2.155	2.626	.845
		M.Sc	4.436	2.369	.248

* Mean difference is significant at the 0.05 level.   *******p<0.05*

A Games-Howell post hoc analysis was conducted in order to further determine which of the groups differed from the other groups in terms of values. The results revealed that the changes in values between M.A. English and M.Sc Psychology students (7.070, $p = 0.020$) and between M.A. English and M.Sc students (9.350, $p = 0.001$) were statistically different from one another.
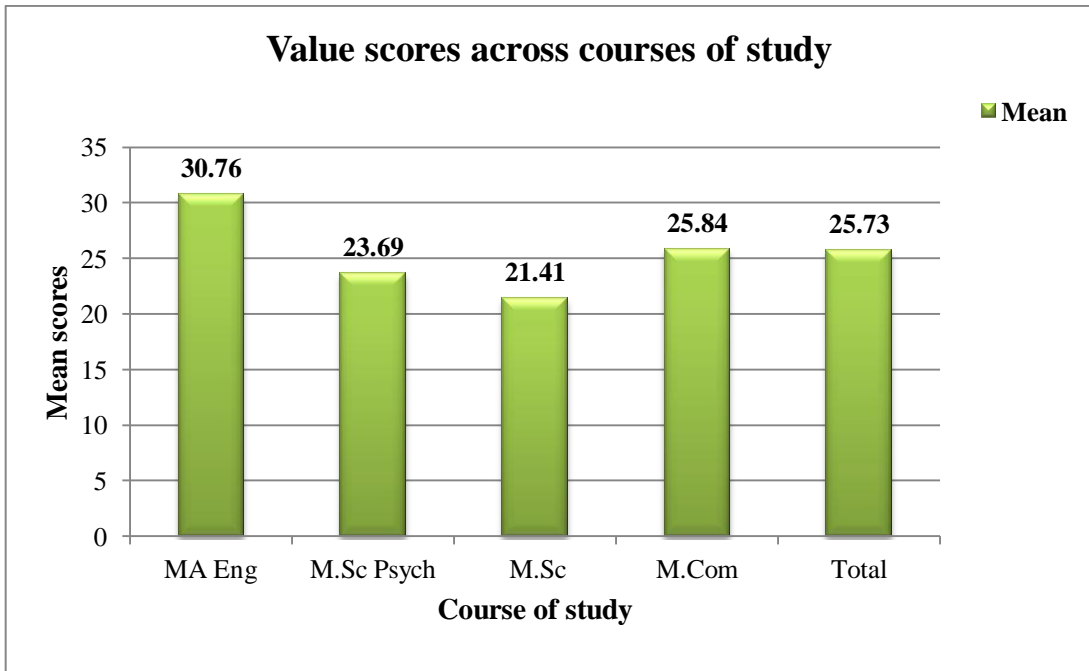
Graph 4.5: Indicating mean value scores across various courses of study
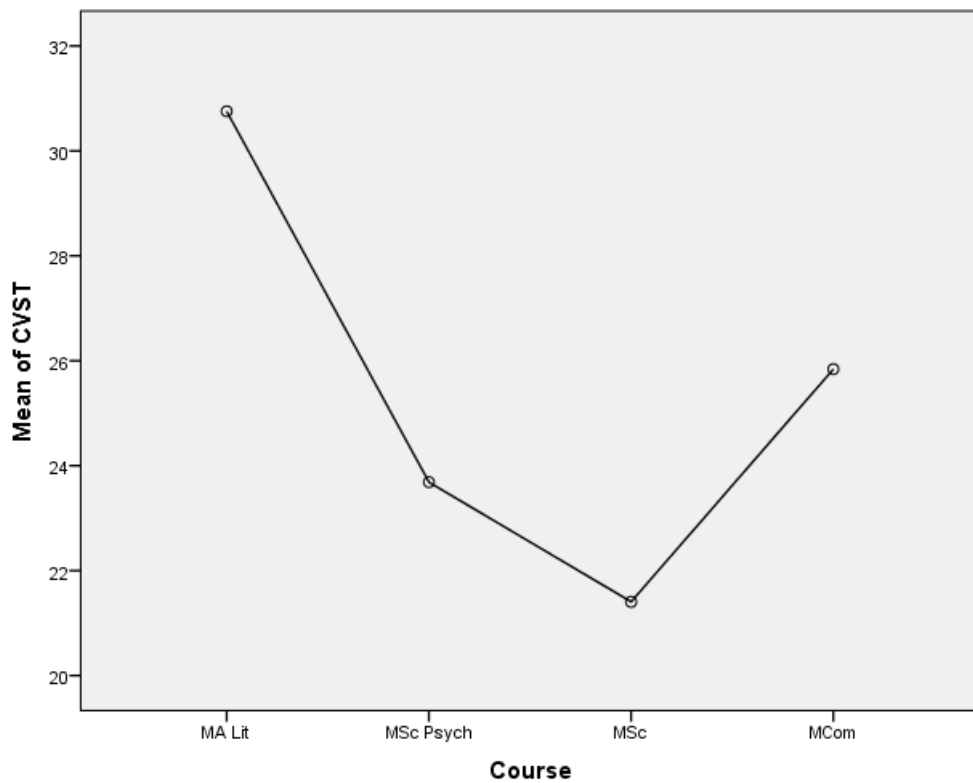
Figure 4.5: Showing the profile plot of values across course of study

The group means were statistically significantly different ($p < .05$) and, therefore, the hypothesis "*There is no significant difference in values among postgraduate students pursuing different courses of study*" is rejected and the alternative hypothesis is accepted, which states that "*There is a significant difference in values among postgraduate students pursuing different courses of study.*"

H$_0$8: *There is no significant difference in values among postgraduate students studying in autonomous and affiliated institutions.*

Table 4.8: Showing independent-samples t-test results

	Type of Management	N	Mean	Std. Deviation	Levene's Test Sig	df	t	Sig (2-tailed)
Values	Autonomous	45	30.76	8.536	0.031*	103.780	4.259	.001*
	Affiliated	116	23.78	11.119				

*$p<0.05$

An independent-samples t-test was conducted to compare the values of postgraduate students studying in autonomous and affiliated colleges The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances for values scores obtained by students studying in autonomous and affiliated colleges, ($p = .031$, $p < 0.05$).

Results revealed that there was a significant difference between the ideology of postgraduate students studying in autonomous (30.76 ± 1.84) and affiliated (23.78 ± 1.84) colleges, $t_{(103.780)} = 4.259$, $p = 0.001$. It was found that students studying in autonomous colleges have more positive value systems, with a mean difference of 6.98 when compared to students studying in affiliated colleges.

