EFFECT OF INFORMATION TECHNOLOGY, INTELLIGENCE, ACHIEVEMENT MOTIVATION AND OCCUPATIONAL ASPIRATIONS ON VOCATIONAL INTERESTS OF SECONDARY SCHOOL STUDENTS OF ALIGARH DISTRICT

ABSTRACT

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PARVEEN BEGUM

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Dr. (Mrs.) Nasrin
Associate Professor
UGC Research Awardee

DEPARTMENT OF EDUCATION
ALIGARH MUSLIM UNIVERSITY
ALIGARH - 202 002, (INDIA)

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DESCRIPTION OF THESIS

Chapter I : Introduction.
Chapter II : Review of Related Studies.
Chapter III : Design of the Study.
Chapter IV : Statistical Analysis of Data, Interpretation and Discussion.
Chapter V : Summary, Findings, Conclusion, Implications of the Study, Recommendations and Suggestions.
ABSTRACT

The rapid changes in our economic, social and political climates are having a direct effect on our educational structure. Life has become more complex, modern day life demands production to speed up and business to progress and science and technology to get greater attentions. There is need for manpower planning so that the human resources are properly utilized and unemployed reduced. At the secondary education stage adolescents faces the problem of choosing the right type of vocation that is compatible with his interests, aptitude and socio-economic status because choice of vocation is regarded as a one of the critical development task of adolescents. With the rapid march towards industrialization and globalization, we need greater number of skilled manpower in order to find the right person for the right vocation. It is possible only when the field of interest of a particular person i.e. his or her field of Vocational Interests is known. Interest plays an important role in every one’s life because they determine to a large extent what one will do and how well one will do it. Several factors that affect Vocational Interests of a person are – Intelligence, Socio-economic status, father’s occupation, personality, etc. It is not possible to carry out a study to know the effect of all these factors on Vocation Interests and therefore in the present study only Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations of secondary school students of Aligarh district were considered.

It is very essential to preserve and utilize the human resources of a developing country, like India where economic, social, educational and occupational set-up are changing very fast, vocational availability is limited but at the same time huge human resources with varied ability, aptitude and interest are available in abundance. There is lack of proper guidance at every educational field. The large percentage of failures in different jobs and dropouts is an immense waste of money and energy. The life of misfits in a vocation is tragic, resulting in heavy loss to individuals as well as to the society.

One of the most challenging demands of this 21st Century is to remove unemployment and poverty, and attain a sustained economic growth. The world economy took a downward turn due to the global economic recession and India too was not insulated from these effects. Therefore, it is the responsibility of the society to prepare the young generation for this unique demand of 21st Century. Today, vocational education has
become synonymous with quality life as it contributes significantly in promoting the interests of individuals, enterprises, economy and society.

The social, economic, technical and cultural efficiency of a nation depends on secondary education. Secondary education plays an important role in the training of the youth in order to take an active part in the social reconstruction and economic development of India. The present secondary education system of India is aggravating the problem of unemployment. Therefore, the secondary education system should be made so practical that the students after passing this stage do not run for admissions to universities and remain unemployed but become economically independent by having acquired some vocational skill of productive nature.

JUSTIFICATION OF THE STUDY:

Education plays an important role in the all-round development of human beings and the nation as a whole and every country has its own education system to express and promote its socio-cultural identity. Education plays a catalytic role in this multifaceted and energetic growth process and hence it needs to be designed meticulously and executed with great sensitivity. According to the Census projection report, the population of India in the working age group (15-59) is likely to increase from fifty-eight percent (58%) in 2001 to sixty-four percent (64%) by 2021 i.e. around 30.8 crore. It is estimated that India will have twenty-five percent (25%) of the world’s total workforce by 2025. In order to utilize the full demographic dividend, India needs an education system, which is of high quality, affordable, flexible and relevant to individual as well as to the society in general and the economy in particular. In a nutshell, the present day society needs an education system which is based on technology and can establish a closer relationship with the economy.

The liberalization and globalization of the Indian economy has brought about rapid changes not only in the scientific and technological world of India but it has also changed our education system. With the Information Technology revolution, India is suddenly witnessing a set of new age vocations, vocations that were unheard of and undiscovered in the previous decades. Our higher education system is completely ignorant of Indian cultural heritage, be it art, craft, handicraft, music, architecture or any such thing, which deserves proper preservation and promotion through education system. These vocations
are not only personally enriching but professionally rewarding too. Therefore, our education system needs to have greater interaction between institutions, industry and the society. With the labour market, becoming more and more specialized and the economies demand higher levels of skills, the government needs to invest in the future of vocational education.

Despite, the government's huge initiative to skill the large workforce of India, like setting up National Skill Development Mission for skilling people and laying special emphasis on expansion of skill-based programmes in 12th five year Plan, (Planning commission) there is a great demand-supply mismatch in the country. Moreover, only around seven percent (7%) of this workforce have received vocational training, whereas the economy needs much more skilled workforce than this. Not only this, there has been a disconnection between the vocational training received and the job they found, e.g. sixty-five percent (65%) of rural labourers had training in mechanical or electrical engineering or computer skills but working at construction sites or agricultural fields or trained as beautician but working as marketing agents (The Times of India, dated May 14, 2013).

In order to understand the reasons behind this disconnection or the mismatch between demand and supply, it is essential to know the Vocational Interests of the students before giving them the right vocational education in order to get the right job according to their abilities and interests as everyone has different abilities and interests. It would not be proper for schools to offer vocational education without knowing the Vocational Interests of the students.

The investigator, after scrutinizing various reviews of related literatures had observed that numerous researches on the relationship between Vocational Interests and other variables like socio-economic status, gender difference, father's occupations, etc. were conducted. But in today's fast changing modern techno-scientific global society of 21st Century, our students have a new style of thinking which makes them different and independent right from an early age. They want to decide their own careers and determine their own future professional growth. This, prompted the present investigator to work with variables other than the types of variables mentioned above and therefore, wanted to know how Vocational Interests of today's generation is effected by Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations as no study had been
done previously. Keeping in mind, the above lacunae the present study is fully justified on the grounds that this study is first of its kind in finding the effect of the four independents variables, viz. Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on the dependent variable i.e. Vocational Interests.

**SIGNIFICANCE OF THE STUDY:**
This study could be of immense use for the prediction of Vocational Interests and will provide an important contribution towards human resource development. Inculcating interest in our society towards Vocational Education could help to reduce the unnecessary rush towards higher education. In fact, vocational courses leading to employment as well as career progression could contribute in reducing the dropout rate in schools and hence produce skill work force, which will help to reduce demand and supply gap of our industries. The findings of the present study could be useful for the guidance counselor in guiding the students at secondary level by knowing their interests, which will in turn, benefit the students in making appropriate career choices, get information about nature of work, entry requirement, training facilities available and other details related to their chosen vocation.

The findings would also be helpful to policy-makers, schools, parents and society as a whole in knowing how far students are using Information Technology devices to keep themselves abreast about vocational courses of their choice available in their surroundings. Based on this information, school administrators and local policy-makers will be able to upgrade their Information Technology facilities and increase the number of vocational courses offered in their schools. The Government of India too, could be benefitted from this information, in knowing how far their policies on vocational education based on the local needs are successful and the changes that are needed to make their policies successful and accordingly provide financial support to both private and public secondary schools to upgrade their Information Technology facilities.

Parents and society have some unrealistic expectations from their children without knowing their abilities and interests. In this regard, Intelligence Test score could help them to know their children's abilities, which will significantly save their efforts, time,
money and disappointments i.e. help prevent resources and opportunities from being wasted.

In the present socio-economic and cultural setup, Vocational Education is always looked down by our society and thinks that it is for the downtrodden. But, it has been seen that achievement is of paramount importance and great emphasis is placed on achievement right from the beginning of formal education. The findings of the study could help parents, schools and communities to know the level of motivations of the students towards vocational education and accordingly parents, schools and communities can take responsibilities to promote Achievement Motivation by explicating the stories of achievements of great personalities living in their surroundings and provide the necessary moral support to go for vocational courses.

Whereas, in case of Occupational Aspirations it could help parents and teachers to encourage students to have a realistic Occupational Aspirations as parents and teachers play a great role in influencing their children towards their occupations and therefore the findings, conclusion and recommendations may help parents to create an enabling environment towards inculcating interests among the students towards vocational education which play an important role in career development.

The finding of the present study could provide a good insight to our society to deal effectively with their children at the time of their career planning. The present study could also be helpful in understanding the importance of Information Technology, Intelligence, Achievement Motivation and Occupation Aspirations in inculcating students’ interests towards vocational courses. Moreover, it is anticipated that the findings of this study will be help secondary schools to keep abreast of their students’ interests towards realistic careers in life.

STATEMENT OF THE PROBLEM:
The topic is stated as:

*Effect of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district.*
DEFINITIONS OF THE TERMS:

VOCATIONAL INTERESTS:

Strong (1943) defines Interest as

"Activities for which we have liking or disliking and which we go towards or away from, on concerning which we at least continue or discontinue the status quo; furthermore, they may or may not be preferred to other interests and they may continue over varying intervals of time".

As defined by Holland (1997):

"Vocational Interests is an expression of an individual’s personality in work, school subjects, hobbies, recreational activities and preferences".

INFORMATION TECHNOLOGY:

Global Dictionary of Education defines (2009) Information Technology as –

"The branch of technology devoted to the study and application of data and the processing thereof, i.e. the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data, and the development and use of the hardware, software, firmware and procedures associated with this processing”.

INTELLIGENCE:

According to Wechsler, D. (1944)

"Intelligence is the aggregate or global capacity of an individual to act purposefully, to think rationally, and to deal effectively with his environment”.

For Hurlock, E.B (2003):

"Intelligence provides the person with the capacity to meet and solve the problems that adjustment to life requires”.

ACHIEVEMENT MOTIVATION:

According to Atkinson and Feather (1966):

"The achievement motive is conceived as a latent disposition which is manifested in overt striving only when the individual perceives performance as instrumental to a sense of personal accomplishment”.

Dictionary of Education by Good, C.V (1973) defines Achievement Motivation as,
"A combination of psychological forces which initiate, direct and sustain behavior towards successful attainment of some goal which provides a sense of significance".

OCCUPATIONAL ASPIRATIONS:
For Rojewski (2005) Occupational Aspirations means:

"desired work-related goals given ideal circumstances, are preferences about work that reflects information about self-concept, perceived opportunities, and interests and hopes".

SECONDARY SCHOOL STUDENTS:
According to the Dictionary of Education by Good, C.V (1973) secondary school students means

"A student who attends a school comprising any span of grades beginning with the next grade following the elementary school and ending with or below grade 12, including the junior high school and other types of high school"

OBJECTIVES OF THE STUDY:
In order to achieve the desired result the following objectives and sub-objectives are formulated.

Objective 1. To find the effect of Information Technology on Vocational Interests of secondary school students.

Sub-Objective 1(a). To find the effect of Information Technology on Vocational Interests of male students studying in secondary schools.

Sub-Objective 1(b). To find the effect of Information Technology on Interests of female students studying in secondary schools.

Objective 2. To determine the effect of Intelligence on Vocational Interests of secondary school students.

Sub-Objective 2(a). To determine the effect of Intelligence on Vocational Interests of male students studying in secondary schools.

Sub-Objective 2(b). To determine the effect of Intelligence on Vocational Interests of female students studying in secondary schools.

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Objective 3. To find the effect of Achievement Motivation on Vocational Interests of secondary school students.

Sub-Objective 3(a). To find the effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

Sub-Objective 3(b). To find the effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

Objective 4. To determine the effect of Occupational Aspirations on Vocational Interests of secondary school students.

Sub-Objective 4(a). To determine the effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.

Sub-Objective 4(b). To determine the effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.

Objective 5. To find the combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary school students.

5.1.2 Hypotheses:

In order to achieve the above objectives the following null hypotheses were formulated:

Ho.: 1 There will be no significant effect of Information Technology on Vocational Interests of secondary school students.

Ho.: 1(a) There will be no significant effect of Information Technology on Vocational Interests of male students studying in secondary schools.

Ho.: 1(b) There will be no significant effect of Information Technology on Vocational Interests of female students studying in secondary schools.

Ho.: 2 There will be no significant effect of Intelligence on Vocational Interests of secondary school students.
Ho.:2(a) There will be no significant effect of Intelligence on Vocational Interests of male students studying in secondary schools.

Ho.:2(b) There will be no significant effect of Intelligence on Vocational Interests of female students studying in secondary schools.

Ho.: 3 There will be no significant effect of Achievement Motivation on Vocational Interests of secondary school students.

Ho.:3(a) There will be no significant effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

Ho.:3(b) There will be no significant effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

Ho.: 4 There will be no significant effect of Occupational Aspirations on Vocational Interests of secondary school students.

Ho.:4(a) There will be no significant effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.

Ho.:4(b) There will be no significant effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.

Ho.:5 There will be no significant combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary schools students.

1.10 DELIMITATIONS OF THE STUDY:
The delimitations of the study are:

1. Vocational Interest of adolescents depends on many factors but the present study is delimited only to the variables like Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations.

2. The present study was delimited to secondary school students of Aligarh district only.

3. The present study was focused only on students studying in class X of CBSE affiliated schools.

Methodology:
The Research Design was descriptive as the information collected from the subjects was not manipulated. The population used for the study was students of secondary schools of Aligarh district. Five hundred boys and five hundred girls constituted the sample for this
study, taken from secondary schools of Aligarh district by using simple random technique. For the purpose of collection of data, the investigator developed two scales - Vocational Interests Scale and the Scale on Effect of Information Technology for Vocations. Before administering these tools, the investigator checked the reliability and validity of these scales. Non-verbal intelligence Test (measures ‘g’) by Sharma, A. (2007), Rao Achievement Motivation Test by Rao, D. G. (1993), and Occupational Aspiration Scale OAS - G by Grewal, J.S. (2011) were the other standardized tools used in the present study. Product Moment Correlation of Coefficient and Regression Analysis were used as the collected data were normally distributed. Product Moment Correlation of Coefficient and Simple Regression Analysis were used for the first four objectives whereas Stepwise Multiple Regressions Analysis was used for the fifth objective. All these had been achieved with the help of SPSS version 16.0.

Findings:

The following were the findings of this present study:

Finding based on Product Moment Correlation of coefficient:

Information Technology and Vocational Interests:

1. Positive and significant relationship was found between Information Technology and Vocational Interests of secondary school students. 30.6 percent of the variance of Vocational Interests was contributed by Information Technology in case of the total sample.

2. Positive and significant relationship was found between Information Technology and Vocational Interests of secondary school boys. 35.3 percent of the variance of Vocational Interests was contributed by Information Technology in case of boys.

3. Positive and significant relationship was found between Information Technology and Vocational Interests of secondary school girls. 23.8 percent of the variance of Vocational Interests was contributed by Information Technology in case of girls.

Intelligence and Vocational Interests:

4. Negative and significant relationship was found between Intelligence and Vocational Interests of secondary school students. Intelligence had a negative significant effect of 1.8 percent of variance of Vocational Interests among secondary school students.
5. Negative and not significant relationship was found between Intelligence and Vocational Interests of male students of secondary schools. Because of this not significant relationship, Intelligence of male students had no or little role in inculcating their Vocational Interests.

6. Negative and significant relationship was found between Intelligence and Vocational Interests of female students of secondary schools. Intelligence had a negative significant effect of 3.6 percent of variance of Vocational Interests in case of female students.

**Achievement Motivation and Vocational Interests:**

7. Positive and not significant relationship was found between Achievement Motivation and Vocational Interests of secondary school students. As this relationship was not significant, therefore Achievement Motivation had no or little effect on their Vocational Interests.

8. Positive and not significant relationship was found between Achievement Motivation and Vocational Interests of male students of secondary schools. As this relationship was not significant, therefore Achievement Motivation was not instrumental in promoting their Vocational Interests.

9. Negative and not significant relationship was found between Achievement Motivation and Vocational Interests of female students of secondary schools. Because of not significant relationship, Achievement Motivation had no or little effect on Vocational Interests of female students.

**Occupational Aspirations and Vocational Interests:**

10. Positive and not significant relationship was found between Occupational Aspirations and Vocational Interests of secondary school students. As this relationship was not significant, therefore Occupational Aspirations did not play any significant effective role in promoting their Vocational Interests.

11. Negative and not significant relationship was found between Occupational Aspirations and Vocational Interests of male students of secondary schools. This relationship signifies that Occupational Aspirations had no significant effective role in promoting their Vocational Interests.
Positive and not significant relationship was found between Occupational Aspirations and Vocational Interests of female students of secondary schools. As this relationship was not significant, therefore Occupational Aspirations of female students did not play any significant effective role in promoting their Vocational Interests.

Finding based on Multiple Regression Analysis:

Multiple Regression Analysis (Stepwise Regression Analysis) was applied on the total sample in order to explore the combine effect of Information Technology (six dimensions), Intelligence, Achievement Motivation and Occupational Aspirations on all the nineteen areas of Vocational Interests. This analysis revealed the following results:

1. IT & Entrepreneurial Services (IT-5), IT & Artistic Jobs (IT-3), Career Options in Computer (IT-4), IT for Human Welfare (IT-6), were found to contribute significantly positively to the Teaching area of Vocational Interests, whereas Intelligence made a negatively significant contribution to the Teaching area of Vocational Interests.

2. IT & Artistic Jobs (IT-3), and Use of IT Services (IT-2) were found to contribute significantly positively to the Performing Arts area of Vocational Interests.

3. Career Options in Computer (IT-4), Knowledge of IT (IT-1), Occupational Aspirations and IT & Entrepreneurial Services (IT-5), were found to contribute significantly positively to the Engineering Services area of Vocational Interests whereas IT & Artistic Jobs (IT-3) made a negatively significant contribution to this area.

4. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Achievement Motivation, IT & Artistic Jobs (IT-3), Occupational Aspirations and IT for Human Welfare (IT-6) were found to contribute significantly positively to the Health Services area of Vocational Interests.

5. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT & Artistic Jobs (IT-3) were found to contribute significantly positively to the Clerical Jobs area of Vocational Interests whereas, Intelligence and Occupational Aspirations made a negatively significant contribution to this area.
6. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), IT & Artistic Jobs (IT-3) and Achievement Motivation were found to contribute significantly positively to the Entrepreneurial Services area of Vocational Interests.

7. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Use of IT Services (IT-2) and IT & Artistic Jobs (IT-3) were found to contribute significantly positively to the Sports Professionals – area of Vocational Interests.

8. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Intelligence and Occupational Aspirations were found to contribute significantly positively to the Social Scientist area of Vocational Interests.

9. Career Options in Computer (IT-4) and IT & Entrepreneurial Services (IT-5) were found to contribute significantly positively to the Gadget Technicians – area of Vocational Interests whereas, Occupational Aspirations made a negatively significant contribution to Gadget Technicians area of Vocational Interests.

10. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Knowledge of IT (IT-1) were found to contribute significantly positively to the Finance & Accounts area of Vocational Interests.

11. IT & Artistic Jobs (IT-3) and IT & Entrepreneurial Services (IT-5) were found to contribute significantly positively to the Social Services area of Vocational Interests whereas, Occupational Aspirations made a negatively significant contribution to the Social Services area of Vocational Interests.

12. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Intelligence Occupational Aspirations and IT for Human Welfare (IT-6) were found to contribute significantly positively to the Conventional Jobs area of Vocational Interests.

13. IT & Artistic Jobs (IT-3), Use of IT Services (IT-2), Intelligence, Career Options in Computer (IT-4) and IT for Human Welfare (IT-6) were found to contribute significantly positively to the Creative Arts area of Vocational Interests.

14. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Occupational Aspirations were found to contribute significantly positively to the Managerial Works area of Vocational Interests.

15. Knowledge of IT (IT-1), Use of IT Services (IT-2) Occupational Aspirations and IT & Entrepreneurial Services (IT-5), were found to contribute significantly positively
to the Airline Services area of Vocational Interests whereas, IT for Human Welfare (IT-6) made a negatively significant contribution to this area of Vocational Interests.

16. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Achievement Motivation were found to contribute significantly positively to the Investigative Services area of Vocational Interests whereas Intelligence made a negatively significant contribution to the Investigative area of Vocational Interests.

17. IT & Artistic Jobs (IT-3), IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) were found to contribute significantly positively to the Media area of Vocational Interests.

18. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT for Human Welfare (IT-6) were found to contribute significantly positively to the Counsellor area of Vocational Interests.

19. IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) were found to contribute significantly positively to the Literary Arts area of Vocational Interests.

CONCLUSION:

The main purpose of this study was to know the effect of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on Vocational Interests, for which responses were collected from one thousand (1000) secondary school students of Aligarh district. Data were collected by using standard methodologies for answering this research problem. Various appropriate statistical techniques were used for analysing the collected data. After analysis of the data, it was concluded from the findings of the first objective that students who were accustomed with Information Technology were found to be more interested to explore the world of vocations. This was true for both male as well as female students. From the findings of the second objective it could be concluded that low intelligent students were more interested towards different areas of vocations and vice versa. The findings of the third and fourth objectives signify that both Achievement Motivation and Occupational Aspirations had no significant contributory effect in inculcating Vocational Interests of secondary school students. It may be concluded from the findings of the fifth objective that Information Technology played a very effective role in inculcating Vocational Interests among secondary school
students. This trend is because of Information Technology revolution that is affecting the whole world and India is also suddenly witnessing a new age of careers, careers that were unheard of and undiscovered in previous years.

EDUCATIONAL IMPLICATIONS OF THE STUDY:

1. Inculcating interest of this society towards vocational education will help to reduce the unnecessary rush towards higher education. In fact, vocational courses leading to employment as well as career progression should contribute in reducing the dropout rate in schools and hence produce skill work force, which will help to reduce demand and supply gap of industries. Not only this, vocational education would assist in proper utilization of human resources and help to reduce juvenile delinquency among adolescents by channelizing their energy in right direction.

2. The Vocational Interests Scale developed by the investigator should be helpful to parents, teachers, and guidance counsellor in knowing the areas of interests of their students. This in turn will help to reduce the mismatch between education and employment and help in selecting the right person for the right job.

3. In present era, Information Technology has played an important role in every sphere of life and education is no exception to it. The result of the present study also found that the use of Information Technology tools had a positive effect on Vocational Interests. This signifies that Information Technology plays an important role in inculcating students' Vocational Interests. Information Technology has opened up a completely new potential in technology-based learning. The present findings should motivate every educational institution to use and infuse Information Technology into their curriculum i.e. a curriculum based on the needs of the children and which will add to children’s occupational interests, opportunities and experiences. In order to achieve this, every educational institution should be well equipped with Information Technology facilities to help their students explore the world through these devices and teacher too has to create an environment in which student become aware and is able to explore the world through various Information Technology devices and then act on their explorations.

4. The Scale on Effect of Information Technology for Vocations developed by the investigator should be helpful to parents, teachers, policy makers and guidance
counsellor in knowing the effect of Information Technology as well as help them in knowing, how far students are taking advantage of Information Technology in selecting their career options.

5. Mental level of a person is of paramount importance and one cannot overlook this aspect when planning a career. Different types of mental abilities are necessary for different types of occupations. Parents and society have some unrealistic expectations from their children without knowing their abilities and interests. In this regard, Intelligence Test will be helpful to them in knowing their children's abilities, which in turn will save considerable effort, time, money and disappointments, when instead of embarking on cherished hopes from their children; they could know beforehand what their children were intellectually capable of i.e. help to prevent resources and opportunities from being wasted. In the present study, the negative and significant relationship between Intelligence and Vocational Interests signifies that schools should use Intelligent Tests score to differentiate the high from the low intelligent students and then guide them accordingly i.e. high intelligent students should be guided to go for higher education, whereas students with low intelligence should be encouraged to go for vocational education of their choice as well as their interests, which will help them to make a bright future.

6. In the present socio-economic and cultural setup, achievement is of paramount importance and it has been seen that great emphasis is placed on achievement right from the beginning of formal education. From the findings of the present study it has become imperatives for every school to provide the necessary guidance to enhance students' Achievement Motivation towards vocational courses of their interests. Parents, schools and communities should take initiatives for explicating the stories of great personalities and their achievements from different walk-of-life like Dhirubhai Ambani (a successful business personality), Sachin Tendulkar (a great cricket legend), etc in order to promote Achievement Motivation of students towards different fields of jobs or vocations. Students should also be encouraged to read the life history of these great personalities. Programmes like work experience and visit to places of work should also be organized so that the students have a taste of world of work to inculcate interests.
7. The relationship between Occupational Aspirations and Vocational Interests in the present study was found to be positive and not significant. This not significant relationship signifies the fact that secondary school students might not have much information on different vocations. This might be because students may not be much aware of occupational information. Therefore, there is an urgent need to provide occupational information in the school’s guidance programmes which will provide the necessary resources to the students needed in making career plans, choices and adjustments. Moreover, occupational information is also useful in inculcating Vocational Interests among the students and therefore plays an important role in career development. There is a need to encourage students to have realistic Occupational Aspirations based on their interests and therefore schools should provide them with information about occupations related to their field of interest and help them to realize their aspirations.

RECOMMENDATIONS:

Based on the finding of the present study, the following could be recommended:

1. Teachers, students, parents, school administrators and indeed the public in general should have a favourable attitude towards vocational education. Their acceptability of these courses is crucial. They must realize that vocational education is nothing less than technical courses and therefore need to change their mindsets; that vocational education is not only for the poor or downtrodden but it is for people who have talents and abilities in the area of manipulative skills leading to technology transformation of Indian society. When students pass out with adequate skills and are able to find jobs or become self-employed, the programmes would gain popularity leading to wider social acceptability.

2. Sound vocational goals are not identified early – they emerge late. Vocational guidance in the secondary school should not be guidance in the choice of an occupation or of a career; rather, it should be guidance in the development of potential Vocational Interests, goals and aptitudes. Therefore, counsellor, psychologist, curriculum specialists, teachers and personnel specialists need to work together to devise effective methods for vocational exploration and self-exploration of students so that schools may provide proper direction and motivation to its
secondary level students in selecting a skilled-based course according to their interests and try to develop them to maximum.

3. The rising standards and aspirations, demands of the economy and more recently, a variety of options available and difficult employment situations has made the selection of a right career for our young generation a difficult process. These manifestations of change in our social and economic context seem to be proceeding at an accelerated pace, thus adding to the complexity and tension in career planning choices. This has created a rapid increase in demand for occupational information and guidance among school students to help them to relate their intrinsic aspirations to study, work and life. Occupational information will help the students to understand themselves better, improve relations with others and fulfill their needs to a large extent. Therefore, every school should have a well-established Occupational Information cell in order to guide the students with better occupational information.

4. The need of the fast changing modern sophisticated techno-scientific global society of 21st century will be a professional who will have to assume both social and moral leadership. Success of any vocational programme always needs a proper mechanism for monitoring, evaluating and up-gradation of vocational courses in the light of emerging technology. Therefore, every school should engage a professional in order to keep abreast of the emerging technology, make necessary changes in the curriculum when needed and hence guide the students accordingly.

5. Today, the market is in dire need of professionals who not only have good practical knowledge but also equally good theoretical knowledge. To serve this purpose, there is a need for thorough reorientation of the curricula and syllabi of the vocational courses in secondary schools. These courses need to be broad based, flexible and susceptible to continuous change with fast changing requirement of time. Therefore, policy-makers and educational administrators must put more emphasis in order to groom a workforce that can be more compatible with the local industrial requirements.

6. The CBSE is currently offering forty skill-based courses in senior secondary level whereas National Vocational Education Qualification Framework (NVEQF) under The Ministry of Human Resource Development (MHRD) standardizes vocational
courses for Class-IX onwards (All India Council for Technical Education, AICTE). This was being done to integrate vocational education with its current educational streams across school and higher education and introduce the students to a large universe of career options. Therefore, policy-makers and educational administrators should encourage all the secondary school administrators to introduce skill-based courses in order to inculcate Vocational Interests among the students.

7. A country’s economy depends on its educational system that trains a workforce that is skilled, adaptable, creative and equipped to compete in the marketplace. In order to integrate skill development in higher educational system with flexible learning formats, the Government of India has initiated the formation of National Vocational Education Qualification Framework (NVEQF) (All India Council for Technical Education, AICTE) for standardization of vocational courses so that these courses are widely accepted among the employer. The Government of India, under the aegis of National Skill Development Policy, 2009 (Ministry of Labour & Employment, Government of India), is anticipating to create a skilled workforce of 500 million by 2022 to meet the future requirement of the industry and other sectors of the employment market; otherwise our demographic dividend will become a demographic debt. In order to achieve this target of National Skill Development Policy, 2009 it is the right time to set-up new ITIs, Polytechnics and Skill Development Centres with new vocational courses as per the need of the local industries.

Skill Development has been an integral part of every educational system worldwide, be it USA, Germany, Canada, UK, Japan, China or any western country. Somewhere it starts at school level while at other places, it starts at college level. They are known by different names in different countries and more popular among them is Community College (University Grant Commission). Realizing the importance of Community colleges for uplifting of people, The Ministry of Human Resource Development, Government of India, should expedite the setting up of Community Colleges in various parts of the country. As ITI and Polytechnics offer courses in secondary and
senior secondary levels respectively, therefore these Community Colleges should offer degree level courses. These colleges should be based on demographic and local industry needs in order to facilitate the students to select a relevant and interests’ based course, which will empower them with the right skill.

8. The National Policy on ICT in school Education, 2012 (The Ministry of Human Resource Development, MHRD, Government of India), has recommended that a programme on ICT literacy that should be implemented across all secondary schools both government and private in the State, within the XII Plan period, and a model Curriculum for ICT in Education (CICT) should be developed at National level and States would be encouraged to adopt it. Therefore, the Government should provide financial support to both public and private secondary schools of India, to set-up state-of-the-art computer lab with internet facilities, Multi-media Room, Smart Rooms, etc. The technologies must be harnessed to provide widespread access to vocational courses in order to inculcate Vocational Interests among the secondary school students so that the governments’ programmes on vocational education in secondary level are successful.

9. Realizing the importance of Information Technology from the present study, particularly in contributing for better employment information, and the relevance of local languages in Information Technology tools from TARAhaat, a portal designed to serve villages in rural India, providing information on job opportunities on local websites in local language (Reddy, C.S., 2010), has made it indispensable for every school to provide Information Technology devices with suitable software with relevant context even in local languages.

SUGGESTIONS FOR FURTHER RESEARCH:

The present study brings to light a good number of new areas to be studied by future investigators.

1. The present investigation was restricted only to the students studying in class X of CBSE

2. Board schools of Aligarh district; the findings cannot be generalized for all secondary school students. Hence, in order to generalize these findings, further research could be done with students of other Boards.
3. In order to get better, authentic and generalized results for secondary school students, districts other than Aligarh could be considered in the future.

4. Future studies on Vocational Interests could be done with factors like socio-economic status, demographic factors, parental occupations, caste and creed as the present study did not consider these factors.

5. Further studies could be done on the government policies on Vocational Education.

6. Studies could also be done on the effective implementation of the government policies on Vocational Education.
EFFECT OF INFORMATION TECHNOLOGY, INTELLIGENCE, ACHIEVEMENT MOTIVATION AND OCCUPATIONAL ASPIRATIONS ON VOCATIONAL INTERESTS OF SECONDARY SCHOOL STUDENTS OF ALIGARH DISTRICT

THESIS
SUBMITTED FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy
IN EDUCATION

BY
PARVEEN BEGUM

UNDER THE SUPERVISION OF
Dr. (Mrs.) Nasrin
Associate Professor
UGC Research Awardee

DEPARTMENT OF EDUCATION
ALIGARH MUSLIM UNIVERSITY
ALIGARH - 202 002, (INDIA)

2014
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THESIS

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T-9404

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T9404
Dedicated to My Esteemed Parents

Who Encouraged me to Follow the path of Sincerity and Devotion.
DEPARTMENT OF EDUCATION
ALIGARH MUSLIM UNIVERSITY,
ALIGARH-202002 (INDIA)

CANDIDATE’S DECLARATION

I, Parveen Begum, Department of Education, certify that the work embodies in this PhD thesis is my own bonafide work carried out by me under the supervision of Dr. (Mrs.) Nasrin at Aligarh Muslim University, Aligarh. The matter embodied in this PhD thesis has not been submitted for the award of any other degree.

I declare that I have faithfully acknowledged, given credit to and referred to the research workers wherever their works have been cited in the text and the body of the thesis. I further certify that I have not willfully lifted up some other’s work, para, text, data, result, etc., reported in the journals, books, magazines, reports, dissertations, thesis, etc., or available at web-sites and included them in this PhD thesis and cited as my own work

(Parveen Begum)
En. No. FA 9479

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

(Dr. (Mrs.) Nasrin)
Associate Professor
Department of Education
Aligarh Muslim University
Aligarh

(Signature of the Chairperson of the Department with Seal)

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DEPARTMENT OF EDUCATION
ALIGARH MUSLIM UNIVERSITY
ALIGARH
DEPARTMENT OF EDUCATION
ALIGARH MUSLIM UNIVERSITY,
ALIGARH-202002 (INDIA)

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Chairperson
Department of Education
Aligarh Muslim University
Aligarh

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Acknowledgement

I bow in reverence to Almighty Allah, the lord of the universe, the most beneficent and merciful and heart fully thank Him for showering His gracious blessings upon me and for giving me all the strength, insight, enthusiasm, courage, patience and the required zeal for completion of my ordeins desire through this work.

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I greatly appreciate and extend my sincere thanks to all the Principals and Class Teachers of all the sample schools of Aligarh district for helping and allowing me to collect the data required for the present study.

However, an acknowledgement of all that one has received from one's near and dear ones in terms of love and affections, sympathy and empathy and inspiring smiles and encouraging glances is impossible of formulation in ordinary speech, what can be communicated only in extraordinary terms. Words are too shaky to carry the load of feeling that originates from the depths of one's being. Furthermore, they are too often inclined to conceal more and reveal less.

Dated

Parveen Begum
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<td>CBSE</td>
<td>Central Board of Secondary Education.</td>
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<td>CICT</td>
<td>Curriculum for Information and Communication Technology.</td>
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<td>e-business</td>
<td>Electronic Business.</td>
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<td>e-mail</td>
<td>Electronic Mail.</td>
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<td>FM</td>
<td>Frequency Modulation.</td>
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<td>ICT</td>
<td>Information and Communication Technology.</td>
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<td>IT</td>
<td>Information Technology.</td>
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<td>MHRD</td>
<td>Ministry of Human Resource Development.</td>
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<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>NS</td>
<td>Not-significant.</td>
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<td>NSDC</td>
<td>National Skill Development Corporation.</td>
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<td>NVEQF</td>
<td>National Vocational Educational Qualification Framework.</td>
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<td>SES</td>
<td>Socio-Economic Status.</td>
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<td>SPSS</td>
<td>Software Package for Social Sciences.</td>
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<td>TV</td>
<td>Television.</td>
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Chapter – 1

INTRODUCTION

"True education ought to be for children a kind of insurance against unemployment”

M. K. Gandhi

In this fast changing modern sophisticated techno-scientific global society of 21st Century internet, cell phone, e-mail, chatting, liberalization, globalization etc. are the frequently used terminologies of our young generations. This 21st Century is known as the age of science and technology because of the tremendous advancement that has been made in scientific, technological and industrial fields. Exciting discoveries and new inventions along with technological developments which are taking place every day are influencing human beings in every sphere of life. This fast changing society has signalled the need for a new human resource development model, where our students need to be empowered and engaged from an early age.

India is into the second decade of the 21st Century with a population of 1210.2 million (Census Report, 2011). It is very essential to preserve and utilize the human resources of a developing country, like India where economic, social, educational and occupational set-up are changing very fast, vocational availability is limited but at the same time huge human resources with varied ability, aptitude and interest are available in abundance. Of the total population, 756.6 million are in the age group of 15-59 years i.e. the economically active population (Census Report, 2011). 481.7 million from this economically active population are employed while the remaining 274.9 million are still unemployed. This may be due to lack of vocational and skill development training (Mohankumar, V., and Sanjay, B., 2014) i.e. there is lack of proper guidance at every educational field. The large percentage of failures in different jobs and dropouts is an immense waste of money and energy. The life of misfits in a vocation is tragic, resulting in heavy loss to individuals as well as to the society.

One of the most challenging demands of this 21st Century is to remove unemployment and poverty, and attain a sustained economic growth. The world economy took a downward turn due to the global economic recession and India too was not insulated from these effects. There were job losses not only because of downsizing or
rightsizing the workforce but also as a result of capacity underutilization in industries. There has been general unemployment, which still persists.

India’s changeover to a knowledge-based economy requires a new generation of educated and skilled people. Its competitive edge will be determined by its people’s ability to create, share, and use knowledge effectively. A knowledge economy requires India to develop workers - knowledge workers and knowledge technologists - who are flexible and analytical and who can be the driving force for innovations and growth. Therefore, it is the responsibility of the society to prepare the young generation for this unique demand of 21st Century. Today, vocational education has become synonymous with quality life as it contributes significantly in promoting the interests of individuals, enterprises, economy and society.

The social, economic, technical and cultural efficiency of a nation depends on secondary education. Secondary education is one of those stages of education, which is given after primary education but before university education. It plays an important role in the training of the youth in order to take an active part in the social reconstruction and economic development of a nation. This stage is always considered to be important one by policy makers and academia, for it is at this stage that students acquire those basic skills and abilities which enable them to enter the job market or go for higher education i.e. it is always regarded as both a terminal stage as well as intermediate stage. As a terminal stage, its goals are not very much different from the general goals of education, while as intermediate stage, goal refers to the preparation for the next stage of education: physically, emotionally, intellectually and socially. However, it is high time that secondary education be treated as a terminal stage rather than intermediate stage as students have to prepare themselves to face the different walks of life.

The present education system of India is aggravating the problem of unemployment. Therefore, the secondary education system should be made so practical that the students after passing this stage do not run for admissions to universities and remain unemployed but become economically independent by having acquired some vocational skill of productive nature. The importance of vocationalization of secondary education was even felt just after independence as can be realized from the words of The Secondary Education Commission (1952-53):
"The secondary school must make itself responsible for equipping students adequately with civic as well as vocational efficiency and the qualities of character that go with it so that they may be able to play their part worthily and competently in the improvement of national life."

Thus, the ultimate aim of secondary education should therefore be to prepare self-dependent and dutiful citizens, instilling the spirit of intelligent patriotism who can make Indian democracy a success.

The students at the secondary school stage are usually in the age group of 14+ to 16+ i.e. the adolescent period. It is the most crucial period, and therefore requires utmost care for the healthy development of the child. It plays a significant role in the development of a well-balanced personality. These students have the immediate task of choosing an appropriate course for higher education or select some short-term or specialized skill training to enter the world of work. Thus, these students during their school years require help in understanding the need and importance of career planning. Therefore, educators and administrators need to look for the various career orientations, with a view to understand the ways in which secondary school students make career planning and the various factors, which influence their planning. It has been observed that students in India make career plans without having enough knowledge; easily falling to the pressures of parents and peers, thereby forcing them to take unrealistic career decisions. Unfortunately, this has led to dissatisfaction and maladjustments in their vocations. Hence, it has become essential to give due weightage to the factors which influence their Vocational Interests in order to minimize the maladjustments in their vocational spheres as life satisfaction and happiness, to a large extent depends upon job satisfaction which is the outcome of interest which one takes in his vocation.

1.1 VOCATIONAL INTERESTS:

Every human being possesses certain inquisitiveness due to which he likes or dislikes certain activity. This inquisitiveness, which is not in-born but is acquired by an individual in due course of his development, can be termed as interest. Interest is an inclination towards certain objects, activities or experiences. Inclinations are generally stimulating, enjoyable and pleasurable. It is the feeling of our likes or dislikes, or our
attractions and aversions. An individual chooses the most acceptable approach out of
the many, from which he derives maximum satisfaction, success, or happiness.

Interests change because of maturation, learning and other internal as well as
environmental conditions and factors. The interest’s patterns of an individual during
the course of his growth and development is affected by both internal or personal
factors like wishes, ideals, motives, attitudes, emotions, sentiments and complexes as
well as physical and mental health and external or environmental and available
circumstances in one’s environment, etc. Interests of an adolescent play an important
role in the development of his/her behaviour and personality as they are a great
motivating force and reservoir of one’s inner potential capable of moulding and
shaping his/her behaviour and personality make-up in a particular direction,
prompting the individual to reach a higher level of accomplishment.

Real happiness in life comes from doing things, which arouse and sustain one’s
interest, and what arouses one’s interest is accomplished with great effort and success.
As happiness and success turn on interest, therefore attempts to discover and measure
one’s interest have great values and importance. Such attempts are all the more
important in education as these will provide information about students, which will
help in understanding the individual and can also be used to the best advantage in
motivating and guiding the student’s future activities and assignments. Educational
and vocational guidance services could be provided to the students on the basis of
their interests, as measurement of one’s interests in a related field may help counsellor
in predicting his or her success in that field.

Interest play a significant part in every one’s life as they determine, to a large extent,
what one will do and how well one will do it. Owie, 2003 (as cited in Igbinedion, V.I.,
2011) advanced the position that the most important reason why a person chooses a
particular career is that the person has intrinsic interest in the field. While this may be
highly influenced by the prior academic achievement, it is, however, expected that
intrinsic interest remains a primary factor if the individual is going to be effective,
satisfied and excel in the career. According to Igbinedion, V.I., (2011), where intrinsic
interest is lacking, no amount of training, motivation or gratification would
significantly increase the person’s professional effectiveness.
Interest has a key role to play in selecting a vocation. It is a significant factor in students' vocational choice which is an important decision that an individual must make for himself. Vocational Interests may be defined as personality traits that have significance for vocational success and satisfaction. These traits are manifested as likes, dislikes, indifferences, preferences, and evaluative attitudes (Encyclopedia of Vocational Guidance, 1948). Generally, Vocational Interests signifies an individual's interest towards a particular vocation i.e. the desire to work in a particular field as means to earn his/her livelihood. Vocational Interests are one of the most enduring and compelling areas of individual differences (Lubinski & Dawis, 1995) and the most popular means for characterizing, comparing and matching persons and environments (Hogan & Blake, 1996). Interests have received substantial empirical attention in areas of vocational choices (Holland, 1997), educational and vocational counselling (Walsh & Osipow, 1986), career development (Oleski & Subich, 1996), personnel selection (Hogan & Blake, 1996), motivation (Ton & Hansen, 2001), job satisfaction (Assouline & Meir, 1987), job stress (Edwards & Rothbard, 1999) and occupational success (Clark, 1961), (as cited in Low, K.S.D., 2005).