Graph 4.6: Indicating mean value scores across type of management

There was a statistically significant difference between means ($p < 0.05$), and therefore, we can reject the null hypothesis "*There is no significant difference in values among postgraduate students studying in autonomous and affiliated institutions*" and accept the alternative hypothesis, which states that "*There is a significant difference in values among postgraduate students studying in autonomous and affiliated institutions.*"

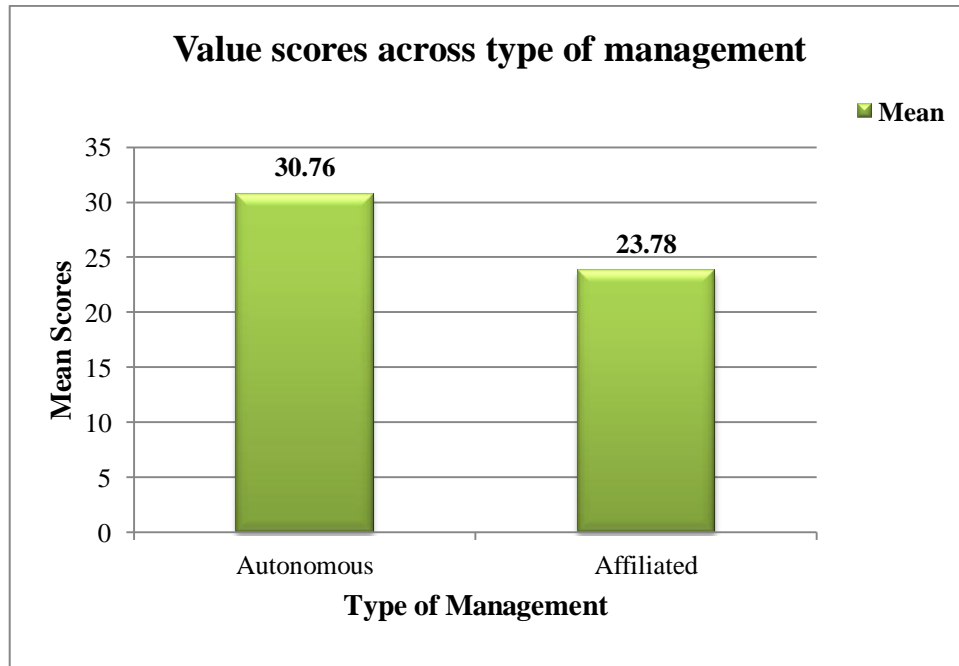**H₀9: *There is no significant difference in intelligence among male and female postgraduate students.***

Table 4.9: Showing independent-samples t-test results

	Gender	N	Mean	Std. Deviation	Levene's Test Sig	df	t	Sig (2-tailed)
Intelligence	Male	45	22.38	3.319	0.068*	159	5.764	.001*
	Female	116	25.39	25.39				

*p>0.05

An independent-samples t-test was conducted to compare the intelligence of male and female postgraduate students. It was determined that there was homogeneity of variances for

intelligence scores obtained by male and female students, as assessed by Levene's test for equality of variances ($p = 0.068$, $p > 0.05$).

Results revealed that there was a significant difference between the intelligence of male students (22.38 ± 0.52) and female students (25.39 ± 0.52), $t_{(159)} = 5.764$, $p = 0.001$. It was found that female students have higher levels of intelligence, with a mean difference of 3.010 when compared to male students.
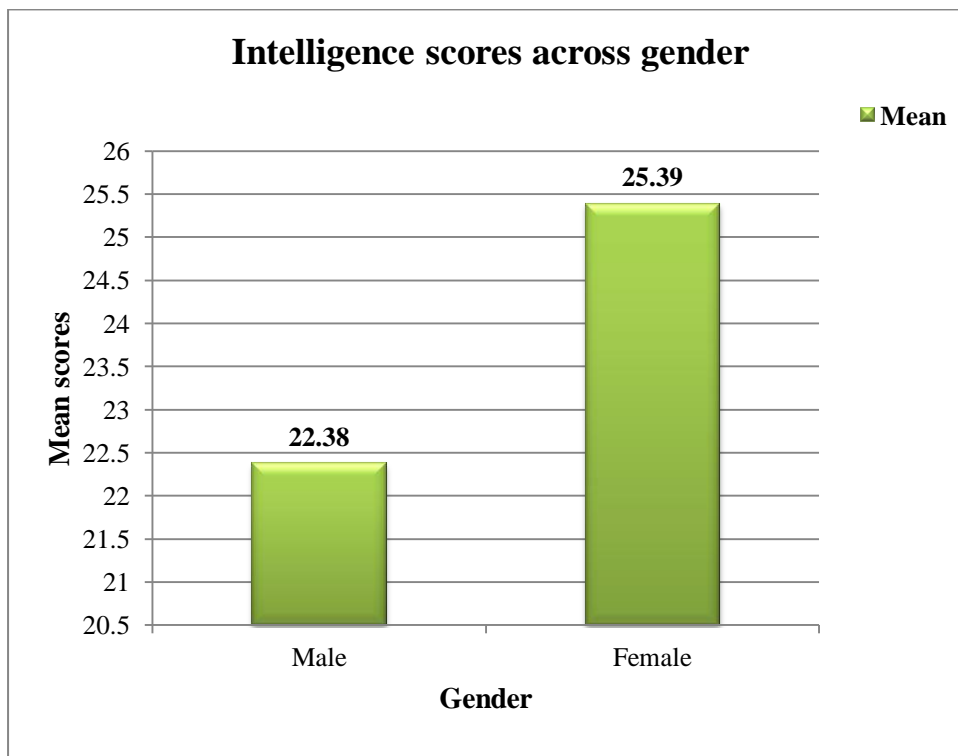
Graph 4.7: Indicating mean intelligence scores across gender

There was a statistically significant difference between means ($p < 0.05$), and therefore, we can reject the null hypothesis "*There is no significant difference in intelligence among male and female postgraduate students*" and accept the alternative hypothesis, which states that "*There is a significant difference in intelligence among male and female postgraduate students.*"

H₀10: *There is no significant difference in intelligence among postgraduate students pursuing different courses of study*

Table 4.10a: Showing descriptive statistics

	N	Mean	Std. Deviation	Std. Error
M.A. Eng	45	24.82	2.516	0.375
M.Sc Psych	35	24.63	3.919	0.662
M.Sc	37	24.16	3.532	0.581
M.Com	44	24.52	3.202	0.483
Total	161	24.55	3.260	0.257

The above table (4.10a) shows the descriptive statistics for value scores of postgraduate students across various courses of study. Levene's test for homogeneity of variances was violated, *Levene F* (3, 157) = 0.001 ($p<0.05$).

Table 4.10b: Showing the results of one-way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.147	3	3.049		
Within Groups	1690.754	157	10.769	0.283	0.838*
Total	1699.901	160			

*$p>0.05$

The above table shows the one-way ANOVA results of the ideology scores across type of management. However, since equality of variances was not met, Welch's Robust tests of equality were conducted and interpreted to check for differences between the groups

Table 4.10c: Showing the Robust tests of equality of means results

	Statistic[a]	df1	df2	Sig.
Welch	.311	3	82.05	.818

*$p>0.05$

a. Asymptotically F distributed.