In early childhood, an individual wants to become a doctor, a nurse, an engineer or a police officer because of the influence of the social surroundings but this can hardly be termed as Vocational Interests. Vocational Interest is a developmental process, which is continuous and ongoing, and do not appear all of a sudden but emerge as one grows up and takes a realistic shape only in later childhood or during adolescent period. It begins early in life and climbs a curve until late in life. Vocational development is an integral part of general development of an individual, similar to cognitive, emotional, and social development. It can be considered as a continuum with definite life stages, each of which has their own peculiar characters. Psychologists and Occupational Analysts have propounded a number of theories on vocational development. Buchler, 1933 (as cited in Kochhar, S.K., 2007) has classified the vocational life stages as: Growth (birth to 14 years), Exploratory (15 to 24 years) – with the sub-stages of fantasy which may be tentative or realistic with appropriate attitudes towards work and occupations, Establishment (24 to 44 years), Maintenance stage (45 to 64 years) and The decline stage (65 onwards) – characterized by deceleration during the early part and progressing into one of retirement.
Super, et al. (1957) used the five stages given by Buchler, 1933 (as cited in Bhatnagar, A., & Gulati, S., 1989) to profound their theory of vocational development. The stages of exploration coincide with the years of adolescence, which is considered as the decision-making period. This period has been considered as the most productive period for future vocational adjustment and success.

The present study is also on secondary school students, i.e. the adolescent period. Selecting a profession subsequently depends on selecting the right vocational courses according to the interest of the individual. The various factors influencing Vocational Interests include psychological, sociological, economic, situational, political and religious. Making a good career selection is a major concern of students, parents and government. Since the aim of education is to help the individual develop vocational competences therefore selecting the right type of curriculum occupies a central place in the life of an adolescent.

1.1.1 Factors Influencing Vocational Interests:

What have to be determined are the factors that are responsible for the Vocational Interests of student. There are many factors, which influence Vocational Interests of adolescents and it is worth mentioning here some of the factors that may interact in varying degrees in the process of development of Vocational Interests of adolescents. Here, the investigator discusses only the few important ones. Some of the factors influencing Vocational Interests are summarized in the following figure.

Fig 1. Showing the various Factors influencing Vocational Interests.
1.1.1.1 Residential factor (Urban-Rural):

The place of residence of an adolescent is an important factor in determining the Vocational Interests. In a study by Sodhi, T.S., (1988) had found that occupational choices and Vocational Interests were comparatively more congruent for girls of urban background as against their counterparts from semi-urban areas. Students who come from rural background do not generally have high ambitions in comparison to students with urban background. This may be due to various factors like lack of information about various jobs opportunities, lack of encouragement, lack of interest, and parental effect like parental education as well as parental support. The rural adolescents do not have opportunities of coming into contact with people of high vocations who can guide, inspire and provide proper information to them. However, it does not mean that adolescents from rural areas do not aspire for higher vocations; there are numerous examples in which rural adolescents have excelled their counterparts from urban areas. Bawa, S.K. (1989) found no dissimilarity of interest among the subjects belonging to rural and urban areas.

1.1.1.2 Socio-economic status:

Socio-economic status is another influential factor, which affects Vocational Interests of adolescents. The attitudes, values, opportunities, reactions of others towards them are a reflection of their socio-economic status. According to Bawa, S.K. (1989), Occupational Interests vary according to the varying levels of socio-economic status. Sewell and Ovenstein in 1965 (as cited in Chauhan, S.S., 1990), had found that adolescents coming from lower socio-economic conditions are exposed to poor stimulation in the sense that they have contact with people of low status who do not provide good models for inspiring adolescents for higher vocations and hence are exposed to less number of vocations. Ose-Edoh, G.I., & Alutu, A.N.G. (2011), had found significant difference in educational values and vocational choices of the students from high and middle socio-economic homes in favour of the high socio-economic status and in favour of middle socio-economic status when studied between middle and low socio-economic status. Vocational development largely depends on education which in turn depends upon SES (Srivasta, L., 1988).
1.1.1.3 Gender:

Adolescent boys and girls have different Vocational Interests because of the different roles they have to play in the society. Pattinthsdr, P. (1989) had found significant difference in Vocational Interests between boys and girls. The society believes that girls need not study and go for work as they have one particular vocation: to be wife and mother whereas boys are the source of economic support of the family and therefore need to study. In India, girls were discouraged from going to school and very few were fortunate to go for higher education. However, because of the government's initiative girls are now aspiring to achieve in every sphere of their life. Previously, achievement for girls meant a successful marriage, a happy family and a pleasant home but now girls have a variety of achievements other than a home and family. As boys are the source of income of the family, they have no particular vocational role and hence have a variety of vocations to choose and different roles to play. Singh, A. (2014) on comparing the Vocational Interests of boys and girls had found girls to be more interested in literary, commercial, constructive, artistic, social and household fields whereas boys were more interested in scientific, executive, agriculture and persuasive fields.

1.1.1.4 Teachers' Influence:

The student's liking for a particular subject largely depends on the teacher, who has a great role in making the subject easy and interesting for him. According to Information Technology Association of America, ITAA, 1998 (as cited in Ohiwertel, F.O. & Nwosu, B.O. 2009), secondary school educators often have a large influence on students' vocational choices. Gaikwad, K.S. (1989) found teachers and career masters to play a significant role in students' Vocational Choices. Moreover, teachers' appearance, way of talking, methods of teaching, etc. contribute in a great way in inculcating interest among students.

1.1.1.5 Parental Influence:

Parents generally want their children to achieve much more than what they have achieved. For this, they ensure that their children go to good schools, which exposes them to good vocational choices. Their decisions have a direct impact on their Vocational Interests. According to Roe, 1957 (as cited in Jershild, A.T, 1963), need
satisfaction in the early years of life depends upon parents and also suggested that there might be a possible relationship between parental attitude towards the child and the development of major orientations towards any particular vocations of their children.

1.1.1.6 Peer Groups' Influence:

According to Topping (1989), many educators believed that peer groups to be an effective and powerful instructional strategy that can be used to develop academic as well as social skills in peer group. According to Piaget, 2002 (as cited in Ohiwertei, F.O. & Nwosu, B.O. 2009) peer tutoring when used as a teaching technique can help children to be more active in the learning process. Through this process, children can easily influence their peers. Generally, in most cases the members of peer group belong to the same social clubs where they interact among themselves and share the same values and ideas. Student's Vocational Choices were related to their friends' choice (Gaikwad, K.S., 1989).

1.1.1.7 Vocational Awareness:

Students are also influenced by the immediate information of various vocations available to them from various sources. Schools should provide a large number of vocational subjects and adequate information and guidance to their students before they are being asked to take any vocation as a career. Positive and realistic information towards any vocation eventually leads to job satisfaction.

1.1.1.8 Industrialization:

Industrialization is another important factor influencing Vocational Interests of a student. Industries offer many new jobs some of which may be very new to the surrounding. These jobs motivate students to take up vocational courses and a mean to acquire new skills required for these unheard jobs or vocations.

1.1.1.9 Governments' Initiatives:

The governments' policy towards vocationalization is an important factor. Popularizing its policies on vocational education or its policies on skill development through mass media will influence the student population specially the semi-urban and rural students to go for vocational education. Not only this, the government
should have a policy to provide employment to all such trained personnel on productive lines in order to motivate parents, society and students towards vocational education. In this regard, the initiatives of the National Skill Development Corporation (NSDC) under the National Policy on Skill Development, 2009, of the Government of India, like organizing Workshop with NGOs and Public Sector Enterprises involved in skill development, will go a long way in influencing the students. By skilling, this Corporation aims to enable people to earn not just their livelihood but also respect in society. These types of government initiatives will help to develop students’ interest to go for vocational courses (Ministry of Labour & Employment, Government of India).

In this present age of science and technology, the investigator wanted to know how factors like Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations other than the above mentioned factors effects the Vocational Interests of secondary school students.

1.2 NEED OF VOCATIONAL INTERESTS IN PRESENT INDIAN SCENARIO:

Today, the society is at a crucial point at which the Economic, Social, Political, Technological and the Physical environment throughout the world is changing very fast. Globalization of the economies is the foremost important factor leading to changes in the world of Technical and Vocational Education. The adoption of the policies of liberalization and globalization is exaggerating the problem of unemployment in the developing nations.

India is a country with unity in diversity not only in terms of religion, language, culture but also in terms of natural resources available. The abundance natural resources in India cannot be explored and exploited fully due to lack of adequate vocational education. Now with the development of science and technology, the society will be able to explore and exploit them fully. But our education system is of little use to life as it does not prepare an individual for earning a living and this is very true seeing the present situation of unemployment both in terms of educated as well as uneducated youths of both rural and urban areas.
The present education system could not keep pace with the rapid changes in technology and learning process. The result is that what is taught in college is different from the way it is actually being used in the workplace. Most of the engineering graduates need to be re-trained, so as to get a job in the industry. There is a mismatch between the skilled work force required for a modern economy and skilled work force available and therefore there is a huge shortage of skilled talent. Former President of India Dr. A.P.J. Abdul Kalam, had also observed “There is substantial growth in our higher education system and we are generating around 4 million graduates every year. However our employment generation system is not in a position to absorb the graduates passing out from the universities leading to increase in the educated unemployed, year after year” (as cited in Johry, G.S, 2008). Therefore, meaningful education should be imparted to the students so that they could enter the world of work or self-employed with relevant skills, instead of increasing the number of educated unemployed and prepare them with adequate knowledge and skills to face the challenges of 21st Century.

Empowering young people through vocational training has become a global exercise and is not just limited to the changes in the educational system but also the changes in the mindset of the society. It is necessary to invest back in the community to continue to build appropriate skill specially to take advantage of the demographic dividend that India offers. Skilled and technically trained people are the capital of developing society. Their numbers, potentials and development is the key not only to the wealth producing capacity of a nation, but also to its social development. There are more jobs than ready people. Therefore, vocational studies must be revamped. There is a great opportunity to improve the range and quality of vocational education in line with the huge emergent skill requirements. The concern department should tie up with various industries to have apprenticeship training for the willing students. The society must address the social aspect where not everyone needs to be under a social expectation to be an engineer, doctor, management graduate, or even a graduate for the namesake of it.

In addition to providing job opportunities for the vocationally trained students, efforts must be made to provide the Indian society with a better understanding of the nature of vocational education, its value to the individual as well as to the country, before the concept of vocationalization can acquire the prestige to enroll the kind and number of
students who need it. This become rather urgent in view of the fact that the rapidly changing nature of modern day work allows the general public too limited a knowledge of occupational opportunities, unless the public attitude towards vocational education undergoes a change, the future of the programme in India is limited.

The parental attitude towards vocational education needs to change. For too many parents appears to be ashamed of the work they do and the vocational education required for such type of work. This is a part of the total societal erosion of the commitment to work. Somehow, parents must be convinced that there is nothing inherently bad or inferior about the working with one’s hand and one’s head rather than one’s hand alone.

The Government of India in recent years has laid a lot of emphasis on streamlining Vocational Education so that it fulfills the emerging need of the market by focusing on employability skills. In this regard, the Ministry of Labour & Employment has formulated a National Policy on Skill Development in 2009. The objective is to create a workforce empowered with improved skill, knowledge and internationally recognized qualifications to gain access to decent employment and to ensure India’s competitiveness in the dynamic Global Labour market. It aims at increase in productivity of workforce both in the organized and in the unorganized sectors, seeking increased participation of youth, women, disabled and the other disadvantaged sections and to synergize efforts of various sectors and reform the present system (XI Five-Year Plan, 2007-2012).

At present, the capacity of skill development in India is around 3.1 million persons per year. The XI Five Year Plan envisioned an increase in that capacity to 15 million annually. India has a target of creating 500 million skilled workers by 2022 (Report of XI Five Year Plan) The programmes and policies of the Government for vocationalization of education in order to tap the natural resources and the workforce will be successful only when educators and parents will be able to inculcate among the coming generation an interest in them. An interest that will give them a secure job, security, a status in the society and a prosperous life and not only this, it will also give them an opportunity to fulfill their own dreams, an opportunity to bring out their own ability and creativity. This Vocational Interest will make a difference for going
towards vocational education courses as these are nothing less than a white-collar job. Because Vocational Education is instrumental in making the remarkable contribution to economic growth of the developing countries by way of suitable manpower production according to the needs of the industry, society and the global world as a whole. To produce fully skilled work force in the present era of science and technology is the need of the hour.

Prof. Gurubasappa very ably conveys this whole message ----

"Without intensive vocationalization there appears to be no future for our country. Immediate steps to enlist active cooperation of all the industrial undertakings, banking establishments, cooperatives and departmental facilities available in every region for training students in various vocational courses should be initiated. Also, vigorous effort to provide employment to all such trained personnel on productive lines must be the policy of the government to arrest the unseemly rush towards highly academic courses at the university which do not add to the productive capacity of the nation in a measure vocationalization can".

(as cited in Thakur, D. and Thakur, D. N., 1997).

1.3 INFORMATION TECHNOLOGY AND VOCATIONAL INTERESTS:

"Information Technology (IT) in its broadest sense encompasses all aspects of computing technology. Information Technology, as an academic discipline, is concerned with issues related to advocating for users and meeting their needs within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies".


The pace of change brought about by new technologies has had a significant effect on the ways of life, work and play worldwide. It has influenced every aspect of life, like education, business, industry, banking, agriculture, medicine and various other fields. New and emerging technologies challenge the traditional teaching-learning process and the ways of education. With the world becoming more complex, the meaning of education has also gone a sea change. Today, education is not just, what the world knows; but it is more about how it can be used and how the world can create new
knowledge from it, i.e. it is more about change rather than stability; the skills that students acquire in schools are quickly changing.

The rise of the global economy and the rapid changes in technology has transformed the present society into a multicultural society. With this, new pattern of work and new vocations have developed, and consequently, new kinds of workers, with new and different skills are required. Developing countries like India where knowledge is in abundance, could take the advantage of technologies to transform its current economy. India has a large number of villages and urban slums whose knowledge potential is still untapped. The use of technology can bring about sweeping changes in these areas and unlock their latent growth potential. Today the society needs to work with others to find new and better ways to solve problems and meet the challenges of everyday life. They have to develop skills, which they can apply in their academic and career endeavours.

The basic skills of reading, writing and arithmetic (3 R's) remain the foundation of schooling and students learning. Technology helps students in accomplishing their goal of having a solid foundation of basic skills and inculcating in them an interest to learn. Realizing this, schools are now introducing Information Technology tools to improve students’ basic skills. The use of audio and video tools in the classrooms rejuvenates the subject matters, which helps to stimulates student’s minds and thus facilitates learning. Pictures, sound and animation, multimedia considerably enhances students’ ability to recall basic facts, as well as improving their understanding of complex systems.

It has been found from various studies conducted in India and abroad that there was a positive effect of use of Information Technology in teaching-learning of various subjects. As in the study of Mauther, M. Z. (1999) revealed that when computer was used to its full potential, it helped students achieve more in learning vocabulary, grammar and comprehension to the learner’s with different IQ, motivation and attitude. It helped the students learn better because it provides them with lot of freedom and responsibility to learn at their own pace and the students were found to have positive attitude towards Computer Assisted English language instruction. Samal, Y. (2000) found that both the Education Television Programme and School Broadcast Programme to have positive effect on school achievement of pupils. Yadav,
K. (2004) had found a significant gain in terms of students' achievement through Information Technology enabled instructional package. According to Rathod, J. (2005) the developed Information Technology based instructional package was more effective for teaching English grammar and also the students had positive reactions towards the developed Information Technology based instructional package. The students and teachers both were found to have favourable opinion towards the developed instructional package. Siddique, U. (2013), confirmed that Computer Assisted Instruction (CAI) was an effective tool for teaching and learning Physical Sciences. Therefore, teaching through Information Technology tools will definitely lead to positive results as students will be able to achieve higher academic results, lead to lower dropouts, better attendance as well as better school preparations or in other words, it will help them to reach new height of achievement not only in school, but also in their future career too.

In the history of mankind, no work of science has so extensively influenced human development as Information Technology. The world is experiencing the new progress brought about by the Information Technology revolution be it in communications, business and commerce, education, health or different aspects of human life. This revolution has made it possible to bring the world into the classroom and to get students out into the world with potential outreach and drive into the physical world. This facilitates students to see the relationship between their schoolwork and their lives outside the classroom now and in the future, and hence can focus on topics of their choice. One of the advantage of using Information Technology tools in the classroom is to prepare the present generation of students for a workplace where Information Technology tools like computer, internet and other related technologies are becoming more and more ubiquitous, as technologically know-how workforce are as assets in an organization and their ability to use Information Technology tools effectively and efficiently, is thus seen as representing a competitive edge in an increasingly globalized job market (Rao, E.P.R., 2010).

Today, students live in a world of almost unlimited streams of trivial and profound information of enormous opportunities and difficult choices. The choice of one's career is influenced by the views of parents, friends, relatives, teachers and also Information Technology tools. Information Technology contributes to better employment opportunities through improved labour market information and direct
employability. Using electronic job market information, employers and employees can match labour skills and availability to satisfy their demands. Many Information Technology applications that are being explored for various day-to-day operations have the potential to enhanced human productivity and efficiency. However, the first step in exploration is to discover the values, interests and skills of the students. This information will give a foundation for making career and life decision of the students. Through various Information Technology tools, like jobs search websites help students to know about what skills an employer is looking for and how to develop those skills. Today, some jobs are in decline, others are changing drastically, and some are expected to be in high demand over the next few years. Latest information concerning these queries and like the following can be had from these sites:

- What is the work actually like?
- What are the working conditions, hours and wages for a job?
- What are the opportunities for getting a job in the concerned area of interest?
- Is the work seasonal, casual or full-time?
- What skills and experience are required for the jobs?
- Education and training information
- Job profile search capabilities
- Demographic based labour market information
- Tips and resources to find a job

The answers of these queries could be obtained by just clicking the button of the computers.

Secondary education is a crucial stage in the educational hierarchy as it prepares students for higher education and for the world of work. Here Vocational Interests play an important role as it involves self-analysis, critical thinking and final decision-making. When making a career decision, it is important to look at student’s interests and values, their abilities and the opportunities available. Once students become aware of their interests, values and skills and considered how they can be fitted into the job market, then only they are in a good position to make an informed decision about which career is suitable for them. Information Technology gives idea or knowledge about every aspect of vocations available around the world, helps to inculcate interest about different vocations available in this age of technology and also
makes aware the students who want to enter the world of work about the present demand of different jobs in the world.

Information Technology has changed the activities of the world greatly. It has been instrumental in bringing down the boundaries, atomized different types of jobs; it has opened numerous opportunities for the cross-section of people the world over, enhanced generation, development and information of vocational guidance more easily accessible to all. Therefore, access to Information Technology is essential for the human resource development, to empower people to take their destiny into their own hands, and access to the internet is crucial for future access to information (Reddy, C.S., 2010). Thus, Information Technology tools are increasingly becoming an essential factor in any strategy of development to empower the students.

1.4 INTELLIGENCE AND VOCATIONAL INTERESTS:

"Intelligence is the cognitive ability of an individual to learn from experience, to reason well, to remember important information, and to cope with the demands of daily living".

Encyclopedia of Psychology (1999)

Intelligence is the mental ability or energy which differs from person to person but influences every aspect of one’s life. It is responsible for one’s achievement in almost all sphere of life, be it art, music, business, political leadership, carpentry, farming or sports. However, studies have shown that Intelligence is by no means the only factor for success of students in their life and therefore, it is necessary to find out how Intelligence is linked to success in life.

It is always worthwhile to know what a student desires to be and what he can do, before making a correct selection of courses and careers, as the level of a student’s Intelligence, knowledge and skills, which differ widely from students to students, influences his interest. Nothing can be more detrimental to a student than an ambition, which overstretches itself. A student with low level of Intelligence should not be forced to take a course for which higher Intelligence is required, as this will affect his achievement. Likewise, a student with higher Intelligence will be disappointed with his occupation and feel frustrated if it lacks challenge and competition, which will ultimately cause loss of interest in the job. Therefore, Intelligence of a student is not
only important for the selection of courses and careers and for other practical purposes but is also an important factor for vocational selection.

The advancement of science and technology has given this world hundreds of vocations, which has, made it difficult for students to choose the right vocation. Vocational guidance will definitely help students to find the right job. Adolescence is the transition period in the life of a student when he has to face the dilemma of selecting either to go for higher education or to go for vocational education. The decision taken at this stage will affect his future course of education and career selection. Though, there are many factors that determine one’s educational as well as vocational selection but Intelligence does play an important role, and therefore Intelligence test scores have been found to be useful in educational and vocational guidance. In order to provide proper guidance to the students for selecting the right vocation or subjects on the basis of their talents, there should be some reliable methods for measuring their potentials. Teachers who have used Intelligence test data precisely have more or less been able to help students better in occupational pursuits, in home adjustment, in institutional work, in community betterment, etc.

However, no intelligence test, including the most sophisticated ones can claim to be independent of cultural, social, racial and other environment factors. It cannot be claimed to be the measure of initial intellectual abilities and potentials of the students. So, the results of Intelligence tests cannot be considered as reliable in spite of all the hard work that goes with making of these tests. The result of such tests, as Crow and Crow (1973) put it, “may be effected by many factors inherent in the testing conditions, the child’s background of experience and other favourable or unfavourable elements. Hence, no administration, teacher or student of education should accept test results as the only measures of an individual’s ability to learn”.

Consequently, it can be said that Intelligence test helps very little in knowing about the composition of the student’s potentialities and therefore, these tests cannot be said to be as the predictor of future success of students as they do not touch important aspects like interest, attitudes, motives, etc. Gaikwad, K.S (1989) had found in his study that students’ vocational choices were not related to interest, aptitude or Intelligence. Noronha, A.P.P., et al. (2009) found low significant correlation between Vocational Interests and Intelligence of adolescents. So, Intelligence may not play an
important role in the selection of educational and vocational courses, as there can be one or more significant factors that a student may possess due to which the lack of Intelligence may be overlooked while selecting educational and vocational courses. In brief, the result of these tests must be interpreted and used intelligently. They should be taken as the means and not the end in themselves. Moreover, present day researches in this direction have proved that Intelligence tests results always favour healthy environmental conditions like improved sanitation, family atmosphere, education of parents, cultural background, socio-economic conditions and better educational opportunities, etc.

Vocational selection is a process that not only depends on Intelligence but also on various factors, which are sorted out in a reasonable way. According to Super D.E. (1957) Intelligence when studied in relation to vocational success does not imply that Intelligence is or viewed as, the only factor of any consequence. An individual’s decision is based on the interaction of vocational selection with various social and psychological factors. Studies have also substantiated the facts concerning the role of variables like socio-economic status, parental influence, school influence, needs and values as motivating factors in specific career preferences of adolescents (Yadav 1979; Jansari, A. 1995; Strenze, T. 2007).

Nevertheless, the importance of Intelligence cannot be overlooked when making career planning, as besides health, persistence, interest and aptitudes, Intelligence is a potent factor in vocational success. The level of Intelligence did influence the vocational preferences to a great extent (Uchat, D.A 1981; Yadav, R 2000). Vock, M. et al. (2013) had shown in their study that besides gender, Intelligence and school achievement contributed substantially in the prediction of Vocational Interests. Intelligence is not only a correlate but may even be a determinant of many important outcomes of life such as educational and vocational attainment and job performance. Gottfredson, 1986; O’Reilly & Chatmaw, 1994; Schmidt, Ones, & Hunter, 1992 (as cited in Ganzach, Y., 1998). Intelligence influences vocational success in a number of different ways such as wisdom of vocational choice, success in training ability to secure a job of a particular type, adjustment in the world of work as shown by placement on the occupational ladder, status in the occupation, satisfaction in one’s work, etc (Super, D.E & Crites, J.O 1962). Different type of vocations needs different type of Intelligence structure. According to Proyer, R.T (2006) there was a positive
relation between realistic and investigative vocations and spatial ability. Therefore, it will be unfair to deny or uphold the right of admission or occupational opportunities to the students simply based on these tests. So, vocational guidance counsellor needs to take care of this and accordingly guide the students for the right job. The ability to match the unique talents of each student with the requirements of the jobs will be beneficial for both student as well as society. Intelligence test will help to prevent resources and opportunities from being wasted on the intellectually under serving young people and on the other hand, they will enable the community and the state to pick out superior children for better education and later on richer service to the community and the country. National planning must seek to utilize intellectual resources in the country and Intelligence test will help to explore and discover those resources.

1.5 ACHIEVEMENT MOTIVATION AND VOCATIONAL INTERESTS:

"Achievement Motivation or a person’s need for achievement – a social form of motivation involving a competitive drive to meet standards of excellence”.


Motivation is a process of stimulating an individual to do something or perform in a particular way at a particular time for attaining some definite goal or intentions in order to satisfy his one or the other basic need. It is the process of governing, undergoing, or prompting oneself for doing an activity. In other words, it is the process of encouraging and stimulating students to perform in a particular manner. Psychologically, motivation is the process of inculcating and stimulating the student’s interest towards his studies i.e. inculcating interest. Thus, motivation is an important factor in the teaching-learning process whose outcome is the academic performance. A student’s intelligence and abilities are generally not so definite that he can be given guidance entirely on the basis of intelligence tests. Students’ interests, values and preferences besides intelligence and abilities influence motivation that determines the selection of a course of study or a vocation.

McClelland and his associates developed the theory of Achievement Motivation in 1951 (as cited in Rao and Rao, 2013). According to him, human being differs from one another in the strength of Achievement Motive. It is due to this difference that
some people are more successful in achieving their ambitions than others. In other words, students with high Achievement Motive do well than whose with low Achievement Motive. The difference in this strength of motivation to achieve also explains why the economic growth of some countries is better than others. McClelland has defined Achievement Motivation, which is the acquired tendency and is one of the most important social needs, as a disposition to strive for success in competition with some standard of excellence set by the individual. According to him, Achievement Motivation is the need for achievement, thereby referring to the individual's motivation to overcome difficulties, desire for success and the effort extended to seek out complicated task and complete them as soon as possible (as cited in Rao and Rao, 2013).

Achievement Motivation is the urge to success or the realization of a desirable goal. The intensity of this urge, which is both internal and external, can be fulfilled in many different ways e.g., homes, school and society play an important role in the development of Achievement Motive. The satisfaction that an individual gets when he overcomes a challenging and difficult task is Achievement Motivation. It is the motivation to perform at par or above par with the standard set against a particular task. In other words, an individual who is more motivated to achieve, tries his best to get success and obtain maximum happiness from it.

Motivational factors place an important role in career planning and career success. Various studies on job satisfaction have revealed that interest in doing a task and the motivation to involve oneself more with that task results in greater personnel satisfaction and success. In other word, one's interest in a work is a key motivating factor for that work. When one is interested in a work, he will find it more enjoyable, be more motivated to learn about it, develop relevant skills, work hard, and continue even through difficult challenges. These factors increase the chances of job satisfaction and success.

McClelland had also studied workplace motivation at length and concluded that workers as well as their supervisors have needs, which influence their achievement at work, and one of these needs is Achievement Motivation i.e. an individual's need to meet realistic goal, receive feedback and experience a sense of accomplishment. Achievement at workplace may also be influenced by the compliment for the work
done, qualities and characteristics of incentives. Moreover, intrinsic motive, economic motives and keenness to achieve the target also affect interest. According to McClelland (as cited in Collins, et al. 2004) individuals high in Achievement Motivation were attracted towards managerial positions in an organization rather than to other types of positions that did not involve management, i.e. individuals high in Achievement Motivation prefer leadership role in an organization.

Atkinson (1966) found Achievement Motivation to have significant contribution on both education and vocational choice. McClelland and his associates have also studied the relationship between Achievement Motivation and vocational performance and they found that students with high Achievement Motive had performed successfully. It appears to them that business executive need high Achievement Motive individual to perform successfully. Dabir (1986), in his study had found a positive and significant relationship between Achievement Motivation and vocational aspirations thereby concluding that school going youth with high Achievement Motivation had high vocational aspirations. Therefore, it can be concluded that Achievement Motivation is an important factor in student’s future career decision making.

Salami (2004), had reviewed many studies wherein he found a significant relationship between work values and vocational interests, occupational choice and job specific skills and Achievement Motivation and occupational choice. Achievement Motivation significantly influenced students in making an occupational choice (Salami 2004). High Achievement Motivation and low fear of failure students had different occupational choice from those who were low in Achievement Motivation and high in fear of failure (Salami 2004). This difference was because the former were more occupationally informed and therefore aspired for higher level of occupations (Tseng & Carter as cited in Salami, 2004).

Tutar, et al. (2011) presumed Achievement Motivation and ambition was significantly positively correlated. This fits with the Raymark, et al. (1997) study, wherein, individual with high Achievement Motivation choose a job or career where they can be ambitious, be challenged and set performance goals in order to improve on previous performance. Inkson (2007) had found Achievement Motivation of adolescent boys to be related to vocational preferences.
Thus, achievement gives individual satisfaction as well as social recognition. Achievement in any activity i.e. either in sports, school activities or in career inculcates interests and motivation that helps an individual to progress in life. An individual with Achievement Motivation always satisfy his deep and extensive interest and also satisfy his intellectual hunger. Achievement Motivation influences students to be regular in their work, attentive in the class, solve complex and challenging problems, and choose their friends and vocations based only on their interest.

1.6 OCCUPATIONAL ASPIRATIONS AND VOCATIONAL INTERESTS:

"Aspirations represent individual goals given ideal conditions, while interests reflect an individual’s emotional disposition towards particular career options".

Rojewski (2005)

Aspiration is an individual’s desire to attain a status or object or goal or ambition. According to International Dictionary of Education, ‘aspiration is an ambition of an individual, in educationally usage usually seen as academic, social or occupational and concerned with performance, prestige and status’ (as cited in Shivarudrappa, G, 1988). The desire to achieve a goal such as, a particular occupation or level of education in life is known as the level of aspiration of an individual. Therefore, success in life of an individual depends on his level of aspiration and the motivation of this level of aspiration comes from his past achievements and abilities. The Encyclopedia of Psychology (1972) had defined the level of aspiration as ‘the possible goal (score), an individual sets himself in his performance’ (as cited in Shivarudrappa, G, 1988)

Interests and tastes vary from individual to individual not only pertaining to food, dress, friends and entertainment but also with respect to vocations. Interest is the driving force necessary for success and it is because of interest and liking that one goes into a particular vocation. In other words, it can be said that there is a close relationship between interests and the occupational field. Occupational Aspirations is an individual’s desire to realize his dream job that would ultimately be his means of livelihood. Occupational Aspirations helps in minimizing social misfits, reduce wastage of human resource and talent by putting in place the right individual in the
right occupation as every occupation needs an individual with aptitude, interest, physical, mental and emotional stability, etc. which will help to determine one’s achievement in that particular field. According to Rojewski, 2005 (as cited in Wendy, P & Creed, P 2007) Occupational Aspirations is “an individual’s expressed career related goals or choices”.

The level of educational and Occupational Aspirations tends to grow mainly because of academic achievement and interpersonal influence. Because of this relationship, the levels of aspiration are likely to be transformed into actual level of vocational and educational attainment that will ultimately lead to levels of socio-economic achievement. Therefore, the level of aspiration is an important variable in determining the opportunities in the job market Sewell, & et al., 1969 (as cited in Ayalon, H. and Yuchtman-Yaar, E., 1989).

Occupational Aspirations is the combined result of an individual’s view of job compatibility and attainability. It not only play an important role in the vocational development and attainment of adolescents but also leads to instantaneous preparation, learning, help to organize life preferences and encourages in the preparation for adult life. Occupational Aspirations and expectations of adolescents are important variables for both immediate educational and long-term vocational choices, Holland, Gottfredson & Baker, 1990; Schoon & Parsons, 2002 (as cited in Wendy, P., & Creed, P., 2007) and as expression of adolescents’ future vocational self-concept, Rojewski, 1995 (as cited in Wendy, P., & Creed, P., 2007).

According to Sewell & Hauser, 1975 and Spenner & Featherman, 1978 (as cited in Staff, J., et al., 2010), Vocational Interests of youth was influenced by their Occupational Aspirations. Their study revealed that youth with higher Occupational Aspirations are more likely to have higher job status and earnings in their later life. Selecting an occupation after school is one of the most difficult exercises that a student has to do. Super, 1969 (as cited in Baker, A.R., & Mohamed, S., 2004), suggested that adolescent period is the crucial period for ‘exploring’ and ‘crystallizing’ their vocational options. Kuvesky & Bealer (1967) defined vocational choices as a manifestation of an individual’s aspirations or preferences concerning work status. High Vocational Interests is linked to social mobility and long-term economic success. Trice & King, 1991(as cited in Baker, A.R., & Mohamed, S.,
2004) had found that strong vocational preferences and aspirations become visible from an early developmental period and remain highly stable and significant until the students’ final vocational choices and occupational futures. Thus, Vocational Interests are ultimately determined by the tentative Occupational Aspirations that students make during their secondary school period.

Various studies on vocational development show that students’ Occupational Aspirations is an important factor that influences their later educational and occupational attainment (Gottfredson 1981, Marjoribanks 1985) and vocational attainment Blau & Duncan 1967; Burki & Hoelter 1988; Marini 1978; Otto & Haller 1979; Sewell Haller & Strauss 1957; Anderson 1980; (as cited in Baker, A.R., & Mohamed, S., 2004). Kelly, 1988, (as cited in Baker, A.R., & Mohamed, S., 2004) pointed out that the decisions made by secondary school students have a direct and significant influence on their later vocational choices. Haller (1966), when studied 431 males had found that the levels of Occupational Aspirations in youth influenced the levels of Vocational Interests in adult life whereas Conroy, 1997 & Empson, 1992 (as cited in Baker, A.R., & Mohamed, S., 2004) found adolescents often had unrealistic Occupational Aspirations. Kuvesky & Bealer (1967) on the other hand, in their study did not find strong evidence to support assumption that Occupational Aspirations was a good prediction of Vocational Interests i.e. higher Occupational Aspirations does not guarantee higher vocational attainment, there are other factors which determine Vocational Interests.

1.7 JUSTIFICATION OF THE STUDY:

Education plays an important role in the all-round development of human beings and the nation as a whole. Every country has its own education system to express and promote its socio-cultural identity. Education plays a catalytic role in this multifaceted and energetic growth process and hence it needs to be designed meticulously and executed with great sensitivity. According to the Census Projection Report (2001), the population of India in the working age group (15-59) is likely to increase from fifty-eight percent (58%) in 2001 to sixty-four percent (64%) by 2021 i.e. around 30.8 crore. It is estimated that India will have twenty-five percent (25%) of the world’s total workforce by 2025. In order to utilize the full demographic dividend, India needs an education system, which is of high quality, affordable, flexible and relevant to
individual as well as to the society in general and the economy in particular. In a nutshell, the present day society needs an education system which is based on technology and can establish a closer relationship with the economy.

The liberalization and globalization of the Indian economy has brought about rapid changes not only in the scientific and technological world of India but it has also changed our education system. With the Information Technology revolution, India is suddenly witnessing a set of new age vocations, vocations that were unheard of and undiscovered in the previous decades. Our higher education system is completely ignorant of Indian cultural heritage, be it art, craft, handicraft, music, architecture or any such thing, which deserves proper preservation and promotion through education system. These vocations are not only personally enriching but professionally rewarding too. Therefore, our education system needs to have greater interaction between institutions, industry and the society. With the labour market, becoming more and more specialized and the economies demand higher levels of skills, the government needs to invest in the future of vocational education.

Despite, the government's huge initiative to skill the large workforce of India, like setting up National Skill Development Mission for skilling people and laying special emphasis on expansion of skill-based programmes in 12th five year Plan, (Planning commission) there is a great demand-supply mismatch in the country. Moreover, only around seven percent (7%) of this workforce have received vocational training, whereas the economy needs much more skilled workforce than this. Not only this, there has been a disconnection between the vocational training received and the job they found, e.g. sixty-five percent (65%) of rural labourers had training in mechanical or electrical engineering or computer skills but working at construction sites or agricultural fields or trained as beautician but working as marketing agents (The Times of India, dated May 14, 2013).

In order to understand the reasons behind this disconnection or the mismatch between demand and supply, it is essential to know the Vocational Interests of the students before giving them the right vocational education in order to get the right job according to their abilities and interests as everyone has different abilities and interests. It would not be proper for schools to offer vocational education without knowing the Vocational Interests of the students.
The investigator, after scrutinizing various reviews of related literatures had observed that numerous researches on the relationship between Vocational Interests and other variables like socio-economic status, gender difference, father’s occupations, etc. were conducted. But in today’s fast changing modern techno-scientific global society of 21st Century, our students have a new style of thinking which makes them different and independent right from an early age. They want to decide their own careers and determine their own future professional growth. This, prompted the present investigator to work with variables other than the types of variables mentioned above and therefore, wanted to know how Vocational Interests of today’s generation is effected by Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations as no study had been done previously. Keeping in mind, the above lacunae the present study is fully justified on the grounds that this study is first of its kind in finding the effect of the four independents variables, viz. Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on the dependent variable i.e. Vocational Interests.

1.8 SIGNIFICANCE OF THE STUDY:

This study could be of immense use for the prediction of Vocational Interests and will provide an important contribution towards human resource development. Inculcating interest in our society towards Vocational Education could help to reduce the unnecessary rush towards higher education. In fact, vocational courses leading to employment as well as career progression could contribute in reducing the dropout rate in schools and hence produce skill work force, which will help to reduce demand and supply gap of our industries. The findings of the present study could be useful for the guidance counsellor in guiding the students at secondary level by knowing their interests, which will in turn, benefit the students in making appropriate career choices, get information about nature of work, entry requirement, training facilities available and other details related to their chosen vocation.

The findings would also be helpful to policy-makers, schools, parents and society as a whole in knowing how far students are using Information Technology devices to keep themselves abreast about vocational courses of their choice available in their surroundings. Based on this information, school administrators and local policy-makers will be able to upgrade their Information Technology facilities and increase
the number of vocational courses offered in their schools. The Government of India too, could be benefitted from this information, in knowing how far their policies on vocational education based on the local needs are successful and the changes that are needed to make their policies successful and accordingly provide financial support to both private and public secondary schools to upgrade their Information Technology facilities.

Parents and society have some unrealistic expectations from their children without knowing their abilities and interests. In this regard, Intelligence Test score could help them to know their children's abilities, which will significantly save their efforts; time, money and disappointments i.e. help prevent resources and opportunities from being wasted.

In the present socio-economic and cultural setup, Vocational Education is always looked down by our society and thinks that it is for the downtrodden. But, it has been seen that achievement is of paramount importance and great emphasis is placed on achievement right from the beginning of formal education. The findings of the study could help parents, schools and communities to know the level of motivations of the students towards vocational education and accordingly parents, schools and communities can take responsibilities to promote Achievement Motivation by explicating the stories of achievements of great personalities living in their surroundings and provide the necessary moral support to go for vocational courses.

Whereas, in case of Occupational Aspirations it could help parents and teachers to encourage students to have a realistic Occupational Aspirations as parents and teachers play a great role in influencing their children towards their occupations and therefore the findings, conclusion and recommendations may help parents to create an enabling environment towards inculcating interests among the students towards vocational education which play an important role in career development.

The finding of the present study could provide a good insight to our society to deal effectively with their children at the time of their career planning. The present study could also be helpful in understanding the importance of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations in inculcating students' interests towards vocational courses. Moreover, it is anticipated that the
findings of this study will be helpful to secondary schools to keep abreast of their students’ interests towards realistic careers in life.

STATEMENT OF THE PROBLEM:

Study of abstracts in the Survey of Research in Education edited by Buch, M.B. and review of other related studies conducted in India and abroad revealed that no studies have been conducted on Vocational Interests with variables Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations. Keeping this in mind and the needs of this present generation of young ready to achieve students, the investigator aimed to study the relationship of Information Technology, and psychological factors like Intelligence, Achievement Motivation and Occupational Aspirations on the Vocational Interests. Therefore, the research problem is formally stated below:

"Effect of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district".

1.10 DEFINITIONS OF THE TERMS:

1.10.1 VOCATIONAL INTERESTS:

Strong (1943) defined Interest as:

"Activities for which we have liking or disliking and which we go towards or away from, on concerning which we at least continue or discontinue the status quo; furthermore, they may or may not be preferred to other interests and they may continue over varying intervals of time".

According to Guildford (1965):

"Interest is a generalized behavior tendency of an individual to be attracted to a certain class of incentives or activities that are vocational in nature and to those whose broad meanings transcend vocations".
Murphy, G. (1970) says:

"Interests are conditional stimuli related to goal objects and expressed as likes or dislikes of activities, objects, characteristics or people in the environment".

Dictionary of Education by Good. C.V (1973) defines Vocational Interests as:

"(i) measured patterns of likes and dislikes that have been found experimentally to differentiate successful adults in one occupation from those in other occupations;

(ii) a feeling of liking associated with a reaction, either actual or imagined, to a specific area or field of an occupation".

According to Hansen, (1990):

"Vocational Interests reflects five components that may be characterized as determinants: personality, motivation or drive, expression of self-concept or identification, habitability, and environment influences (e.g. learning and socialization)" (as cited in Baker, L.L. Jr., 2004).

As defined by Holland (1997):

"Vocational Interests is an expression of an individual’s personality in work, school subjects, hobbies, recreational activities and preferences" (as cited in Bloye, E.J, 2007).

According to Strong:

"Vocational Interest is not only a single choice but the sum total of many interests that bear in any way upon an occupational career" (as cited in Singh, A 2014).

In the present study Vocational Interests has been defined as the interests of students towards the areas: Teaching, Performing Arts, Engineering Services, Health Services, Clerical Jobs, Artistic Jobs, Entrepreneurial Services, Sports Professionals, Social Scientists, Gadget Technicians, Finance & Accounts, Social Services, Creative Arts, Managerial Works, Airline Services, Investigative Services, Media, Counsellor and Literary Arts. Vocational Interests is the sum total of the scores secured by the sample student in each of the areas of the test constructed by the investigator.
1.10.2 INFORMATION TECHNOLOGY:

Percival and Ellington (1984) defined:

“Information Technology is the technology associated with the creation, storage, selection, transformation and distribution of information of all kind”.


Information Technology – “contains three main components:

i) Management Information System (MIS) or Decision Support System (DSS)

ii) Hardware and

iii) Human Factor”

For Haag et al. (1998) Information technology is:

“Any computer-based tool that people use to work with information and support the information and information processing needs of an organization”.

UNESCO (1998) defined Information Technology as:

“Scientific, technological and engineering disciplines, and the management techniques used in information handling processing; their application, computers and their interactions with men and machines; and associated social, economical and cultural matters”.

For The Compact Oxford Reference Dictionary (2001) Information Technology is:

“The study or use of systems such as computers and telecommunications for storing, retrieving and sending information”.

Global Dictionary of Education defines (2009) Information Technology:

“The branch of technology devoted to the study and application of data and the processing thereof; i.e. the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data, and the development and use of the hardware, software, firmware and procedures associated with this processing”.

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According to the *Merriam-Webster Dictionary* Information Technology means:

'The technology involving the development, maintenance, and use of computer system, software and networks for the processing and distribution of data'.

From the above definitions, it can be concluded that Information Technology focuses on activities that deal with the solution of problems through logical thinking, information management and communication. It also focuses on the development of computer applications using current development tools. The subject develops awareness and an understanding of the social, economic and other implications of using computers i.e. ultimately means creation, storage, exchange, computing and use of information in various forms. In the present study, the investigator had considered Information Technology as a source which exchanges information through all electronic, digital and audio-video devices that are being used by the majority of secondary school students. Here, the total score obtained by the sample student in the various dimensions (Knowledge of IT, Use of IT Services, IT & Artistic Jobs, Career Options in Computer, IT & Entrepreneurial Services and IT for Human Welfare) of the test constructed by the investigator helps to know the effect of Information Technology for vocations.

1.10.3 INTELLIGENCE:

**Stoddard (1943)** offers the following definition:

"Intelligence is the ability to undertake activities that are characterized by:

(i) difficulty, (ii) complexity, (iii) abstractness, (iv) economy, (v) adaptiveness to a goal, (vi) social value, and the (vii) the emergence of originals and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces" (as cited in Freeman, F.S).

According to **Wechsler, D. (1944)**:

"Intelligence is the aggregate or global capacity of an individual to act purposefully, to think rationally, and to deal effectively with his environment" (as cited in Mangal, S.K., 2007).
Dictionary of Education by Good, C.V (1973) defines Intelligence as:

“(i) the ability to learn and to criticize what is learned; (ii) the ability to deal effectively with tasks involving abstractions; (iii) the ability to learn from experience and to deal with new situation; (iv) as commonly used in measurement and testing, a degree of ability represented by performance on a group of tests selected because they have proved their practical value in the prediction of success in academic work and in some vocations”.

For Hurlock, E.B (2003):

“Intelligence provides the person with the capacity to meet and solve the problems that adjustment to life requires”.

According to the Merriam-Webster Dictionary:

“Intelligence is the ability to learn or understand things or to deal new or difficult situations”.

For Wells:

“Intelligence is the property of recombining our behavior patterns so as to act better in a novel situation” (as cited in Sharma, Y.K. 2004).

In Stern, W.’s opinion

“Intelligence is the ability to adjust one-self to a new situation” (as cited in Sharma, Y.K. 2004).

Intelligence is an inborn or innate quality, as distinct from the abilities acquired through individual experiences at home, at school or elsewhere. Intelligence is a sort of mental energy in the form of mental or cognitive abilities and capacity of an individual that enables him to handle his environment in terms of adoption to face novel situations as effectively as possible. Therefore, in the present study, Intelligence is measured as the total score secured by the student in Non-Verbal Intelligence Test (measures ‘g’) by Sharma, A., (2007).
1.10.4 ACHIEVEMENT MOTIVATION:

McClelland, D.C et al. (1953) defined Achievement Motivation as:

"May be associated with a variety of goals, but in general the behavior adopted will involve activity which is directed towards the attainment of some standard of excellence. Competition with others in which they are beaten may be included in it".

According to Atkinson and Feather (1966):

"The achievement motive is conceived as a latent disposition which is manifested in overt striving only when the individual perceives performance as instrumental to a sense of personal accomplishment”.

Dictionary of Education by Good, C.V (1973) defines Achievement Motivation as:

“A combination of Psychological forces which initiate, direct and sustain behavior towards successful attainment of some goal which provides a sense of significance”.

For Morris and Maurice (1980) Achievement Motivation is:

“The expectancy of finding satisfaction in mastering challenging and difficult performances” (as cited in Rao and Rao, 2013).

For Irving Sarnoff Achievement Motivation is:

“Defined in terms of the way an individual orients himself towards objects or conditions that he does not possess. If he values those objects and conditions and he feels that he ought to possess them he may be regarded as having an achievement motive” (as cited in Mangal, S.K., 2007).

In the present study, Achievement Motive of secondary school students was considered as motivation to perform specific jobs based on some standard of excellence against which results can be judged. Here Achievement Motivation was considered as the total score secured by the student in the Achievement Motivation Test by Rao, D. G., (1993).
1.10.5 OCCUPATIONAL ASPIRATIONS:

**Dictionary of Education by Good, C.V (1973)** defines Occupational Aspirations as:

“A goal – directed attitude which involves conception of the self in relation to a particular level of the occupational prestige hierarchy”.

For **Gottfredson, L.S (1981)** Occupational Aspirations:

“An occupation is the single occupation named as one’s best alternative at any given time. As perceptions of compatibility and accessibility change, so too, may a person’s assessment of which alternative is the best even though the social space may be stable”.

For **Rojewski (2005)** Occupational Aspirations means:

“desired work-related goals given ideal circumstances, are preferences about work that reflects information about self-concept, perceived opportunities, and interests and hopes”.

According to **Wikipedia**:

“Occupational Aspirations are the thoughts, feelings, fantasies and goals that people have about their work that effect their motivation and decision making in respect of their occupational choice and subsequent participation in their occupation”.

Occupation is a person’s trade, vocation or principal means of earning a living or a group of jobs with a significant number of tasks and skills in common while aspirations or ambitions are individuals’ hopes for achieving their goals. In the present study, Occupational Aspirations of secondary school students meant their aspiration about a particular job or vocation as a means of their earning a living that will give them satisfaction and respect in society. Occupational Aspirations in the present study had been considered as the total score secured by the sample student in the Occupational Aspiration Scale OAS – G by Grewal, J.S., (2011).
1.10.6 SECONDARY SCHOOL STUDENTS:

According to the *Dictionary of Education by Good, C.V (1973)* secondary school students:

“A student who attends a school comprising any span of grades beginning with the next grade following the elementary school and ending with or below grade 12, including the junior high school and other types of high school”.

According to *Merriam-Webster’s Collegiate Dictionary (1993)*:

“Secondary school is the stage where education that follows the typically compulsory comprehensive primary education, is given. It is a school that is intermediate in level between elementary school and college and that usually offers general, technical, vocational or college preparatory curricula”.

The *New International Webster’s Comprehensive Dictionary of English Language (2002)* defines secondary school as:

“High school or Preparatory school beyond the elementary or primary and below the college level”.

According to *Wikipedia*:

“Secondary school is just a term used to describe an educational institution where the final stage of compulsory schooling, known as secondary education takes place. It follows on from elementary or primary education”.

In India, educational system at school level is classified as:

- Primary school education: standard I to V
- Middle school education: standard VI to VIII
- Secondary school education: standard IX to X
- Senior school education: standard XI to XII

Secondary Education is the kind of education, which is given after primary education and before university education. It includes all the classes after primary school and before the university. It serves as a step towards preparation of higher and
professional education. In the present study, the students of class X only were considered as secondary school students.

1.11 OBJECTIVES OF THE STUDY:

In order to achieve the desired result the following objectives and sub-objectives are formulated.

Objective 1. To find the effect of Information Technology on Vocational Interests of secondary school students.

Sub-Objective 1(a). To find the effect of Information Technology on Vocational Interests of male students studying in secondary schools.

Sub-Objective 1(b). To find the effect of Information Technology on Vocational Interests of female students studying in secondary schools.

Objective 2. To determine the effect of Intelligence on Vocational Interests of secondary school students.

Sub-Objective 2(a). To determine the effect of Intelligence on Vocational Interests of male students studying in secondary schools.

Sub-Objective 2(b). To determine the effect of Intelligence on Vocational Interests of female students studying in secondary schools.

Objective 3. To find the effect of Achievement Motivation on Vocational Interests of secondary school students.

Sub-Objective 3(a). To find the effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.
Sub-Objective 3(b).  To find the effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

Objective 4.  To determine the effect of Occupational Aspirations on Vocational Interests of secondary school students.

Sub-Objective 4(a).  To determine the effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.

Sub-Objective 4(b).  To determine the effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.

Objective 5.  To find the combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary schools students.

HYPOTHESES OF THE STUDY:

In order to achieve the above objectives the following null hypotheses (H₀) were formulated:

**Ho.: 1**  There will be no significant effect of Information Technology on Vocational Interests of secondary school students.

**Ho.: 1(a)**  There will be no significant effect of Information Technology on Vocational Interests of male students studying in secondary schools.

**Ho.: 1(b)**  There will be no significant effect of Information Technology on Vocational Interests of female students studying in secondary schools.

**Ho.: 2**  There will be no significant effect of Intelligence on Vocational Interests of secondary school students.
H0.: 2(a) There will be no significant effect of Intelligence on Vocational Interests of male students studying in secondary schools.

H0.: 2(b) There will be no significant effect of Intelligence on Vocational Interests of female students studying in secondary schools.

H0.: 3 There will be no significant effect of Achievement Motivation on Vocational Interests of secondary school students.

H0.: 3(a) There will be no significant effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

H0.: 3(b) There will be no significant effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

H0.: 4 There will be no significant effect of Occupational Aspirations on Vocational Interests of secondary school students.

H0.: 4(a) There will be no significant effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.

H0.: 4(b) There will be no significant effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.

H0.: 5 There will be no significant combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary schools students.
DELIMITATIONS OF THE STUDY:

The delimitations of the study are:

1. Vocational Interest of adolescents depends on many factors but the present study is delimited only to the variables like Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations.

2. The present study was delimited to secondary school students of Aligarh district only.

3. The present study was focused only on students studying in class X of CBSE affiliated schools.

1.12 ORGANIZATION OF THE STUDY:

The study has been organized in the following chapters.

Chapter-1 includes Introduction, Vocational Interests, need for Vocational Interests in present Indian scenario, introduction of the four independent variables, justification of the problem, significance of the study, statement of the problem, definitions of the terms, objectives of the study, hypotheses of the study, delimitations of the problem and organization of the study.

In Chapter-2, A review of the related literature of the variables of the study is discussed.

In Chapter-3, A detailed discussion of the methodology and design for collecting of data with procedures for analysis is presented.

Chapter-4 Contains presentation and discussion of the analyzed data.

Chapter-5 The investigator discusses summary, conclusion, educational implications of the study, and recommendations for practice and suggestions for further research.
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Chapter - 2

REVIEW OF RELATED LITERATURE

2.1 International Scenario
   2.1.1 Vocational Interests
   2.1.2 Information Technology
   2.1.3 Intelligence
   2.1.4 Achievement Motivation
   2.1.5 Occupational Aspirations

2.2 National Scenario
   2.2.1 Vocational Interests
   2.2.2 Information Technology
   2.2.3 Intelligence
   2.2.4 Achievement Motivation
   2.2.5 Occupational Aspirations

2.3 Critical Appraisal of the Related Literature
Chapter – 2

REVIEW OF RELATED LITERATURE

"The literature in any fields forms the foundation upon which all future work will be built. If we fail to build the foundation of knowledge provided by the review of literature, our work is likely to be shallow and naive and will often duplicate work that has already been done better by someone else".

W. R. Borg

To ‘Review’ means to organise the knowledge of a specific area of research, to evolve as edifice of knowledge, to show that present study would be an addition to this field.

A review of literature, prepares the investigator to formulate a researchable problem in which conceptually and practically important variables are selected, and helps the investigator to avoid any duplication of work done earlier. It also makes the investigator to take wise decisions to enhance the quality of present research by incorporating methodology, selecting research tools and utilize statistical techniques for better interpretation of results.

The review of related literature serves the following purposes as given below:

• To avoid the risk of duplication
• To contribute to the general scholarship of the investigator.
• To suggest methods of research appropriate to the problem.
• To locate comprehensive data useful in the interpretation of the results.
• To define the limit of field.
• To state the objectives clearly and precisely.
• To help the investigator know about the tools and instruments which will prove to be useful.

It is thus essential to review the related literature to study a specific problem. In order to develop deep insight and to evaluate the methodological practices emerging, the present investigator made a survey of the available literature and reviewed the researches in the field of Vocational Interests, Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations. The investigator carefully reviewed research journals, encyclopaedia, theses, books, research projects and other
sources of information on the problem to be investigated. The investigator therefore went through the relevant literature for the present study as far as possible.

The studies quoted in this chapter have been classified into two sections i.e. International Scenario and National Scenario. Each section is further subdivided into sub-sections as:

2.1 International Scenario:
   2.1.1 Vocational Interests
   2.1.2 Information Technology
   2.1.3 Intelligence
   2.1.4 Achievement Motivation
   2.1.5 Occupational Aspirations

2.2 National Scenario:
   2.2.1 Vocational Interests
   2.2.2 Information Technology
   2.2.3 Intelligence
   2.2.4 Achievement Motivation
   2.2.5 Occupational Aspirations

2.1 International Scenario:
2.1.1 Studies Related to Vocational Interests:

Lowe, B. (1981): studied the relationship between Vocational Interests differentiation and career undecidnessness with a sample of fifty-four female and thirty male students of 20 years old. The Career Decision Scale and the six occupational scales of Vocational Preference Inventory were used to test the hypothesis that indecision was negatively related to occupational interest differentiations in an adult population. And it was found that interest differentiations did not appear to be a reliable indicator of vocational undecidness.

Athanason, J.A., and Cooksey, R.W. (1993): conducted a study on influence of personality and other individual difference factors on high school students; ability to estimate their levels of Vocational Interests; the investigators considered 10 aspects of individual differences: Intelligence, general desirability; extraversion; anxiety; flexibility; job knowledge; career exploration; and career decision of 796 students
from nine metropolitan and country high schools. The study found that self-estimate ability of Vocational Interests was independent of individual differences.

Smith, S.M. (2002): explained Vocational Interest in Information Technology of 278 undergraduate students by using the social cognitive model. They were asked to identify their sources of computer self-efficacy beliefs, outcomes expectations and Information Technology interests. Consistent with theory, all the social cognitive variables were strongly related to Information Technology interest. Hierarchical Regression Analysis revealed that mastery experiences and affective states significantly predicted interest in Information Technology. Computer self-efficacy and outcome expectations significantly impacted Information Technology interest.

Salami, S.O. (2004): examined the relationship between psychopathology and Vocational Interests among school-going adolescents in Nigeria. Two hundred and seventy-eight secondary school final year students responded to a psychopathology inventory and the Bakare’s Vocational Interest Inventory (VII). Data were analysed by using the discriminate Function Analysis and the students' t-test. Result of the study found that the students’ Vocational Interests could not significantly differentiate between high and low psychopathology groups at the .05 levels. Significant differences were however obtained in the outdoor, mechanical and musical areas when compared the VII scores of males with females.

Igbinedion, V.I. (2006): studied the perceived factors that influence students’ vocational choice of secretarial studies in tertiary institutions in Edo State of Nigeria. The factors investigated included parental, peer group, gender and interest. The design of the study was descriptive with a stratified sample of 191 subjects randomly selected from a population of 447 students enrolled in secretarial studies programmes in public tertiary institutions in Edo State during the 2006 / 2007 academic session. A questionnaire was the instrument used to gather data from the field for analysis. Two research questions were raised and answered, while two hypotheses were formulated and tested. The results showed that there were variations in the perceived factors that influence students’ vocational choice of secretarial studies between male and female students, and also students from the universities and college of education differed significantly with regard to some of the factors that influence their choice.

Proyer, R.T. (2006): conducted a study with 138 persons on the relationship between their Vocational Interests and Intelligence and wanted to know if the findings could
be generalized across difference assessment methods? The tools used were Non-Verbal test together with two questionnaires. Test for general intelligence, verbal, numeric and spatial ability and memory were used. The results of the study indicated that there is a positive relation between realistic and investigative interests and spatial ability. As the investigator had used both questionnaires as well as non-verbal test, therefore the researcher concluded that this relation was stable for different methods.

Sparfeldt, J.R. (2007): compared the Vocational Interests of 106 intellectually gifted adolescents (IQ=136) with 98 adolescents of average ability (IQ=103). Participants completed a questionnaire measuring Vocational Interests according to Holland’s (1997) Theory. The study revealed that gifted adolescents displayed higher investigative interests (d=0.54) and lower social interests (d=0.38) than non-gifted adolescents. Differences between both groups regarding their realistic, artistic, enterprising and conventional interests were negligible.

Salami, S.O. (2008): analyzed 220 males and 210 females secondary school adolescents of Southwestern Nigeria for the role played by personality, Vocational Interests, academic achievement and socio-cultural factors in their educational aspirations using Hierarchical Multiple Regression Analysis. The study found that specific personality, Vocational Interests dimensions, academic achievement, socio-economic status and demands from extended family were significantly related to the students’ educational aspirations.

Alike, H.J., and Egbochuku, F.O. (2009): investigated the relationship between Vocational Interest, counselling, socio-economic status and age as correlates of re-entry of three hundred and twenty randomly selected girls from three continuing school in Edo State. Modified Bakare Vocational Interest Inventory, the instrument on socio-economic status of parents, the instrument on age and the instrument on reasons for re-entry into school by girls were used for verifying one research hypothesis. Results obtained by using Multiple Regression Analysis showed that there was a significant relationship between Vocational Interest, counselling, and socio-economic status on re-entry of girls into school with the exception of age.

Hirschi, A. (2010): conducted a study on Vocational Interests and career goals: development and relations to personality in middle adolescence, among 292 Swiss adolescents. The investigator used longitudinal study to examine the development of Things/People (T/P) and Data/Ideas (D/I) Vocational Interests and career goals in
relation to Big Five personality traits. Cross-lagged panel design with two measurement points over one year from seventh to eighth grade was used to conduct the study. It was found that interests and goals were significantly related within time and showed significant interactions across time.

Ose-Edoh, G.I., and Alutu, A.N.G. (2011): found significant difference between educational values and career aspirations in favour of the higher socio-economic status students when examined between high and middle socio-economic homes and in favour of the middle socio-economic status when compared between middle and low socio-economic homes. These findings were from a study of 100 randomly drawn students from public senior secondary schools of Oredo Local Government Area.

Proyer, R.T., et.al (2012): studied the relationship between character strengths and Vocational Interests of 197 adolescents in the age group of 13 to 18 years, using a multi-method approach. The researcher used online questionnaire method to measure character strengths and a multi-method to measure interests (questionnaire, non-verbal test, and objective personality test). The findings were that intellectual strengths had relations with investigative and artistic interests. Social interests had relations with strengths of transcendence and other-directed strengths and enterprising interests with leadership strengths.

Vock, M., et al. (2013): conducted a study to know the Vocational Interest of 4694 German intellectually gifted and highly achieving students. They based their study on the fact that Vocational Interests play a central role in the vocational decision-making process and are decisive for the later job satisfaction and vocational success. They achieved their result by comparing the Vocational Interests of gifted and highly achieving adolescents with those of less intelligent/achieving peers. They found that gifted students had stronger investigative and realistic interest but lower social interests than less intelligent students. Highly achieving students had higher investigative and (in wave 2) higher artistic interests.

2.1.2 Studies Related To Information Technology:

Durndell, A., and Haag, Z. (2002): conducted a study on Computer Self-Efficacy, Computer Anxiety, attitudes towards the Internet and reported experiences with the Internet, by gender with the sample of 74 female and 76 male Romanian University students, from a wide mixture of courses. The Computer Self-Efficacy Scale,
Computer Anxiety Scale and an Attitude to the Internet Scale were used to collect data. The result found that significant zero order correlations were obtained with the relationship being between higher Computer Anxiety, more positive attitudes towards the Internet and longer reported use of Internet and significant gender effects were found throughout, with males tending to report greater Computer Self-Efficacy, lower Computer Anxiety, more positive attitudes towards the Internet and longer use of the Internet than females. By using Regression Analysis the investigator concluded that Internet experience (use) was the only variable independently linked to gender.

Fan, T., and Li, Y. (2005): sought to know the gender difference for college Computer Science programs in 940 college students who were enrolled in five Universities of Taiwan. The result revealed that there was significant gender difference and female outperformed their male counterparts in the male dominated Computer field probably due to the prior knowledge of Mathematics and Computer Experience.

Wong, S.L., and Hanafi, A. (2007): analysed the gender differences in attitudes toward the usage of Information Technology (IT) related tools and applications of 102 (73 female and 29 male) student teachers of University of Putra, Malaysia. They were given a questionnaire to relate their attitude towards IT before and after undergoing a discrete IT course for the duration of one semester. The result revealed that there was no significant difference between female and male student teachers when the pre-and post-test mean scores were compared. Both genders exhibited the same levels of attitudes before and after undergoing the comprehensive IT course.

Papastergion, M. (2008): investigated the intentions and motivation towards and against pursuing academic studies in Computer Science (CS), the influence of the family and the scholastic environment on student’s career choices, student’s perceptions of CS and the Information Technology (IT) profession as well as student’s attendance at CS course at school, Computer use in the home and self-efficacy beliefs regarding Computers of 358 Greek high school students of both sexes by using an anonymous questionnaire. Gender differences were examined with a view to identifying factors that may affect boys’ and girls’ Career Choices. The data analysis showed that girls were less likely than boys to pursue a Computer Science degree and hold less positive views of the IT profession than boys, and girls had
greater Computer Self-Efficacy and more sex-stereotypical views of Computer Science and IT as male domains.

Chou, C., et.al (2009): investigated fifth-graders attitudes toward the Internet based on the 5-T framework (Tool, Toy, Telephone, Territory, and Treasure of information) and to understand whether gender made any difference in their attitude. Data were obtained from 2,253 Taiwan fifth-grade students. The result revealed that the subjects used the Internet mainly for their academic work and daily lives; there existed gender difference in the subscales of Tool, Toy, Treasure of information and Telephone but not in the Territory Subscale of the Internet Attitude Scale. The investigator concluded that the Internet was good for both writing and reading of information.

Karabocu, D., et.al (2010): studied the interactive and web based simulation contents on education for students’ Achievement in Vocational and Technical Education. The sample of study consisted of 24 (12 test and 12 control subjects) students of 10th class in Department of Information Technology at Technical high school. Their investigation revealed that shortage of professional tools and space and shortage of teaching staff could be overcome by interactive and web-based content for simulation education.

Yilmaz, M. B., and Orhan, F. (2010): examined the Internet usage of high school students for educational purposes in relation to their learning approaches. The sample of the study consisted of 921 secondary school students and Learning Process Questionnaire (LPQ) was used on them. This tool consisted of two dimensions- deep learning and surface learning. The result revealed that surface learners used the Internet more frequently when compared to deep learners, though they used it for non-instructional purposes. The ratios of the Internet use by deep learners for educational purposes were higher when compared to those of surface learners and students who were given assignments required higher use of Internet.

Zhu, Y.Q., et.al (2011): investigated the relationship between Vocational high school student’s information seeking activities on the Internet, academic self efficacy and academic performance by using survey data from 295 Vocational high school students in Taiwan. The result revealed that the positive effect of Internet information seeking to student’s academic performance was mediated through academic self efficacy. Academic self-efficacy, at the same time moderates the relationship between Internet information seeking to academic performance and the students with low academic
self-efficacy benefit more from Internet information seeking in regard to their academic performance.

Austin, W.A., and Totaro, M.W. (2011): examined if Internet use effect high school absenteeism differently for males and females high school students. The investigators utilized data from the National Survey on Drug use and Health which measures educational outcomes, Internet use and a host of other correlates. The result revealed that female’s students who intensely use the Internet incur more days of absenteeism than males students.

2.1.3 Studies Related To Intelligence:

Waters, E.W. (1954): conducted a study on Vocational Aspirations, Intelligence, problems and socio-economic status of rural Negro high school seniors on the Eastern Shore of Maryland, their implications for Vocational Guidance. One of the purposes of the study was to measure the mental abilities of rural Negro high school pupils in order to determine the extent to which they would be able to complete and profit by the training necessary to fulfil their Vocational Aspirations. The population of the study included 288 seniors from nine high schools for Negroes on the Eastern Shore of Maryland. California Short Form Test of Mental Maturity was used to measure mental abilities. The result revealed that the average measured mental abilities of the group were low when compared with national norms for the general population and 12th grade pupils. However, the average tended to measure higher in mental abilities, for selected occupations which required advanced academic training, and the selected occupations which required little or no academic training tended to measure lower in mental abilities.

Ripple, R.E., et.al (1969): attempted to study the relationship between selected characteristics of the students including characteristics and relative student, Intelligence and relative degree of success through programmed versus conventionally structured method for teaching vocabulary (word meaning and usage). The sample consisted of 1100 students of grade eight from 22 schools. Four way analysis of variance revealed no significant interaction of Intelligence with any of the treatment modes.

Lawrence, W. & Brown, D. (1976): used Multiple Regression Analysis to investigate the effect of Intelligence, Self-Concept, SES status, race, and sex of 266
twelfth grader on their Career Maturity. The result revealed that when predicting Career Maturity by Career Maturity Inventory (CMI), a separate equation utilizing different predictors depending on race and sex should be considered. The result also revealed that SES and Self-Concept had a differential effect upon Career Maturity.

Esfandiari, M. (1989): made a comparative study of Intelligence and Vocational Aspiration of Iranian high school student in single-sex and mixed-sex bilingual schools. The sample of the study consisted of 50 girls and 44 boys from single-sex monolingual High Schools and 44 girls and 15 boys from mixed-sex bilingual high schools. The results obtained by using Raven’s Progressive Matrices and Ruder’s Preference Record showed that bilinguals scored higher than monolinguals on Non-Verbal Intelligence and mathematical preferences and bilingualism seems to have had a salutary effect on Non-Verbal Intelligence of Iranian high school students in general and of girls in particular. The girls in both types of schools had high Occupational Aspirations and Vocational Preferences due to their social class and their parents’ level of education.

Roznowski, M., et.al (2000): carried out a study to examine how youth Intellectual Giftedness was related to values, interests, performance and behaviour. A sample of 1000 American 10th grade high school students were selected by using stratified random sampling method. The result revealed that high school experience, study habits, social attitude, future plans and self esteem were all associated with Intellectual Giftedness.

Laidra, K., et.al (2006): conducted a study on personality and Intelligence as predictors of academic achievement. A cross-sectional study from elementary to secondary school with 3618 students of different grades from all over Estonia was taken as the sample. The Raven’s Standard Progressive Matrices was used to measure Intelligence and the Estonica Big Five Questionnaire and Neo Five Factor Inventory were used to measure Personality traits. The result revealed that Intelligence was the strongest predictor of Grade Point Average (GPA).

Strenze T. (2007): conducted a study on Intelligence and socio-economic success: a meta-analytic review of longitudinal research. The study conducted a meta-analysis of the longitudinal studies that had investigated Intelligence as a prediction of success (as measured by education, occupation and income) and also included meta-analysis of parental socio-economic status (SES) and academic performance (school grades) as
predictors of success. The result showed that Intelligence was a powerful prediction of success but on the whole, not an overwhelmingly better predictor than parental socio-economic status on grades.

Naderi, H., et.al (2008): conducted a study with sample of 153 undergraduate students on Intelligence and gender as predictors of their academic achievement. They completed Catell Culture Fair Intelligence Test and the Cumulative Grade Point Average (CGPA). Multiple Regression Analyses indicated that Intelligence and gender explained 0.019 of the variance in academic achievement.

Noronha, A.P.P., et.al (2009): investigated the association between professional interests and Intelligence with adolescents. 211 students took part on this study from a private school located at Parana and mean age 16.5 years old. Escala de Aconselhamentos Professional (EAP) and Bacteria de Provas de Raciocinio (BRP-5), tests were used in this study. Results of the study showed few and low significant correlations between the constructs, suggesting divergence between them. There were significant differences regarding five from seven interests areas accessed and at spatial and numerical Intelligence.

Rammstedt, B., and Rammsayer, T.H. (2009): conducted a study on sex differences in self-estimates of different aspects of Intelligence, with a sample of 105 German students. The Thurstone’s primary mental abilities and Gardener’s Frames of mind: the theory of multiple Intelligences was used to estimate student and their parent IQ scores. The result revealed that males had higher mathematical logical and spatial Intelligence than females whereas females had higher musical and interpersonal Intelligence than males.

Kalelioglu, F., and Gulbahar, Y. (2010): investigated the usage of blogs in educational settings from multiple Intelligences perspective. The sample of this study was 33 students of one undergraduate course “Computer II” offered by the Turkish Education Department (TE) of a private university. The multiple Intelligence evaluation questionnaire developed by Armstrong was used and both qualitative and quantitative measures were used to gather and analyze the data. The results revealed that participant’s blog usage activity was addressing interpersonal, intrapersonal and linguistics Intelligence types, which were also the top three lending Intelligence types of the group, besides visually spatial and kinaesthetic.
Spinath, B., et.al (2010): sought to know low Intelligence, personality and motivation forecast school achievement of 1353 Austrian eight graders boys and girls. Intelligence, the Big Five Personality Factors as well as domain specific school anxiety ability self-perceptions and interests were assessed as predictors of grades in Germaine, Math and English. The result revealed that Intelligence and the ability of self perception were the strongest predictors of school achievement in all domains.

Steinmayr, R., et.al (2011): sought to know how goal orientations along with Intelligence and personality predict academic performance of 520, 11th and 12th graders. Intelligence, the Big Five Factors of personality (Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness) as well as goal orientations (learning performance-approach, avoidance and work avoidance goals) were assessed. The result revealed that when all variables taken together Intelligence, openness to experience conscientious and learning goals predicted school performance.

D’Amico, A., et.al (2012): made a study on Lunn’s (2010a, 2010b) paper about Italian regional differences in IQ. They used Raven’s Progressive Matrices and Cognitive Assessment System (Taddir and Naglieri, 2006) to find out difference between Intelligence and Achievement Motivation among the north-south children of Italy. The result revealed that similar level of performance of northern and southern Italian in fluid Intelligence and PASS (Planning, Attention, Simultaneous and Successive) cognitive abilities.

2.1.4 Studies Related To Achievement Motivation:

Kight, H.R., and Sarsenrath, J.M. (1966): when conducted a study with 139 undergraduate pupils showed that high Achievement Motivated students learned efficiently through programmed leaning than low Achievement Motivated students on all the three criteria of immediate, retention and transfer learning scores.

Reed, L. (1970): investigated the relation of Achievement Motivation and the degree of responsibility attributed to the self for success and failure to school achievement. The data were collected from elementary school children by using Children’s Achievement Motivation Scale and Crandall’s Intellectual Achievement Responsibility Questionnaire. The result revealed that high Achievement Motivation was strongly related to a belief in self-responsibility for both success and failure. Both
the factors of Achievement Motivation and belief in self-responsibility for success contribute to and were needed to predict school performance.

Castenell, L.A. (1983): investigated whether adolescents were capable of maintaining differing levels of Achievement Motivation across their different areas of experience and whether the capacity to do so varies with their race, socio-economic status and sex. The sample of the study consisted of 310 eight graders and the investigator attempted to access whether adolescents of varying backgrounds differ in their levels of general and area-specific (school, peer and home) Achievement Motivation. The data were analysed through a 2x2x2 Analysis of Variance. The study found that there were significant differences on general measures of Achievement Motivation as well as on the area specific measures. The study suggested that race, sex and class exercise a great influence on specific types of Achievement Behaviour.

Farmer, H.S. (1987): investigated a multivariate model for explaining the gender differences in career and Achievement Motivation. The findings revealed that there was no difference for man and women as far as strength of Motivation was concern but there was significant difference as far as patterns and type factor influencing Motivation was concern.

Schultz, G.F. (1993): examined the relationships between socio-economic advantage, Achievement Motivation and academic performance in an urban elementary school with a population of 130 minority students (African-American, Hispanic). Level of socio-economic advantage (more/less) was determined by school records and a self-report measure of Students’ Self-Efficacy Intrinsic Value, and Self-Regulatory Learning Orientation were used to determine level of Achievement Motivation (high/low). Multivariate analyses revealed that socio-economic advantage and Achievement Motivation were significant mediators of academic performance in minority children, independent of Intellectual ability.

Perry, R.P., et al (1993): sought to know the enhancing of Achievement Motivation and performance of college students from an attributional retraining prospective. The result revealed that attributional retraining was an alternative method and an important intervention to improve college student’s Achievement Motivation and performance particularly to those students who were academically weak.

Oldari, R. (1997): conducted a study to know whether prenatal environment was the cause for increase in Achievement Motivation. The clinical study of 58 junior college
students revealed that prenatal anxiety of mothers correlated positively with Achievement Motivation.

**Accordion, D.B., et al (2000):** examined the relationship of perfectionism with measures of Achievement and Achievement Motivation and mental health aspects of depression and self-esteem of 123 tenth-through twelfth-grade students. It was found using Multiple Regression Analysis that student's personal standards were significant predictors of academic achievement and Achievement Motivation.

**Janman, K. (2006):** studied how Atkinson's model of Achievement Motivation could predict occupational choices of two different populations. The result was that the theory in the present form was not suitable to predict occupational choices.

**Inkson, J.H.K. (2007):** investigated the Achievement Motivation and Occupational choice of adolescent boys. The result was that Achievement Motivation and vocational preferences were related and also it was in line with the theory of Achievement Motivation. Therefore, the investigator was of the opinion that students with high n-Ach were relatively more attracted towards moderate-probability than to high or low probability occupations. The adolescents had liking for business and engineering occupations and evaluated prospective occupations relatively more in terms of intrinsic work content than extrinsic rewards. Result varied in different social-class groups in a way, which indicated that n-Ach only affects occupational values strongly when it conflicts with value characteristic of the social class of the individual.

**Muola, J.M. (2010):** investigated the relationship between academic Achievement Motivation and home environment among standard eight pupils of 13 to 17 years. The sample of the study consisted of 235 standard eight Kenyan pupils from six urban and rural primary schools randomly selected from Machakos district. The Simple Profile (SP) and Home Environment Questionnaire were used to collect information on the pupil's levels of academic Achievement Motivation and home environment. Result showed that pupil's motivation to do well in academic work was to some extend dependent on the nature of their home environment.

**Ates, A. (2011):** conducted a study on self-efficacy beliefs, Achievement Motivation and gender as related to educational software development with 46 senior students of computer education and instructional technology department. The Scale of Self-Efficacy Beliefs Towards Educational Software Development (ESD), Achievement
Motivation Scale and students' demographics forms were used to conduct the study. The result revealed that there was significant difference in the level of Achievement Motivation before and after the result.

Abd-El-Fattah, S.M., and Patrick, R.R. (2011): Examined the relationship among Achievement Motivation orientations, academic achievement and interest and whether achievement goals mediate their relationships, with a sample of 503 students from 8 secondary schools of two Australian cities using measures of Individual Oriented Achievement Motivation (IOAM), Social-Oriented Achievement Motivation (SOAM). Results showed Individual Oriented Achievement Motivation (IOAM) and Social Oriented Achievement Motivation correlated positively.

Glaser, R.G. (2012): studied the relationship between personality and Achievement Motivation and career choice on a sample of 136 participants recruited through the psychology subject pool at Murdoch University through snowballing technique. There was positive significant relationship between achievement motivation and general leadership which indicated that individual with high achievement motivation always wanted leadership role i.e. management position in an organization.

2.1.5 Studies Related To Occupational Aspirations:
Berman, Y. (1972): conducted a study on Occupational Aspirations of 545 female high school seniors. The relationship was studied between ethnic group membership and Occupational Aspirations and result found was that ethnic group membership was a factor in the determination of Occupational Aspirations.

Burlin, F. (1976): investigated the relationship of parental education and maternal work and Occupational Status to Occupational Aspiration in adolescent females. The result revealed that there was significant association between Occupational Aspirations and father's education and between Occupational Aspirations and mother's occupational status.

Dunne, F., et al (1981): conducted a study on sex differences in the educational and Occupational Aspirations of rural youth. The sample of the study consisted of 926 rural girls and 861 rural boys in grades 10, 11 and 12 who answered questions concerning educational and Occupational Aspirations. The young women showed significantly higher Occupational Aspirations and equal wages of job choice.
Odell, K. S. (1989): studied on gender differences in the educational and Occupational Expectations of rural Ohio youth of 248 females and 243 males, in grades 10 and 12 at four rural Ohio high schools. Geographically representative of the state, were surveyed to ascertain their educational and Occupational Expectations. The instruments used for data collection were – Student Information Questionnaire (SIQ) by Dillman and the Standard Occupational Classification Manual. The result showed that the young women showed significantly higher educational and Occupational Expectations than did the males.

Maqsud, M. (1992): conducted a study on trends in Occupational Aspirations of rural Secondary School leavers in Bophuthatswana. The study aimed at exploring trends in Occupational Aspirations of rural Secondary School leavers and also examined the relationship of their choices to work categories to their socio-economic backgrounds and sexes. The result of the study found that significant proportions of the subjects restricted their Occupational Aspirations to few occupations. It was also found that Occupational Aspirations of a sizeable number of subjects did not match with their academic subjects studied. The subjects’ Occupational Aspirations were significantly associated with their sexes and socio-economic backgrounds.

Rojewski, et al (1997): The National Education Longitudinal Study of 1988 was used to investigate the longitudinal influence of select demographic and latent variables on the development of adolescent’s Occupational Aspirations at three critical points in the career development process early, mid and late adolescence. Linear structural equation analysis examined the contributions of demographic variables, socio-economic status, self-esteem, locus of control, educational aspirations, and academic achievement on adolescents Occupational Aspirations measured at grades eight, ten and twelve. Occupational Aspirations of adolescents were relatively stable across the four year time period. Further, earlier aspirations offered significantly predictive power for subsequent ones. Structural coefficients for social demographic variables indicated that socio-economic status had significant effects on adolescents’ aspirations. In contrast, two latent variables, academic achievement and self-evaluation, initially represented only modest effects on aspirations which then decreased consistently over time.

Bajema, D.H., et al (2002): studied to determine the aspirations of rural youth and to identify perceived support for and barriers to achieving their goals. The population for
this study included high school seniors enrolled in public and private schools in a geographical area of northwest Iowa called Area Education Agency IV (AEA 4). AEA 4 was selected because all the schools were classified as rural schools and all communities had a strong agricultural history. A questionnaire developed by the Northwest Regional Laboratory to measure aspirations of youth was adapted for use in this study (Ley, 1996). Result found that town and farm students alike had diverse educational and Occupational Aspirations. A high level of congruence was observed between the students’ Occupational Aspirations and their educational goals. Students perceived that the environment provided by their schools was supportive of their aspirations.

**Bakar, A. R., and Mohamed, S. (2004):** a study was conducted to assess the academic performance, educational and Occupational Aspirations of students from Technical Secondary Schools. Two hundred forty-three students were involved in the study. The findings of the study showed that Technical Secondary School Students had high educational aspirations. The majority planned to study for at least a Bachelor degree. About 76% of them planned to enrol in technical courses especially in engineering. About 60% of the students had an average general academic ability and about 50% had an average academic ability in mathematics and sciences. No significant correlations were observed between academic achievement and educational aspirations and Occupational Aspirations. The majority of the students were confident in obtaining a place for further education, the area of studies and the occupation they aspired for. Students were moderately knowledgeable about the field of studies and occupations they aspired for.

**Mburza, A. (2004):** studied the Occupational Aspirations of 603 senior secondary female school students of Borno State, Nigeria by using the Vocational Interest Inventory (VII) designed by Bakare (1997). Stratified random sampling technique was employed to select eight female Senior Secondary Schools. The data on student’s Occupational Aspirations were analysed using simple percentages. The level of relationship between Occupational Aspirations of boarding and day female students at 0.05 probability levels was calculated by using Spearman Rank Correlation Coefficient. It was found that there was a big gap in the level of Occupational Aspirations between the two groups of school students.
Patton, W., and Creed, P. (2007): conducted a study on the relationship between career variables and Occupational Aspirations and expectations for Australian high school adolescents. The study surveyed 925 Australian high school students enrolled in grades 8 through 12 on measures of Occupational Aspirations, occupational expectations, career status aspirations and career status expectations. Adolescents generally aspired to or expected to work within a small range of RIASEC (Realistic, Investigative, Artistic, Social, Enterprising and Conventional) occupational categories. One third of students reported Occupational Aspiration and expectation discrepancies. Students generally held higher occupational status aspirations than expectations, and male students were more likely to choose professional occupations than were female students. Age differences were found for status expectations but not for status aspirations.