The above table shows the results of the Robust tests of equality of means of intelligence scores across course of study, computed since the equality of variances was

violated. The results show that there is no statistically significant difference between the other groups in terms of intelligence, Welch's F $(3, 82.050) = 0.311$, $p = 0.818$. This indicates that the ideology of students does not vary with the type of management of the institution they are studying in.

Intelligence scores across courses of study
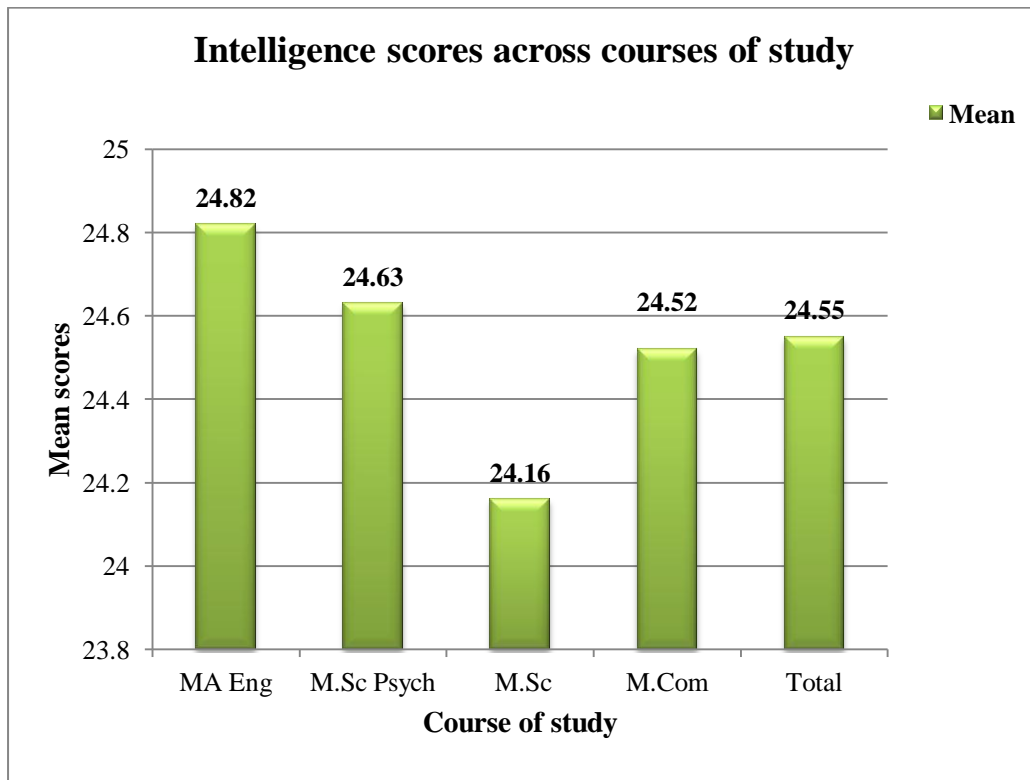
Graph 4.8: Indicating mean intelligence scores across various courses of study
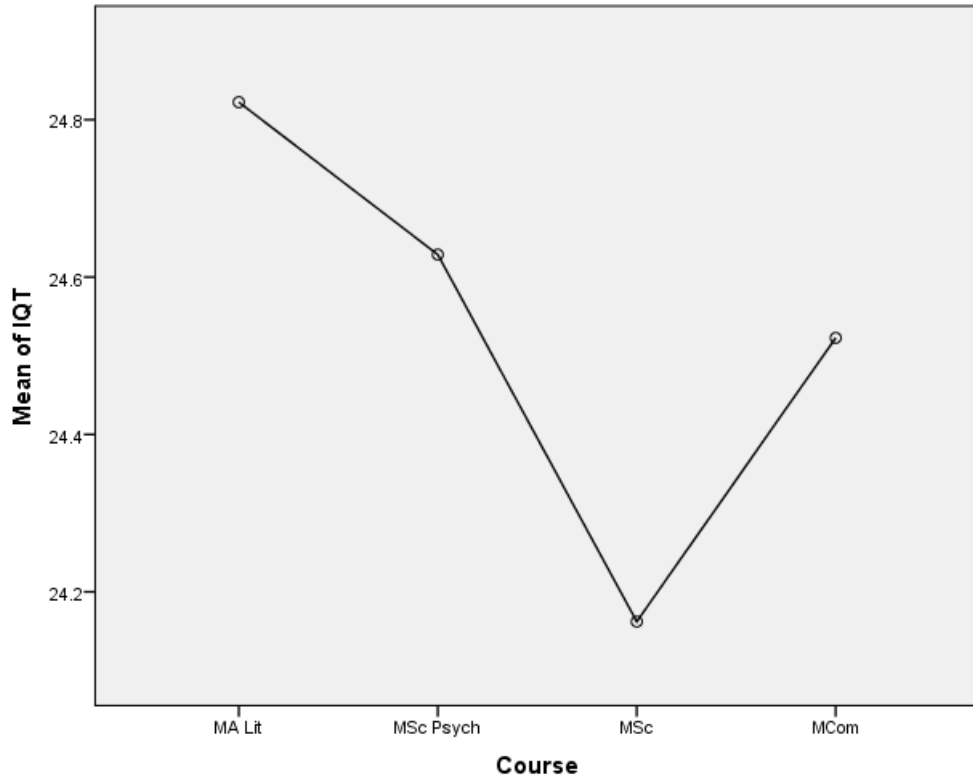
Figure 4.6: showing the profile plot of intelligence scores across course of study

The group means were not statistically significantly different ($p > 0.05$) and, therefore, the hypothesis "*There is no significant difference in intelligence among postgraduate students pursuing different courses of study*" is accepted.

H₀11: *There is no significant difference in intelligence among postgraduate students studying in autonomous and affiliated institutions.*

Table 4.11: Showing independent-samples t-test results

	Type of Management	N	Mean	Std. Deviation	Levene's Test Sig	df	t	Sig (2-tailed)
Intelligence	Autonomous	45	24.82	2.516	0.001*	111.238	0.770	0.443*
	Affiliated	116	24.44	3.150				

*$p<0.05$

An independent-samples t-test (table 4.11) was conducted to compare the intelligence of postgraduate students studying in autonomous and affiliated colleges The assumption of

homogeneity of variances was violated, as assessed by Levene's test for equality of variances, ($p = .001$, $p < 0.05$).