Creed, P. A., et al (2009): studied the career decision-making, career barriers and Occupational Aspirations of Chinese adolescents. The study tested the relationship between Occupational Aspirations/expectations (type and status) and decision making difficulties, efficacy and career barriers of 498 Chinese high school students. It was found that the male participants aspired to be of investigative and enterprising types, but expected to be realistic and enterprising while females aspired to be of enterprising and conventional types, but expected to be conventional and social. It was also found that the female students with aspirations/expectations type discrepancies were higher achiever but were poor academic achiever, less confident and perceived more barriers.

Beal and Crockett (2010): explored adolescents’ future-oriented cognitions, current activities and later educational attainment using data from 317 adolescents. The findings of the study revealed that Occupational Aspirations were positively related to academic activities but negatively related to vocational activities.

Staff, J., et al (2010): conducted a study on uncertainty in early Occupational Aspirations: role exploration or aimlessness. The investigators used nationally representative data from the National Education Longitudinal Study to examine how uncertainty in Occupational Aspirations in adolescence (age 16) affects wage attainment in young adulthood (age 26). The result found that youth with undecided career ambitions earn significantly lower hourly wages in young adulthood than youth with more certain aspirations.
Kisilu, J., et al (2012): examined the factors that influence Occupational Aspirations of 87 female secondary school students in Nairobi region-Kenya. Data collected through a designed questionnaire were analyzed using descriptive statistics. The findings revealed that the factors which affected girls’ Occupational Aspirations were family settings, parenting, siblings and other relatives. There were other factors too, like students’ personality and self-esteem, the school environment, friends and role models that affected their Occupational Aspirations.

Gemici, S., et al. (2014): studied the factors affecting the educational and Occupational Aspirations of young Australian. Examined the extent to which Occupational Aspirations of teenagers align with their actual job outcomes a decade later. The findings were that the aspirations of 15 years old were somewhat unrealistic, by age 25 years, a significant portion of young people fell short of what they set to achieve occupationally but they later somehow achieve their desired occupations.

2.2 National Scenario:

2.2.1 Studies Related To Vocational Interests:

Pandey, A. (1970): conducted a study of adjustment, personality, values and Vocational Interests of supernormal and normal adolescents. Four hundred adolescents of classes X and XII varying in age from 15 to 18 years served as the sample for the study. The sample was drawn from 1410 adolescents of classes X and XII using both verbal and Non-Verbal Intelligence Tests; half the subjects in each age group were supernormal and the other half normal. The major findings obtained by using Adjustment Inventory, Vocational Blank and an Inventory to measure values were – (1) supernormals developed better Vocational Interests than the normals (2) class XII adolescents developed better Vocational Interests than class X adolescents. Increase in age, education and Intelligence brought betterment to Vocational Interests.

Vohra, H.B.L. (1977): investigated the relationship among intelligence, aptitude, personality, academic achievement and Vocational Choice of polytechnic students. The sample comprised 335 polytechnic final year students (males) from the three popular branches of engineering (Electrical -100, Civil – 110 and Mechanical – 125), selected randomly from six polytechnic institutions. The tools used for collecting data were Raven's Standard Progressive Matrices, Space Relation Aptitude Test from the
Differential Aptitude Test Battery (Form A) by Bennett, Wesman and Seashore, Eysenck’s Personality Inventory, Semantic Differential Scale for Occupational Choices by Mohan and Banth, academic achievements were taken from the official records of the institutions. The major findings of the study were – (1) Intelligence played little role in their choices for technology group of occupations, (2) occupational choice (technology) and aptitude were significantly and positively correlated, (4) the choices of polytechnic students did not have a rational and scientific basis as no relationship was found between the occupational choices and personality, academic achievement and Intelligence of the students.

Sinha, J.C. (1978): made a study on role of family as a unit and Vocational Interest of the intermediate students. The sample of the study consisted of 460 male students having an average intellectual level and studying in Higher Secondary School/Intermediate Colleges of Mathura and Agra cities. Thurstone’s Interest Schedule was used to measure the Vocational Interests of students. Parivarik Sambandh Suchi was adopted and standardized and Home Adjustment Scale of Saxena were used. An adapted form of Kuppuswami’s SES Scale (urban) was used to study the parents’ socio-economic status. Sherry and Verma’s Personal Values Questionnaire was also used to study the personal values of parents. Tandon’s Verbal Test of Intelligence was used to study the average students. The findings of the study were – (1) family environment characterized by amicable parent-child relationship inculcated among children love and liking for vocations in the scientific and executive fields (2) family environment characterized by parental avoidance and high economic and social values motivated the students for vocations in computational business and persuasive fields (3) interest of vocations in artistic and musical fields was engendered in the family environment where children were not accepted by the parents and there was an absence of parental democratic values.

Yadav, R.K. (1979): studied the motives for the Vocational Preferences of adolescents. A sample of 600 students of classes XI and XII was selected randomly from five Intermediate Colleges of Agra. Test used in the study were Jalota’s Sadharan Manasik Yogyata Pariksha (Group Test of General Mental Ability), Joshi’s Samanya Manasik Yogyata Pariksha (Test of General Mental Ability), Cattell’s Culture Fair Intelligence Test (adaptation), Mehta’s Samohik Budhi Pariksha and Tandon’s Samoonik Manasik Yogyata Pariksha 1/61 (Group Test of Intelligence).
The findings of the study were: (1) Intelligence and socio-economic status were two factors which start influencing the Vocational Preferences of the adolescents much earlier at the time of choosing their courses of study. Intellectually brighter and economically better off students went to science and commerce streams and poorer ones to arts and in turn their Vocational Preferences were by and large in tune with their course of study. This conclusion extended support to Super’s Developmental Theory of vocational behaviour (2) intellectually, academically and socio-economically, superior adolescents were more definite and specific in their Vocational Preferences than their opposites (3) needs seemed to be stronger motives for Vocational Preferences than values, and adolescents preferred those vocations which could potentially reduce their needs.

Jayapoorani, N. (1982): examined the Vocational Interests of higher secondary school students. The sample of the study consisted of two hundred students of both sexes in the age-range of 15-17 years from standard XI and was selected randomly from the five schools of Coimbatore city. Fifty higher secondary school teachers were also selected. Separate questionnaire was administered to elicit relevant information from the students and the heads of the institutions. The Standardized Differential Aptitude Test (DAT) by G.K. Birnet, H.C. Seashore and A.G. Wesman was used to find out the aptitudes of the students. The study included the five sub-tests on numerical ability, mechanical reasoning, clerical speed and accuracy, language usage (Part-I), spelling and language usage (Part-II) sentences. To find out the Vocational Interest of the students the Vocational Interest Inventory Schedule by Thurstone was used after modifying it to suit Indian conditions. The researcher found that – (1) boys (42%) showed interest in engineering jobs while girls (55%) preferred to work as doctors (2) boys and girls (53%) developed their Vocational Interest during the age-range of thirteen to fifteen years.

Kathuria, P.R. (1982): made a study on scholastic Achievement and Vocational Interests as related to Prolonged Deprivation. The sample of the study consisted of 143 students of grades IX and X, identified as prolonged deprived (N = 301) and non-deprived (N = 112), from the student population of the urban higher secondary schools of Bhilai and Raipur using the Prolonged Deprivation Scale by Tripathi and Misra. Data related to Vocational Interest of the students were collected by employing the Chatterji’s Non-verbal Preference Record Form 962, and the
scholastic achievement of students was measured by their average scores on one external and two consecutive internal examinations. The findings of the study were – (1) the relationship between prolonged deprivation and global Vocational Interests and prolonged deprivation and various fields of Vocational Interest was not found to be significant (2) significant sex differences were found in The Vocational Interests of prolonged deprived boys and girls (3) prolonged deprived and non-deprived students differed significantly with respect to their Vocational Interest.

Kakkar, V. (1983): investigated the impact of Vocational Attitude, Interests and work values on the job satisfaction of women employees. Apart from women employees, the investigator also studied girl students of vocational courses. The investigator had a subsidiary objective in order to study the interrelationship, and factor structure of job satisfaction and Occupational Aspirations of women employees and compared them with 1 girl students of vocational courses. The result was that there was a positive correlation between Vocational Interest and Occupational Aspirations of girls’ students.

Srivastava, L. (1988): conducted a study of the influence of some variables – academic achievement, personality, socio-economic status on Vocational Development. Six hundred boys and girls of 15 to 24 years of age studying in class XII, B.A. and M.A. at different institutions of Agra City formed the sample of the study. The stratified quota random sampling procedure was used in selecting the sample. The tools used for the study include the SES Scale of S.P. Kulshrestha, a Personality Type Test (Introversion – Extraversion), the Vocational Development Inventory of the researcher and Academic Achievement (from the marks in the final years examinations.) The major findings were – (1) there existed a relationship between academic achievement and Vocational Development and SES and Vocational Development (2) no difference was found in Vocational Development at the different educational stages (3) sex difference in Vocational Development was not significant (4) middle SES and academic achievement were the factors which interacted with and led the students to a better Vocational Development (5) Vocational Development was largely dependent upon education, which in turn depended upon social status.
Sodhi, T.S. (1988): studied the Vocational Interests and occupational choices of 1015 adolescent girls studying in class-X. The researcher found from the stratified random sample that very few girls of the sample were able to make correct occupational choices in accordance with their Vocational Interests. Moreover, occupational choices and Vocational Interests were comparatively more congruent for girls of urban background and those belonging to the high-income groups as against their counterparts from semi urban areas and low-income group.

Makhiza L. (1988): made a study of risk-taking, self-esteem and family planning in relation to Vocational Interests. The sample of the study consisted of 400 male students studying in the undergraduate classes of different colleges of Agra City in different streams. The variables taken for the study were – risk-taking, self-esteem and family status. The tools used were a Vocational Interest Inventory, a Risk-Taking Inventory, a Self-Esteem Inventory and a Family Status Inventor. Major findings were – (1) risk-taking and Vocational Interests were significantly related to each other (2) risk-taking was significantly and positively related to literary interests, scientific interests, executive interests, and outside interests but negatively related to agriculture and construction, commercial, persuasive, social and household interests (3) the Vocational Interests of males showed that they were high on executive, social and scientific jobs; moderately interested in persuasive, artistic and literary jobs, and had low interest in commercial, agricultural, household and constructive jobs.

Robert (1988): conducted a study of the socio-economic status and Vocational Choices of students. In the study, 199 higher secondary students from various schools in Madurai and Anna districts formed the sample. Sixty-three parents of the students were also interviewed to ascertain their Vocational Aspirations for their children. The Socio-Economic Status Scale (SESS), the Vocational Interest Record (VIR) and The Parental Aspiration on Children’s Vocations Questionnaire were used. The major findings were – (1) the Vocational Choices of the higher secondary students were independent of their socio-economic status and Vocational Aspirations of their parents (2) both boys and girls had similar Vocational Choices as regards agriculture, arts literature, executive work, commerce, science and social work. However, more girls preferred the vocational ‘household work’ than boys.

Gautam, V. (1988): made an investigation into the educational and Vocational Interests of students at the delta stages and their implications for future curricula. One
thousand students were included in the sample by following the random sampling procedure. The tools used included the Educational and Vocational Interest Forms of S.P. Kulshrestha and an information form developed by the investigator. The major findings were – (1) a significant correlation was found in the preference orders of boys of classes VIII and X is both educational and Vocational Interest areas (2) no significant correlation was found in the preference orders of girls of classes VIII and X is the educational interest area, while in the Vocational Interest area a significant correlation was noted (3) at the class VIII level, no significant correlation was found in the interest preference orders of boys and girls in both educational and Vocational Interest areas, which means that the two groups had different interest preferences (4) at the class X level, no significant correlation was found in the preference orders of boys and girls in educational interest, while in the field of Vocational Interests a significant correlation was noted between these groups (5) significant differences were found between the scores of boys and girls in all the areas of educational and Vocational Interests (6) significant differences in most of the interest areas were found between the scores of rural and urban boys while in case of girls significance differences could be noticed only in a few interest areas (7) a significant correlation was noted in the preference orders of urban and rural students of class VIII in both educational and Vocational Interest.

Bawa, S.K. (1989): conducted a study on recreational, social, religious, intellectual and Occupational Interests for high school students of Punjab in relation to regional and socio-economic differences. 1600 students were selected by both random and stratified sampling technique. An Interest Inventory prepared and standardised by the investigator, Kuppuswamy’s Socio-economic status scale for urban students and G. Trivedi and Udai Pareek’s Scale for rural students were used to collect data. Occupational Interests along with other interest in this study were found to be very largely dissimilar among the subjects belonging to the four regions of Punjab. No dissimilarity of interests (except in a few cases) was found among the subjects belonging to rural and urban areas of the four regions of Punjab. Interests were found to vary with the varying levels of socio-economic status, and no sex difference (except in a few cases) were found in relation to different types of interests.

Gaikwad, K.S. (1989): made a descriptive and an experimental study of educational and Vocational Choice of the students after passing standard X and of efficacy of
guidance services at different levels. The sample of the study comprised 951 students from five schools with career masters, 590 students from seven schools with no career master and 106 students from school with career masters and counsellors. Questionnaires were used for students', career masters and counsellors. The major findings were – (1) most of the students from different socio-economic backgrounds selected the medical and technical streams. Students from the better socio-economic backgrounds selected commerce and fine arts (2) students felt that their choices were appropriate for their aptitudes (3) students’ Vocational Choices were related to their friends’ choices (4) teachers and career master played a significant role in students’ choices (5) students with high intelligence showed definiteness and students with low intelligence were not certain about further courses (6) the higher the intelligence, the more was the occupational information while, lower the intelligence the less the occupational information gained by students (7) due to their parents’ wishes students chose courses for which they had neither aptitude nor the required level of intelligence (8) students’ Vocational Choices were not related to interest, aptitude or intelligence.

Pattinsonsr, P. (1989): conducted a study on economic parameters and interests of vocational stream students. The sample consisted of 11 schools of a district, offering vocational courses to 250 students. In order to collect data the investigator developed a score card to find out the economic parameters of the students. For identifying the Vocational Interests of the students, a three-point Vocational Interest scale was structured and validated. The investigator collected and analysed both primary and secondary data. With regard to Vocational Interests among the students, the findings revealed that the students of both sexes differed significantly.

Chander, P. (1990): a study of the educational and Vocational Interests patterns of tribal High School students and their relationship with intelligence, socio-economic status and educational achievement was made. A sample of 232 tribal high school students was drawn from high and senior secondary schools of district Kinnaur of Himachal Pradesh, using a multistage sampling method. The educational and Vocational Interest Inventory was constructed and standardized by the investigator. The General Mental Ability Test by Julota and the Socio-Economic Status Scale by Kaul were used for collecting data. Analysis of variance (2x2x2x2) was used to analyse the data by taking the educational and Vocational Interest pattern scores as.
the dependent variable and two levels of sex, intelligence, socio-economic status and educational achievement as the independent variables. Major findings were -- (1) the tribal boys were found to have scored high in the business and scientific interest patterns and low in the literacy, artistic and music Vocational Interest patterns as compared to the tribal girls.(2) high-intelligent students achieved higher scores in the social and lower score in the mechanical and business Vocational Interest patterns as compared to the low intelligent students (3) students with high socio-economic status were found to score high in the music and teaching and less in the mechanical and clerical Vocational Interest patterns as compared to the low socio-economic status students (4) high achiever tribal students showed high scientific Vocational Interest patterns as compared to low achievers (5) the interaction effects of different variables on the various Vocational Interest patterns were found to be significant.

Saraswathi, L. (1992): conducted a study on the relationship between personality dimensions and Vocational Interests of pupils of standard X. The sample consisted of 400 students of standard X drawn from various high schools in and around Madurai City. Data were collected by administering Tamil version of the Multidimensional Personality Inventory by Manu Rani Agarwal and The Vocational Interest Record by Kumal Trivedi. Pearson’s Product-Moment Correlation and Chi-square techniques were employed for statistical analysis. The major findings were -- (1) the personality dimensions and the Vocational Interests of standard X students were not related (2) the Vocational Interests of standard X students and their academic achievement were not related either.

Sundararajan, S. (1993): made a study on Vocational Preference of higher secondary students. 560 first year higher secondary students from 8 higher secondary schools in Chidambaram district were selected. The study found that (1) the boys and girls did not differ significantly with regard to their preference on three vocations namely the medical, engineering and the district collector (2) in respect of the aided and government school students, no significant difference was found in respect of first two vocations but significant difference was seen in respect of the third vocation, viz. district collector (3) in respect of the other categories of students, significant differences in the percentages were found with regard to all the three vocations (4) there was no association between the gender and most preferred three vocations (5) as regard the aided and government school students, there was no association between
them and their most preferred third vocation viz., the district collector but not so in respect of the first two vocations.

Jansari, A. (1995): made an investigation on impact of cognitive styles of students on Vocational Interests. Randomly selected 480 students were considered as sample with equal number of male and female. The sample was further sub-divided into urban and rural, caste and cognitive styles. The factorial design of 2x2x2x2 with 30 students in each of the 16 cells were employed. The tools used were Gottschaldt Figure Test for cognitive style, and Badami’s Vocational Interests Inventory (VII) were used to collect data. The investigation concluded that cognitive style did not influence Vocational Interest except for vocations classified under computational area. The Vocational Interests depended on the interactions of sociological variables and also such interactions varied from one area to another area of vocations.

Trivedi, S. (1999): conducted a study to explore the effect of mother’s education on the Vocational Interest of their children. The major findings were – (1) the boys of educated mothers were more interested in making household vocational field, their means of livelihood by adopting job of home-manager and expert in cooking in the in the absence of any other job. No differences were found in the remaining fields such as commercial, agriculture, social, artistic and executive, etc. (2) in case of girls differences were found as the girls of educated mothers were more interested in the executive, artistic and social fields (3) boys of educated mother and girls of educated mothers were found significantly different in commercial, agricultural, artistic, social and household fields.(4) boys of educated mothers had more interest in commercial, agricultural field, whereas girls of educated mothers in artistic, social and household fields (5) in case of boys and girls of uneducated mothers significant differences were found in commercial, artistic, agricultural and household fields.

Yadav, R.K. (2005): studied the relationship between needs and Vocational Preferences of adolescents. The sample consisted of 200 students of class XI belonging to the faculties of Arts, Science and Commerce. Tools used were Tripathi’s Personal Preferences of students. The study found that need achievement has got negative correlation with biological sciences. Need difference had no significant correlation with any of the vocational areas. Need order had significant relationship with five fields of Vocational Preferences. These areas are biological sciences, computation, persuasive, linguistic and humanitarian.
Nandwana, S., and Asawa, N. (2007): conducted a study to assess the Vocational Interest of high and low creative adolescent. A representative sample of 120 boys (60 high scorers on creativity and 60 low scorers on creativity) and 120 girls (60 high scorers on creativity and 60 low scorers on creativity) in the age range of 14-18 years, belonging to middle income family were randomly selected. Two major tools were used for data collection i.e. Verbal Test of Creativity and Comprehensive Interest Schedule. It was found that both high creative boys and girls had more focused on Vocational Interest as compared to their low counterparts. They were more expressive and self actualized. Creativity was significantly related to Vocational Interest of boys and girls.

Asha (2009): examined the scholastic achievement and Vocational Interest of adolescent of educated and uneducated mothers. The sample of the study comprised of both adolescent boys and girls of educated and uneducated mothers. It was found that the Vocational Interest of the boys of educated mothers was higher than the boys of uneducated mothers.

Mattoo, M I. (2011): had carried out a comparative study on Vocational Interests and academic achievement of secondary school students at different levels of Creative Thinking Ability. A total of 1000 students as sample (700 boys and 300 girls) were selected from 26 secondary schools of Kashmir Valley. The tools used to collect data were Baquer Mehdi’s Verbal Test for Creative Thinking Ability and Chatterji’s Non-Language Preference Record. The criteria of top 25% (Q3) and bottom 25% (Q1) i.e. extreme groups (high and low) were identified. Two way analyses of variance was used to study the differences between these two categories. The investigator found that the Vocational Interests and Creative Thinking Ability of the two groups differed significantly.

Singh, A. (2014): conducted a comparative study vocational Interest of secondary level students. Vocational Interest Record (VIP) by Dr. S.P. Kulshrestha was employed and statistical methods like Mean, S.D. and t-Test was used to analysis the data. The investigator found that the Mean of girls to be slightly higher than that of boys in some field thereby indicating that girls were slightly more interested in literary, commercial, constructive, artistic, social and household fields whereas boys were slightly more interested in scientific, executive, agriculture and persuasive fields.
2.2.2 Studies Related To Information Technology:

Biswal, B. (1980): studied the strategies for effective utilization of School Broadcast Programme (SBP) in Orissa state. The All India Radio, Cuttack and the schools listening to the broadcast programmes were the sample of the study. In order to study the facilities and reactions, questionnaire were developed and used by the investigator. Criterion test was developed to measure the achievement of the students; pro forma and unsaturated interviews were also used to collect data. The major findings of the investigation were – (1) the number of broadcasts for particular grades were less and for grade X there was no programme. Also several subjects were neglected (2) experts were not given training in writing scripts for radio lessons and they felt that teachers in the schools did not known how to make use of SBP (3) among the respondents, 62 percent of the schools had been found not using SBP and wherever the programmes were used, there was no systematic arrangement to sit, and no guidance was given to students about the use of SBP. Even teachers were not trained to make use of SBP (4) teachers felt that English lessons were difficult for students to understand. Students had interest is listening to radio lessons and half of the students expressed the desire to have radio lessons daily (5) student’s achievement was found to be above 56 percent in two programmes, above 60 percent in ten programmes and above 70 percent in four programmes which were selected for this purpose (6) the strategies developed for effective utilization of SBP were significantly effective where compared to the radio broadcast alone. Students and teacher favoured the strategies and (7) the strategies were feasible in terms of time, schedule and cost involved.

Kothari and Chowdhari (1995): studied the impact of Television Programmes on behaviour of students of different age levels and they found that girls had more positive effect on their emotional and creative behaviour than boys. As regard the impact of Television Programmes on moral behaviour, negative effect was more than the positive one.

Reddy, G.L., and Ramar, R. (1995): the study was an attempt to develop Multimedia Modules for Mathematics for the use of low achievers studying in class VIII and to measure their effectiveness and also assess their advantage over the traditional lecture method. The sample of the study comprised of 50 low achieving students of VIII class from SSHN higher secondary school, Muhavoor. They were
divided equally to constitute experimental group and control group following the systematic random sampling technique. The control group was taught through traditional lecture method and experimental group through the Multimedia Modular approach. The study found that – (1) the control group of low achievers performed significantly better in their post test as compared to their pre-test performance and so were the experimental group (2) on the post-test the experimental group performed better than the control group (3) the normal group comprising high achievers performed significantly better than the group subjects as well as experimental group subjects.

**Chakraborty, P. (1995):** conducted a study to find out the attitude of high schools of selected states of North-East India towards Computer Education course. The sample comprised 1142 students and 66 teachers from 34 high schools. The tools used were separate questionnaires for the teachers and students. ICSE final examination marks of class X were used for measuring the performance of students in the Computer Study and their performance in other school subjects and an Attitude Scale to measure the attitude of students towards Computer Education were used. The study found that the students had a favourable attitude towards Computer Education course and no difference was found between boys and girls in their attitude towards Computer Education course.

**Chetanlal, N. (1998):** conducted a study to explore the effectiveness of Video Teaching – learning materials for teaching the subject of Home Science in secondary level. The sample comprised of 102 class XII students selected from three different schools situated within a radius of one kilometre. The findings of the study were – (1) pre-test scores of the three groups belonging to three levels of Intelligence and their interaction effects were not found to be significant (2) students exposed to Video-Teaching learning material and Video-Aided instruction achieved higher as compared to conventional teaching (3) Video-Teaching learning material and Video Aided instruction were not found significantly different (4) on retention test scores significant difference were observed in three different treatments. Students exposed to Video Teaching learning material and Video-Aided instruction retained more concepts in Home Science as compared to conventional teaching (5) majority of students had favourable attitude towards Video Teaching learning material.
Thatte, C.H. (1998): conducted an experimental study of the relative effectiveness of Programmed Learning and learning through Audio Visual Aids with reference to certain selected topics from the syllabus of Science for standard V to VII in Greater Bombay. The sample of the study was eight schools of Greater Mumbai. Twenty four different classes were considered and the total number of students was 1381. The question paper set by the investigator based on the topic was used as tools for data collection. The study found that— (1) Audio Visual Aids methods was found to be significantly more effective than the Programmed Learning method and the traditional method in terms of achievement for standard V, VI and VII. (2) Programmed Instruction Method was found to be significantly more effective than the traditional method in terms of achievement at standard V, VI and VII. (3) Programmed Learning Method and Audio Visual Method were more successful when the classes were small, at the same time they were more effective for average students (4) Male and female students, both, equally benefited through the Audio-Visual Method as well as Programmed Learning Method. No significant effect of interaction between treatment and sex was found on the achievement of students.

Khurwadkar, A. (1999): studied to develop a Computer Software for learning Chemistry at standard IX. One of the English medium schools of Baroda City was taken for implementing the developed Software. One section of standard IX (science) was taken and thirty students were selected randomly as sample for the experimental group and rest of the students of the section constituted the control group. The Software developed by the investigator was used as treatment tool. Achievement test constructed by the investigator was used as a testing tool. The developed Software package was found to be effective in terms of academic achievement of the students. The students and teachers were found to have favourable opinion towards the Software package.

Muthair, M. Z. (1999): studied to develop a Computer Programme to assists for teaching of English language to VIII standard students. The study revealed that the students with different I.Q., motivation and attitude achieved more in learning vocabulary, grammar and comprehension, when the Computer was used to its full potential. It helped the students learn better because it provided them with lot of freedom and responsibility to learn at their own pace. The students were found to have positive attitude towards Computer Assisted English Language instruction.
Thillaka, S., and Pramilla, K.S. (2000): studied the use of Computer Multimedia Programme in Learning Trigonometry among high school students. Experimental and Quantitative method were adopted for the study. A sample of 62 students studying in class IX, Madras was selected for the study. The probability sampling method was chosen for the study. Attitude Scale was used for data collection. The major findings of the study were – (1) there was no influence of Computer-Based Multimedia Programme on the achievement in Mathematics among high school students (2) there was no significant change in their attitude towards Mathematics after learning Trigonometry through Computer-Based Multimedia and text-based self-study material.

Samal, Y. (2000): conducted a study on effectiveness of the School Broadcast Programmes of All India Radio (AIR) and Educational Television (ETV) Programmes of Doordarshan with reference to school achievement of the learners. A sample of 120 students and 20 teachers was used for the study. Also 20 ETV Programmes and 10 Educational Radio Programmes were selected for the study. Six tasks were constructed for the study. The achievement test was constructed for the study. The data were analysed both quantitatively and qualitatively. The study found that – (1) both the ETV and School Broadcast Programmes had positive effect on school achievement of pupils.

Tare, J. (2001): studied the effectiveness of branching variety of Programmed Instructional Material (PLM) as Diagnostic and Remedial Tool in Chemistry for secondary classes in Jabalpur Division. The sample of the study consisted of 280 students from different government higher secondary schools of urban and rural areas of Jabalpur Division. A branching programme was developed on Atomic Structure and chemical Bonding and pre-test and post-test were constructed by the investigator. The study found that – the achievement of the urban girls through PLM was significantly higher than that of the urban boys.

Desai, B.Y. (2004): made a comparative study of the efficacy of teaching through the Traditional Method and the Multimedia Approach in the subject of Home Science. The sample of the study constituted 98 students of B.A. first year Home Science (2001-2002) of Smt. J.P. Shroff Arts College. The multimedia package constituted of transparencies, pie-graphs, charts, diagrams, pictures, video tape, audio tape and slide set was well developed by the investigator. All the tests: pre-test, post-test, retention
test and opinionnaires was well constructed by the investigator and the Intelligence Test by Dr. K.G. Desai was used. The study found that the mean achievement of the experimental group was significantly higher than that of the control group. From post-test to retention test almost equal reduction in performance was found in both the groups. The study arrived at significant findings when caste, location, income, standard XII examination marks, and IQ of the students were considered as co-variables. The students were found to have favourable opinions towards the Multimedia Approach.

**Yadav, K. (2004):** conducted a study on development of an IT enabled Instructional Package for Teaching English medium students of Vadodara city. 20 students were randomly selected from standard VIII of the New Era Senior Secondary School, Baroda. Pre-test, post-test and opinionnaire were used for the study. There was significant gain in terms of students’ achievement through IT-enabled Instructional Package. The students and teachers were found to have favourable opinion towards the developed instructional package.

**Barot, H.M. (2005):** the study was conducted to develop Computer Assisted Instruction (CAI) in Sanskrit for standard VIII students and to study its effectiveness in terms of mean achievement of students in Sanskrit and to study the reactions of the standard VIII students regarding the effectiveness of the developed CAI package. 86 students of standard VIII of Shree Ambe Vidhyalaya, Baroda constituted the sample for the study. A single group pre-test and post-test design was employed for the study. Achievement Test and Reaction Scale were constructed by the investigator. Flash MX, Coral Draw 11 and Front Page were used for the development of software. The developed CAI in Sanskrit was found effective in teaching Sanskrit to VIII standard students. The reactions of the students towards the developed CAI in Sanskrit were found positive.

**Rathod, J. (2005):** studied the development and implementation of an Information Technology based instructional package for English Grammar to Gujarati medium students of standard VIII of Jamnagar city. 100 students were randomly selected from standard VIII of Smt. G.S. Mehta Municipal Girls High School, Jamnagar. The developed IT based instructional package was found to be effective for teaching English Grammar because there was significant difference in the gain mean scores of
the experimental group and control group. The students were found having positive
reactions towards the developed IT based instructional package.

Anuradha, K., et al (2006): conducted a study on television viewing behaviour of
adolescents – its impact on their academic achievement. The sample of the study
consisted of 48 adolescent (24 boys and 24 girls) along with their mothers selected
randomly from government Telugu Medium Schools (9th, 9th and 10th standards) of
Tirupati town. Adolescent’s TV viewing behaviour was collected from students as
well as their mothers by using two tools omnibus schedule for Parents’ and omnibus
schedule for Children’ (both developed by Anuradha and Bharathi, 1988). Academic
achievement was obtained from school records. The study found that – the mean
Television viewing time for boys was 166.47 minutes (sd = 98.7) and the same for
girls was 182.89 minutes. (sd = 93.820). Adolescent did not differ significantly in
their TV viewing behaviour according to sex, grade and type of family. The
percentage of marks was found to be more for adolescents with cable connection than
with those without cable connection.

Meera (2006): conducted a study on utilisation and effectiveness of Educational
Television Programmes at primary school level. The purposive sample technique was
used to select a sample of 40 students. The tools used were Questionnaire for
Headmasters and Teachers, Achievement test of class III in EVS and Mathematics,
Achievement Test for class V in EVS and Mathematics, Teacher Attitude towards
Educational Television (ETV) Programmes – a rating scale, learner reactions towards
ETV Programmes – an Interview Schedule. The study found that ETV lessons in
Mathematics and EVS (SC and SS) taught to students of both class III and V
significantly improved their learning achievement as compared to their counterparts
taught through traditional methods. The experiment also showed that ETV lessons
developed more favourable teacher attitude and learner reactions towards ETV
programmes.

Kumar, R. (2007): conducted a comparative study of the effectiveness of three
instructional systems for teaching IT to secondary school students. The study
attempted to find out the best instructional method i.e. Conventional, Instructional
System (CIS), Audio-Video Instructional System (AVIS) and Multimedia
Instructional System (MIS) for teaching Information Technology at the secondary
level. For this purpose 120 students were randomly selected from three CBSE
affiliated schools of Bhiwani city, Haryana. It was found that Multimedia Instructional System was the best method, Audio-video Instructional System (AVIS) was the second best and Conventional Instrumental System was the third best method for taking Information Technology at secondary level.


2.2.3 Studies Related To Intelligence:

Sharma, K. (1981): the main aim of the study was to find out the impact of some socio-economic characteristics and Intellectual Abilities of high school students. A sample of 400 male students of class X and XI was selected from three high schools of Aurangabad district. Singh’s Socio-Economic Status Scale (Rural), the Verbal Numerical and Abstract Reasoning Test (VNART), Mohsin’s General Intelligence Test (GIT), Ravan’s Standard Progressive Matrices and a personal data schedule were used. A significant difference was found between science and arts students in General Intelligence Test, numerical ability and non-verbal ability.

Uchat, D.A. (1981): conducted a study to find the relationship between Intelligence Level of standard X students of Rajkot city, their Vocational Aspiration and their fathers’ education and occupation. 1143 students of standard X were selected from twenty-two out of the forty-two high schools of Rajkot city, of which 718 were boys and 425 were girls. The Intelligence Level of the subjects was determined with the help of Desai-Bhatt Group Test of Intelligence. Certain data such as name, age, sex, vocational choice, father’s education and father’s occupations, were collected on a data sheet. The overall relationship of the Intelligence Level and Vocational Aspiration with father’s education and father’s occupation were checked through chi-square test. The major findings of the study were – (1) boys with higher level of Intelligence selected higher-level occupations (2) girls who aspired for higher-level Vocations possessed higher level of Intelligence (3) the Vocational Aspirations of the subjects (irrespective of sex) were related to their Intelligence level, the subjects of higher Intelligence level possessed higher Vocational Aspirations (4) the Intelligence level of boys and girls with better educated fathers was higher than that of boys and
girls with less educated fathers (5) the Intelligence level of subjects (irrespective of sex) was related with the occupation of their fathers, the children of fathers working in high level occupations had higher level of Intelligence.

Reddy, O.R. (1983): made a study of the n-Achievement and Intellectual capacity of high school students. A sample of 360 students was selected from class VI, VIII and X, each class having middle and low school performance students. The sample students were administered the Mehta TAT Pictures Test (1969), Raven’s Standard Progressive Matrices (1960) and a family background questionnaire which was locally developed. The findings of the study were – (1) in terms of Intellectual Capacity, the low n-Achievement groups and the high n-Achievement groups differed significantly for all the three classes and mean Intellectual Capacity of high n-Achievement groups was significantly higher than those of the low n-Achievement group students (2) boys and girls did not show any significant difference in their Intellectual Capacity levels except in case of class X in which boys showed significantly higher Intellectual Capacity level than girls (3) in terms of academic levels, students of different levels showed significant differences and Intellectual Capacity of high academic students was the highest and that of low academic students was the lowest (4) the Intellectual Capacity of class X students was the highest and class VI students the lowest

Tripathy, A.N. (1986): conducted a study of home and personality determinants of Intelligence and social competence of Tribal and Non-Tribal children. The sample of the study consisted of 119 tribal and 130 non-tribal children, with two more intra group variations, i.e., grade (VIII and IX) and six from three high schools of a tribal district of Madhya Pradesh. The subjects were administered the Home Environment Questionnaire, High School Personality Questionnaire of R.B. Cattell and Cattell’s Culture Fair Test of Intelligence. Other instruments used for data collection were Teachers Rating for Social Competence and Academic Achievement Measures. The study found that – (1) tribal and non-tribal children differed significantly in their family socio-economic-status, personality patterns, Intelligence, but not in their total achievement and social competence scores (2) home and personality scores together predicted Intelligence and achievement almost equal (40 percent) both in tribal and non-tribal groups.
Singh, R. (1986): made an investigation into the relationship between Achievement Motivation, Intelligence, (General Mental Efficiency), Introversion, Extroversion, Achievement in Mathematics and a comparison thereof between Haryana and Delhi students belonging to various socio-cultural strata. The sample comprised 184 students from schools of South Delhi and the same number from schools of Haryana. The following tools were used in the study: (1) B.N. Mukerjee’s Sentence Completion (SCI) to secure a measure of Achievement Motivation, (2) Raven’s Progressive Matrices Test to provide a global measure of Intelligence, (3) Kundu’s Introversion Extroversion Inventory (KIEI), (4) Daba’s Socio-Cultural Scale, and (5) Objective based Achievement Test in Mathematics constructed by the investigator. The major findings of the study were that correlation between n-Achievement and Intellectual Efficiency was found significant.

Behera, A.P. (1995): studied the differences in the level of Intelligence among the children belonging to rural and urban areas. The sample consisted of 80 six graders (40 from rural and 40 from urban background) of two Jawahar Navodaya Vidyalayas located at two districts (one rural and one urban) of Orissa. Verbal Intelligence Test by Mehrotra (MGTI, 1984) and Non-Verbal Raven’s Colour Progressive Matrices (CPM, 1960) were used for the collection of data. The result revealed that the urban student’s of Navodaya Vidyalayas scored significantly higher on Verbal Intelligence, but did not show significant difference on Non-Verbal Measures.

Yadav, R. (2000): conducted a study on the Vocational Preferences of adolescents in relation to their Intelligence and Achievement. The sample was 200 intermediate students from 4 intermediate colleges of Agra, by using probability sampling method for the study. The tools were – R.K. Tandon’s Group Test of Intelligence, Thurstone’s Interest schedule, and Achievement Test used for data collection. The findings of the study were – (1) the students preferred administrative jobs rather than job related to music and artistic (2) highly intelligent students preferred jobs related to the area of Physical Sciences, (3) average and below average Intelligence groups did not differ significantly in any of the area (4) the level of Intelligence influenced the Vocational Preferences to a great extent (5) Achievement and Intelligence had good correlations with the area of Physical Science and executive jobs.

Kaur, M. (2001): investigated the self concept of students studying in class IX in relation to their Intellectual Variables. The sample consist of 510 girls students (230
rural + 280 urban) studying in class IX of Punjab by using probability sampling technique. Descriptive school survey method as well as qualitative approach was adopted for the study. The tools used were – (1) Children Self-Concept Scale (Ahluwalia, 1986) (2) Group Test of General Mental Ability (Jalota, 1972), (3) Creative Activities Checklist (Torrance, 1982), and (4) Academic Achievement Test. The study found that – (1) variable of Intelligence and creativity to be positively significant with self-concept in urban as well as in rural.

Aruna, P.K., and Usha, P. (2006): conducted a study on the effect of cognitive style, Intelligence and classroom climate on process outcomes in science. The sample size was 1000 persons and selected through proportionate stratified sampling technique and considered other factors like sex, locality of students and management category of schools. For data collection, the tools used were the following: (1) Group Embedded Figures Test (GEFT) by Otman, et.al. 1971, (2) Standard Progressive Matrices Test (SPMT) by Raven, 1958, (3) Scale of Classroom Climate by Usha and Aruna, (1999), (4) Test of Process Outcomes in Science by (Usha and Aruna, 1999). The statistical techniques used in this study were means, Person’s Product Moment Coefficient of Correlation and three-way ANOVA with 3x3x3 Factorial Design. The study found that – the cognitive style and Intelligence had significant positive correlation with process outcomes in science.

Swain, C. B., and Parida K. A. (2010): the investigators had tried to study socio metric status in relation to 14 personality characteristics and Intelligence of high school students. The sample of 124 male students divided into three groups of 45, 42 and 37 was selected by using purposive sampling technique from one district of Orissa. The tools used were – (1) Oriya version of Cattle’s (1986) Jr. Sr. High School Personality Questionnaire, Form-A by B.B. Mishra (1989), (2) Cultural Fair Intelligence Test, Scale-2, Form-B and (3) Socio Metric Rating Scale (Developed by the investigation). Statistical Techniques used were – Product Moment Correlation and t-test and the study found socio metric status was positively and significantly correlated with Intelligence. Popular had been found to more Intelligent than rejections.

Sharma, L., and Madan, P. (2014): studied the effect of individual factors like intelligence, past self-employment experience, past work experience and educational course of professional students on their decision to take up entrepreneurship as a
career choice. The sample consisted of 530 final year students of various professional courses like MBA, PGDM, MCA, B. Tech, BHMCT, & B. Pharm. They found that students with high Intelligence had no or little liking for entrepreneurship whereas students from MBA, PGDM, MCA & BHMCT were somewhat better inclined towards entrepreneurship in comparison to the rest of the courses.

2.2.4 Studies Related To Achievement Motivation:

Bhargava, V.P. (1972): conducted a study of level of aspiration and need for Achievement. The sample consisted of 120 male subjects in the age group of seventeen to twenty years studying in the post metric classes in the colleges at Agra. The following tools and techniques were administered to the sample: (1) The Code Experiment and GDS; (2) The McClelland’s TAT Picture Cards; (3) The Mukherjee’s Sentence Completion Test; (4) Questionnaire for measuring levels of aspiration following Clark, Jeevan and Ricciuti. The findings revealed that – there was no correlation between the level of aspiration and Achievement Motivation scores; there was extremely low correlation between the n-Achievement scores obtained on TAT Cards and SCT; TAT cards were found to be better measure of Achievement Motivation than SCT.

Chaudhary, N. (1974): conducted a study on the relationship between Achievement Motivation and anxiety, Intelligence, sex, social class and Vocational Aspiration. The sample consisted of 200 boys and 209 girls from higher secondary schools of Amristar, Jullundur and Chandigarh. Metha’s adapted version of the McClelland’s TAT for n-Achievement, the Hindi version of Test Anxiety Scale for children developed by Sarason and others, the Raven’s Standard Progressive Matrices for Intelligence, the Kuppuswamy’s Socio-Economic Status Scale and a self developed Vocational Information Questionnaire for Vocational Aspirations were used. The important findings were – (i) the correlation coefficients between n-Achievement and Intelligence scores for the combined samples, and for boys were not significant, whereas the same was significant at .01 level for girls (ii) Partial Correlations (first and second order), Multiple Correlation, Analysis of Variance and Regression Equations indicated absence of correlation between these two variables (iii) girls had higher n-Achievement score (iv) the hypothesis asserting that n-Achievement and Intelligence were significantly positively related, was rejected (v) students with higher
degree of discrepancy from realistic Vocational Aspirations as compared to the students with low n-Achievement and high test anxiety.

Pathak, C.C. (1974): conducted a study of Achievement Motive, educational norms and school performance of high school pupils. The sample of 1346 students of classes VIII, IX and X from twelve schools in Kaira district. The tools for data collection were – (1) The Thematic Apperception Test, (2) The Madhukar Patel’s Intelligence Test (MPIT), (3) Three Achievement Test prepared by Faculty of Education and Psychology, Baroda, (4) The Desai Attitude Inventory and (5) Perception Inventory, Word Association Test and Value Judgment Inventory developed by the investigator. The investigator found that – (1) the pupils studying in schools of high socio-economic and achieving status had high n-Ach scores as compared to pupils studying in schools of various status combinations (2) boys and girls did not differ on n-Ach components (3) n-Ach score was positively related to pupil’s school performance, attitude towards study and Intelligence.

Agarwal, P.C. (1974): made a study of the correlates of Achievement Motivation. A sample of 500 boys and 500 girls was selected by random sampling technique from the high and higher secondary schools in the state of Haryana. The Socio-Economic Status Scale Questionnaire (SESSQ), The High School Personality Questionnaire (HSPQ), The Adjustment Inventory and The Achievement Motivation Test were the tools of research used in the study. The major findings of the study were – (1) Achievement Motivation and SES variables were significantly positively related with each other (2) the girls had significantly higher Achievement Motivation as compared to boys (3) girls had significantly higher Achievement Motivation than boys on SES, adjustment and personality factors.

Abrol, D.N. (1977): conducted a study on Achievement Motivation in relation to intelligence, Vocational Interest, achievement, sex and socio-economic status. The investigator had considered a sample of 414 students of class-X from six higher secondary schools from the urban area of Delhi and had found that Achievement Motivation was higher among those students who had more of Vocational Interest maturity.

Christian, J.A. (1977): made an attempt to study fear of failure, hope of success, Achievement Motivation, anxiety and concern of the girl students of Sardar Patel University in relation to their socio-economic status and performance. The sample
consisted of 500 girl students of the Sardar Patel University. The tools used were the Pareek and Trivedi Socio Economic Status Scale for rural sample, the Kuppuswamy’s Socio-Economic Status Scale for urban sample, the McClelland’s Thematic Apperception Test, the Birney’s Thematic Apperception Test, The Badami’s Self-Analysis Scale and The Cantril’s Self-anchoring Striving Scale. The research revealed that — (1) there was a significant positive correlation between n-Ach and students’ academic performance (2) there was a significant negative correlation between n Ach and fear of failure and there was greater hope of success feelings than fear of failure feelings in achievement situations.

Chatterji, P.S. (1983): made a comparative study of personality, Intelligence and Achievement Motivation of students in different academic groups. A sample of 760 male students studying in four academic groups, Arts (N = 190), Science (N = 180), Commerce (N = 190) and Agriculture (N = 200) of class XII, was drawn from nine different recognized institutions of the Varanasi region by using the purpose incidental sampling method. The tools – Eysenck Personality Inventory Form A adopted by Srivastava (1976) Jalota’s Group Test of General Mental Ability were used to measure Intelligence. Achievement Motivation was measured by the test developed by Gandhi and Srivastava (1980). Academic achievement was determined on the basis of subjects’ performance at the board examination. The major findings were — (1) Science students were significantly higher in Achievement Motivation in comparison with those in Agriculture and the Arts groups (2) scores on Achievement Motivation of students of Science or Commerce were significantly higher than those of the other groups.

Bharathi, G. (1984): conducted a study of self-concept and Achievement Motivation of early adolescents. The total sample consisted of 360 students (180 boys and 180 girls). The tools used in the study were: (i) Rao Socio-Economic Status Scale (1973) (ii) The Mehta Achievement Motivation Test for High School Boys (1969) (iii) the Self-Concept Inventory with two dimensions - Real Self – Concept and Ideal Self-Concept. The findings of the study were — (1) no sex differences were found in Achievement Motivation. (2) Achievement Motivation was found to be the highest among the high SES groups and lowest is low SES groups.

Intelligence and socio-economic status. The study was conducted on 600 students studying in grade X. Scheduled-tribe students were selected randomly from the three main tribes of Himachal Pradesh. Schedule-caste students were selected from the schools of five districts of Himachal Pradesh. The necessary data were collected by using – (1) The Socio-Economic Status Scale for rural population by Udaip Pareek and G.Trivedi (2) The Group General Mental Ability Inventory by S. Jalota and (3) The Achievement Values and Anxiety Inventory by Prayag Mehta. The researcher found that (1) Scheduled-Tribe and Schedule-Caste students did not differ significantly in relation to their Achievement Motivation (2) boys and girls did not differ significantly in relation to their Achievement Motivation. Boys in both the communities had slightly higher Achievement Motivation than the girls (3) the Achievement Motivation of students differed significantly at different levels of Intelligence, high, middle and low (4) Scheduled-Tribe and Scheduled-Caste students did not differ significantly in relation to their Achievement Motivation at different levels of Intelligence (5) the Achievement Motivation of students differed significantly at different levels of socio-economic status, high, middle and low. (6) Scheduled-Tribe and Scheduled-Caste students did not differ significantly in relation to their Achievement Motivation at different levels of socio-economic status.

Singh, R.R. (1985): investigated the self-concept aspiration and Achievement Motivation of tribal adolescents of Rajasthan. The sample consisted of 500 school-going tribal adolescents both from rural and urban areas of Rajasthan. The finding related to aspirations, revealed that the tribal adolescents studying in city schools possess higher aspirations than the rural tribal students. The tribal students expressed nobler values for selecting their jobs such as helping the disadvantaged or deprived persons of the society. Secondly, the urban tribal adolescents had higher Achievement Motivation than the rural tribal adolescents.

Ahuwalia, I. (1985): made a study of factors affecting Achievement Motivation. The sample consisted of 480 children studying in public, central and government schools. Tools used were – A Background-Information Blank Dependency Test developed by Kaul, Organizational Climate Description Questionnaire by Halpin and Craft and An Achievement Motivation Test developed by the investigator. The findings were (1) gender of the child had no effect on Achievement Motivation (2) age was significantly and positively related to Achievement Motivation (3) academic
performance was positively and significantly related with Achievement Motivation (4) father's education significantly affected Achievement Motivation while mother's education had no effect on Achievement Motivation of children (5) the Achievement Motivation was not affected either by father's occupation or mother's occupation (6) economic status of parents did not affect Achievement Motivation (7) urban/rural upbringing of children had no effect on Achievement Motivation of children (8) size of family did not show any significant relationship with Achievement Motivation.

Mansuri, A.R. (1986): made a study of Achievement Motivation of students of standards V, VI and VII in relation to some psycho-socio factors. The sample consisted of 1100 pupils of classes V, VI and VII of Sabarkantha District. The data of variables were collected by using the SES Scale constructed by Patel, B.V., and Vora, I.A. The J-Scale for measuring Motivation towards School, the Anxiety Scale by Nijhawan, K.R., The General Ability Test of Patel, J.Z., and Achievement Motivation Scale by the researcher himself. The major findings were – (1) the students of successive grades showed successive advancement in Achievement Motivation (2) the students with high SES level were found significantly higher in their Achievement Motivation than those with low SES level (3) the students with low anxiety level had more Achievement Motivation than those with high anxiety level (4) the students having good general ability also had a high level of Achievement Motivation.

Dabir, D. (1986): conducted a study on 9th, 10th, and 11th grades boy and girl students of Nagpur district on their Vocational Aspirations as a Function of Aptitudes and Motivational Patterns. The investigator had found that there was positive and significant relationship between vocational aspirations and Achievement Motivation, which suggested that Achievement Motivation was likely to generate vocational aspirations of the subjects and the hierarchy of needs, was associated with the hierarchy of vocational aspiration of the school-going youth.

Rani, R. (1992): made a study of Intelligence, socio-economic status, Achievement Motivation and academic achievement with reference to pupil's behaviour in classroom. The sample comprised of 500 boys and girls of Science and Arts groups using random purposive sampling technique. The tools used included Pupils' Behaviour Inventory of Wade, Socio-Economic Status by R.L. Bharadwaj, Achievement Motivation Test by D.G. Rao, Group Test of General Intelligence of
S.S. Jalota and achievement marks of high school examination. Major finding was –
girls were higher than boys in Achievement Motivation.

Taj, H., (1997): examined the effect of attitude towards education, parent-child
interaction, Intelligence, sex, type of school management and medium of instruction
of secondary school students on their Achievement Motivation. A sample of 450
students was drawn from 15 different schools of Bangalore. Data were collected with
the help of an attitude scale by Haseen Taj, Intelligence test by RSSB and
Achievement Motivation inventory by Prayag Mehta. The result found that (1) sex did
not have any significant effect on the Achievement Motivation (2) students with
higher Intelligence, high attitude towards education and high parent-child interaction
had comparatively higher achievement related motivation than their counterparts.

Ayishabi, T.C., and Kuruvilla, M. (1998): conducted a study to explore the effects
of maternal employment on Achievement Motivation of school children. The sample
comprised of 871 secondary school pupils attending class IX, from schools of
Kottayam, Ernakulum and Kozhikode district. It was found that – Motivation of
Achievement which was a strong determinant of academic performance was found to
be unaffected by maternal employment in Kerala.

Motivation, home environment and parent-child relationship of adolescents. The
sample of 200 students (100 boys and 100 girls) in the age range of 14-16 years
studying in classes IX and X of senior secondary schools of Hissar (Haryana) was
selected for the study. Home Environment Inventory (HEI) by Kumar Shankar Mishra
(1989), Parent-Child Relationship Scale (PCRS) by Nalini Rao (1989) and Deo-
Mohan Achievement Motivation (n-Ach) Scale by Pratibha Rao and Asha Mohan
(1985) were applied on the sample for the collection of data. The result revealed that
(1) there was no significant difference between girls and boys in Achievement
Motivation (2) Achievement Motivation was positively correlated with child’s
perception of parents as demanding, loving, protecting and rewarding and negatively
correlated with indifferent, neglecting, rejecting and punishing parent-child
relationship.

Sood, P. (2006): made a study on educational choice in relation to academic stress,
Achievement Motivation and academic self-concept among the adolescents of the
intermediate or plus two stage in their academic career. Random sampling procedure
was used to select the sample. One hundred and eighty students studying in the second year intermediate in the junior colleges of Hyderabad and Secunderabad formed the sample. There were 90 boys and 90 girls varying in age from 17 years to 19 years. The Academics Stress Scale (Rajendra and Kaliappan, 1991), Achievement Motivation Scale (Deo and Mohan, 1985) and Academic Self-Concept Scale (Kumar, 1998) were administrated to the sample. The results revealed that no significant gender differences were found in academic stress, Achievement Motivation and academic self-concept in the subjects of four educational streams. Girls exhibited significantly higher Achievement Motivation than boys.

Pandey, S. N., and Ahmad, F. (2007): made a study on Achievement Motivation with reference to sex-differences. The sample comprised of 100 randomly selected students of whom 50 boys and 50 girls were taken from the schools of Azamgarh district. The tools used were – The Achievement Motivation Scale constructed by Uma J. and T.J. Kamalnathan (1998) from the Indian Institute of Technology, Madras to obtain reliable data. In this study the investigators hypothesize that girls and boys differ in terms of their Achievement Motivation and found that the hypothesis being rejected as the Achievement Motivation of boys and girls in all the factors was the same with girls not being inferior to boys in any factor.

Kuruvilla, M., and Usha, P. (2009): made a study on emotional adjustment, Achievement Motivation and academic achievements of adolescents of working and non-working mothers. The sample consisted of 980 standards X students, of whom 412 were children of employed mother and 568 were of non-employed mothers. The following standardized tools were used for data collection – The Scale of Emotional Adjustment developed by Kuruvilla (SEA, 2001), the Scale of Achievement Motivation developed by Kumar (1993) and Achievement Test in Biology developed by Kumar (1992). The results showed that the children of non-employed mothers were found to have higher Achievement Motivation than their counterparts.

Tali, D.B., and Rosy (2012): attempted to assess the vocational aspiration of +2 students in relation to their achievement motivation and some demographic variables i.e. gender, academic stream and of schools. They used Occupational Aspirations Scale by J.S. Grewal and Deo-Mohan Achievement Motivation (n-Ach) Scale by Dr. Pratibha Deo and Asha Mohan on a sample of 200 students of three government schools and three private schools of Yamuna Nagar district of Haryana. Their results
showed that students of both high and low Achievement Motivation did not differ significantly with respect to their vocational aspirations and both boys and girls had equal aspiration and knowledge towards vocational choices.

2.2.5 Studies Related To Occupational Aspirations:
Pillai, G.P. (1977): studied the influence of Intelligence on the Occupational Aspirations of students of class X. The sample comprised of 1899 students (984 boys 915 girls) of class X drawn from twenty-one secondary schools of Trivandrum district. The tools used were an Intelligence Test in Malayalam developed and standardized in the Department of Psychology of Kerala University and a personal data questionnaire to collect information about Occupational Aspirations of students. The major findings of the study were: (1) three groups of students, viz. those aspired for professional and semi-professional occupations (H), those who aspired for white-collar jobs and clerical occupations (M) and those aspiring to enter semi-skilled or unskilled occupations (L) differed significantly in their Intelligence scores. This was true for boys as well as for girls (2) the mean Intelligence score for group H was maximum and for group L minimum for boys and girls (3) intellectually superior children aspired for higher level occupations and those whose intellectual capacity was low aspired only for lower level of occupations.

Annamma, A.K. (1984): studied 1200 college entrants with objectives to gain an understanding of values, aspiration and adjustment. A majority of students had high vocational and educational aspirations, but did not have clear plans relating to selection of vocations. The result revealed that male students exhibited higher aspirations than female respondents and no discrepancies were seen between self and parental aspirations.

Chopra, S. L. (1984): studied socio-economic background and Occupational Aspirations. The sample of the study consisted of 598 boys in the age group of 15 to 16 years. Information was also collected about the occupations of their fathers. The obtained data were analysed to compare the Occupational Aspirations of the students both by an absolute and relative standard. The study revealed that there was gradual fall in the percentage of the students aspiring for professional, administrative and executive occupations as we go down the different occupational groups; the differences in the percentage of students within the different occupational group aspiring for different types of occupation were also analysed and it was observed that
significantly large number of students from the higher occupational group aspiring for occupations higher than similar to and lower than their father’s occupations, the students in three lowest categories of occupations higher than those of their father’s.

Mehta, P.H., et al (1985): conducted a study on influences on level of Occupational Aspirations of adolescents. The sample of the study consisted of 106 boys and 96 girls belonging to a semi-urban area of Haryana and 40 boys and 43 girls belonging to the Delhi metropolis. All the sample students were studying in Class IX of four higher secondary schools, two each in a semi-urban area and an urban area. The tools used were Miller and Haller’s Occupational Aspirations Scale (1964), Raven’s Standard Progressive Matrices and Questionnaire. The study found that – (1) residential status and Intelligence did not influence level of Occupational Aspirations of adolescents (2) for boys, significant predictors of level of Occupational Aspirations were number of occupations known and scholastic achievement (4) the variables that did not predict level of Occupational Aspirations of boys were the SES global index, Intelligence and people not known personally (5) in the case of girls, significant predictors of level of Occupational Aspirations turned out to the SES global index, number of occupations known, people not known personally and intelligence (6) the girls did not consider the role played by scholastic achievement is realizing their Career Aspirations.

Saraswat, A. (1988): conducted a study of Achievement Motivation, Occupational Aspirations and academic achievement of adolescents in different types of school climate in Aligarh district. The sample comprised 1000 male and female students of class X studying Science and Arts in the schools of rural and urban areas of Aligarh district using random sampling procedure. The tools used were Occupational Aspirations Scale of Grewal, Organizational Climate Description Questionnaire of Halpin and Craft and Achievement Motivation Test of Rao. The study found that – (1) boys–girls, rural–urban students, Science-Arts students significantly differed in their academic achievement, Occupational Aspirations and Achievement Motivation (2) the coefficients of correlation among Achievement Motivation, Occupational Aspirations and academic achievement were significant.

Shukla, S.K., and Agarwal, A. (1997): studied the socio-economic status, Intelligence Occupational Aspirations, self-concept and academic achievement of scheduled castes and non-scheduled castes students. The sample of the study comprised of 225 scheduled castes (150 boys and 75 girls) students of class X from
14 aided secondary schools of Lucknow. The study found that the level of Occupational Aspirations of SC students were lower as compared to the non-SC students. The SC boys had low Occupational Aspirations in comparison to non-SC boys, though no significant difference in the Occupational Aspirations level of SC and non-SC girls were found.

Lhungdim, H. (2000): enquired about the Aspirations of adolescents and their implications for Educational Planning. A study in Imphal and Churachandpur towns of Manipur with a sample of 1655 adolescents, the investigator found that aspirations of the adolescents reflected their interest in a particular subject and profession. They aspired to become medical and technical or engineering army officers' professionals.

Hasan, B. (2006): examined empirically whether or not self-concept, Occupational Aspiration and gender work independently or in interaction with each other to generate variance in career maturity in case of Hindi speaking Indian adolescents studying in class-X. A sample of 480 students of class-X was considered for the study. Self-concept, Occupational Aspiration and gender were potential enough in generating variance in career maturity.

Paul, D. (2013): conducted a study on the Occupational Aspirations of the youth in college: a sociological analysis of present and future position of youth in Siliguri city with a sample of 208 consisting of equal number of male and female college students of Siliguri city enrolled in the faculties of social sciences, sciences and professional courses. The investigator found that female students were particular about their occupations whereas the male respondents had variety of career choices but overall Occupational Aspirations was positively related with their present courses.

2.3 Critical Appraised of the Related Literature:
A diagnostic study of the above review of related studies conducted in India and abroad leads to certain substantive inquires which need to be highlighted. Most of the studies whether conducted in India or abroad support multiple results leading to phenomena where the need for further research becomes imperative. In the area of Vocational Interests, it has come to light that research studies found contrary and mixed results. The studies conducted by Srivastava, L. (1988) found that there existed a relationship between Vocational development and socio-economic status. Vocational development was largely dependent upon education that in turn depended
up socio-economic status. Osa–Edoh, G. J and Alutu, A.N.G. (2011) had found in their study that there was significant difference in educational values and career aspirations of the students from high and middle socio-economic status homes in favour of the higher socio-economic status and also there was significant difference in educational and career choices of students from middle and low socio-economic status home in favour of the former. As against this, study conducted by Robert (1988) found that the Vocational choices of the higher secondary students were independent of their socio-economic status and Vocational aspirations of their parents.

In the area of Information Technology, researcher found from various studies conducted in India and abroad that there was a positive effect of Information Technology in teaching-learning of various subjects. As in the study of Mauther, M. Z. (1999) revealed that when the computer was used to its full potential, it helped the students achieve more in learning vocabulary, grammar and comprehension to the learner's with different I.Q., motivation and attitude. It helped the students learn better because it provides them with lot of freedom and responsibility to learn at their own pace. The students were found to have positive attitude towards Computer Assisted English Language instruction. Samal, Y. (2000) found that both the Educational Television Programme and School Broadcast Programmes had positive effect on school achievement of pupils. Rathod, J. (2005), who developed Information Technology based instructional package had found this package to be effective for teaching English grammar and moreover, the students were found to have positive reactions towards the developed Information Technology based instructional package. Yadav, K. (2004) also found a significant gain in terms of students’ achievement through Information Technology enabled instructional package. The students and teachers were found to have favourable opinion towards the developed instructional package. Siddique, U. (2013) confirmed that Computer Assisted Instruction (CAI) was an effective tool for teaching and learning Physical Sciences.

The investigator from review of related literature conducted both in India and abroad on variable Information Technology had found that most of the studies had positive effect of Information Technology on various teaching subjects like English, Sanskrit, etc. and also found positive effect of Information Technology on student’s
achievement. These studies motivated the investigator to take Information Technology as a variable in the present study and to know its effect on Vocational Interests of secondary schools students.

Some other studies conducted in India and abroad in relation to Vocational Interests and Intelligence had found contrary and mixed results. Proyer, R.T. et al. (2012) found in their study that Intellectual strengths had relations with investigative and artistic Vocational Interests. Proyer, R.T (2006) also found positive relation between realistic and investigative Vocational Interests and spatial ability. Waters, E. W. (1954), Uchat, D.A. (1981) and Yadav, R. (2000) had also found in their studies that there was relationship between Intelligence and Vocational Interests. As they found that, the subjects of higher Intelligence level possessed higher Vocational aspirations and highly intelligent students prefer to go to jobs related to the area of Physical Sciences.

Yadav, R.K. (1979) found Intelligence and socio-economic status as two factors which start influencing Vocational Preference of the adolescents much earlier than at the time of choosing their courses of study. Intellectually brighter and economically better off students went to Science and Commerce Streams and poorer ones to Arts and in turn, their Vocational Interests were mostly in tune with their course of study. Chander, P. (1990) also found that high intelligent students achieved higher scores in mechanical and business Vocational Interests pattern as compared to the low intelligent students. And students with high socio-economic status were found to score high in the music and teaching and less in the mechanical and clerical Vocational Interests patterns as compared to the low socio-economic status students.

A contradictory to this study conducted by Gaikwad, K.S. (1989) found that student's Vocational choices were not related to interests, aptitude or Intelligence. Vohra, H.B.L. (1977) had found that Intelligence played little role in choice of polytechnic students for technology group of occupations. The choices of polytechnic students did not have a rational and scientific basis as no relationship was found between their vocational choices and personality, academic achievement and Intelligence. Noronha, A.P.P. et al (2009) found low significant correlation between Vocational Interests and Intelligence of adolescence. Pandey, A. (1970), Sparfeldt, J.R., (2007), and Nandwana,
S. & Asawa, N. (2007) had found in their studies that gifted and high creative adolescents displayed higher Vocational Interests than normal adolescents.

The studies conducted by Asha, (2009) and Trivedi, S. (1999) found that mother's education played an important role in the Vocational Interests of the boys and concluded that Vocational Interests of boys of educated mother were higher than the boys of uneducated mothers.

Again in the area of Achievement Motivation, it has come to light that research studies found contrary and mixed results. Several researchers had reported that gender had no influence on Achievement Motivation of adolescents. (Pathak, C.C.1974; Chauhan, S.S. 1984; Bharathi, G. 1984; Ahluwalia, I.1985; Taj, H. 1997; Rani, S. and Kaushik, N. 2005; Pandy, S.N and Ahmad, F. 2007). However, some studies revealed that girls had higher Achievement Motivation than boys. (Chaudhary, N.1974; Agarwal, P.C; 1974; Sood, P. 2006). Chaudhary, N. (1974) had also found that those who had higher Achievement Motivation had higher degree of discrepancy from realistic vocational aspiration as compared to student with low Achievement Motivation.

Some other researchers had reported that Achievement Motivation and Intelligence were not positively related (Chaudhary, N 1974 and Chauhan, S.S.1984). On the other hand (Pathak, C.C. 1974; Rani, R. 1992; and Taj, H. 1997) found that students with higher Intelligence had comparatively higher achievement related motivation than their counterparts.

Some other researcher reported that socio-economic status; Intelligence and Achievement Motivation were the variables that contributed positively to academic achievement of students. The student of higher SES had higher Achievement Motivation than the pupils of middle or low SES (Christian, J.A. 1977; Castenell, L.A. 1983; Bharathi, G. 1984; Mansari, A.R. 1986; Rani, R. 1992). Contradictory of the these findings Ahluwalia, I. (1985) found that socio-economic status of parents did not affect Achievement Motivation of children.

Muola, J.M. (2010) found that pupils' academic Achievement Motivation related with their nature of home environment. Oldari, R (1997) also found that parental anxiety of mothers correlated positively with Achievement Motivation of students. On the other
hand, Ahulwalia I, (1985) found in his study that size of family did not show any significant relationship with Achievement Motivation.

Again, in the area of Occupational Aspirations it has come to light that research studies found contrary results. Mehta, P.H. et al (1985); and Saraswat A. (1988) found in their studies that there was a strong indication of gender differences on level of Occupational Aspirations. The results of Dunne, F. et al. (1981), and Odell, K.S. (1989) showed that young women showed significantly higher Occupational Aspirations than males. Shukla, S.K. & Agarwal, A. (1997) also found that Scheduled Castes (SC) boys had low Occupational Aspirations in comparison to non-Scheduled Caste boys, though no significant difference in the Occupational Aspirations level of Scheduled Caste and non-Scheduled Caste girls were found.

From the thorough review of related literature published in India and abroad, the investigator came to know that various studies were conducted on the variables like Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations in relation to variables like socio-economic status, gender difference, Intelligence and other variables with Vocational Interests, but no direct study was conducted in India or abroad to know the effect of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on Vocational Interests of secondary school students. Therefore, the present study is not a duplication of work done earlier. It is a novel and challenging one in the days of Information Technology where we need Information Technology literate and skilled work force to fulfil the demand of our job market and it is possible only by knowing Vocational Interests of our adolescence in relation to their Intelligence, Achievement Motivation and Occupation Aspirations. Thus, the present investigation is a relevant one in the age of Information Technology.

Methods of data collection, research design, tool construction, standardization and the various methods of statistics needed for analysing data, which would assist the investigator in arriving to some conclusion are discussed in the next chapter i.e. chapter-3 (Design of the Study).
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Chapter- 3
DESIGN OF THE STUDY

3.1 Research Design
3.2 Population
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Chapter-3
DESIGN OF THE STUDY

Research Design is the most important step of any scientific research. The purpose of this chapter is to give a detailed report of the research procedure adopted for the present study i.e. Effect of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district. This includes the techniques of sample selections, variables of the study, selection of tools, development of tools, strategies followed for data collection, and statistical techniques employed for the analysis of the data. In this regard, the research procedure applied in the present study has been presented in the following sections:

3.1 Research Design
3.2 Population
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3.4 Description of the Variables
3.5 Tools used in the study
3.6 Description of the Tools used in the Study
   3.6.1 Development of Tools
      3.6.1.1 Development of Vocational Interests Scale
      3.6.1.2 Development of Scale on Effect of Information Technology for Vocations
   3.6.2 Non-Verbal Intelligence Test (measures ‘g’)
   3.6.3 Rao Achievement Motivation Test.
   3.6.4 Occupational Aspiration Scale OAS - G.
3.7 Administration of the tools.
3.8 Data Analysis Procedure.

3.1 Research Design:
Research is a structured inquiry that - utilizes acceptable scientific methodology to solve problems, and to create new generally applicable knowledge. Design gives a particular shape to an object, things that become relevant, meaningful, and appreciable for others.
According to Kerlinger, F.N. (2011), research design may be referred to as the plan, structure, and strategy of investigation, conceived so as to obtain answers to research questions and control variances. Research design can also be said to be a mapping strategy. It is essentially a statement of the object of inquiry and the strategies for collecting the evidences, analyzing the evidence, and reporting the findings. Research Design helps the investigator in testing the hypotheses by reaching valid and objective conclusions regarding the relationship between dependent and independent variables. The selection of any research design is obviously not based upon the whims of the investigator; rather it is based upon the purpose of the investigation, types of variables and the conditions under which the research is to be conducted. The purpose of any research design is to provide maximum information relevant to the problem under investigation at a minimum cost.

In the present study, the design adopted to analysis the hypotheses can be categorized as descriptive survey in nature, which is one of the quantitative research methods. According to Gay and Airasian, (2000), descriptive data are generally collected through questionnaire, interview, telephone, or observations. Descriptive research studies are designed to obtain pertinent and precise information concerning the current status of phenomena and whenever possible to draw valid general conclusions from the facts discovered. It is concerned with conditions or relationship that exist, practices that prevail, beliefs, point of views or attitudes that are held, processes that are going on, effects that are being felt or trends that are developing. Descriptive research is mainly concerned with ‘attitudes, opinions, preferences, demographics, practices, and procedures (Gay and Airasian, 2000).

The present investigator seeks to study the effect of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district.

3.2 Population:
A population is defined as a group of individuals with at least one common characteristic which distinguishes that group from other group of individuals and which are of interest to the investigator. In this study, secondary school students of Aligarh district constituted the target population irrespective of their caste, creed, religion, and family occupation.
3.3 Sample:
The representative proportion of the population is called a sample. Sampling is the process by which a relatively small number of individuals or measures of individuals, objects, or events is selected and analyzed in order to find out something about the entire population from which it was selected. It helps to reduce expenditure, save time and energy, permit measurement of greater scope, or produce greater precision and accuracy. Sample is not selected haphazardly but rather they are chosen in a systematic way according to some rule or plan so that they are representative of the population.

The main consideration in the selection of the sample is its representativeness. In this study, representativeness was ensured by adopting simple random sampling without replacement selection technique. Sampling without replacement means that there is no repetition or duplications of the units in the sample. For the purpose of selection of the institutions from where the target sample was to be taken, the investigator collected the list of secondary schools of Aligarh district affiliated to Central Board of Secondary Education (CBSE) from its website. The investigator selected – schools through lottery method from this list of thirty-five (35) CBSE affiliated schools. A sample of one thousand (1000) CBSE affiliated secondary school students consisting of five hundred (500) boys and five hundred (500) girls of Aligarh district were selected for this study by using simple random sampling without replacement technique. The list of CBSE affiliated schools from where the sample students were taken is affixed in Appendix – VI.

3.4 Description of the variables under study:
A variable as the name implies is something, which varies. Variables may be defined as those attributes of objects, events, things and beings, which can be measured. In other words, variables are the characteristics or conditions that are manipulated, controlled, or observed by the investigator.

A research problem seeks to analyze the relationship between two or more variables under study. In order to arrive at the expected answer of the research problem, research hypotheses are formulated which determines the probable relationship between dependent and independent variables.
3.4.1 Dependent Variable:
The dependent variable is defined as one about which the investigator makes a prediction. The variable being affected or assumed to be affected by the independent variable is called dependent variable. In the present investigation Vocational Interests was the dependent variable as the effect of four independent variables were to be seen on it.

3.4.2 Independent Variable:
Independent variable is the variable on the basis of which the prediction about the dependent variable is made. It is a variable that affects or is assumed to affect the dependent variable under study and is included in the research design so that its effect can be determined. In the present study there was four independent variables viz. Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations.

3.5 Tools used in the study:
In order to carry out any research investigation, an investigator has to collect data. The worthiness of any research investigation depends on the appropriateness of the tools and measures employed in the study. These tools employ distinctive ways of describing and quantifying the data. Each tool should be particularly appropriate for certain sources of data yielding information of the kind and in the form that can be most effectively used. The tools employed should be appropriate, reliable and valid as well as suitable for the sample involved in the research work. In this study, the investigator employed the following tools:

1. Vocational Interests Scale developed by the investigator (2012).
2. Scale on Effect of Information Technology for Vocations developed by the investigator (2012).
3.6 Description of the Tools used in the Study:

3.6.1 Development of Tools:

3.6.1.1 Development of Vocational Interests Scale:

The Scale to measure the Vocational Interests of secondary school students was developed by the investigator on a five-point scale with the objective to measure their Vocational Interests. The investigator preferred this scale to know their degree of preferences so as to overcome the limitations of check list and multiple choice/forced choice type formats where an expressed preference for one vocation represents usually, but not always, an omitted preference for some other vocation (Thurstone, L.L. 1947). The students had to respond with the usual options from strongly like to strongly dislike. The sum of the responses to the items was the score of the respondent.

As in the development of any scale, this scale too passed through phases like collection and writing of items, scrutiny, tryout, final scoring and item analysis, factor analysis, reliability and validity.

3.6.1.1.1 Collection and Writing of Items:

The first step in constructing this scale was to explore all the relevant information related to different areas of vocations. For this, the investigator surveyed all the available review of related literature, books, articles, journals, existing Vocational Interest inventories and other similar inventories, and also relevant information available in electronic and print media. Initial investigation generated a long list of vocations. This list was then sorted for vocations which were relevant in this 21st Century and accordingly, the investigator shortlisted around one hundred thirty eight (138) names of vocations covering different areas. Some of these areas were similar to Holland RIASEC (Realistic, Investigative, Artistic, Social, Entrepreneur, and Conventional) interest types. The students had to respond to this list of vocation with the usual options from strongly like to strongly dislike.

3.6.1.1.2 Scrutiny and Critique:

The draft of one hundred thirty eight (138) vocations was circulated among tool development experts, Psychologists, researchers in Educations, and other experts for their comments and suggestions in order to improve the quality of the scale. As per the comments and suggestions of the experts some of the items were modified, some items were included to suit Indian situation and irrelevant items were deleted. The tool was then ready for tryout with one hundred fourteen (114) items.
3.6.1.1.3 Tryout:

The tryout of the scale is necessary in order to determine.

1) the major weakness, omissions, ambiguities and inadequacies of the items.
2) selecting items for their even and proper distributions.
3) the validity of each item (the discriminatory power of each item).
4) a reasonable time limit of the test.
5) Inter-correlation of items in order to avoid overlapping of items.

The final list of the scale with one hundred fourteen (114) items was administered on a sample of two hundred (200) randomly selected secondary school students of Aligarh city. The students were required to respond to each item according to their degree of likeliness to the degree of dislikeliness on a five-point scale, the response categories being ‘Strongly Like’, ‘Like’, ‘Undecided’, ‘Dislike’ and ‘Strongly Dislike’.

3.6.1.1.4 Scoring:

Scoring is a vital part of a test. The scoring pattern involved different weightage to the response as a weight of 5 was given to ‘Strongly like’, a weight of 4 to ‘Like’, a weight of 3 to ‘Undecided’, a weight of 2 to ‘Dislike’, and weight of 1 to ‘Strongly Dislike’. The sum of the weights of these one hundred fourteen (114) items gave the measure of Vocational Interests of the student.

3.6.1.1.5 Preparation of Code Sheet and Analysis Data:

A code sheet was prepared in the Microsoft Excel of the computer to interpret the responses in numerical form for easy handling of the voluminous information on which further statistical methods was necessary. The code sheet was a matrix of order 201x115. The first column contained names of the students whereas 2nd, 3rd and so on were items from 1 to 114. This information was directly entered into the computer by the investigator and the analysis was done by using SPSS 16 version.

3.6.1.1.6 Item Analysis:

After the items had been written, revised, and carefully edited, they are subjected to a procedure called item analysis. It is a set of procedure that is applied to know the indices of truthfulness (or validity) of items. In other words item analysis is a technique through which the items which are valid and suited for the purpose are selected and the rest are either eliminated or modified to suit the purpose. Item
Analysis demonstrates how effectively a given test item functions within the total test. The main objectives of item analyses are (Singh, A.K., 2008):
1) indicates the discrimination value of each items.
2) it indicates the effectiveness of the distracters in multiple-choice items.
3) it also indicates why a particular item in the test has not functioned effectively and how this might be modified so that its functional significance can be increased.

**3.6.1.7 Index of Discrimination:**

Index of discrimination, is the ability of the item on the basis of which the discrimination or distinction can be made between superiors and inferiors (Blood and Budd, 1972). The aim of item analysis was to make ‘The Vocational Interests scale’ homogenous by checking consistency of each item with the total test. The scores of each item were correlated with the total score using Pearson Product Moment Correlation Technique. Eighty four (84) out of the one hundred fourteen (114) items were retained as they had a correlation of 0.25 or more. The Pearson Product Moment formula was

\[
 r = \frac{N \sum xy - \sum x \sum y}{\sqrt{(N \sum x^2 - (\sum x)^2)(N \sum y^2 - (\sum y)^2)}}
\]

where,

- \( r \) is the Pearson’s Product Moment Coefficient of Correlation.
- \( N \) is the number of values in each data set.
- \( \sum xy \) is the sum of the products of pair scores.
- \( \sum x \) is the sum of the scores of one variable.
- \( \sum y \) is the sum of scores of the other variable.
- \( \sum x^2 \) is the sum of the square of one variable.
- \( \sum y^2 \) is the sum of the square of the other variable

**3.6.1.8 Factor Analysis:**

Factor Analysis is a statistical method, which was introduced to test construction and validation by Guilford (1947), is a powerful research tool to single out, and reduce in number, the factor being measured by particular tests. In other words, it enables us to get the ‘deadwood’ out of tests — to eliminate tests or part of tests that contribute nothing or add little to measuring the factors in which the investigator is interested i.e.
it makes possible the refinement of the test so as to have a statistically sound and theoretically meaningful test. However, Factor Analysis could be applied only if the Kaiser-Meyer-Olkin (KMO) measure is high i.e. above 0.5.

In order to refine and have a statistically sound and theoretically meaningful 'Vocational Interests scale' with eighty-four (84) items, the investigator had applied factor analysis as the KMO measure was 0.915. Factor Analysis singled out nineteen (19) areas (factors) of vocations with eighty (80) items along with their factor loadings. Each area (factor) had different number of items to explore the respective area. The items with factor loadings of 0.33 or more were considered for the scale. The tables below demonstrates the KMO values and the factor loadings.

Table 3(a) KMO Table

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | 0.915 |
| Bartlett’s Test of Sphericity Approx. Chi-Square | 8.648E3 |
| df | 3160 |
| Sig | 0.000 |

Table 3(b) Factors and Factor Loadings

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>ITEMS</th>
<th>FACTOR LOADINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching (Factor-V1)</td>
<td>1. Middle School Teacher</td>
<td>0.790</td>
</tr>
<tr>
<td></td>
<td>2. Elementary School Teacher</td>
<td>0.777</td>
</tr>
<tr>
<td></td>
<td>3. High School Teacher</td>
<td>0.767</td>
</tr>
<tr>
<td></td>
<td>4. College Teacher</td>
<td>0.723</td>
</tr>
<tr>
<td></td>
<td>5. Kindergarten School Teacher</td>
<td>0.585</td>
</tr>
<tr>
<td></td>
<td>6. Principal of Schools</td>
<td>0.557</td>
</tr>
<tr>
<td>Performing Arts (Factor-V2)</td>
<td>7. Actor</td>
<td>0.771</td>
</tr>
<tr>
<td></td>
<td>8. Modeling</td>
<td>0.744</td>
</tr>
<tr>
<td></td>
<td>9. Film/Video Editor</td>
<td>0.676</td>
</tr>
<tr>
<td></td>
<td>10. Fashion Designer</td>
<td>0.613</td>
</tr>
<tr>
<td></td>
<td>11. Musician and Singer</td>
<td>0.598</td>
</tr>
<tr>
<td></td>
<td>12. Choreographer</td>
<td>0.581</td>
</tr>
<tr>
<td></td>
<td>13. Professional Hairdresser</td>
<td>0.358</td>
</tr>
<tr>
<td>Engineering Services (Factor-V3)</td>
<td>14. Electronics Engineer</td>
<td>0.819</td>
</tr>
<tr>
<td></td>
<td>15. Electrical Engineer</td>
<td>0.814</td>
</tr>
<tr>
<td></td>
<td>16. Mechanical Engineer</td>
<td>0.726</td>
</tr>
<tr>
<td></td>
<td>17. Civil Engineer</td>
<td>0.633</td>
</tr>
<tr>
<td></td>
<td>18. Aeronautical Engineer</td>
<td>0.542</td>
</tr>
</tbody>
</table>

121
<table>
<thead>
<tr>
<th>Health Services (Factor-V4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19. General Physician</td>
<td>0.739</td>
</tr>
<tr>
<td>20. Surgeon</td>
<td>0.737</td>
</tr>
<tr>
<td>21. Medical Scientist</td>
<td>0.623</td>
</tr>
<tr>
<td>22. Dentist</td>
<td>0.592</td>
</tr>
<tr>
<td>23. Radiologist</td>
<td>0.486</td>
</tr>
<tr>
<td>24. Psychiatrist</td>
<td>0.481</td>
</tr>
<tr>
<td>25. Physiotherapist</td>
<td>0.442</td>
</tr>
<tr>
<td><strong>Clerical Jobs (Factor-V5)</strong></td>
<td></td>
</tr>
<tr>
<td>26. Library Clerk</td>
<td>0.682</td>
</tr>
<tr>
<td>27. Bank Clerk</td>
<td>0.679</td>
</tr>
<tr>
<td>28. Office Worker</td>
<td>0.537</td>
</tr>
<tr>
<td>29. Receptionist</td>
<td>0.496</td>
</tr>
<tr>
<td>30. Librarian</td>
<td>0.455</td>
</tr>
<tr>
<td>31. Typist</td>
<td>0.403</td>
</tr>
<tr>
<td>32. Cashier</td>
<td>0.372</td>
</tr>
<tr>
<td><strong>Enterprising (Factor-V6)</strong></td>
<td></td>
</tr>
<tr>
<td>33. Sales Representative</td>
<td>0.701</td>
</tr>
<tr>
<td>34. Travel Agent</td>
<td>0.649</td>
</tr>
<tr>
<td>35. Insurance Agent</td>
<td>0.621</td>
</tr>
<tr>
<td>36. Reservation/Ticketing Agent</td>
<td>0.440</td>
</tr>
<tr>
<td>37. Property Dealer</td>
<td>0.336</td>
</tr>
<tr>
<td>38. Sports Coach</td>
<td>0.710</td>
</tr>
<tr>
<td>39. Aerobics Trainer/Fitness Trainer</td>
<td>0.659</td>
</tr>
<tr>
<td>40. Referee/Umpire</td>
<td>0.553</td>
</tr>
<tr>
<td>41. Sports Rehabilitator</td>
<td>0.523</td>
</tr>
<tr>
<td>42. Sports Commentator</td>
<td>0.414</td>
</tr>
<tr>
<td><strong>Sports Professionals (Factor-V7)</strong></td>
<td></td>
</tr>
<tr>
<td>43. Geographer</td>
<td>0.665</td>
</tr>
<tr>
<td>44. Economist</td>
<td>0.648</td>
</tr>
<tr>
<td>45. Political Scientist</td>
<td>0.546</td>
</tr>
<tr>
<td>46. Agricultural Scientist</td>
<td>0.500</td>
</tr>
<tr>
<td>47. Sociologist</td>
<td>0.417</td>
</tr>
<tr>
<td>48. Agricultural Inspector</td>
<td>0.330</td>
</tr>
<tr>
<td><strong>Social Scientists (Factor-V8)</strong></td>
<td></td>
</tr>
<tr>
<td>49. Mobile Phone Technician</td>
<td>0.713</td>
</tr>
<tr>
<td>50. Computer Technician</td>
<td>0.698</td>
</tr>
<tr>
<td>51. Home Appliance Technician</td>
<td>0.593</td>
</tr>
<tr>
<td>52. Electronic Equipments Technician</td>
<td>0.447</td>
</tr>
<tr>
<td>53. Building Equipments Technician</td>
<td>0.350</td>
</tr>
<tr>
<td><strong>Gadget Technicians (Factor-V9)</strong></td>
<td></td>
</tr>
<tr>
<td>54. Chartered Accountant</td>
<td>0.739</td>
</tr>
<tr>
<td>55. Accountant/Auditor</td>
<td>0.622</td>
</tr>
<tr>
<td>56. Tax Consultant</td>
<td>0.535</td>
</tr>
<tr>
<td>57. Share Broker</td>
<td>0.355</td>
</tr>
<tr>
<td>58. Personnel Finance Advisor</td>
<td>0.354</td>
</tr>
<tr>
<td><strong>Finance &amp; Accounts (Factor-V10)</strong></td>
<td></td>
</tr>
<tr>
<td>59. Philanthropist</td>
<td>0.563</td>
</tr>
<tr>
<td>60. Social Worker</td>
<td>0.506</td>
</tr>
<tr>
<td>61. Public Health Service Officer</td>
<td>0.454</td>
</tr>
<tr>
<td>62. Social Reformer</td>
<td>0.432</td>
</tr>
<tr>
<td><strong>Social Services (Factor-V11)</strong></td>
<td></td>
</tr>
<tr>
<td>63. Section Officer</td>
<td>0.598</td>
</tr>
<tr>
<td>64. Public Relation Officer</td>
<td>0.597</td>
</tr>
<tr>
<td><strong>Conventional Jobs (Factor-V12)</strong></td>
<td></td>
</tr>
<tr>
<td>Creative Arts (Factor-V13)</td>
<td>65. Animator</td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>66. Interior Designer</td>
</tr>
<tr>
<td></td>
<td>67. Professional Photographer</td>
</tr>
<tr>
<td>Managerial Services (Factor-V14)</td>
<td>68. Construction Manager</td>
</tr>
<tr>
<td></td>
<td>69. Purchasing Manager</td>
</tr>
<tr>
<td>Airline Services (Factor-V15)</td>
<td>70. Fighter Pilot</td>
</tr>
<tr>
<td></td>
<td>71. Commercial Pilot</td>
</tr>
<tr>
<td></td>
<td>72. Air Traffic Controller</td>
</tr>
<tr>
<td>Investigative (Factor-V16)</td>
<td>73. Criminal Investigator</td>
</tr>
<tr>
<td></td>
<td>74. Geologist</td>
</tr>
<tr>
<td>Media (Factor-V17)</td>
<td>75. Translator</td>
</tr>
<tr>
<td></td>
<td>76. News Analyst/Journalist</td>
</tr>
<tr>
<td></td>
<td>77. Radio/Video Jockey</td>
</tr>
<tr>
<td>Counsellor (Factor-V18)</td>
<td>78. Educational/Vocational Counselor</td>
</tr>
<tr>
<td></td>
<td>79. Child Care Counselor</td>
</tr>
<tr>
<td>Literary Arts (Factor-V19)</td>
<td>80. Poet/Lyricist/Novelist</td>
</tr>
</tbody>
</table>

3.6.1.9 Reliability:

It is one of the important characteristics of any test. It refers to the precision or accuracy of the measurement or score. Reliability refers to the consistency of score or measurement, which is reflected in the reproducibility of the score. Reliable test are stable in whatever they measure and yield comparable scores on repeated administration. The internal consistency of reliability was found by Spilt Half method in which the items were divided into two equal halves. The score of the odd numbers items were correlated with the even number items. The Pearson Product Moment Correlation Of Coefficient was found to be 0.91 which when corrected by Spearman Brown formula increased to 0.95. Reliability was also found to be 0.939 by using Cronbach Alpha formula. The table below illustrates the reliability values.