Results revealed that there was no significant difference between the intelligence of postgraduate students studying in autonomous (24.82 ± 0.50) and affiliated (24.44 ± 0.50) colleges, $t_{(111.238)} = 0.770$, $p = 0.443$. It was found that students studying in autonomous and affiliated colleges have no differences in their intelligence levels that can be explained by the type of management of the college.
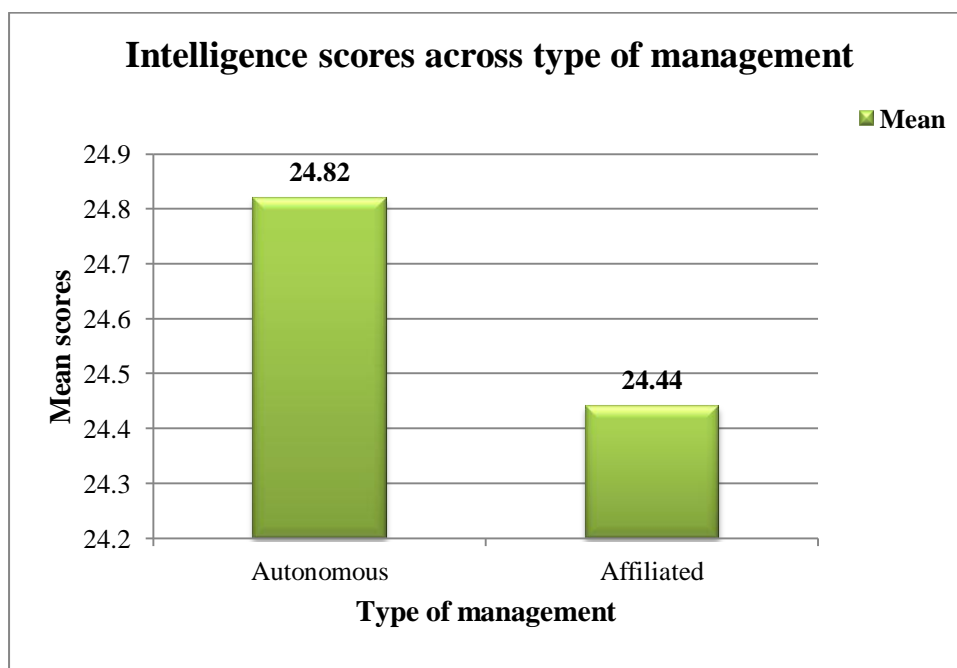
Graph 4.9: Indicating mean intelligence scores across type of management

There was no statistically significant difference between means ($p < 0.05$), and therefore "*There is no significant difference in intelligence among postgraduate students studying in autonomous and affiliated institutions*" is accepted.

H₀12: *The main and interaction effect of intelligence and values does not account for significant differences in ideology among postgraduate students.*

A two-way ANOVA was conducted to examine the effects of intelligence and values on ideology to determine the whether there was a main and interaction effect.

Table 4.12a: Showing the descriptive statistics

Values	Intelligence	Mean	Std. Deviation	N
Neutral	Below Avg.	141.429	7.244	7
	Low avg.	159.100	6.060	10
	Average	177.385	5.315	13
	High Avg.	164.000	11.065	3
	Above Avg.	173.800	8.571	5
	Superior	199.000	13.552	2
Positive	Below Avg.	189.429	7.244	7
	Low avg.	182.867	4.948	15
	Average	187.881	2.957	42
	High Avg.	197.610	2.993	41
	Above Avg.	213.867	4.948	15
V. Positive	Superior	246.000	19.165	1

The above table shows the descriptive statistics for intelligence and values scores with regard to ideology in postgraduate students.

Table 4.12b: Showing between test-subjects effects results

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	723531.200	1	723531.200	1969.932	.001*
Values	6898.682	2	3449.341	9.391	.001*
Intelligence	10081.478	5	2016.296	5.490	.001*
Values* Intelligence	1981.732	4	495.433	1.349	.255*

a. R Squared = .400 (Adjusted R Squared = .355)   *$p>0.05$

The analysis of the between test-subjects effects results revealed that there was no statistically significant interaction between intelligence and values for ideology scores, $F(4, 149) = 1.349$, $p = 0.255$. The analysis further revealed that there is a significant main effect of values ($F(2,149) = 9.391$, $p = 0.001$) on ideology, as well as intelligence ($F(2,149) = 5.490$, $p = 0.001$) on ideology in postgraduate students. It was inferred that while intelligence and values both have significant influences on ideology, there is no interaction between intelligence and values that cause a combined effect on ideology in postgraduate students.

Table 4.12c: Showing pairwise comparison of values scores

(I) Values	(J) Values	Mean Difference (I-J)	Std. Error	Sig.
Avg.	Positive	-25.212*	4.309	.001**
	Very positive	-76.881*	19.522	.001**
Positive	Avg.	25.212*	4.309	.001**
	Very positive	-51.669*	19.289	.025**
Very positive	Avg.	76.881*	19.522	.001**
	Positive	51.669*	19.289	.025**

* Mean difference is significant at the 0.05 level   **$p<0.05$

A pairwise comparison was conducted to determine how different levels of values influenced ideology. The comparison revealed that there was a statistical difference in the mean ideology scores between students with average and positive value systems (25.212 points, $p = 0.001$), average and very positive value systems (76.881 points, $p = 0.001$) and positive and very positive value systems (51.669 points, $p = 0.025$). The analysis revealed that the level of values influences ideology differently in postgraduate students.
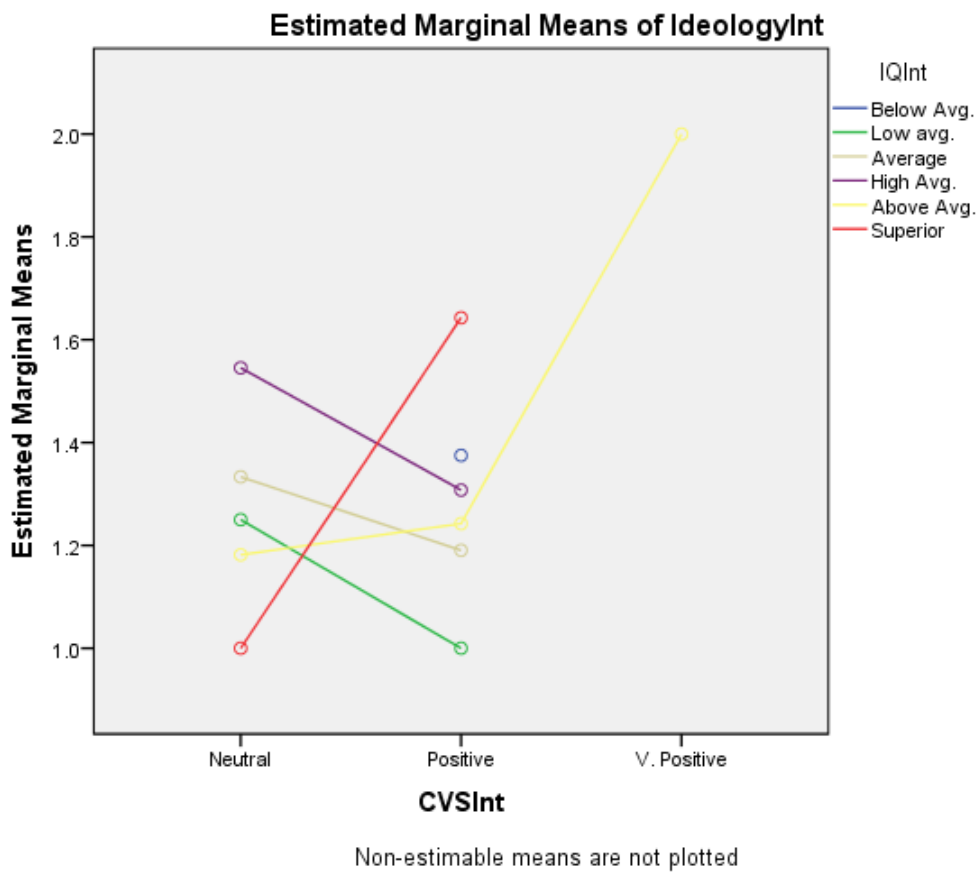
Figure 4.7: Showing the profile plots for levels of values for ideology

Table 4.12d: Showing pairwise comparison of intelligence scores

(I) Intelligence	(J) Intelligence	Mean Difference (I-J)	Std. Error	Sig.
Below avg.	Low avg.	-32.836[*]	8.647	.003**
	Avg.	-38.697[*]	8.103	.001**
	High avg.	-34.512[*]	9.234	.004**
	Above avg.	-44.276[*]	8.548	.001**
	Superior	-78.194[*]	10.789	.001**
Low avg.	Below avg.	32.836[*]	8.647	.003**
	Avg.	-5.861	5.957	1.000
	High avg.	-1.676	7.422	1.000
	Above avg.	-11.441	6.550	1.000

	Superior	-45.358	9.286	.001**
	Below avg.	38.697*	8.103	.001**
	Low avg.	5.861	5.957	1.000
Avg.	High avg.	4.185	6.781	1.000
	Above avg.	-5.579	5.813	1.000
	Superior	-39.497*	8.782	.001**
	Below avg.	34.512*	9.234	.004**
	Low avg.	1.67	7.422	1.000
High avg.	Avg.	-4.185	6.781	1.000
	Above avg.	-9.764	7.307	1.000
	Superior	-43.682*	9.835	.001**
	Below avg.	44.276*	8.548	.001**
	Low avg.	11.441	6.550	1.000
Above avg.	Avg.	5.579	5.813	1.000
	High avg.	9.764	7.307	1.000
	Superior	-33.917*	9.195	.005**
	Below avg.	78.194*	10.789	.001**
	Low avg.	45.358*	9.286	.001**
Superior	Avg.	39.497*	8.782	.001**
	High avg.	43.682*	9.835	.001**
	Above avg.	33.917*	9.195	.005**

* Mean difference is significant at the 0.05 level   **$p<0.05$

A pairwise comparison was conducted to determine how different levels of intelligence influenced ideology. The comparison revealed that there was a significant difference in ideology of students with below average and all higher levels of intelligence, as well as superior and all lower levels of intelligence. The ideology of postgraduate students also significantly varies depending on the level of intelligence.
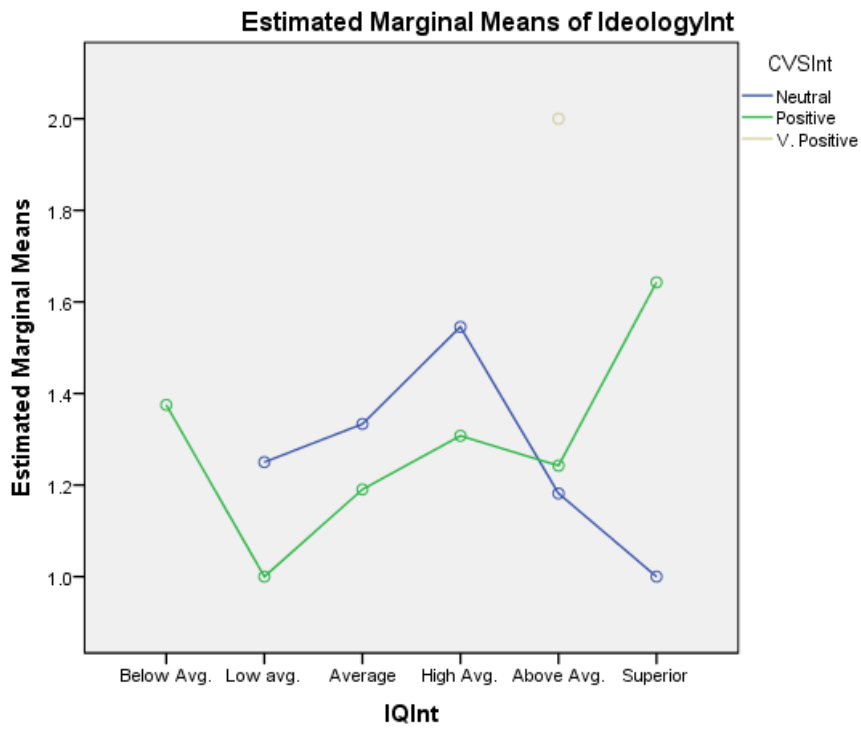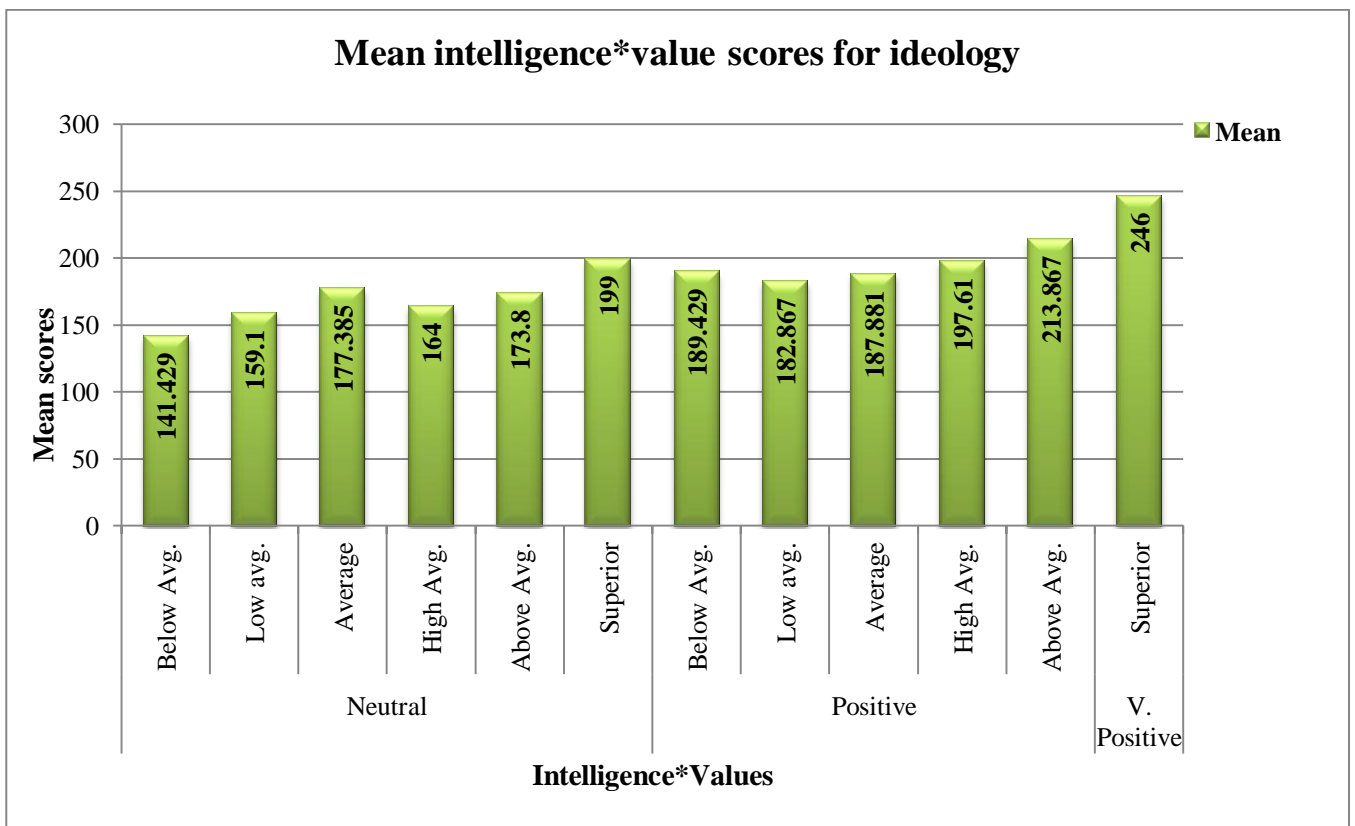
Figure 4.8: Showing the profile plots for levels of intelligence for ideology