Table 3(e) Reliability Table

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman Brown</td>
<td>0.95</td>
</tr>
<tr>
<td>Cronbach Alpha</td>
<td>0.939</td>
</tr>
<tr>
<td>Number of Items</td>
<td>80</td>
</tr>
</tbody>
</table>

3.6.1.10 Validity:

Validity is another important characteristic of a scientific instrument. Validity is the degree to which a test measure what it claims to measure. Anastasi (1968) has defined validity as "The validity of a test concerns what the test measures and how well it
does so”. Lindquist (1951) has defined validity as “The accuracy with which it measures that what is intended to measure or as the degree to which it approaches infallibility in measuring what it purports to measure”.

**Content Validity:** is the intensity to which a test measures a proposed content area. The validity of the Vocational Interests Scale was established by circulating the content of the scale among a panel of experts in the field of Education and Psychology. The scale was evaluated during and after construction. Modification and clarification were sought from them, which was incorporated in the test. The items where there were hundred percent agreements among the experts were retained.

**Item Validity:** Index of discrimination, was computed and all the items in the scale had high coefficient of correlation with the total score significant beyond 0.01 level of significant.

**Factorial Validity:** was established by using Principal component methods whereas Rotation was carried out by variance criterion. Factor Analysis singled out nineteen (19) factors or areas with eighty (80) items along with their corresponding factor loadings. The factors or areas are Teaching, Performing Arts, Engineering Services, Health Services, Clerical Jobs, Entrepreneurial Services, Sports Professionals, Social Scientist, Gadget Technician, Finance & Accounts, Social Services, Conventional Jobs, Creative Arts, Managerial Services, Airline Services, Investigative Services, Media, Counsellor, and Literary Arts.

3.6.1.1.11 Final form of Vocational Interests Scale:
The final form of Vocational Interests Scale contained eighty (80) highly discriminating items. The scale was revised on the basis of inputs from experts from the preliminary stage of development till the tryout was administered. The present form was used for data collection for the present study. A copy of the scale is affixed in Appendix – I.

3.6.1.2 Development of the Scale on Effect of Information Technology (IT) for Vocations:
The investigator developed the Scale on Effect of Information Technology (IT) for Vocations. This scale was based on the Likert method to solicit opinions from the respondents. They were asked to respond with the usual options from strongly agree to strongly disagree. The sum of the responses to the items was the scores of the
respondent. This method of summated rating, which is generally used to measure attitude and opinion, is simple, easy and less labourious than the method of Thurstone and hence more preferable. Moreover, the time required to construct such a scale is much less.

The investigator developed this Scale with the intention to measure the effect of IT sources like TV, radio, computer, internet services, cell phones, ipods, laptops, and all other electronic devices that our secondary school students are familiar with, in their day to day life, helpful for knowing about different Vocations.

3.6.1.2.1 Collection and Writing of Items:
As in the development of any scale, this scale too, passed through phases like collection and writing of items, scrutiny, tryout, final scoring, item analysis, factor analysis, reliability, and validity.

The investigator surveyed all the available review of related literature, books, existing Information Technology inventories, research articles, and relevant information available in electronic and print media in order to collect relevant information related to Information Technology and vocations. This generated a long list of statements related to Information Technology and some vocations. The investigator considered only those statements, which explored domain of Information Technology like - knowledge about Information Technology, various sources of Information Technology helpful for knowing about different vocations, and utility of Information Technology resources for making life qualitative. Accordingly, forty (40) statements were formulated correlating Information Technology with different vocations, thereby fulfilling the motive of constructing this scale. In order to make the testing more valid both positive as well as negative statements were framed with five alternatives. These negative statements were in contradiction to the positive statements, thus making the evaluation more accurate.

3.6.1.2.2 Scrutiny and Critique:
The investigator circulated this draft of forty (40) statements among experts, researchers in Education and Psychology, experienced teacher from Education and Psychology, teachers working in schools, for their criticism and healthy suggestions in order to improve the quality of the scale. This exercise also helped in evaluating the overall design, sequential arrangement of the items, reshaping of the items, situational appropriateness (Indian context) of language and its clarity and cognitive
and logical validity of content. With the help of these comments and suggestions the irrelevant statements were deleted, some were modified and reframed. The revised scale with thirty-four (34) items was used for the try out.

3.6.1.2.3 Tryout:
The tryout of the scale was necessary in order to determine.
1) the major weaknesses, omissions, ambiguities and inadequacies of the items.
2) selecting items for their even and proper distribution.
3) the validity of each item (the discriminatory power of each item)
4) a reasonable time limit of the test.
5) Inter-correlations of items in order to avoid overlapping of items.
The final form of the scale with thirty-four (34) items was ready for tryout. It was administered on a sample of two hundred (200) randomly selected secondary school students of Aligarh city. The students had to respond to each item according to their degree of agreement to degree of disagreement on a 5 point scale, the response categories being 'Strongly Agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly Disagree'.

3.6.1.2.4 Scoring:
Scoring is an important part of any test. The different weightage to the responses were 5 to 'Strongly Agree', 4 to 'Agree', 3 to 'Undecided', 2 to 'Disagree' and 1 to 'Strongly Disagree' while the negative items had a weightage of 1 to 'strongly agree', 2 to 'agree', 3 to 'Undecided', 4 to 'Disagree' and 5 to 'Strongly Disagree'. The sum total of the scores of these thirty-four (34) items gave the measure of the effect of Information Technology in knowing about different Vocations of each student.

3.6.1.2.5 Preparation of Code Sheet and Analysis of Data:
The collected raw data was directly fed into the computer by the investigator; where a code sheet was prepared in Microsoft Excel for easier interpretation of the huge numerical responses and on which further statistical methods could be applied. The code sheet was a matrix of order 201 x 35 in which the names of the students were entered in the first column and name of the items from 1 to 34 were entered in the first row. The investigator analyzed this code sheet by using SPSS 16 version.

3.6.1.2.6 Item Analysis:
According to Singh, A.K., (2008), item analysis is a set of procedure that is applied to know the degree of accurateness (or validity) of items. In other words, item analysis
is a method through which, those items that are valid and suited for the purpose are retained, and the rest are either eliminated or modified to suit the purpose. Item analysis illustrates how successfully a given test item functions within the total test. The main objectives of item analysis are:

1) indicate the discrimination value of each items.
2) it indicates the effectiveness of the distracters in multiple-choice items.
3) it also indicates why a particular item in the test has not functioned effectively and how this might be modified so that its functional significance can be increased.

3.6.1.2.7 Index of Discrimination:

Index of discrimination is that ability of the item on the basis of which the discrimination or distinction can be made between superiors and inferiors (Blood and Budd, 1972). In order to make this scale homogenous, the investigator checked the consistency of each item with the total test. The scores of each item were correlated with the total score using Pearson Product Moment Correlation Technique and items with a correlation value of 0.25 or more were retained. The final form of the Scale on Effect of Information Technology for Vocations had thirty (30) items. The Pearson Product Moment Formula was:

\[
r = \frac{N \sum xy - \sum x \sum y}{\sqrt{(N \sum x^2 - (\sum x)^2)(N \sum y^2 - (\sum y)^2)}}
\]

where,

r is the Pearson's Product Moment Coefficient of Correlation.

N is the number of values in each data set.

\(\sum xy\) is the sum of the products of pair scores.

\(\sum x\) is the sum of the scores of one variable.

\(\sum y\) is the sum of scores of the other variable.

\(\sum x^2\) is the sum of the square of one variable.

\(\sum y^2\) is the sum of the square of the other variable.
3.6.1.2.8 Factor Analysis:
Factor Analysis is a powerful statistical tool that distinguishes, and reduces in number; the factors being measured by a particular test. It helps the investigator to eliminate or to modify those items which contributes nothing or makes little sense in measuring the factors in which the investigator is interested. In other words, it makes possible the fine-tuning of the test so as to have a statistically sound and theoretically meaningful test. In order to refine the ‘Scale on Effect of Information Technology for Vocations’ with thirty (30) items, factor analysis was applied as the Kaiser-Meyer-Olkin (KMO) measure was 0.881 i.e. above 0.5. Factor Analysis highlighted six (06) factors along with their corresponding factor loadings. The items with factor loadings of 0.33 or more were considered for the scale. The tables below illustrate the KMO value and the factor loadings of the items with 0.33 or more.

**Table 3(d) KMO Table**

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | 0.881 |
| Bartlett’s Test of Sphericity | Approx. Chi-Square | 1.945E3 |
| df | 435 |
| Sig | 0.000 |

**Table 3(e) Factors and Factor Loadings**

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>ITEMS</th>
<th>FACTOR LOADINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of IT (IT-1)</td>
<td>1. Knowledge of IT provides me a lot of options to select my career</td>
<td>0.715</td>
</tr>
<tr>
<td></td>
<td>2. Knowledge of IT enhanced my learning abilities</td>
<td>0.702</td>
</tr>
<tr>
<td></td>
<td>3. New inventions in IT encouraged me to do something new</td>
<td>0.612</td>
</tr>
<tr>
<td></td>
<td>4. Today IT knowledge has given me several options to select a job.</td>
<td>0.585</td>
</tr>
<tr>
<td></td>
<td>5. Knowledge of IT helps me to know about job markets</td>
<td>0.552</td>
</tr>
<tr>
<td></td>
<td>6. Knowledge of IT does not help me in determining my future</td>
<td>0.536</td>
</tr>
<tr>
<td>Use of IT Services (IT-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------</td>
<td></td>
</tr>
<tr>
<td>7. Internet Services help me to up-date my knowledge about various educational institutions of the world</td>
<td>0.659</td>
<td></td>
</tr>
<tr>
<td>8. Use of Computer, Internet, e-mail, etc. services have made my life easy, fast, and enjoyable</td>
<td>0.626</td>
<td></td>
</tr>
<tr>
<td>9. Internet provides me a large number of entertaining and mind stimulating activities</td>
<td>0.620</td>
<td></td>
</tr>
<tr>
<td>10. Information acquired through Internet does not help me in decision-making</td>
<td>0.566</td>
<td></td>
</tr>
<tr>
<td>11. I become more confident after using IT devices</td>
<td>0.550</td>
<td></td>
</tr>
<tr>
<td>12. New electronics devices generate eagerness and curiosity among us</td>
<td>0.521</td>
<td></td>
</tr>
<tr>
<td>13. Internet services help me in selecting my career according to my interest</td>
<td>0.414</td>
<td></td>
</tr>
<tr>
<td>IT and Artistic Jobs (IT-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Fashion show in TV motivates me to be a Fashion Designer</td>
<td>0.802</td>
<td></td>
</tr>
<tr>
<td>15. TV serial motivates me to become a TV actor</td>
<td>0.738</td>
<td></td>
</tr>
<tr>
<td>16. TV advertisements motivate me a become an advertisement designer</td>
<td>0.650</td>
<td></td>
</tr>
<tr>
<td>17. FM radio motivates me to become a radio Jockey</td>
<td>0.517</td>
<td></td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. I will prefer Computer Science as a subject if I get a chance to select my subject</td>
<td>0.685</td>
<td></td>
</tr>
<tr>
<td>19. I will never advise my juniors to pursue a career in Computer Science</td>
<td>0.613</td>
<td></td>
</tr>
<tr>
<td>20. Short Term Computer Courses encouraged me to choose computer as a career option</td>
<td>0.585</td>
<td></td>
</tr>
<tr>
<td>21. Computer education is not important for me</td>
<td>0.564</td>
<td></td>
</tr>
<tr>
<td>22. Computer education improves the status of human vocation span</td>
<td>0.432</td>
<td></td>
</tr>
<tr>
<td>23. Animation in Computer/TV motivates me to take animation course as a career</td>
<td>0.402</td>
<td></td>
</tr>
<tr>
<td>IT and Entrepreneurial Services (IT-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Krishidarshan programmes in TV motivates me to be an Agricultural online Entrepreneur</td>
<td>0.718</td>
<td></td>
</tr>
<tr>
<td>25. Tele-Shopping encourage me to an Entrepreneur</td>
<td>0.547</td>
<td></td>
</tr>
<tr>
<td>26. Various News channels discourage me to be a freelance Journalist</td>
<td>0.490</td>
<td></td>
</tr>
<tr>
<td>27. e-business provides me various business options</td>
<td>0.466</td>
<td></td>
</tr>
<tr>
<td>IT for Human Welfare (IT-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Working on Computer would be an interesting way to earn a living</td>
<td>0.524</td>
<td></td>
</tr>
<tr>
<td>29. IT is an important means to serve mankind</td>
<td>0.504</td>
<td></td>
</tr>
<tr>
<td>30. Computer knowing person never faces job problem</td>
<td>0.481</td>
<td></td>
</tr>
</tbody>
</table>
Table 3(f) Factor (Dimension) Wise Items of the Scale

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Dimensions</th>
<th>Positive Items</th>
<th>Negative Items</th>
<th>Total Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge of IT (IT-1)</td>
<td>1,2,3,4, &amp; 5</td>
<td>6</td>
<td>06</td>
</tr>
<tr>
<td>2</td>
<td>Use of IT Services (IT-2)</td>
<td>7,8,9,11,12, &amp; 13</td>
<td>10</td>
<td>07</td>
</tr>
<tr>
<td>3</td>
<td>IT and Artistic Jobs (IT-3)</td>
<td>14,15,16, &amp; 17</td>
<td>-</td>
<td>04</td>
</tr>
<tr>
<td>4</td>
<td>Career Options in Computer (IT-4)</td>
<td>18,20,22, &amp; 23</td>
<td>19 &amp; 21</td>
<td>06</td>
</tr>
<tr>
<td>5</td>
<td>IT and Entrepreneurial Services (IT-5)</td>
<td>24,25, &amp; 27</td>
<td>26</td>
<td>04</td>
</tr>
<tr>
<td>6</td>
<td>IT for Human Welfare (IT-6)</td>
<td>28, 29, &amp; 30</td>
<td></td>
<td>03</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

3.6.1.2.9 Reliability:

It is an important technical aspect of any test. It refers to the extent to which a test is consistent in measuring what it measures which is reflected in the reproducibility of the scores. According to Anastasi and Urbina (1997), reliability refers to “The consistency of scores obtained by the same individuals when re-examined with test on different occasions or with different sets of equivalent items, or under other variable examining conditions”. Reliable tests are consistent in whatever they measure and yield comparable scores on repeated administration. Split-Half method was used to find the internal consistency reliability in which the items were divided into two equal halves. The scores of the odd number items were correlated with the even number items. The value of correlation of coefficient was found to be 0.7006 that improved to 0.8239 when correlated by Spearman Brown formula. The investigator further applied Cronbach Alpha formula, which refined the reliability of the scale to 0.844.

Table 3(g) for Reliability

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman Brown</td>
<td>0.8239</td>
</tr>
<tr>
<td>Cronbach Alpha</td>
<td>0.844</td>
</tr>
<tr>
<td>Number of Items</td>
<td>30</td>
</tr>
</tbody>
</table>
3.6.1.2.10 Validity: Validity is the most important quality of a scientific instrument as the functionality of any test eventually depends on the measure or efficiency with which it will predict the performance of the examinees. Anastasi (1968) has defined validity as "The validity of a test concerns what the test measures and how well it does so." Lindquist (1951) has defined validity as "The accuracy with which it measure that what is intended to measure or as the degree to which it approaches – in measuring what it purports to measure".

Content Validity is the intensity to which a test measures a proposed content area. The Scale on Effect of Information Technology for Vocations was circulated among a panel of experts in the field of Education and Psychology. The comments and suggestions from them were incorporated in this scale. The items that had hundred percent agreements among the experts were retained.

Item validity: Index of discrimination, which is also known as item validity index, was computed and the thirty items in the scale had high coefficient of correlation with the total score significant at 0.01 level.

Factorial validity: The Principal component method was used to establish factorial validity whereas Rotation was carried out by variance criterion. Factor Analysis singled out six (06) factors with thirty (30) items along with their corresponding factor loadings. The factors were Knowledge of IT, Use of IT Services, IT & Artistic Jobs, Career Options in Computer, IT & Entrepreneurial Services and IT for Human Welfare.

3.6.1.2.11 Final Form:
The Scale on Effect of Information Technology for Vocations with thirty (30) items was modified from the preliminary stage of development until the tryout was administered because of feedbacks constantly received from experts is now in the final form, was administrated on the sample of the present study. A copy of the scale is affixed in Appendix – II.

3.6.2 Non-Verbal Intelligence Test (measures ‘g’):
Non-Verbal Intelligence Test (measures ‘g’) by Sharma, A. which was culture free was used in the presents study for measuring Intelligence of secondary school students as this test was intended for the students of the age group of 10 plus to 16 plus. The test was standardized on 1342 students of tenth grade of government senior
secondary schools of Delhi. The test contains a series of 25 visually presented problems based on the three laws of cognition as stated by Spearman to explain the working of the creative minds. A copy of the scale is affixed in Appendix – III.

3.6.2.1 Administration:
The test was administered in a testing situation. The test had 25 pictorial items where each item was represented by nine different shapes with one missing shapes. The subject had to fill this missing shape from six alternative shapes marked as 1, 2, 3, 4, 5, 6 provided against each item as answer. An answer sheet was provided where the students had to answer the correct number as answer of the missing shape. The exact time allowed for the test was 15 minutes.

3.6.2.2 Reliability:
The reliability of the test was found by two methods (a) Split Half and (b) KR-21. The reliability was also measured by Standard Error of Measurement (SEM). The three reliability indices are:

<table>
<thead>
<tr>
<th>Reliability</th>
<th>VI</th>
<th>VII</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split Half</td>
<td>0.92</td>
<td>0.94</td>
<td>0.90</td>
</tr>
<tr>
<td>KR-21n</td>
<td>0.77</td>
<td>0.78</td>
<td>0.75</td>
</tr>
<tr>
<td>SEM</td>
<td>1.35</td>
<td>0.98</td>
<td>1.46</td>
</tr>
</tbody>
</table>

3.6.2.3 Validity:
Psychologists were of the view that fairly good predictions of ability in Education, industry or everyday life can be achieved by ‘g’ test alone and therefore, validity was obtained with scholastic achievement as a criterion. The predictive validity was found by administering this test to the students of class VI, VII and X of three categories of schools judged as good, average or poor on the basis of result of public examinations held by Central Board of Secondary Education, Delhi.

3.6.2.4 Scoring Norms:
All the 25 items had one correct answer and each correct answer was to be awarded a score of 1. The sum total of all the correct answers was the score of an individual student. The score ranged from 0 to 25.

3.6.3 Rao-Achievement Motivation Test:
In the present study, Rao-Achievement Motivation Test was used to measure Achievement Motivation of secondary school students. Rao, G, had developed this test. The test was standardized on 550 secondary school pupils of Bhopal. It contains 20 incomplete sentences, each of which is followed by two possible alternatives A
and B, out of which one is an achievement-related item. Though both the alternatives are achievement-oriented and socially acceptable, yet one of them implies a higher sense of achievement and excellence. A copy of the scale is affixed in Appendix – IV.

3.6.3.1 Administration:
The present test may be administered to a group or an individual. The test contains 20 incomplete sentences with two possible alternatives, A and B which complete the sense. There was nothing like a right or wrong answer. Both the statements are correct. The subject has to put a tick mark against only one of the alternatives which he prefers. There was no time limit but the group test takes about 8 to 10 minutes.

3.6.3.2 Reliability:
The reliability of the test was determined by the test-retest method after an interval of one month. The co-efficient of reliability was found to be 0.79.

3.6.3.3 Validity:
The test had been validated in two ways:

(a) The test was validated between the upper and the lower 27% of individuals in a distribution of scores. Only those items which had a discriminating index of 0.25 and above were retained in the present form of the test.

(b) The teachers of four secondary schools of Bhopal were explained the purpose of the test and the concept of Achievement Motivation, and they were asked to identify students who had ‘very high’ and ‘very low’ Achievement Motives. The test was administered to these two extreme groups. The mean of the total weighted scores was compared. The difference between the mean scores of the two group was found to be significant at 0.01 level, which means that there was agreement between the judgment of the teachers and the scores on the Achievement Motivation test.

3.6.3.4 Scoring:
The test was scored as per the scoring key provided. Each item of the test is followed by two responses of which one was High Achievement Related (HAR) and the other was General Achievement Related (GAR). The GAR responses get a score of one and the HAR responses get a score of three.
3.6.4 Occupational Aspiration Scale (OAS – G):
In the present study, Occupational Aspiration Scale was used to measure Occupational Aspiration of secondary school students. The Occupational Aspiration Scale had been developed by Grewal, J.S. and it was standardized on 1375 Higher Secondary School students of different sex, age, grade and cultural groups. The inventory consists of eight items covering realistic short and long range and idealistic short and long range of level of occupational preferences. A copy of the scale is affixed in Appendix – V.

3.6.4.1 Administration:
The Occupational Aspiration Scale was administered in a group testing situation. Each item had ten alternatives jobs with no right or wrong answers. The respondent had to select only one alternative which he/she thought best suited his/her preference. The respondent responded by putting a cross mark (X) against the occupation of his/her preference. No item was to be omitted. Though there was no time limit but half an hour was found to be sufficient enough for administration of the test which included both instructions and time required to response.

3.6.4.2 Reliability:
The coefficient of stability was found by test – retest method and it was found to be 0.84. The coefficient of internal consistency was 0.54.

3.6.4.3 Validity:
The Occupational Aspiration Scale was validated against Haller and Miller Occupational Aspiration Scale and the coefficient of validity was 0.75.

3.6.4.4 Scoring Norms:
All the eight items with ten alternatives were in a mixed order but score for each is in the same way. The scores for each alternative were as follows.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

A score of 9 indicates that a job from among the highest eight prestige occupations has been preferred and a score of ‘O’ indicates that one of the lowest eight occupations has been preferred. An individual’s score for the whole inventory ranges from 0 to 72.
3.7 Administration of the Tools:
Correct administration of the tools is the basic to any testing programme. Tests administered carelessly or in such a manner as either, to give subject an unfair advantage or to put them at a disadvantage will yield invalid results no matter how good the instruments may be.
Therefore, the investigator personally visited each school and contacted the respective Principals / Head of the institutions for their kind permission to collect data. After the approval from the respective Principal / Head of the institution, the investigator administered the instruments i.e. Vocational Interests Scale, Scale on Effect of Information Technology for Vocations, Non-Verbal Intelligence Test (measures – g), Rao Achievement Motivation Test, and Occupational Aspiration Scale (OAS-G), to the secondary school students of each school. In order to develop rapport and to get the right responses from the sample population a brief talk about each tool and the main objective of the study, was delivered to them. The instructions given in each tool were explained in a very exhaustive manner, and the investigator personally took care to see that the students did not have any difficulty in understanding the instructions. Each tool was administered in accordance with the instructions laid down in their respective manuals. Before starting, the investigator made best efforts to see that each subject has clearly understood the instructions. The subjects were given full assurance by the investigator that the information collected from them would be kept confidential.

3.8 Data Analysis Procedure:
The quantitative data which the investigator collected through the administration of various tools on the samples are known as raw data. But these data needs to be tabulated, organized, analyzed and interpreted for drawing sound conclusions and valid generalizations by using appropriate statistical techniques. Statistics is a body of mathematical techniques or processes for gathering, organizing, analyzing, and interpreting numerical data. Because most research yields such quantitative data, statistics is a basic tool of measurement, evaluation, and research. This was accomplished by using SPSS 16 version on MS EXCEL sheets.
Analysis of data means studying the organized material in order to discover inherent facts. To investigate the effect of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on Vocational Interests the investigator employed suitable statistical techniques for analyzing the quantitative data in
accordance to the nature of variable involved. In order to examine and justify the objectives of the study both descriptive and inferential statistics were used. Pearson Product Moment Correlation of Coefficient and Simple Regression Analysis were used to determine the relationship and contribution of each of the independent variables (Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations) on the dependent variable i.e. Vocational Interests. Moreover, Multiple Regression Technique was employed in order to study the combined effects of the independent variables on dependent variable.

(a) Pearson Product Moment Coefficient of Correlation:
Coefficient of Correlation tells us the extent or degree and direction of correlation between two variables. The great biologist and statistician Karl Pearson has given a formula. According to this, the coefficient of correlation is obtained by dividing the sum of the products of the corresponding deviations of the various items of the two series from their respective means by the product of their standard deviations and the number of pairs of observation.

\[
\rho = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}
\]

where

- \(r\) is the Pearson's coefficient of correlation.
- \(n\) is the number of values in each data set.
- \(\Sigma xy\) is the sum of the products of pair scores.
- \(\Sigma x\) is the sum of the scores of one variable.
- \(\Sigma y\) is the sum of scores of the other variable.
- \(\Sigma x^2\) is the sum of the square of one variable.
- \(\Sigma y^2\) is the sum of the square of the other variable.

(b) Regression Analysis:
Regression analysis is the measure of the average relationship between two or more variables. It studies the functional relationship between the variables and thereby provides a mechanism for predicting. This is a very useful statistical tool, which is used in both natural and social sciences to predict the effect of the unknown value of
one variable from the known values of the other variable or variables. The regression study that confines itself to a study of only two variables is called Simple Regression. In Simple Regression Analysis, there are two variables, one of which is known as the independent variable on the basis of which the other variable is predicted known as dependent variable. If \(x\) is the independent and \(y\) is the dependent variables then the equation of simple regression is

\[
(Y - y) = r \frac{\sigma_y}{\sigma_x} (X - x)
\]

where

- \(Y\) is the values of the dependent variable,
- \(X\) is the values of the independent variable,
- \(x\) is the mean of the values of the independent variable,
- \(y\) is the mean of the values of the dependent variable,
- \(r\) is the correlation coefficient between \(X\) and \(Y\),
- \(\sigma_x\) is the standard deviation of the values of the independent variable,
- \(\sigma_y\) is the standard deviation of the values of the dependent variable,
- \(r \frac{\sigma_y}{\sigma_x}\) is the regression coefficient of \(Y\) on \(X\).

Multiple Regression Analysis studies the combined effect of two or more independent variables on one dependent variable i.e. it predicts the dependent variable when two or more independent variables works on it. It helps us to determine the potential relationship or shared common variance between the independent variables and the dependent variable. If there are three variables say \(X\) the dependent variable and \(Y\) and \(Z\) the independent variables, then the Multiple Regression equation will be

\[
X = a_{1.23} + b_{12.3} Y + b_{13.2} Z
\]

In the above equation, \(b_{12.3}\) indicates the slope of the regression line of \(X\) on \(Y\) when \(Z\) is held constant. Similarly, \(b_{13.2}\) indicates the slope of the regression line of \(X\) on \(Z\) when \(Y\) is held constant. In most the of the problems the changes in the dependent variable \(X\) are due partially to changes in the independent variable \(Y\) and partially to changes in the independent variable \(Z\). Therefore, \(b_{12.3}\) and \(b_{13.2}\) are known as partial regression coefficients of \(X\) on \(Y\) keeping \(Z\) constant and of \(X\) on \(Z\) keeping \(Y\) constant. In the present study, Vocational Interests is the dependent variable whereas
Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations are the independent variables.

'Step-wise' Regression Analysis method is one of the several methods of Regression Analysis that is being used in the present study. The first step in this method is to identify the best predictor among the various independent variables to be included in the regression equation. Then in the second step, it identifies the second best predictor among the various independent variables, which has high validity coefficients but low correlation with the first predictor. In the third step, the next best predictor is identified from the various independent variables with higher validity coefficient but low correlation with both of the existing predictors that has been already selected. The process is continued until variables make insignificant contribution to the prediction power of the predictors. In this method, it is not necessary to use all the predictor variables in the regression equation but only those predictors are taken which contributes significantly in the prediction process.

In the present study, Multiple Regression Analysis constitutes the major portion of analysis. The statistical analysis and interpretations of the data with the help of above formulae employed for the present research have been presented and discussed in the next chapter i.e. chapter – 4.
REFERENCES


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Chapter-4

STATISTICAL ANALYSIS OF DATA, INTERPRETATION, AND DISCUSSION

4.1 Nature of Distribution of variables under study

4.2 Analysis based on Product Moment coefficient of Correlation

4.3 Analysis based on Multiple Regression analysis

4.4 Discussion
Chapter – 4

STATISTICAL ANALYSIS OF DATA, INTERPRETATION AND DISCUSSION

This chapter is devoted to analysis and interpretation of data, which were collected by the investigator in order to study the effect of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district. The unorganized raw data, which were collected for this purpose had to be arranged in such a manner so as the general people can, understand the findings of this study. Statistical techniques need to be employed in order to arrange the data in a systematic form as these techniques give a definite direction to the findings which are comprehensible and have specific meanings too. In the present study, statistical techniques – Pearson Product Moment Correlation of Coefficient and Simple Regression Analysis were used to find the effects of the different independent variables on the dependent variable and Multiple Regression Analysis was used to study the combined effect of the independent variables on the dependent variable.

Most of the parametric statistical tests rely on the basic assumption that the parent population from which sample was taken is normally distributed. Many statistical tests assume that the distribution of raw scores of particular variables approximates a normal distribution in the population (Vaus, 2002). Hence, it is important to examine the normality of the data before analyses could be done. Normal distribution is a theoretical distribution, which is typically bell-shaped when graphed. In the present study, normal distribution was examined with the help of Histogram with Normal Curve, Skewness and Kurtosis. The skewness measures the symmetry of the distribution while kurtosis measures the flatness or peakedness of the distribution. The theoretical limits for skewness and kurtosis are +1 to -1 as a more stringent criterion while +3 to -3 is considered as a more lenient criterion (Garson, 2012). According to Krzanowski (2000), normality is not critical for many multivariate analyses. If the observations are reasonably close to normal distribution when the normality assumption is violated, corrective techniques are not necessary.
Table No. 4.0

In the present study, the following were the Independent and Dependent Variables.

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>DEPENDENT VARIABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) INFORMATION TECHNOLOGY (Six Dimensions)</td>
<td>VOCATIONAL INTERESTS (Nineteen Areas)</td>
</tr>
<tr>
<td>1. Knowledge of IT (IT-1)</td>
<td>1. Teaching (V1)</td>
</tr>
<tr>
<td>2. Use of IT Services (IT-2)</td>
<td>2. Performing Arts (V2)</td>
</tr>
<tr>
<td>3. IT &amp; Artistic Jobs (IT-3)</td>
<td>3. Engineering Services (V3)</td>
</tr>
<tr>
<td>4. Career Options in Computer (IT-4)</td>
<td>4. Health Services (V4)</td>
</tr>
<tr>
<td>5. IT &amp; Entrepreneurial Services (IT-5)</td>
<td>5. Clerical Jobs (V5)</td>
</tr>
<tr>
<td>6. IT for Human Welfare (IT-6)</td>
<td>6. Entrepreneurial Services (V6)</td>
</tr>
<tr>
<td>(b) INTELLIGENCE</td>
<td>7. Sports professionals (V7)</td>
</tr>
<tr>
<td>(c) ACHIEVEMENT MOTIVATION</td>
<td>8. Social Scientists (V8)</td>
</tr>
<tr>
<td>(d) OCCUPATIONAL ASPIRATIONS</td>
<td>9. Gadget Technicians (V9)</td>
</tr>
</tbody>
</table>

| | 10. Finance & Accounts (V10) |
| | 11. Social Services (V11) |
| | 12. Conventional Jobs (V12) |
| | 13. Creative Arts (V13) |
| | 14. Managerial Services (V14) |
| | 15. Airline Services (V15) |
| | 16. Investigative Services (V16) |
| | 17. Media (V17) |
| | 18. Counselor (V18) |
| | 19. Literary Arts (V19) |

4.1 NATURE OF DISTRIBUTION OF THE DEPENDENT AND INDEPENDENT VARIABLES UNDER STUDY:

In order to study the nature of the distribution of the raw scores for the dependent variable of samples of male and female students as well as of the total sample, the investigator took the help of statistical methods like Mean, Median, Frequency Distribution, Standard Deviation, Skewness and Kurtosis. The nature of distribution of dependent variable is discussed below.

4.1.1 NATURE OF DISTRIBUTION OF SCORES OF DEPENDENT VARIABLE (VOCATIONAL INTERESTS):

In order to peruse the nature of the scores of Vocational Interests in the selected sample of students of secondary schools of Aligarh district obtained by using the ‘Vocational Interests Scale’, the investigator arranged the scores in the form of a frequency distribution, which is given below.
# Table no. 4.1.1.1

Frequency distribution of Vocational Interests scores of male, female, and the total sample of secondary school students.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Male Students</th>
<th>Female Students</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>c.f</td>
<td>f</td>
</tr>
<tr>
<td>1.</td>
<td>80-120</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>120-160</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>160-200</td>
<td>41</td>
<td>48</td>
<td>25</td>
</tr>
<tr>
<td>4.</td>
<td>200-240</td>
<td>131</td>
<td>179</td>
<td>103</td>
</tr>
<tr>
<td>5.</td>
<td>240-280</td>
<td>180</td>
<td>359</td>
<td>219</td>
</tr>
<tr>
<td>6.</td>
<td>280-320</td>
<td>108</td>
<td>467</td>
<td>123</td>
</tr>
<tr>
<td>7.</td>
<td>320-360</td>
<td>29</td>
<td>496</td>
<td>24</td>
</tr>
<tr>
<td>8.</td>
<td>360-400</td>
<td>4</td>
<td>500</td>
<td>1</td>
</tr>
</tbody>
</table>

where \( f \) is frequency, \( c.f \) is cumulative frequency.

The above table (Table no. 4.1.1.1) exhibits the frequencies of Vocational Interests scores of male, female, and the total sample students. It can be observed that most of the frequencies lie between the range of 200-320. The following figures depict the Normal Probability Curves for the scores of Vocational Interests scores for male, female, and the total sample students.
Fig. 4.1.1.1 Normal Probability Curve showing the scores of Vocational Interests of male students (N=500)

Fig. 4.1.1.2 Normal Probability Curve showing the scores of Vocational Interests of female students (N=500)

Fig. 4.1.1.3 Normal Probability Curve showing the Vocational Interests scores of the total sample (N=1000)

The calculated statistical values like Mean, Median, S.D., Skewness and Kurtosis values of Vocational Interests scores for male, female and the total sample of secondary school students are presented in table no. 4.1.1.2

144
Table no. 4.1.1.2

Statistical measures of Vocational Interests scores of male, female, and the total sample of secondary school students.

<table>
<thead>
<tr>
<th>VOCATIONAL INTERESTS</th>
<th>Mini Stats</th>
<th>Max Stats</th>
<th>Mean Stats</th>
<th>Median Stats</th>
<th>S.D Stats</th>
<th>Skewness Stats</th>
<th>Kurtosis Stats</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=500 (MALE)</td>
<td>92</td>
<td>400</td>
<td>256.06</td>
<td>257.00</td>
<td>43.413</td>
<td>-0.141</td>
<td>0.109</td>
</tr>
<tr>
<td>N=500 (FEMALE)</td>
<td>150</td>
<td>373</td>
<td>260.54</td>
<td>262.00</td>
<td>38.031</td>
<td>-0.351</td>
<td>0.109</td>
</tr>
<tr>
<td>N = 1000 TOTAL SAMPLE</td>
<td>92</td>
<td>400</td>
<td>258.27</td>
<td>261.00</td>
<td>40.873</td>
<td>-0.246</td>
<td>0.077</td>
</tr>
</tbody>
</table>

Through histogram with frequency curve, it could be observed that the distribution of the scores for the variable Vocational Interests is approximately normal as the values of skewness and kurtosis lie within the range of -3 to +3.

4.1.2 NATURE OF DISTRIBUTION OF SCORES OF INFORMATION TECHNOLOGY:

In order to scrutinize the nature of the scores of Information Technology for the selected sample of secondary school students of Aligarh district obtained by using the 'Scale on Effect of Information Technology for Vocations', the investigator arranged the scores in a frequency distribution form, which is given below.

Table no. 4.1.2.1

Frequency distribution of Information Technology scores of male, female and the total sample of secondary school students.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Male Students</th>
<th>Female Students</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>c.f</td>
<td>f</td>
</tr>
<tr>
<td>1.</td>
<td>30-45</td>
<td>1</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>45-60</td>
<td>1</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>3.</td>
<td>60-75</td>
<td>6</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>4.</td>
<td>75-90</td>
<td>52</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>5.</td>
<td>90-105</td>
<td>143</td>
<td></td>
<td>149</td>
</tr>
<tr>
<td>6.</td>
<td>105-120</td>
<td>187</td>
<td></td>
<td>219</td>
</tr>
<tr>
<td>7.</td>
<td>120-135</td>
<td>97</td>
<td></td>
<td>88</td>
</tr>
<tr>
<td>8.</td>
<td>135-150</td>
<td>13</td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

where f is frequency, c.f is cumulative frequency.
It can be perceived from the above table (Table no. 4.1.2.1) that the most of the frequencies of Information Technology scores of the sample lie within the range of 75-120, for both sample of male and female as well as for the total sample students. The Normal Probability Curves for the scores of Information Technology scores of male, female and the total sample students are shown below.