Graph 4.10: Indicating the mean intelligence*value scores for ideology

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There was no statistically significant difference between intelligence means ($p > 0.05$), and therefore, the hypothesis stating that "*The interaction effect of intelligence and values does not account for significant differences in ideology among postgraduate students*" is accepted.

There was a statistically significant difference between values means ($p<0.05$), and therefore, the hypothesis which states that "*The main effects of intelligence and values do not account for significant differences in ideology in postgraduate student*" is rejected, and the alternative hypothesis is accepted, which states that "*The main effects of intelligence and values account for significant differences in ideology in postgraduate student.*"

H₀13: *Values are not a significant predictor of ideology in postgraduate students*

A linear regression analysis was conducted to determine whether values could statistically significantly predict ideology in postgraduate students.

Table 4.13a: Showing linear regression analysis results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.606	0.367	0.363	19.979

A simple linear regression was conducted to determine the predictive influence of values on ideology. Analysis revealed that there was a strong, positive correlation between the two variables, $R = 0.606$. It can be inferred that increase in every point of values results in an increase in ideology. Analysis further revealed that values accounted for 36.3% of the explained variability in ideology.

Table 4.13b: Showing ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36760.699	1	36760.699	92.091	.001*
	Residual	63469.513	159	399.179		
	Total	100230.211	160			

*p<0.05

The linear regression also revealed that values could significantly predict ideology in postgraduate students, $F (1, 159) = 92.091$, $p = 0.001$. Based on the level or degree of values, the ideology of an individual can be predicted.

Table 4.13c: Showing the coefficient values

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	151.560	4.047		37.446	.001
	Values	1.391	.145	.606	9.596	.001

The values in the above table were used to compute the regression equation.

The regression equation was computed to be 151.560 + (1.391*values)
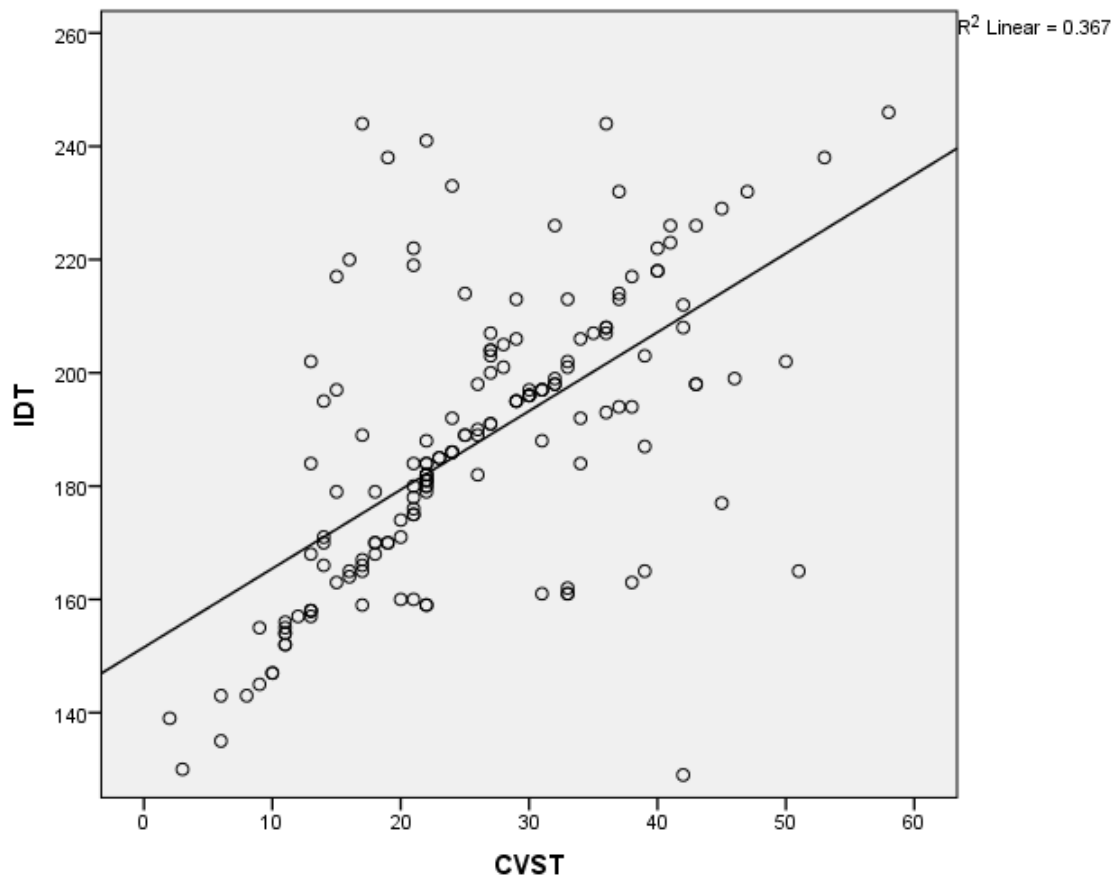

Figure 4.9: Showing the scatter plot of ideology and value scores

There was a significant difference between means ($p < 0.05$), and therefore, the hypothesis stating that "*Values are not a significant predictor of ideology in postgraduate students*" and the alternative hypothesis stating that "*Values are a significant predictor of ideology among postgraduate students*" is accepted.

$H_0$14: *Intelligence is not a significant predictor of ideology among postgraduate students*

A linear regression analysis was conducted to determine whether intelligence could statistically significantly predict ideology in postgraduate students.

Table 4.14a: Showing linear regression analysis results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.575[a]	0.331	0.327	20.536

A simple linear regression was conducted to determine the predictive influence of intelligence on ideology. Analysis revealed that there was a strong, positive correlation between the two variables, $R = 0.575$. It can be inferred that increase in every point of intelligence results in an increase in ideology. Analysis further revealed that intelligence accounted for 32.7% of the explained variability in ideology.

Table 4.14b: Showing ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33177.920	1	33177.920	78.674	.001*
	Residual	67052.291	159	421.713		
	Total	100230.211	160			

*p<0.05

The linear regression also revealed that intelligence could significantly predict ideology in postgraduate students, $F(1, 159) = 78.674$, $p = 0.001$. Based on the intelligence of an individual, the level of ideology of an individual can be predicted.

Table 4.14c: Showing the coefficient values

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	78.898	12.333		6.397	.001
	Intelligence	4.418	.498	.575	8.870	.001

The values in the above table were used to compute the regression equation.

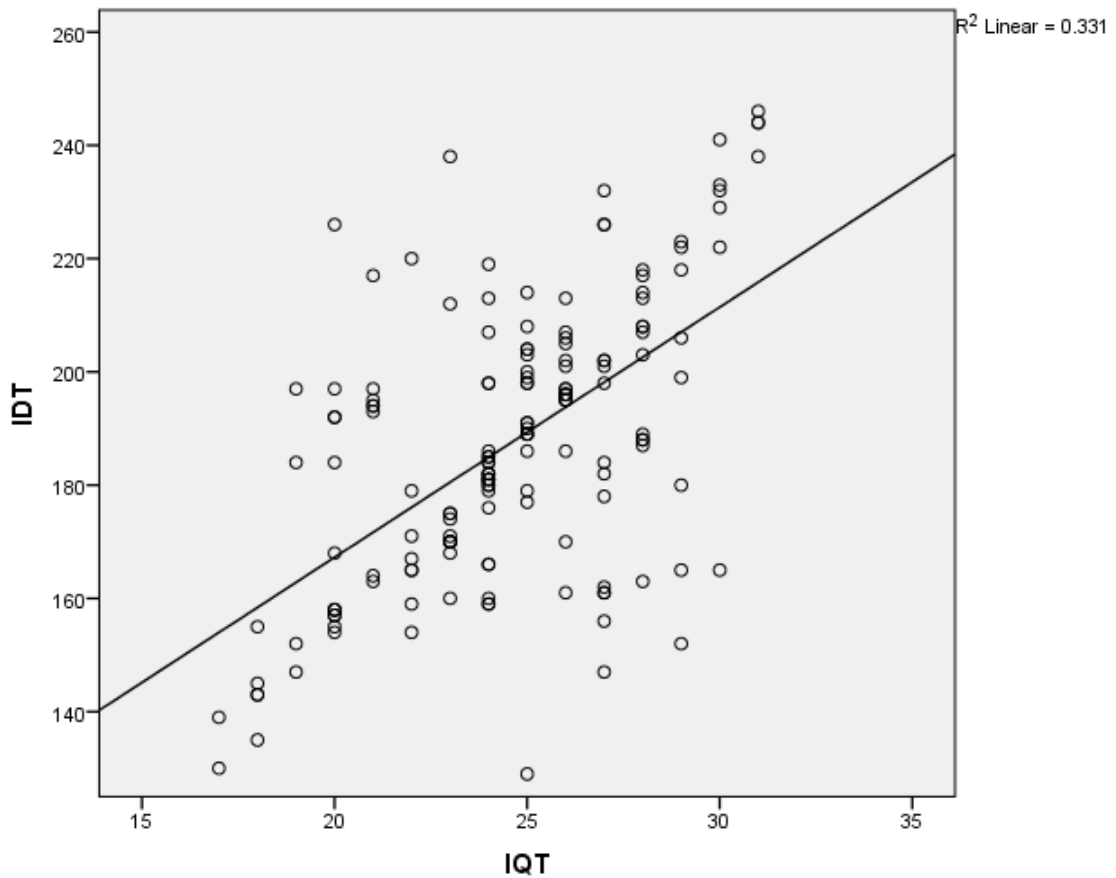The regression equation was computed to be 78.898 + (4.418*intelligence)

Figure 4.10: Showing the scatter plot of ideology and intelligence scores

There was a significant difference between means ($p<0.05$), and therefore, the hypothesis stating that "*Intelligence is not a significant predictor of ideology among*

postgraduate students" is rejected, and the alternative hypothesis stating that "*Intelligence is a significant predictor of ideology among postgraduate students*" is accepted.

H₀15: *Intelligence and values are not significant predictors of ideology among postgraduate students*

A multiple regression analysis was conducted to determine the effect of intelligence and values on ideology. The assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met.

Table 4.15a: Showing linear regression analysis results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.656	0.431	0.424	19.000

The linear regression results obtained revealed that the *R* value was found to be 0.656, which indicates that there is a strong connection between the dependent variables (i.e. intelligence and values) and the independent variables (i.e. ideology.) 42.4% of the variances in ideology scores can be explained by the combined effects of intelligence and values.

Table 4.15b: Showing one-way ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43194.535	2	21597.268	59.829	.001*
	Residual	57035.676	158	360.985		
	Total	100230.211	160			

*p<0.05

The one-way ANOVA results obtained indicate that intelligence and values can statistically significantly predict ideology in postgraduate students, $F(2, 158) = 59.829$, $p = 0.001$. Based on an individual's intelligence *and* level of value, the ideology of the individual can be predicted.

Table 4.14c: Showing the coefficient values

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	102.443	12.255		8.360	.001
	Values	.928	.176	.404	5.268	.001
	Intelligence	2.486	.589	.324	4.222	.001

Based on the values in the table, the regression equation to predict ideology was determined.