**Fig. 4.1.2.1 Normal Probability Curve** showing the scores of Information Technology of male students (N=500).

**Fig. 4.1.2.2 Normal Probability Curve** showing the scores of Information Technology of female students (N=500).

**Fig. 4.1.2.3 Normal Probability Curve** showing scores of the Information Technology scores of the total sample (N=1000).
The table (table no. 4.1.2.2) exhibits the calculated statistical values like Mean, Median, S.D., Skewness and Kurtosis values of Information Technology scores of male, female and the total sample of secondary school students.

**Table no. 4.1.2.2**

<table>
<thead>
<tr>
<th>INFORMATION TECHNOLOGY</th>
<th>Mini Stats</th>
<th>Max Stats</th>
<th>Mean</th>
<th>Median</th>
<th>S.D Stats</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=500 (MALE)</td>
<td>30</td>
<td>150</td>
<td>108.49</td>
<td>109.00</td>
<td>15.205</td>
<td>-0.470</td>
<td>0.109</td>
</tr>
<tr>
<td>N=500 (FEMALE)</td>
<td>66</td>
<td>142</td>
<td>109.02</td>
<td>109.00</td>
<td>13.298</td>
<td>-0.289</td>
<td>0.109</td>
</tr>
<tr>
<td>N= 1000 TOTAL SAMPLE</td>
<td>30</td>
<td>150</td>
<td>108.75</td>
<td>109.00</td>
<td>14.281</td>
<td>-0.407</td>
<td>0.077</td>
</tr>
</tbody>
</table>

Through histogram with frequency curve, it was observed that the distribution of the scores of the variable Information Technology is approximately normal. The normality of the scores of Information Technology was found to be approximately normal as the values of skewness and kurtosis lie within the range of -3 to +3.

**4.1.3 NATURE OF DISTRIBUTION OF SCORES OF INTELLIGENCE:**

In order to study the nature of the scores of Intelligence in the selected sample of secondary schools students of Aligarh district obtained by using the 'Non-Verbal Intelligence Test', the investigator arranged the scores in the form of Frequency Distribution, which is given below.

**Table no. 4.1.3.1**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Male Students</th>
<th>Female Students</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>c.f</td>
<td>f</td>
</tr>
<tr>
<td>1.</td>
<td>0-5</td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>5-10</td>
<td>16</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td>3.</td>
<td>10-15</td>
<td>70</td>
<td>89</td>
<td>71</td>
</tr>
<tr>
<td>4.</td>
<td>15-20</td>
<td>175</td>
<td>264</td>
<td>167</td>
</tr>
<tr>
<td>5.</td>
<td>20-25</td>
<td>236</td>
<td>500</td>
<td>227</td>
</tr>
</tbody>
</table>

N = 500 500 1000

where f is frequency, c.f is cumulative frequency.
The above table (Table no. 4.1.3.1) illustrated the distribution of frequencies of Intelligence scores of male, female and the total sample. It can be seen from the above table that most of the frequencies lie in the range of 10-25. The Normal Probability Curves with Histogram for each of the above distributions are given below.

Fig. 4.1.3.1 Normal Probability Curve with Histogram exhibiting the Intelligence scores of male students (N=500).

Fig. 4.1.3.2 Normal Probability Curve with Histogram exhibiting the Intelligence scores of female students (N=500).

Fig. 4.1.3.3 Normal Probability Curve with Histogram exhibiting the Intelligence scores of the total sample (N=1000).
The following table (Table no. 4.1.3.2) shows the calculated values of Mean, Median, S.D., skewness and Kurtosis values of Intelligence scores of male, female, and the total sample of secondary school students.

Table no. 4.1.3.2

Statistical measures of Intelligence scores of male, female, and the total sample of secondary school students.

<table>
<thead>
<tr>
<th>INTELLIGENCE</th>
<th>Mini Stats</th>
<th>Maxi Stats</th>
<th>Mean Stats</th>
<th>Median Stats</th>
<th>S.D Stats</th>
<th>Skewness Stats</th>
<th>Kurtosis Stats</th>
<th>Std.Err Stats</th>
<th>Stats</th>
<th>Std.Errr</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=500 (MALE)</td>
<td>3</td>
<td>25</td>
<td>19.43</td>
<td>20.00</td>
<td>4.339</td>
<td>-0.981</td>
<td>0.109</td>
<td>0.786</td>
<td></td>
<td>0.218</td>
</tr>
<tr>
<td>N=500 (FEMALE)</td>
<td>4</td>
<td>25</td>
<td>18.91</td>
<td>20.00</td>
<td>4.623</td>
<td>-0.877</td>
<td>0.109</td>
<td>0.259</td>
<td></td>
<td>0.218</td>
</tr>
<tr>
<td>N = 1000 TOTAL SAMPLE</td>
<td>3</td>
<td>25</td>
<td>19.19</td>
<td>20.00</td>
<td>4.483</td>
<td>-0.935</td>
<td>0.077</td>
<td>0.516</td>
<td></td>
<td>0.155</td>
</tr>
</tbody>
</table>

Normality of the variable Intelligence was examined through histogram with normal curve and found to be approximately normal as the values of skewness and kurtosis lie within the range of -3 to +3.

4.1.4 NATURE OF DISTRIBUTION OF SCORES OF ACHIEVEMENT MOTIVATION:

In the study of the nature of the scores of Achievement Motivation in the selected sample of students of secondary schools of Aligarh district obtained by using the ‘Rao Achievement Motivation Test’, the investigator organized the scores in the form of a Frequency Distribution, which is given below.

Table no. 4.1.4.1

Frequency Distribution of Achievement Motivation Scores of male, female and the total sample of secondary school students.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Male Students</th>
<th>Female Students</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>c.f</td>
<td>f</td>
</tr>
<tr>
<td>1.</td>
<td>10-20</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>20-30</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>30-40</td>
<td>74</td>
<td>79</td>
<td>57</td>
</tr>
<tr>
<td>4.</td>
<td>40-50</td>
<td>284</td>
<td>363</td>
<td>274</td>
</tr>
<tr>
<td>5.</td>
<td>50-60</td>
<td>137</td>
<td>500</td>
<td>164</td>
</tr>
</tbody>
</table>

where f is frequency, c.f is cumulative frequency.
It had been observed from the above table (Table no. 4.1.4.1) that most of the frequencies of Achievement Motivation scores of the sample of male, female as well as total samples lie within the range of 30-50. The Normal Probability Curves for the above distributions are also given below.

**Fig. 4.1.4.1** Normal Probability Curve with Histogram depicting the Achievement Motivation scores of male students (N=500).

**Fig. 4.1.4.2** Normal Probability Curve with Histogram depicting the Achievement Motivation scores female students (N=500).

**Fig. 4.1.4.3** Normal Probability Curve with Histogram depicting the Achievement Motivation scores of the total sample (N=1000).
Statistical measures like Mean, Median, S.D., Skewness and Kurtosis values are arranged in a tabular form (Table no. 4.1.4.2).

**Table no. 4.1.4.2**
Mean, Median, S.D., Skewness and Kurtosis values of Achievement Motivation scores of male, female, and total sample of secondary school students.

<table>
<thead>
<tr>
<th>ACHIEVEMENT MOTIVATION</th>
<th>Mini Stats</th>
<th>Maxi Stats</th>
<th>Mean Stats</th>
<th>Median Stats</th>
<th>S.D Stats</th>
<th>Skewness Stats</th>
<th>Std.Err Stats</th>
<th>Kurtosis Stats</th>
<th>Std.Errr Stats</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=500 (MALE)</td>
<td>20</td>
<td>58</td>
<td>46.72</td>
<td>48.00</td>
<td>6.087</td>
<td>-0.712</td>
<td>0.109</td>
<td>0.716</td>
<td>0.218</td>
</tr>
<tr>
<td>N=500 (FEMALE)</td>
<td>24</td>
<td>58</td>
<td>47.48</td>
<td>48.00</td>
<td>5.999</td>
<td>-0.822</td>
<td>0.109</td>
<td>0.893</td>
<td>0.218</td>
</tr>
<tr>
<td>N = 1000 TOTAL SAMPLE</td>
<td>20</td>
<td>58</td>
<td>47.11</td>
<td>48.00</td>
<td>6.042</td>
<td>-0.766</td>
<td>0.077</td>
<td>0.796</td>
<td>0.155</td>
</tr>
</tbody>
</table>

Normality of Achievement Motivation was examined through histogram with normal curve and found to be approximately normal as the values lie within the range.

**4.1.5 NATURE OF DISTRIBUTION OF SCORES OF OCCUPATIONAL ASPIRATIONS:**

In order to analyse the nature of the scores of Occupation Aspirations in the selected sample of secondary schools students of Aligarh district obtained by using the 'Occupational Aspirations Scale', the investigator categorized the scores in a Frequency Distribution form, which is given below.

**Table no. 4.1.5.1**
Frequency Distribution of Occupational Aspirations scores of male, female, and the total sample of secondary school students.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Male Students</th>
<th>Female Students</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>c.f</td>
<td>f</td>
</tr>
<tr>
<td>1.</td>
<td>10-20</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>20-30</td>
<td>5</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>3.</td>
<td>30-40</td>
<td>23</td>
<td>32</td>
<td>17</td>
</tr>
<tr>
<td>4.</td>
<td>40-50</td>
<td>93</td>
<td>125</td>
<td>99</td>
</tr>
<tr>
<td>5.</td>
<td>50-60</td>
<td>216</td>
<td>341</td>
<td>272</td>
</tr>
<tr>
<td>6.</td>
<td>60-70</td>
<td>158</td>
<td>499</td>
<td>103</td>
</tr>
<tr>
<td>7.</td>
<td>70-80</td>
<td>001</td>
<td>500</td>
<td>000</td>
</tr>
</tbody>
</table>

where f is frequency, c.f is cumulative frequency.
It was perceived from the above table (Table no. 4.1.5.1) that the most of the frequencies of Occupational Aspirations scores of male, female, and of the total sample lie within the range of 40-70. In order to study the normality of the variable Occupational Aspirations scores, the Normal Probability Curves for each of the above distributions are shown in the following figures.

**Fig. 4.1.5.1** Normal Probability Curve with Histogram depicting the Occupational Aspirations scores of male students (N=500).

**Fig. 4.1.5.2** Normal Probability Curve with Histogram depicting the Occupational Aspirations scores female students (N=500).

**Fig. 4.1.5.3** Normal Probability Curve with Histogram depicting the Occupational Aspirations scores of the total sample (N=1000).
The calculated statistical values like Mean, Median, S.D., Skewness and Kurtosis values of Occupational Aspirations scores for male, female, and the total sample of secondary school students are presented in table no. 4.1.5.2

Table no. 4.1.5.2

Statistical measures of Occupational Aspirations scores of male, female, and the total sample of secondary school students.

<table>
<thead>
<tr>
<th>OCCUPATIONAL ASPIRATIONS</th>
<th>Mini Stats</th>
<th>Maxi Stats</th>
<th>Mean Stats</th>
<th>Median Stats</th>
<th>S.D Stats</th>
<th>Skewness Stats</th>
<th>Std.Er</th>
<th>Kurtosis Stats</th>
<th>Std.Er</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=500 (MALE)</td>
<td>11</td>
<td>71</td>
<td>55.49</td>
<td>57.00</td>
<td>9.198</td>
<td>-1.234</td>
<td>0.109</td>
<td>2.557</td>
<td>0.218</td>
</tr>
<tr>
<td>N=500 (FEMALE)</td>
<td>16</td>
<td>69</td>
<td>54.58</td>
<td>55.00</td>
<td>7.844</td>
<td>-1.176</td>
<td>0.109</td>
<td>2.705</td>
<td>0.218</td>
</tr>
<tr>
<td>N = 1000</td>
<td>TOTAL SAMPLE</td>
<td>11</td>
<td>71</td>
<td>55.04</td>
<td>56.00</td>
<td>8.557</td>
<td>-1.192</td>
<td>0.077</td>
<td>2.646</td>
</tr>
</tbody>
</table>

Through histogram with frequency curve, it can be observed that the distribution of the scores for the variable Occupational Aspirations is approximately normal as the values of skewness and kurtosis lie within the range of -3 to +3.

Analysis and interpretation are two sides of the same coin. Analyses are done with the help of statistical techniques, which gives a definite direction, whereas interpretation helps in drawing the conclusions. In this chapter, analysis, interpretation, and discussions are presented under the following headings.

4.2 ANALYSES BASED ON PRODUCT MOMENT COEFFICIENT OF CORRELATION AND SIMPLE REGRESSION ANALYSIS:

4.2.1 Objective: 1. To find the effect of Information Technology on Vocational Interests of secondary school students.

The first objective of this study was concerned with determining the effect of Information Technology on Vocational Interests of secondary school students. In order to achieve this objective the investigator formulated the following null hypothesis for empirical verification.

$H_0: \text{There will be no significant effect of Information Technology on Vocational Interests of secondary school students.}$
In order to find the effect of Information Technology on Vocational Interests the investigator first analysed the scores to study the relationship between Information Technology and Vocational Interests of secondary school students by using statistical method – Pearson Product Moment Coefficient of Correlation. The following table depicts the value of Pearson Product Moment Coefficient of Correlation between Information Technology and Vocational Interests.

**Table no. 4.2.1(a)**

**Product Moment Coefficient of Correlation between Information Technology and Vocational Interests of secondary schools students (N = 1000).**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td>998</td>
<td>0.554**</td>
<td>0.000</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (2-tailed)** 
**df: degree of freedom**

From the above table (Table no. 4.2.1(a)), it could be said that the coefficient of correlation between Information Technology and Vocational Interests was 0.554**, significant at 0.01 level which indicates a positive and significant relationship.

As there was a significant relationship between Information Technology and Vocational Interests, the investigator could determine the effect of Information Technology on Vocational Interests by using Simple Regression Analysis. The following table (Table no 4.2.1(b)) depicts the value of Simple Regression Analysis.

**Table no. 4.2.1(b)**

**Simple Regression Analysis between Information Technology and Vocational Interests of secondary school students (N = 1000).**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. (Constant) Information Technology</td>
<td>85.985</td>
<td>8.276</td>
<td></td>
<td>10.390</td>
</tr>
<tr>
<td></td>
<td>1.584</td>
<td>0.075</td>
<td>0.554**</td>
<td>20.996</td>
</tr>
</tbody>
</table>

**R=0.554** 
**R Square=0.306**

**Significant at 0.01 level (2-tailed).**

It has been observed from the above table (Table no. 4.2.1(b)) that the square of R was 0.306, which indicates that Information Technology contributed 30.6 percent of the variance in Vocational Interests. In addition, the positive Beta value, which was significant at 0.01 level, indicated that Information Technology had a positive effect on
Vocational Interests. Therefore, the investigator is of the opinion that Information Technology has helped the students to enhance their interests about the different areas of vocations i.e. Information Technology has significant effect on Vocational Interests of secondary school students. Hence, the above null hypothesis is rejected.

Furthermore, the investigator calculated the correlation values between six dimensions of Information Technology and the nineteen areas of Vocational Interest by using Product Moment Correlation of Coefficient. The following table (Table no. 4.2.1(c)) shows the correlations values between them.

**Table no. 4.2.1(c)**

Coefficient of Correlations between six dimensions of Information Technology (IT) and nineteen areas of Vocational Interests of secondary school students (N = 1000).

<table>
<thead>
<tr>
<th>Areas of Vocational Interests</th>
<th>Dimensions of Information Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knowledge of IT (IT-1)</td>
</tr>
<tr>
<td>Teaching</td>
<td>.193**</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>.149**</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>.221**</td>
</tr>
<tr>
<td>Health Services</td>
<td>.206**</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>.161**</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>.174**</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>.222**</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>.225**</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>.226**</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>.259**</td>
</tr>
<tr>
<td>Social Services</td>
<td>.087**</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>.180**</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>.183**</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>.159**</td>
</tr>
<tr>
<td>Airline Services</td>
<td>.261**</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>.172**</td>
</tr>
<tr>
<td>Media</td>
<td>.166**</td>
</tr>
<tr>
<td>Counsellor</td>
<td>.177**</td>
</tr>
<tr>
<td>Literary arts</td>
<td>.156**</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed). **Significant at 0.01 level (2-tailed). NS: Not Significant at any level.
It was evident from the above table (Table no. 4.2.1(c)) that all the dimensions of Information Technology (Knowledge of IT, Use of IT Services, IT & Artistic jobs, Career Options in Computer, IT & Entrepreneurial Services and IT for Human Welfare) had positive and significant relationships (at 0.01 and 0.05 levels, 2-tailed) with all the areas of Vocational Interests (Teaching, Performing Arts, Engineering Services, Health Services, Clerical Jobs, Entrepreneurial Services, Sports Professionals, Social Scientists, Gadget Technicians, Finance & Accounts, Social Services, Conventional Jobs, Creative Arts, Managerial Services, Airline Services, Investigative Services, Media, Counsellor and Literary Arts). The IT & Artistic Jobs — one of the dimensions of Information Technology however, had positive but not-significant (at any levels) relationship with the Engineering Services area of Vocational Interests.

The first objective was further sub-divided by the investigator into two more sub-objectives in order to determine the effect of Information Technology on Vocational Interests of secondary school male and female students.

4.2.1.1 Sub-Objective: 1(a). To find the effect of Information Technology on Vocational Interests of male students studying in secondary schools.

The investigator formulated the following null hypothesis for empirical verification in order to achieve the above-mentioned objective.

$H_0$:1(a) There will be no significant effect of Information Technology on Vocational Interests of male students studying in secondary schools.

The investigator first analysed the scores of Information Technology and Vocational Interests of secondary school male students to establish a relationship between these variables by using statistical method — Pearson Product Moment Coefficient of Correlation so as to find the effect. The following table illustrates the value of Pearson Product Moment Coefficient of Correlation between Information Technology and Vocational Interests of secondary school male students.
Table no. 4.2.1.1(a)

Product Moment Coefficient of Correlation between Information Technology and Vocational Interests of secondary school male students (N = 500).

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td>498</td>
<td>0.594**</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (2-tailed)**

From the above table (Table no. 4.2.1.1(a)), it could be said that the correlation coefficient between Information Technology and Vocational Interests was 0.594**, significant at 0.01 levels which indicates a positive and significant relationship.

As Information Technology and Vocational Interests had a positive and significant relationship, the investigator could use Simple Regression Analysis to find the instrumental effect of Information Technology on Vocational Interests of secondary school male students. The following table (Table no. 4.2.1.1(b)) depicts the value of Simple Regression Analysis:

Table no. 4.2.1.1(b)

Simple Regression Analysis between Information Technology and Vocational Interests of male students (N = 500).

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. (Constant)</td>
<td>72.068</td>
<td>11.275</td>
<td>0.594**</td>
<td>6.392</td>
</tr>
<tr>
<td>Information Technology</td>
<td>1.696</td>
<td>0.103</td>
<td></td>
<td>16.478</td>
</tr>
</tbody>
</table>

R=0.594  R Square = 0.353

**Significant at 0.01 level (2-tailed)**

It has been observed from the above table (Table no. 4.2.1.1(b)) that the square of R was 0.353, which indicates that Information Technology influenced 35.3 percent of the variance in Vocational Interests. In addition, the positive Beta value that was significant at 0.01 levels indicates that Information Technology had a positive effect on Vocational Interests. Therefore, investigator concludes from the above discussions that male students
who were highly influenced by Information Technology had high Vocational interests. Hence, the above null hypothesis is rejected.

Furthermore, the investigator calculated the correlation values between six dimensions of Information Technology and the nineteen areas of Vocational Interest by using Product Moment Correlation of Coefficient. The following table (Table no. 4.2.1.1(c)) depicts the values of coefficient of correlation between Information Technology (six dimensions) and Vocational Interests (nineteen areas) of male students.

**Table no. 4.2.1.1(c)**
Coefficient of Correlations between six dimensions of Information Technology (IT) and nineteen areas of Vocational Interests of secondary school male students (N = 500).

<table>
<thead>
<tr>
<th>Areas of Vocational Interests</th>
<th>Dimensions of Information Technology</th>
<th>Knowledge of IT (IT-1)</th>
<th>Use of IT Services (IT-2)</th>
<th>IT &amp; Artistic Jobs (IT-3)</th>
<th>Career options in Computer (IT-4)</th>
<th>IT &amp; Entrepreneurial Services (IT-5)</th>
<th>IT for Human Welfare (IT-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td></td>
<td>.195**</td>
<td>.193**</td>
<td>.322**</td>
<td>.251**</td>
<td>.347**</td>
<td>.209**</td>
</tr>
<tr>
<td>Performing Arts</td>
<td></td>
<td>.164**</td>
<td>.181**</td>
<td>.591**</td>
<td>.254**</td>
<td>.262**</td>
<td>.185**</td>
</tr>
<tr>
<td>Engineering Services</td>
<td></td>
<td>.234**</td>
<td>.185**</td>
<td>.045 NS</td>
<td>.211**</td>
<td>.155**</td>
<td>.125**</td>
</tr>
<tr>
<td>Health Services</td>
<td></td>
<td>.247**</td>
<td>.209**</td>
<td>.272**</td>
<td>.274**</td>
<td>.345**</td>
<td>.238**</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td></td>
<td>.140**</td>
<td>.109*</td>
<td>.350**</td>
<td>.289**</td>
<td>.405**</td>
<td>.172**</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td></td>
<td>.148**</td>
<td>.142**</td>
<td>.377**</td>
<td>.287**</td>
<td>.399**</td>
<td>.204**</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td></td>
<td>.251**</td>
<td>.229**</td>
<td>.297**</td>
<td>.301**</td>
<td>.386**</td>
<td>.200**</td>
</tr>
<tr>
<td>Social Scientists</td>
<td></td>
<td>.236**</td>
<td>.156**</td>
<td>.345**</td>
<td>.291**</td>
<td>.447**</td>
<td>.207**</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td></td>
<td>.174**</td>
<td>.234**</td>
<td>.305**</td>
<td>.385**</td>
<td>.314**</td>
<td>.226**</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td></td>
<td>.250**</td>
<td>.167**</td>
<td>.237**</td>
<td>.285**</td>
<td>.277**</td>
<td>.215**</td>
</tr>
<tr>
<td>Social Services</td>
<td></td>
<td>.134**</td>
<td>.120**</td>
<td>.362**</td>
<td>.177**</td>
<td>.304**</td>
<td>.099*</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td></td>
<td>.208**</td>
<td>.107*</td>
<td>.209**</td>
<td>.190**</td>
<td>.312**</td>
<td>.173**</td>
</tr>
<tr>
<td>Creative Arts</td>
<td></td>
<td>.261**</td>
<td>.265**</td>
<td>.309**</td>
<td>.305**</td>
<td>.186**</td>
<td>.099*</td>
</tr>
<tr>
<td>Managerial Services</td>
<td></td>
<td>.167**</td>
<td>.152**</td>
<td>.182**</td>
<td>.230**</td>
<td>.245**</td>
<td>.162**</td>
</tr>
<tr>
<td>Airline Services</td>
<td></td>
<td>.320**</td>
<td>.202**</td>
<td>.173**</td>
<td>.197**</td>
<td>.207**</td>
<td>.102*</td>
</tr>
<tr>
<td>Investigative Services</td>
<td></td>
<td>.177**</td>
<td>.154**</td>
<td>.107**</td>
<td>.164**</td>
<td>.216**</td>
<td>.133**</td>
</tr>
<tr>
<td>Media</td>
<td></td>
<td>.207**</td>
<td>.128**</td>
<td>.426**</td>
<td>.248**</td>
<td>.396**</td>
<td>.177**</td>
</tr>
<tr>
<td>Counsellor</td>
<td></td>
<td>.218**</td>
<td>.167**</td>
<td>.281**</td>
<td>.245**</td>
<td>.311**</td>
<td>.213**</td>
</tr>
<tr>
<td>Literary Arts</td>
<td></td>
<td>.231**</td>
<td>.167**</td>
<td>.155**</td>
<td>.224**</td>
<td>.260**</td>
<td>.146**</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed), **Significant at 0.01 level (2-tailed) NS: Not Significant at any level*
It was evident from the above Table 4.2.1.1(c), that all the dimensions of Information Technology i.e. Knowledge of IT, Use of IT Services, Career Options in Computer, IT & Entrepreneurial Services and IT for Human Welfare had positive and significant relationship (at 0.01 and 0.05 levels, 2-tailed) with all the areas of Vocational Interests i.e. Teaching, Performing Arts, Health Services, Clerical Jobs, Entrepreneurial Services, Sports Professionals, Social Scientists, Gadget Technicians, Finance & Accounts, Social Services, Conventional Jobs, Creative Arts, Managerial Services, Airline Services, Investigative Services, Media, Counsellor and Literary Arts expect one dimension of Information Technology i.e. IT & Artistic Jobs that had positive but not-significant relationship with the Engineering Services area of Vocational Interests.

4.2.1.2 Sub-Objective:1(b). To find the effect of Information Technology on Vocational Interests of female students studying in secondary schools.

The investigator formulated the following null hypothesis for empirical verification in order to achieve the above-mentioned objective.

\[ H_0:1(b) \text{ There will be no significant effect of Information Technology on Vocational Interests of female students studying in secondary schools.} \]

With the help of statistical method Pearson Product Moment Coefficient of Correlation the investigator analysed the data of Information Technology and Vocational Interests of female students to establish a relationship between Information Technology and their Vocational Interests. The following table illustrates the value of Pearson Product Moment Coefficient of Correlation between Information Technology and Vocational Interests of female students.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td>498</td>
<td>0.488**</td>
<td>0.000</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (2-tailed) df: degree of freedom
From the above table (Table No. 4.2.1.2(a)), it could be said that the coefficient of correlation between Information Technology and Vocational Interests of female students was 0.488** significant at 0.01 levels which indicates a positive and significant relationship.

In order to study the instrumental effect of Information Technology on Vocational Interests of secondary school female students as the correlation value was significant, the investigator took the help of Simple Regression Analysis. The following table (Table No. 4.2.1.2(b)) depicts the value of Simple Regression Analysis.

**Table no. 4.2.1.2(b)**

Simple Regression Analysis between Information Technology and Vocational Interests of female students (N = 500).

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. (Constant) Information Technology</td>
<td>106.122</td>
<td>12.470</td>
<td></td>
<td>8.510</td>
</tr>
<tr>
<td></td>
<td>1.446</td>
<td>0.116</td>
<td>0.488**</td>
<td>12.472</td>
</tr>
</tbody>
</table>

R=0.488  
R Square=0.238

**Significant at 0.01 level (2-tailed)**

It was evident from the above table (Table No. 4.2.1.2(b)) that the square of R to be 0.238, which indicates that Information Technology contributed 23.8 percent of the variance in Vocational Interests. Also, the positive Beta value, which was significant at 0.01 levels, indicates that Information Technology had a positive influence on Vocational Interests of female students. So, the investigator concludes that Information Technology was instrumental in promoting their Vocational Interests. Hence, the above null hypothesis is rejected.

The following table (Table no. 4.2.1.2(c)) exhibits the coefficient of correlation between the six dimensions of Information Technology and the nineteen areas of Vocational Interests of female students.
Table no. 4.2.1.2(c)
Coefficient of Correlations between six dimensions of Information Technology (IT) and nineteen areas of Vocational Interests of secondary school female students (N = 500).

<table>
<thead>
<tr>
<th>Areas of Vocational Interests</th>
<th>Dimensions of Information Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knowledge of IT (IT-1)</td>
</tr>
<tr>
<td>Teaching</td>
<td>.217**</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>.179**</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>.200**</td>
</tr>
<tr>
<td>Health Services</td>
<td>.180**</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>.193**</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>.199**</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>.176**</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>.213**</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>.281**</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>.263**</td>
</tr>
<tr>
<td>Social Services</td>
<td>.089*</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>.143**</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>.110*</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>.139**</td>
</tr>
<tr>
<td>Airline Services</td>
<td>.184**</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>.162**</td>
</tr>
<tr>
<td>Media</td>
<td>.120**</td>
</tr>
<tr>
<td>Counsellor</td>
<td>.126**</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>.069NS</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed). **Significant at 0.01 level (2-tailed). NS: Not Significant at any level

It was evident from the above table (Table no. 4.2.1.2(c)) that most of the dimensions of Information Technology had positive and significant relationship (at 0.01 and 0.05 levels, 2-tailed) with almost all the areas of Vocational Interests. However, some of the
dimensions of IT had positive but not-significant relationship with Vocational Interests; whereas Application of Internet (dimension of Information Technology) had negative and not-significant relationship with Entrepreneurial Services (r = -0.009) and Social Services (r= -0.040).

4.2.2 Objective: 2. To determine the effect of Intelligence on Vocational Interests of secondary school students.

The second objective of this study was related to finding the effect of Intelligence on Vocational Interests of the secondary school students. In order to achieve this objective the investigator formulated the following null hypothesis for empirical verification.

H₀: 2. There will be no significant effect of Intelligence on Vocational Interests of secondary school students.

In order to find the effect of Intelligence on Vocational Interests the investigator first analysed the scores to study the relationship between Intelligence and Vocational Interests among the secondary school students by using statistical method – Pearson Product Moment Coefficient of Correlation. The following table depicts the value of Pearson Product Moment Coefficient of Correlation between Intelligence and Vocational Interests.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence</td>
<td>998</td>
<td>-0.132**</td>
<td>0.000</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0.01 level (2-tailed)**

From the above table (Table no. 4.2.2(a)), it could be said that the coefficient of correlation between Intelligence and Vocational Interests was -0.132**, significant at 0.01 levels, which indicates a negative but a significant relationship.
As Intelligence and Vocational Interests had a negative and significant relationship, the investigator could apply Simple Regression Analysis to know the effect of Intelligence of the secondary school students on their Vocational Interests. The following table (Table no. 4.2.2(b)) depicts the value of Simple Regression Analysis.

**Table no. 4.2.2(b)**

Simple Regression Analysis between Intelligence and Vocational Interests of sample students (N = 1000).

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. (Constant)</td>
<td>281.425</td>
<td>5.636</td>
<td>-0.132**</td>
<td>49.934</td>
</tr>
<tr>
<td>Intelligence</td>
<td>-1.207</td>
<td>0.286</td>
<td></td>
<td>-4.219</td>
</tr>
</tbody>
</table>

R=0.132  
R Square=0.018

**Significant at 0.01 level (2-tailed)**

It has been observed from the above table (Table no. 4.2.2(b)) that the square of R was 0.018, which indicates that 1.8 percent of the variance in Vocational Interests was contributed by Intelligence. In addition, the negative Beta value that was significant at 0.01 levels indicates that Intelligence had a negative effect on Vocational Interests. Therefore, the investigator was of the opinion that intelligent students were less interested towards Vocational courses and vice versa. Hence, the above null hypothesis is rejected.

Furthermore, the investigator calculated the correlation values between Intelligence and the nineteen areas of Vocational Interest by using Product Moment Correlation of Coefficient. The following table (Table no. 4.2.2(c)) shows the coefficient of correlations between Intelligence and Vocational Interests (nineteen areas).
Table no. 4.2.2(c)

Coefficient of Correlations between Intelligence
and nineteen areas of Vocational Interests of secondary school student (N = 1000)

<table>
<thead>
<tr>
<th>Areas of Vocational Interest Dependent Variable</th>
<th>Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>- 0.118**</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>- 0.100**</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>- .006 NS</td>
</tr>
<tr>
<td>Health Services</td>
<td>- 0.044 NS</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>- 0.161**</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>- 0.105**</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>- 0.019 NS</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>- 0.181**</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>- 0.105**</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>- 0.054 NS</td>
</tr>
<tr>
<td>Social Services</td>
<td>- 0.115**</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>- 0.146**</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>0.077*</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>- 0.052 NS</td>
</tr>
<tr>
<td>Airline Services</td>
<td>0.050 NS</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>- 0.121**</td>
</tr>
<tr>
<td>Media</td>
<td>- 0.026 NS</td>
</tr>
<tr>
<td>Counsellor</td>
<td>- 0.010 NS</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>0.040 NS</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed).  **Significant at 0.01 level (2-tailed).

*NS: Not Significant at any level.

From the above table (Table no. 4.2.2(c)) it has been observed that Intelligence had a positive but not-significant relationship with Airline Services (r= 0.050) and with Literary Arts (r= 0.040); whereas it had a positive but significant (at 0.05 level, 2-tailed)
relationship with Creative Arts ($r = 0.077$). But, Intelligence had a negative but non-significant relationship with Engineering Services ($r = -0.006$); Health Services ($r = -0.044$); Sports Professionals ($r = -0.019$); Finance/Accounts ($r = -0.054$); Managerial Services ($r = -0.052$); Media ($r = -0.026$) and Counsellor ($r = -0.010$) whereas it had negative but significant (at 0.01 level, 2-tailed) relationship with Teaching ($r = -0.118$); Performing Arts ($r = -0.100$); Clerical Jobs ($r = -0.161$); Entrepreneurial Services ($r = -0.105$); Social Scientists ($r = -0.181$); Gadget Technicians ($r = -0.105$); Social Services ($r = -0.115$); Conventional Jobs ($r = -0.146$); and Investigative Services ($r = -0.121$) areas of Vocational Interests.

The investigator further sub-divided the above-mentioned objective into two sub-objectives in order to ascertain the effect of Intelligence on Vocational Interests of secondary school male and female students.

4.2.2.1 Sub-Objective: 2(a). To determine the effect of Intelligence on Vocational Interests of male students studying in secondary schools.

In order to achieve this objective the investigator framed the following null hypothesis for empirical verification.

$H_0$: 2(a). There will be no significant effect of Intelligence on Vocational Interests of male students studying in secondary schools.

In order to ascertain the effect of Intelligence on Vocational Interests the investigator first analysed the collected data with the help of statistical technique – Product Moment Correlation. The following table depicts the value of coefficient of correlation between Intelligence and Vocational Interests of secondary school male students.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated $r$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence</td>
<td>498</td>
<td>$-0.070^{NS}$</td>
<td>0.123</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td>498</td>
<td>$-0.070^{NS}$</td>
<td>0.123</td>
</tr>
</tbody>
</table>

$NS$: Not significant    $df$: degree of freedom
The above table (Table no. 4.2.2.1(a)), exhibits the coefficient of correlation between Intelligence and Vocational Interests as - 0.070 which indicates a negative and not-significant relationship.

The not significant relationship between Intelligence and Vocational Interests of male students signifies that their Intelligence had no or little effect in influencing their Vocational Interests. Hence, the above null hypothesis is accepted.

The following table (Table no. 4.2.2.1(b)) exhibits the correlation coefficient between Intelligence and the nineteen areas of Vocational Interests of male students.

<table>
<thead>
<tr>
<th>Areas of Vocational Interest Dependent Variable</th>
<th>Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>-0.096*</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>-0.059NS</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>0.049NS</td>
</tr>
<tr>
<td>Health Services</td>
<td>-0.006NS</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>-0.097*</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>-0.047NS</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>0.021NS</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>-0.130**</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>-0.082NS</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>-0.044NS</td>
</tr>
<tr>
<td>Social Services</td>
<td>-0.107*</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>-0.115*</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>0.093*</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>0.016NS</td>
</tr>
<tr>
<td>Airline Services</td>
<td>0.071*</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>0.079**</td>
</tr>
<tr>
<td>Media</td>
<td>-0.031NS</td>
</tr>
<tr>
<td>Counsellor</td>
<td>-0.031NS</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>0.027NS</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed). **Significant at 0.01 level (2-tailed).

NS: Not Significant (at any level).
From the above table (Table no. 4.2.2.1(b)) it was concluded that Intelligence had a positive but not-significant relationship with Engineering Services ($r= 0.049$); Sports Professionals ($r= 0.021$); Managerial Services ($r= 0.016$); Literary Arts ($r= 0.027$); whereas it had a positive but significant (at 0.05 level, and 0.01 level, 2-tailed) relationship with Creative Arts ($r= 0.093$), Airline Services ($r= 0.071$) and Investigative Services ($r= 0.079$); However, Intelligence had a negative but not-significant relationship with Performing Arts ($r= -0.059$); Health Services ($r= -0.006$); Entrepreneurial Services ($r= -0.047$); Gadget Technicians ($r= -0.082$); Finance & Accounts ($r= -0.044$); Media ($r= -0.031$) Counsellor ($r= -0.031$) whereas it had negative but significant (at 0.05 level, 2-tailed) relationship with Teaching ($r= -0.096$); Clerical Jobs ($r= -0.097$); Social Services ($r= -0.107$); Conventional Jobs ($r= -0.115$); it had negative and significant (at 0.01 level, 2-tailed) relationship with Social Scientists ($r= -0.130$).

Though, there was no overall effect of Intelligence of male students on their Vocational Interests, it was evident from the above table (Table no. 4.2.2.1(b)) that Intelligence had significant influence on areas of vocations like Teaching, Clerical Jobs, Social Scientists, Social Services, Conventional Jobs, Creative Arts, Airline Services, and Investigative Services.

4.2.2.2 Sub-objective: 2(b). To determine the effect of Intelligence on Vocational Interests of female students studying in secondary schools.

In order to ascertain the effect of Intelligence on Vocational Interests the investigator framed the following null hypothesis for empirical confirmation.

$H_0; 2(b)$. There will be no significant effect of Intelligence on Vocational Interests of female students studying in secondary schools.

In order to ascertain the effect of Intelligence on Vocational Interests the investigator first analysed the collected data for relationship, with the help of statistical technique: Product Moment Coefficient of Correlation. The following table outlines the value of coefficient of correlation between Intelligence and Vocational Interests of female students of secondary schools.
Table no. 4.2.2.2(a)
Product Moment Coefficient of Correlation between Intelligence and Vocational Interests of female students of secondary schools (N = 500).

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence</td>
<td></td>
<td>-0.191**</td>
<td></td>
</tr>
<tr>
<td>Vocational Interests</td>
<td>498</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0.01 level (2-tailed). df: degree of freedom

From the above table (Table no. 4.2.2.2(a)), it was observed that the coefficient of correlation between Intelligence and Vocational Interests was -0.191**, significant at 0.01, which indicates a negative but significant relationship.

As these variables had a negative but significant relationship, the investigator used Simple Regression Analysis to study the contributory role of Intelligence of female students of secondary schools on their Vocational Interests. The following table (Table no. 4.2.2.2 (b)) illustrates the value of Simple Regression Analysis.

Table no. 4.2.2.2(b)
Simple Regression Analysis between Intelligence and Vocational Interests of female students (N = 500)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1. (Constant)</td>
<td>290.228</td>
<td>7.046</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intelligence</td>
<td>-1.570</td>
<td>0.362</td>
<td>-0.191**</td>
<td></td>
</tr>
</tbody>
</table>

R= -0.191  R Square=0.036

**Significant at 0.01 level (2-tailed)

It was observed from the above table (Table no. 4.2.2.2 (b)) that the value of R square was 0.036, which indicates that 3.6 percent of the variance in Vocational Interests was contributed by Intelligence. In addition, the negative Beta value that was significant at 0.01 levels indicates that Intelligence of female students had a negative effect on their
Vocational Interests. Therefore, the investigator concludes that higher the Intelligence lower is their Vocational Interests and vice versa. Hence, the above-mentioned null hypothesis is rejected.

The following table (Table no. 4.2.2.2(c)) exhibits the coefficient of correlation between Intelligence and the nineteen areas of Vocational Interests of female students of secondary schools.

<table>
<thead>
<tr>
<th>Areas of Vocational Interest Dependent Variable</th>
<th>Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>-0.130**</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>-0.115*</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>-0.074NS</td>
</tr>
<tr>
<td>Health Services</td>
<td>-0.067NS</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>-0.223**</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>-0.184**</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>-0.078NS</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>-0.231**</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>-0.140**</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>-0.080NS</td>
</tr>
<tr>
<td>Social Services</td>
<td>-0.096*</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>-0.182**</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>0.085NS</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>-0.135**</td>
</tr>
<tr>
<td>Airline Services</td>
<td>0.016NS</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>-0.170**</td>
</tr>
<tr>
<td>Media</td>
<td>-0.017NS</td>
</tr>
<tr>
<td>Counselor</td>
<td>0.013NS</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>0.066NS</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed). **Significant at 0.01 level (2-tailed). NS: Not-Significant
From the above table it could be observed that Intelligence had a positive but not-significant relationship with Creative Arts ($r = 0.085$); Airline Services ($r = 0.016$); Counsellor ($r = 0.013$) and Literary Arts ($r = 0.040$). However, Intelligence had a negative but not-significant relationship with Engineering Services ($r = -0.074$); Health Services ($r = -0.067$); Sports Professionals ($r = -0.078$); Finance & Accounts ($r = -0.080$); Media ($r = -0.017$); whereas it had negative but significant (at 0.05 level, 2-tailed) relationship with Performing Arts ($r = -0.115$); Social Services ($r = -0.096$); and negative but significant (at 0.01 level, 2-tailed) relationship with Teaching ($r = -0.130$); Clerical Jobs ($r = -0.223$); Entrepreneurial Services ($r = -0.184$); Social Scientists ($r = -0.231$); Gadget Technicians ($r = -0.140$); Conventional Jobs ($r = -0.182$); Managerial Services ($r = -0.135$); and Investigative Services ($r = -0.170$).

4.2.3 Objective: To find the effect of Achievement Motivation on Vocational Interests of secondary school students.

The third objective of this study was concerned with finding the effect of Achievement Motivation on Vocational Interests of the sample students. In order to achieve this objective the investigator formulated the following null hypothesis for empirical validation.

$H_0$3. There will be no significant effect of Achievement Motivation on Vocational Interests of secondary school students.

In order to find the effect of Achievement Motivation on Vocational Interests the investigator first analysed the scores to study the relationship between Achievement Motivation and Vocational Interests among the sample students by using statistical method Pearson Product Moment Coefficient of Correlation. The following table depicts the value of Pearson Product Moment Coefficient of Correlation between Achievement Motivation and Vocational Interests.
Table no. 4.2.3 (a)

Product Moment Coefficient of Correlation between Achievement Motivation and Vocational Interests of secondary school students (N = 1000).