Predicted ideology = 102.443 + (0.928*values) + (2.486*intelligence)
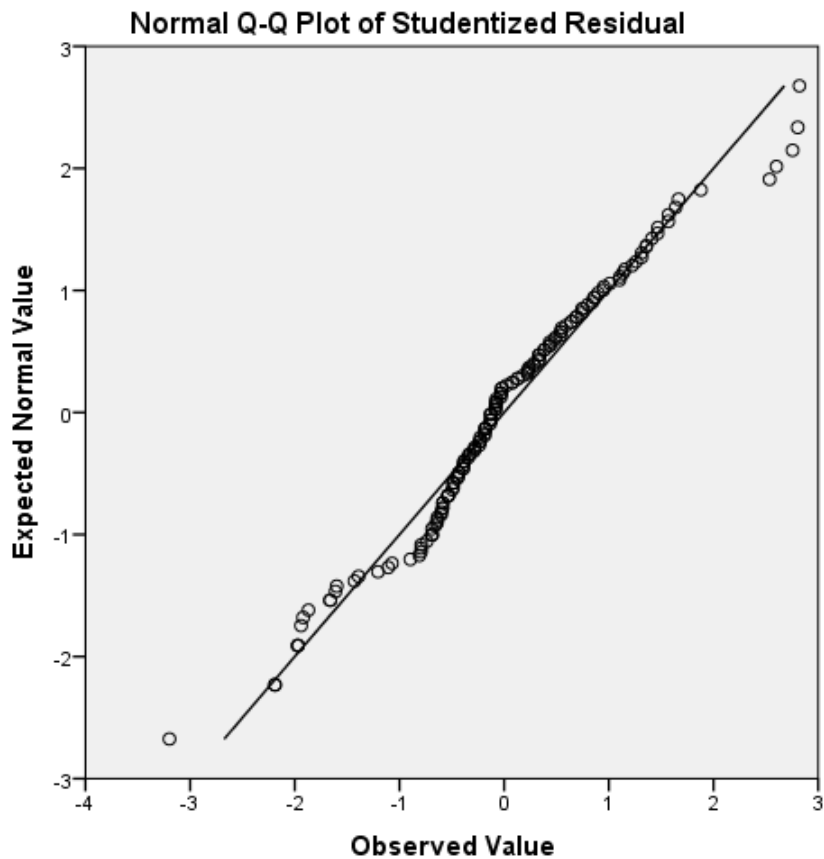

Figure 4.11: Showing the normal Q-Q plot of studentized residual

The regression coefficients and standard errors are presented in the table below.

Table 4.15d: Summary of Multiple Regression Analysis

	B	SE$_B$	β
Intercept	102.443	12.255	
Intelligence	.928	.176	.404
Values	2.486	.589	.324

* $p < 0.05$; B = unstandardized regression coefficient; SE$_B$ = standard error of the coefficient; β = standardised coefficient.

There was a significant difference between means ($p<0.05$), and therefore, the hypothesis stating that "*Intelligence and values are not significant predictors of ideology among postgraduate students*" is rejected and the alternative hypothesis stating that "*Intelligence and values are a significant predictors of ideology among postgraduate students*" is accepted.

CHAPTER V

SUMMARY AND CONCLUSIONS

Many educationists and leaders across the world insist that education is the key to success on both, the personal level and the professional level.

Even with the vast population in India, a large percentage of the population barely complete high school. Despite this fact, the higher education sector in the country has witnessed a rapid growth in the number of universities (or university-level) and colleges in the post-independent era. The number of students who enrol for graduate and postgraduate studies (both, in India and abroad) is also increasing rapidly. (www.mhrd.gov.in)

Higher education, vital for India, and is considered as a powerful tool that can be used to transform the population into a knowledge-based one in the 21st century. Further, it is also estimated that by 2020, India will require as much as forty million universities to cater to and accommodate the growing student population. (Ernst and Young, 2011)However, despite impressive growth, India's higher education gross enrolment ratio (GER) is 18%, well below the global average of 27%. (British Council, 2014)

The educational institution is perceived as the common setting, where a student has the potential to develop their intellectual capacity, as well as their value systems and ideologies.

For a person to be able to develop holistically, not only do they require having a more accepting ideology, but also have a strong pro-social value system. (Rim, 1993) People with neutral/ liberal ideologies have the ability to adapt to changes better than conservatives. On the other hand, people with good value systems could also have better ideologies (Graham et. al., 2009) and IQs than people with lower systems, probably as a result of better education or status in society (Kanazawa, 2010; Hodson and Busseri, 2012).

Both these variables can influence a person's intelligence, which (combined) determines how a person can deal with problems, reason and make sound decisions. Therefore it becomes important to determine whether there exists a relationship between ideology, intelligence and values, and the degree of the relationship as well.

5.1 Aim and Hypotheses of the Study

The present study aimed at studying the variables in postgraduate students in colleges in Bangalore. It was hypothesised that there was no relationship between the dependent (i.e. ideology) and independent variables, (i.e. values and intelligence.) Further, it was also hypothesised that there were no significant differences in ideology, values and intelligence across demographics – i.e. gender, course of study and type of management of the institution. It was also hypothesised that there was no main and interaction effect between the variables. Further, the hypotheses that there was no predictive influence of values and intelligence, individually and combined, toward ideology was tested.

5.2 Findings of the Study

It was found that there was a positive correlation between ideology and values (strong) and between ideology and intelligence (moderate). The study also revealed that there were significant differences in ideology and values across demographics – i.e. gender, course of study and type of management of the institution. While significant differences in intelligence were found between male and female students, there were no differences in intelligence across other demographics – i.e. course of study and type of management of the institution. No interaction effect was found between values and intelligence, but the analysis showed that there was a main effect. Additionally, values and intelligence, both individually and combined, were found to be predictors of ideology in postgraduate students.

5.3 Educational Implications

The results of the study can be used in the educational context to help higher education institutions and instructors instil in students a self of responsibility, duty and humaneness. The implications of the results of the stud include:

- Influence on the framing of curriculum for higher education classes. Modules and texts can be chosen that speak of being accepting of change, showing pro-social values, etc.

- Colleges, seeing the importance if ideology, values and intelligence, can develop these traits in students through workshops and compulsory classes, like Holistic Education.
- The institutions can adopt an experiential approach, requiring students to offer volunteer services to help them become more aware and become pro-social.
- Since educational instructors are seen as role models for students, the results implicate that the selection of lecturers and instructors must involve a careful process of scrutiny, testing and selection.

5.4   Suggestions for Further Research

`Scope for future studies include carrying out researches with:

- Larger samples
- Samples of other populations in the professional sectors
- Students pursuing other courses of study
- Additional variables, like personality, self-concept, etc.

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APPENDICES