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>998</td>
<td>0.001\textsuperscript{NS}</td>
<td>0.971</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textit{NS}: Not-Significant at any level. df: degree of freedom

The above table (Table no. 4.2.3 (a)) exhibits the coefficient of correlation between Achievement Motivation and Vocational Interests to be 0.001, which indicates a positive but not-significant relationship. This not significant correlation value implies that Achievement Motivation of secondary school students did not influence their interests towards various vocations. Hence the above-mentioned null hypothesis is accepted.

Furthermore, the investigator calculated the correlation values between Achievement Motivation and the nineteen areas of Vocational Interest by using Product Moment Correlation of Coefficient. The following table (Table no. 4.2.3(b)) depicts the coefficient of correlations between Achievement Motivation and the nineteen areas of Vocational Interests.

Table no. 4.2.3 (b)

Table showing the relationship (Coefficient of Correlations) between Achievement Motivation and nineteen areas of Vocational Interests of secondary school students (N = 1000)

<table>
<thead>
<tr>
<th>AREAS OF VOCATIONAL INTEREST DEPENDENT VARIABLE</th>
<th>Achievement Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>-0.023\textsuperscript{NS}</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>-0.001\textsuperscript{NS}</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>0.012\textsuperscript{NS}</td>
</tr>
<tr>
<td>Health Services</td>
<td>0.109**</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>-0.090**</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>-0.082**</td>
</tr>
<tr>
<td>Sports professionals</td>
<td>0.046\textsuperscript{NS}</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Social scientists</td>
<td>0.000&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Gadget technicians</td>
<td>-0.065&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>Finance &amp; accounts</td>
<td>-0.003&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Social services</td>
<td>-0.038&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>-0.019&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Creative arts</td>
<td>0.056&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Managerial services</td>
<td>-0.026&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Airline services</td>
<td>0.110&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Investigative</td>
<td>0.063&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>Media</td>
<td>0.012&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Counsellor</td>
<td>0.030&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>0.057&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed). **Significant at 0.01 level (2-tailed).

<sup>NS</sup>: Not-Significant at any level.

From the above table, it has been observed that Achievement Motivation had a positive and significant relationship (at 0.05 level, 2-tailed) with Investigative Services ($r = 0.063$); also with Health Services ($r = 0.109$), Airline Services ($r = 0.110$) (at 0.01 level, 2-tailed). It was also evident from the above table that there was a positive but not-significant relationship between Achievement Motivation and Engineering Services ($r = 0.012$), Sports Professionals ($r = 0.046$), Social Scientists ($r = 0.000$), Creative Arts ($r = 0.056$), Media ($r = 0.012$), Counsellor ($r = 0.030$), Literary Arts ($r = 0.057$). However, Achievement Motivation had a negative but significant relationship (at 0.01 level, 2-tailed) with Clerical Jobs ($r = -0.09$) and Entrepreneurial Services ($r = -0.082$). Achievement Motivation also had negative but significant relationship (at 0.05 level, 2-tailed) with Gadget Technicians Vocations ($r = -0.065$). Lastly Achievement Motivation had negative and non-significant relationship with Teaching ($r = -0.023$), Performing Arts ($r = -0.001$), Finance & Accounts ($r = -0.003$), Social Services ($r = -0.038$), Conventional Jobs ($r = -0.019$) and Managerial Services ($r = -0.026$).

Even though there was no significant relationship between Achievement Motivation and Vocational Interests of secondary school students, however Achievement Motivation was instrumental in promoting Health Services, Clerical Jobs, Entrepreneurial Services, Gadget Technician, and Investigative Services – areas of Vocational Interests.
The above-mentioned objective was further sub-divided by the investigator into two more sub-objectives in order to study the effect of Achievement Motivation on Vocational Interests of secondary school male and female students. In order to peruse the effects of Achievement Motivation on Vocational Interests of male and female students studying in secondary schools, the investigator formulated the following sub-objectives.

4.2.3.1 Sub-objective:3(a). To find the effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

The investigator formulated the following null hypothesis for empirical confirmation in order to study the effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

**H_0: 3(a)** There will be no significant effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

In order to know the status of the above-mentioned null hypothesis, the investigator first studied the relationship between Achievement Motivation and Vocational Interests by using statistical technique Pearson Product Moment Coefficient of Correlation. The following table illustrates the value of Pearson Product Moment Coefficient of Correlation between Achievement Motivation and Vocational Interests of male students.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>498</td>
<td>-0.060&lt;sup&gt;NS&lt;/sup&gt;</td>
<td>0.181</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>NS: Not-Significant at any level</sup>  
<sup>df: degree of freedom</sup>

It has been observed from the above table (Table no. 4.2.3.1 (a)), that the correlation coefficient between Achievement Motivation and Vocational Interests was 0.060, which indicates a positive but not-significant relationship. This not-significant relationship
signifies that Achievement Motivation had no or little effect on inculcating Vocational Interest of male students. Hence the null hypothesis $H_0$ 3(a) is accepted.

The following table (Table no. 4.2.3.1(b)) exhibits the coefficient of correlation between Achievement Motivation and the nineteen areas of Vocational Interests of male students.

Table no. 4.2.3.1 (b)

Coefficient of Correlations between Achievement Motivation and nineteen areas of Vocational Interests of male students secondary schools (N=500).

<table>
<thead>
<tr>
<th>Areas of Vocational Interest (Dependent Variable)</th>
<th>Achievement Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>0.020 NS</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>- 0.033 NS</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>0.024 NS</td>
</tr>
<tr>
<td>Health Services</td>
<td>0.174**</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>- 0.048 NS</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>- 0.059 NS</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>0.099*</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>0.070 NS</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>- 0.014 NS</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>0.046 NS</td>
</tr>
<tr>
<td>Social Services</td>
<td>- 0.035 NS</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>0.030 NS</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>0.068 NS</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>0.008 NS</td>
</tr>
<tr>
<td>Airline Services</td>
<td>0.177**</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>0.161**</td>
</tr>
<tr>
<td>Media</td>
<td>0.012 NS</td>
</tr>
<tr>
<td>Counsellor</td>
<td>0.068 NS</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>0.038 NS</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed).  **Significant at 0.01 level (2-tailed).

NS: Not-Significant at any level
It was evident from the table (Table no. 4.2.3.1(b)) that there was positive and significant relationship between Achievement Motivation and Health Services \( (r = 0.174) \), Airline Services \( (r = 0.177) \) and Investigative Services \( (r = 0.161) \), (at 0.01 level, 2-tailed). Achievement Motivation had positive and significant relationship (at 0.05 level, 2-tailed) with Sports Professionals vocations \( (r = 0.099) \). Achievement Motivation also had positive but not-significant relationship with Teaching \( (r = 0.02) \), Engineering Services \( (r = 0.024) \), Social Scientists \( (r = 0.07) \), Finance & Accounts \( (r = 0.046) \), Conventional Jobs \( (r = 0.03) \), Creative Arts \( (r = 0.068) \), Managerial Services \( (r = 0.008) \), Media \( (r = 0.012) \), Counsellor \( (r = 0.068) \) and Literary Arts \( (r = 0.038) \). However, Achievement Motivation had negative and not-significant relationship with Performing Arts \( (r = -0.033) \), Clerical Jobs \( (r = -0.048) \), Entrepreneurial Services \( (r = -0.059) \), Gadget Technicians \( (r = -0.014) \) and Social Services \( (r = -0.035) \) areas of Vocational Interests.

Despite the fact that Achievement Motivation had no or little effect on Vocational Interests of male students but, it did have significant effects on Health Services, Sports Professionals, Airline Services, and Investigative Services.

4.2.3.2 Sub-objective: 3(b). To find the effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

The investigator formulated the following null hypothesis for empirical authentication in order to determine the effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

\( H_0 : 3(b) \) There will be no significant effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

With the help of statistical method Pearson Product Moment Coefficient of Correlation, the investigator at the foremost analysed the scores Achievement Motivation and Vocational Interests of female students to study the relationship between them. The following table illustrates the value of Pearson Product Moment Coefficient of Correlation.
Table no. 4.2.3.2(a)

Product Moment Coefficient of Correlation between Achievement Motivation and Vocational Interests of secondary school female students (N=500).

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>498</td>
<td>-0.073&lt;sup&gt;NS&lt;/sup&gt;</td>
<td>0.102</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not-Significant at the any level*  

*df: degree of freedom*

From the above table (Table no. 4.2.3.2 (a)), it could be said that the coefficient of correlation between Achievement Motivation and Vocational Interests of female students was - 0.073 indicating a negative and not-significant relationship. This not-significant relationship implies that Achievement Motivation had no or little role to play in inculcating the Vocational Interests of female students. Therefore, the null hypothesis $H_0$ 3(b) is accepted.

The following table (Table no. 4.2.3.2(b)) exhibits the coefficient of correlation between Achievement Motivation and the nineteen areas of Vocational Interests.

Table no.4.2.3.2(b)

Coefficient of Correlations between Achievement Motivation and nineteen areas of Vocational Interests of secondary school female students (N=500).

<table>
<thead>
<tr>
<th>Areas of Vocational Interests Dependent Variable</th>
<th>Achievement Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>- 0.097&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>-0.004&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>0.026&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Health Services</td>
<td>0.016&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>- 0.139&lt;sup&gt;**&lt;/sup&gt;</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>- 0.098&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>0.015&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>-0.071&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>- 0.106&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>-0.041&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Social Services</td>
<td>-0.098*</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>-0.067&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>0.024&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>-0.048&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Airline Services</td>
<td>0.064&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>-0.038&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Media</td>
<td>0.008&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Counsellor</td>
<td>-0.013&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>0.067&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed).

<sup>NS: Not-Significant at any level</sup>

It was evident from the table (Table no. 4.2.3.2(b)) that Achievement Motivation had positive but not-significant relationship with Engineering Services (r= 0.026), Health Services (r= 0.016), Sports Professionals (r= 0.015), Creative Arts (r= 0.024), Airline Services (r= 0.064), Media (r= 0.008) and Literary Jobs (r= 0.067). It was also clear from the table that Achievement Motivation had negative but significant relationship (at 0.01 level, 2-tailed) with Clerical Jobs (r= -0.139). Achievement Motivation had negative but significant relationship (at 0.05 level, 2-tailed) with Teaching (r= -0.097), Entrepreneurial Services (r= -0.098), Gadget Technicians (r= -0.106) and Social Services (r= -0.098). Achievement Motivation also had negative but not-significant relationship with Performing Arts (r= -0.004), Social Scientists (r= -0.071), Finance & Accounts (r= -0.041), Conventional Jobs (r= -0.067), Managerial Services (r= -0.048), Investigative Services (r= -0.038) and Counsellor (r= -0.013).

It may however be mentioned here that Achievement Motivation had significant contributory effect in promoting interest in the areas of Teaching, Clerical Jobs, Entrepreneurial Services, Gadget Technicians, and Social Services.
4.2.4 Objective: To determine the effect of Occupational Aspirations on Vocational Interests of secondary school students.

The fourth objective of this study was concerned with finding the effect of Occupational Aspirations on Vocational Interests of the total sample students. In order to achieve this objective the investigator formulated the following null hypothesis for empirical confirmation.

Hₐ:4 There will be no significant effect of Occupational Aspirations on Vocational Interests of secondary school students.

The investigator analysed the data to study the above-mentioned effect of Occupational Aspirations on Vocational Interests of the students of secondary schools by using Pearson Product Moment Coefficient of Correlation. The following table depicts the value of Pearson Product Moment Coefficient of Correlation between Occupational Aspirations and Vocational Interests.

**Table no. 4.2.4 (a)**

Product Moment Coefficient of Correlation between Occupational Aspirations and Vocational Interests of secondary school students (N = 1000)

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Aspirations</td>
<td>998</td>
<td>0.013</td>
<td>NS</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td>998</td>
<td>0.690</td>
<td></td>
</tr>
</tbody>
</table>

*NS: Not-Significant at any level  df: degree of freedom*

From the above table (Table no. 4.2.4 (a)), it was observed that the coefficient of correlation between Occupational Aspirations and Vocational Interests was 0.013 indicating a positive but not-significant relationship. Therefore, it could be concluded that Occupational Aspirations of the students did not contribute significantly in inculcating their Vocational Interests. Hence, the above-mentioned null hypothesis Hₐ 4 is accepted.

Furthermore, the investigator calculated the correlation values Occupational Aspirations and the nineteen areas of Vocational Interest by using Product Moment Correlation of
Coefficient. The following table (Table no. 4.23.4(b)) shows the coefficient of correlations between Occupational Aspirations and the nineteen areas of Vocational Interests.

**Table no.4.2.4 (b)**

Coefficient of Correlations between Occupational Aspirations and various areas of Vocational Interests of secondary school students (N=1000)

<table>
<thead>
<tr>
<th>Areas of Vocational Interest Dependent Variable</th>
<th>Occupational Aspirations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>-0.043 NS</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>0.004 NS</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>0.094**</td>
</tr>
<tr>
<td>Health Services</td>
<td>0.107**</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>-0.071*</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>-0.043 NS</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>-0.005 NS</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>0.045 NS</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>-0.083**</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>0.017 NS</td>
</tr>
<tr>
<td>Social Services</td>
<td>-0.114**</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>0.090**</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>-0.027 NS</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>0.066*</td>
</tr>
<tr>
<td>Airline Services</td>
<td>0.146**</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>0.057 NS</td>
</tr>
<tr>
<td>Media</td>
<td>0.023 NS</td>
</tr>
<tr>
<td>Counsellor</td>
<td>-0.003 NS</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>0.012 NS</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed). **Significant at 0.01 level
NS: Not-Significant at any level.
It was evident from the table (Table no. 4.23.4(b)) that Occupational Aspirations had positive and significant relationship (at 0.01 level, 2-tailed) with Engineering Services ($r = 0.094$), Health Services ($r = 0.107$), Conventional Jobs ($r = 0.09$) and Airline Services ($r = 0.146$). Occupational Aspirations had positive and significant relationship (at 0.05 level, 2-tailed) with Managerial Services ($r = 0.066$). Occupational Aspirations also had positive but not significant relationship with Performing Arts ($r = 0.004$), Social Scientists ($r = 0.045$), Finance & Accounts ($r = 0.017$), Investigative Services ($r = 0.057$) Media ($r = 0.023$) and Literary Arts ($r = 0.012$). Occupational Aspirations had negative but significant relationship (at 0.01 level, 2-tailed) with Gadget Technicians ($r = -0.083$) and Social Services ($r = -0.114$). It had negative but significant relationship (at 0.05 level, 2-tailed) with Clerical Jobs ($r = -0.071$). However, Occupational Aspirations had negative and not-significant relationship with Teaching ($r = -0.043$), Entrepreneurial Services ($r = -0.043$), Sports Professionals ($r = -0.005$), Creative Arts ($r = -0.027$) and Counsellor ($r = -0.003$).

Although Occupational Aspirations was not instrumental in promoting Vocational Interests of secondary school students, however it did have significant effect on the areas of interests like Engineering, Health Services, Clerical Jobs, Gadget Technicians, Social Services, Conventional Jobs, Managerial Services, and Airline Services.

The investigator further sub-divided the above-mentioned objective into two more sub-objectives in order to study the effect of Occupational Aspirations on Vocational Interests of secondary school male and female students.

4.2.4.1 Sub-objective:4(a). To determine the effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.

In order to peruse the effect of Occupational Aspirations on Vocational Interests of secondary school male students the investigator formulated the following null hypothesis for empirical verification.

$H_0$:4(a) There will be no significant effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.
Using Pearson Product Moment Coefficient of Correlation, the investigator at the foremost analysed the Occupational Aspirations and Vocational Interests scores of secondary school male students to establish a relationship between them. The following table illustrates the value of Pearson Product Moment Coefficient of Correlation between Occupational Aspirations and Vocational Interests of male students.

**Table no. 4.2.4.1(a)**

Product Moment Coefficient of Correlation between Occupational Aspirations and Vocational Interests of secondary school male students (N = 500).

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Aspirations</td>
<td>498</td>
<td>-0.026&lt;sup&gt;NS&lt;/sup&gt;</td>
<td>0.537</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NS: Not-Significant at any level*

From the above table (Table no. 4.2.4.1(a)), it can be observed that the coefficient of correlation between Occupational Aspirations and Vocational Interests was -0.026 which indicates a negative but not-significant relationship. Because of this not significant relationship it could be concluded that there was no or little contributory effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools. Therefore, the null hypothesis H<sub>0</sub> 4(a) is accepted.

The following table (Table no. 4.2.4.1(b)) exhibits the coefficient of correlation between Occupational Aspirations and the nineteen areas of Vocational Interests of male students.

**Table no. 4.2.4.1(b)**

Coefficient of Correlations between Occupational Aspirations and nineteen areas of Vocational Interests of secondary school male students (N=500).

<table>
<thead>
<tr>
<th>Areas of Vocational Interest Dependent Variable</th>
<th>Occupational Aspirations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>-0.040&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>0.021&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>0.023&lt;sup&gt;NS&lt;/sup&gt;</td>
</tr>
<tr>
<td>Occupation</td>
<td>Correlation Coefficient</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Health Services</td>
<td>0.108*</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>-0.143**</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>-0.102*</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>-0.047 NS</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>0.026 NS</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>-0.117**</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>-0.025 NS</td>
</tr>
<tr>
<td>Social Services</td>
<td>0.111*</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>0.081 NS</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>-0.046 NS</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>0.045 NS</td>
</tr>
<tr>
<td>Airline Services</td>
<td>0.121**</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>0.009 NS</td>
</tr>
<tr>
<td>Media</td>
<td>0.022 NS</td>
</tr>
<tr>
<td>Counsellor</td>
<td>-0.012 NS</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>-0.012 NS</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed). **Significant at 0.01 level

**NS: Not-Significant at any level.**

Table 4.2.4.1(b) shows that Occupational Aspirations had positive and significant relationship (at 0.05 level, 2-tailed) with vocation related to Health Services ($r=0.198$), and Social Services ($r=0.111$). Occupational Aspirations had positive and significant relationship (at 0.01 level, 2-tailed) with vocation related to Airline Services ($r=0.121$). Occupational Aspirations had also positive but not significant relationship with vocation related to Performing Arts ($r=0.021$), Engineering Services ($r=0.023$), Social Scientists ($r=0.026$), Conventional Jobs ($r=0.081$), Managerial Services ($r=0.045$), Investigative Services ($r=0.009$), Media ($r=0.022$). Contradictory to these, a negative and not-significant relationship was found with Teaching ($r=-0.04$), Sports Professionals ($r=-0.047$), Finance & Accounts ($r=-0.025$), Creative Arts ($r=-0.046$), Counsellor ($r=-0.012$) and Literary Arts ($r=-0.012$) whereas, Occupational Aspirations had negative but significant relationship (at 0.05 level, 2-tailed) with Entrepreneurial Services ($r=-0.102$). Occupational Aspirations had negative and significant relationship (at 0.01
level, 2-tailed) with Clerical Jobs vocation (r = -0.143) and Gadget Technicians (r = -0.177).

Apart from the fact that Occupational Aspirations had no contributory effect on Vocational Interests, however, it did influence the areas like Health Services, Clerical Jobs, Entrepreneurial Services, Gadget Technicians, and Airline Services as these areas had significant relationship with Occupational Aspirations.

4.2.4.2 Sub-objective: 4(b). To determine the effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.

The investigator formulated the following null hypothesis for empirical verification in order to establish the effect of Occupational Aspirations on Vocational Interests of secondary school female students.

\[ H_0:4(b): \text{There will be no significant effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.} \]

Statistical method Pearson Product Moment Coefficient of Correlation was used for analysing the Occupational Aspirations and Vocational Interests scores. This analysis was done in order to establish a relationship between Occupational Aspirations and Vocational Interests of secondary school female students. The following table illustrates the value of Pearson Product Moment Coefficient of Correlation between Occupational Aspirations and Vocational Interests of female students.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>df</th>
<th>Calculated r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Aspirations</td>
<td>498</td>
<td>0.075 $^{NS}$</td>
<td>0.094</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$NS$: Not-Significant at any level.

From the above table (Table no. 4.2.4.2(a)) it was observed that the coefficient of correlation between Occupational Aspirations and Vocational Interests was 0.075, which
indicates a positive but not-significant relationship. As this relationship was not significant it could be concluded that there was no or little contributory effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools. Therefore, the null hypothesis $H_0$ 4(b) is accepted.

The following table (Table no. 4.2.4.2(b)) exhibits the coefficient of correlation between Occupational Aspirations and the nineteen areas of Vocational Interests of female students.

**Table no. 4.2.4.2 (b)**

Coefficient of Correlations between Occupational Aspirations and nineteen areas of Vocational Interests of secondary school female students (N=500).

<table>
<thead>
<tr>
<th>Areas of Vocational Interest Dependent Variable</th>
<th>Occupational Aspirations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>$-0.027^{NS}$</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>$0.018^{NS}$</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>$0.152^{**}$</td>
</tr>
<tr>
<td>Health Services</td>
<td>$0.132^{**}$</td>
</tr>
<tr>
<td>Clerical Jobs</td>
<td>$0.022^{NS}$</td>
</tr>
<tr>
<td>Entrepreneurial Services</td>
<td>$0.024^{NS}$</td>
</tr>
<tr>
<td>Sports Professionals</td>
<td>$0.024^{NS}$</td>
</tr>
<tr>
<td>Social Scientists</td>
<td>$0.067^{NS}$</td>
</tr>
<tr>
<td>Gadget Technicians</td>
<td>$-0.055^{NS}$</td>
</tr>
<tr>
<td>Finance &amp; Accounts</td>
<td>$0.057^{NS}$</td>
</tr>
<tr>
<td>Social Services</td>
<td>$-0.090^{*}$</td>
</tr>
<tr>
<td>Conventional Jobs</td>
<td>$0.098^{*}$</td>
</tr>
<tr>
<td>Creative Arts</td>
<td>$0.020^{NS}$</td>
</tr>
<tr>
<td>Managerial Services</td>
<td>$0.080^{NS}$</td>
</tr>
<tr>
<td>Airline Services</td>
<td>$0.162^{**}$</td>
</tr>
<tr>
<td>Investigative Services</td>
<td>$0.115^{**}$</td>
</tr>
<tr>
<td>Media</td>
<td>$0.029^{NS}$</td>
</tr>
<tr>
<td>Counsellor</td>
<td>$0.011^{NS}$</td>
</tr>
<tr>
<td>Literary Arts</td>
<td>$0.057^{NS}$</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed).  **Significant at 0.01 level

NS: Not-Significant at any level.

It was evident from the above table (Table no.4.2.4.2 (b)) that Occupational Aspirations had positive and significant relationship (at 0.01 level, 2-tailed) with Engineering
Services (r = 0.152), Health Services (r = 0.132), Airline Services (r = 0.162) and Investigative Services (r = 0.115). Occupational Aspirations also had positive and significant relationship (at 0.05 level, 2-tailed) with Conventional Jobs (r = 0.098). Occupational Aspirations had positive but not significant relationship with Performing Arts (r = 0.018), Clerical Jobs (r = 0.022), Entrepreneurial Services (r = 0.024), Sports Professionals (r = 0.024), Social Scientists (r = 0.067), Finance & Accounts (r = 0.057), Creative Arts (r = 0.02), Managerial Services (r = 0.08), Media (r = 0.029), Counsellor (r = 0.011) and vocations related to Literary Arts (r = 0.0570). On the other hand Occupational Aspirations had negative and not-significant relationship with Teaching (r = -0.027) and Gadget Technicians (r = -0.055). In case of Social Services (r = -0.09), Occupational Aspirations had negative and significant relationship (at 0.05 level, 2-tailed) with it.

Although Occupational Aspirations was not instrumental in promoting Vocational Interests of female secondary school students, however it did promote interests significantly in the areas of Engineering, Health Services, Social Services, Conventional Jobs, Airline Services and Investigative Services.

4.3 Analysis based on Multiple Regression Analysis:

4.3.1 Objective–5 To find the combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary schools students.

The fifth objective of this study was concerned with finding the combined effect of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on Vocational Interests of the sample students. In order to achieve this objective the investigator formulated the following null hypothesis for empirical verification.

Hₐ: 5 There will be no significant combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary schools students.
In order to substantiate this hypothesis, the investigator treated the scores of all the six dimensions of Information Technology, Intelligence, Achievement Motivation, Occupational Aspirations and the nineteen areas of Vocational Interests under the Stepwise Multiple Regression Analysis and the results and their interpretations are presented in the following tables.

4.3.1.1 DETERMINANTS OF 'TEACHING (V1)'

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Teaching)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.211 *</td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.147 **</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.097 **</td>
</tr>
<tr>
<td>Intelligence</td>
<td>-0.059 *</td>
</tr>
<tr>
<td>IT for Human Welfare (IT-6)</td>
<td>0.064 *</td>
</tr>
</tbody>
</table>

Multiple R=0.392  R Square=0.154

*Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)

The above table (Table no. 4.3.1(a)) suggested that only Information Technology and Intelligence influenced the determinants of Teaching (V1), which was one of the nineteen areas of Vocational Interests. IT & Entrepreneurial Services (IT-5), IT & Artistic Jobs (IT-3), Career Options in Computer (IT-4), and IT for Human Welfare (IT-6) which are four of the six dimensions of Information Technology along with Intelligence were instrumental in promoting the Teaching area of Vocational Interests among the secondary school students.

The value of $R^2 = 0.154$, (coefficient of determination) indicates the fact that only 15.4 percent of variance of Teaching area of Vocational Interests of the students was accounted by these variables.
The positive beta values for IT & Entrepreneurial Services (IT-5), IT & Artistic Jobs (IT-3), Career Options in Computer (IT-4) and IT for Human Welfare (IT-6) indicates that the Teaching area of the Vocational Interests increases by 0.211, 0.147, 0.097 and 0.064 units for every per unit increase in the respective dimensions of IT, whereas the negative beta (-0.059) value for Intelligence indicates that Teaching Interests decreases by 0.059 units for every per unit increase in Intelligence.

4.3.1.2 DETERMINANTS OF ‘PERFORMING ARTS (V2)’

Table no. 4.3.1(b) Stepwise Regression

DETERMINANTS OF ‘PERFORMING ARTS (V2)’ – AN AREA OF VOCATIONAL
INTERESTS (N =1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Performing Arts)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.610**</td>
</tr>
<tr>
<td>Use of IT Services (IT-2)</td>
<td>0.096**</td>
</tr>
</tbody>
</table>

Multiple R=0.627 R Square=0.393

**Significant at 0.01 level (2-tailed)

It can be perceived from the above table (Table no. 4.3.1(b)) that IT & Artistic jobs (IT-3) and Use of IT Services (IT-2), two of the six dimensions of Information Technology were the potential predictors of Performing Arts – one of the areas of Vocational Interests.

The value of R² (coefficient of multiple determination) being 0.393 was indicative of the fact that 39.3 percent of the total variance of Performing Arts could be predicted by IT & Artistic jobs (IT-3) and Use of IT Services (IT-2).

The beta value from the table clearly indicates that it was positively significant in case of the two dimensions of Information Technology i.e. IT & Artistic jobs (IT-3) and Use of IT Services (IT-2), which enables the investigator to conclude that an increase in per unit in these two dimensions of Information Technology helps in promoting the interest in Performing Arts of the respondents by 0.610 and 0.096 units respectively.
4.3.1.3 DETERMINANTS OF ‘ENGINEERING SERVICES (V3)’

Table no. 4.3.1(c)  Stepwise Regression

DETERMINANTS OF ‘ENGINEERING SERVICES (V3)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Engineering Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.176**</td>
</tr>
<tr>
<td>Knowledge of IT (IT-1)</td>
<td>0.119**</td>
</tr>
<tr>
<td>Occupational Aspirations</td>
<td>0.089**</td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>-0.105**</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.107**</td>
</tr>
</tbody>
</table>

Multiple R=0.302               R Square=0.091

** Significant at 0.01 level (2-tailed). NS: Not Significant at any level.

It could be perceived from the above table (Table no. 4.3.1(c)) that Information Technology and Occupational Aspirations were the only determinants of Engineering Services - area Vocational Interests. The dimensions of Information Technology that were active predictors were Career Options in Computer (IT-4), Knowledge of IT (IT-1), IT & Artistic Jobs (IT-3) and IT & Entrepreneurial Services (IT-5). These four dimensions of Information Technology along with Occupational Aspirations were instrumental in promoting the Engineering Services area of Vocational Interests.

The value of $R^2$ (coefficient of multiple determination) was 0.091 which indicates the fact that 9.1 percent of the total variance of Engineering Services area of Vocational Interests was predicted by Career Options in Computer (IT-4), Knowledge of IT (IT-1), IT & Artistic Jobs (IT-3), IT & Entrepreneurial Services (IT-5) and Occupational Aspirations.

The positive beta values were indicative of the fact that Engineering Services area of Vocational Interests increased by 0.176, 0.119, 0.089 and 0.107 units for every unit
increase in Career Options in Computer (IT-4), Knowledge of IT (IT-1), Occupational Aspirations and IT & Entrepreneurial Services (IT-5) respectively, whereas Engineering Services area decreased by 0.105 units for every unit increase in IT & Artistic Jobs (IT-3).

4.3.1.4 DETERMINANTS OF ‘HEALTH SERVICES (V4)’

Table no. 4.3.1(d)  Stepwise Regression

DETERMINANTS OF ‘HEALTH SERVICES (V4)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Health Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.181**</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.111**</td>
</tr>
<tr>
<td>Achievement Motivation</td>
<td>0.110**</td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.102**</td>
</tr>
<tr>
<td>Occupational Aspirations</td>
<td>0.093**</td>
</tr>
<tr>
<td>IT for Human Welfare (IT-6)</td>
<td>0.077*</td>
</tr>
</tbody>
</table>

Multiple R=0.364  R Square=0.132

* Significant at 0.05 level (2-tailed)  ** Significant at 0.01 level (2-tailed)

The Table no. 4.3.1(d) indicates that the determinants of Health Services – an area of Vocational Interests were Information Technology, Achievement Motivation and Occupational Aspirations. In fact, IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), IT & Artistic Jobs (IT-3) and IT for Human Welfare (IT-6) which are dimensions of Information Technology along with Achievement Motivation and Occupational Aspirations contributed for promoting the Health Services area of Vocational Interests.

Coefficient of Multiple Determination being 0.132 signifies the fact that 13.2 percent of variance of the Health Services area of Vocational Interests of the students was accounted for by these variables.
Also, for every unit increase in IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Achievement Motivation, IT & Artistic Jobs (IT-3), Occupational Aspirations and IT for Human Welfare (IT-6), the area of Vocational Interests i.e. Health Services also increased by 0.181, 0.111, 0.110, 0.102, 0.093 and 0.077 units.

4.3.1.5 DETERMINANTS OF 'CLERICAL JOBS (V5)'

Table no. 4.3.1(e) Stepwise Regression

DETERMINANTS OF 'CLERICAL JOBS (V5)' – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Clerical Jobs)</th>
<th>Beta</th>
<th>Simple Correlation ‘r’</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.281**</td>
<td>0.394**</td>
<td>8.620</td>
<td></td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.151**</td>
<td>0.279**</td>
<td>5.052</td>
<td></td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.125**</td>
<td>0.307**</td>
<td>3.881</td>
<td></td>
</tr>
<tr>
<td>Intelligence</td>
<td>-0.093**</td>
<td>-0.161**</td>
<td>-3.237</td>
<td></td>
</tr>
<tr>
<td>Occupational Aspirations</td>
<td>-0.057*</td>
<td>-0.071*</td>
<td>-1.998</td>
<td></td>
</tr>
</tbody>
</table>

Multiple R=0.458

R Square=0.210

* Significant at 0.05 level (2-tailed)     ** Significant at 0.01 level (2-tailed)

It could be perceived from the above table (Table no. 4.3.1(e)) that Information Technology, Intelligence, and Occupational Aspirations were the three contributors for promoting the Clerical Jobs area of interest of the secondary school students. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT & Artistic Jobs (IT-3) which are the dimensions of Information Technology had positively contributed whereas Intelligence and Occupational Aspirations contributed negatively.

The value of $R^2$ (Coefficient of Multiple Determination) being 0.210, indicates the fact that 21 percent of the total variance of Clerical Jobs area of Vocational Interests was predicted by IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), IT and Artistic Jobs (IT-3), Intelligence and Occupational Aspirations.

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The positive beta value for IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), IT & Artistic Jobs (IT-3) indicates that the Clerical Jobs area of Vocational Interests increased by 0.281, 0.151 and 0.125 units for every per unit increase in the respective dimensions of Information Technology, while the negative beta value for Intelligence and Occupational Aspirations indicates that Clerical Jobs area decreased by 0.093 and 0.057 units for every unit increase in these two variables.

4.3.1.6 DETERMINANTS OF ‘ENTREPRENEURIAL SERVICES (V6)’

Table no. 4.3.1(f) Stepwise Regression

DETERMINANTS OF ‘ENTREPRENEURIAL SERVICES (V6)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Entrepreneurial Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.256**</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.161**</td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.100**</td>
</tr>
<tr>
<td>Achievement Motivation</td>
<td>0.064*</td>
</tr>
</tbody>
</table>

Multiple R=0.405                    R Square=0.164

*Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)

The above table (Table no. 4.3.1(f)) suggested that IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT & Artistic Jobs (IT-3) which are the dimensions of Information Technology along with Achievement Motivation were the determinants of Entrepreneurial Services area Vocational Interests.

The value of Coefficient of Determination i.e. R² was 0.164. This signifies the fact that 16.4 percent of the variance of Entrepreneurial Services area was accounted for, by IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), IT & Artistic Jobs (IT-3) and Achievement Motivation.

From the above table the investigator concluded that for every unit increase in IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), IT & Artistic Jobs
(IT-3) and Achievement Motivation there was an increase of Entrepreneurial Services area by 0.256, 0.161, 0.100 and 0.064 unit respectively.

4.3.1.7 DETERMINANTS OF ‘SPORTS PROFESSIONALS (V7)’

Table no. 4.3.1(g) Stepwise Regression

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Sports Professionals)</th>
<th>Beta</th>
<th>Simple Correlation ‘r’</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td></td>
<td>0.257**</td>
<td>0.351**</td>
<td>7.698</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td></td>
<td>0.165**</td>
<td>0.291**</td>
<td>4.970</td>
</tr>
<tr>
<td>Use of IT Services (IT-2)</td>
<td></td>
<td>0.073*</td>
<td>0.187**</td>
<td>2.309</td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td></td>
<td>0.070*</td>
<td>0.235**</td>
<td>2.138</td>
</tr>
<tr>
<td>Multiple R=0.410</td>
<td>R Square=0.168</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.05 level (2-tailed)       **Significant at 0.01 level (2-tailed)

The above table (Table no. 4.3.1(g)) exhibits the determinants of Sports Professionals area of Vocational Interests. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Use of IT Services (IT-2) and IT & Artistic Jobs (IT-3) indicates that Information Technology is the only variable that was instrumental in promoting the Sports Professionals area of Vocational Interests of the students.

The value of R Square (0.168) indicates that IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Use of IT Services (IT-2) and IT & Artistic Jobs (IT-3) was instrumental in promoting only 16.8 percent of Sports Professionals area of Vocational Interests.

The beta value being positive for all the four dimensions of Information Technology signifies that Sports Professionals area of Vocational Interests increased by 0.257, 0.165, 0.0730 and 0.07 for every unit increase in IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Use of IT Services (IT-2) and IT & Artistic Jobs (IT-3).
4.3.1.8 DETERMINANTS OF ‘SOCIAL SCIENTISTS (V8)’

Table no. 4.3.1(h) Stepwise Regression

DETERMINANTS OF ‘SOCIAL SCIENTISTS (V8)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Social Scientists)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.354**</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.165**</td>
</tr>
<tr>
<td>Intelligence</td>
<td>0.132**</td>
</tr>
<tr>
<td>Occupation Aspirations</td>
<td>0.057*</td>
</tr>
</tbody>
</table>

Multiple R=0.471  R Square=0.222

* Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)

NS: Not Significant

It was evident from the above table (Table no. 4.3.1(h)) that the variables responsible for promoting Social Scientists area of Vocational Interests were IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Intelligence and Occupational Aspirations.

The value of coefficient of determination was 0.222, which indicates that these variables were responsible for promoting only 22.2 percent of Social Scientists area of Vocational Interests.

The beta value being positive for all these variables was indicative of the fact that Social Scientists area of Vocational Interests increased by 0.354, 0.165, 0.132 and 0.057 for every unit increase in IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Intelligence and Occupational Aspirations.
4.3.1.9 DETERMINANTS OF ‘GADGET TECHNICIANS (V9)’

Table no. 4.3.1(i) Stepwise Regression

DETERMINANTS OF ‘GADGET TECHNICIANS (V9)’ - AN AREA OF
VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Gadget Technicians)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.324**</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.225**</td>
</tr>
<tr>
<td>Occupational Aspirations</td>
<td>-0.067*</td>
</tr>
</tbody>
</table>

Multiple R=0.455  R Square=0.207

*Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)

In this stepwise regression table (Table no. 4.3.1(i)) the determinants of Gadget Technicians area of Vocational Interests were Career Options in Computer (IT-4), IT & Entrepreneurial Services (IT-5), and Occupational Aspirations.

Career Options in Computer (IT-4), IT & Entrepreneurial Services (IT-5), and Occupational Aspirations was instrumental in promoting 20.7 percent of Gadget Technicians area of Vocational Interests as the coefficient of determination was 0.207.

The positive beta value for Career Options in Computer (IT-4) and IT & Entrepreneurial Services (IT-5) indicates that for every unit increase in these variables, the Gadget Technician area of Vocational Interests increased by 0.324 and 0.225 units respectively whereas for the negative beta value for Occupational Aspirations signifies that the Gadget Technicians area of Vocational Interests decreased by 0.067 units.
4.3.1.10 DETERMINANTS OF 'FINANCE & ACCOUNTS (V10)'

Table no. 4.3.1(j) Stepwise Regression

DETERMINANTS OF 'FINANCE & ACCOUNTS (V10)' – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Finance &amp; Accounts)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.209**</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.165**</td>
</tr>
<tr>
<td>Knowledge of IT (IT-1)</td>
<td>0.120**</td>
</tr>
</tbody>
</table>

Multiple R=0.374  R Square=0.140

**Significant at 0.01 level (2-tailed)

The table no 4.3.1(j) shows the determinants of Finance & Accounts area of Vocational Interests. The three dimensions of Information Technology - IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Knowledge of IT (IT-1) were responsible for this area of Vocational Interests. No other variables contributed for this area of Vocational Interests.

IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), and Knowledge of IT (IT-1) contributed only 14 percent of variance of Finance & Accounts as the coefficient of determination was 0.14.

The positive beta value signifies the fact that Finance & Accounts increased by 0.209, 0.165, and 0.12 units for every unit increase in the respective dimension of Information Technology.
4.3.1.11 DETERMINANTS OF ‘SOCIAL SERVICES (V11)’

Table no. 4.3.1(k) Stepwise Regression

DETERMINANTS OF ‘SOCIAL SERVICES (V11)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta</th>
<th>Simple Correlation ‘r’</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.328**</td>
<td>0.353**</td>
<td>10.172</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.138**</td>
<td>0.285**</td>
<td>4.269</td>
</tr>
<tr>
<td>Occupational Aspirations</td>
<td>-0.104**</td>
<td>-0.114**</td>
<td>-3.620</td>
</tr>
<tr>
<td>Multiple R=0.425</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R Square =0.181</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0.01 level (2-tailed)**

The above stepwise regression table (Table no. 4.3.1(k)) reveals the determinants of Social Services the area of Vocational Interests as IT & Artistic Jobs (IT-3), IT & Entrepreneurial Services (IT-5), and Occupational Aspirations. IT and Artistic Jobs (IT-3) and IT & Entrepreneurial Services (IT-5) are the dimensions of Information Technology.

The value of $R^2 = 0.181$, (coefficient of determination) indicates the fact that only 18 percent of variance of Social Services area of Vocational Interests was accounted by these two variables.

The positive beta value for IT & Artistic Jobs (IT-3) and IT & Entrepreneurial Services (IT-5) was indicative of the fact that for every unit increase in these two variables there was an increase of 0.328 and 0.138 units in Social Services area of Vocational Interests respectively whereas the negative beta value for Occupational Aspirations signifies that every unit increase of Occupational Aspirations there was a decrease of 0.104 units of Social Services area of Vocational Interests.

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4.3.1.12 DETERMINANTS OF ‘CONVENTIONAL JOBS (V12)’

Table no. 4.3.1(l) Stepwise Regression

DETERMINANTS OF ‘CONVENTIONAL JOBS (V12)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Conventional Jobs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>Beta: 0.231**</td>
</tr>
<tr>
<td></td>
<td>Simple Correlation ‘r’: 0.293**</td>
</tr>
<tr>
<td></td>
<td>t-value: 7.320</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>Beta: 0.097**</td>
</tr>
<tr>
<td></td>
<td>Simple Correlation ‘r’: 0.205**</td>
</tr>
<tr>
<td></td>
<td>t-value: 2.864</td>
</tr>
<tr>
<td>Intelligence</td>
<td>Beta: 0.115**</td>
</tr>
<tr>
<td></td>
<td>Simple Correlation ‘r’: -0.146**</td>
</tr>
<tr>
<td></td>
<td>t-value: -3.841</td>
</tr>
<tr>
<td>Occupational Aspirations</td>
<td>Beta: 0.099**</td>
</tr>
<tr>
<td></td>
<td>Simple Correlation ‘r’: 0.090**</td>
</tr>
<tr>
<td></td>
<td>t-value: 3.327</td>
</tr>
<tr>
<td>IT for Human Welfare (IT-6)</td>
<td>Beta: 0.075*</td>
</tr>
<tr>
<td></td>
<td>Simple Correlation ‘r’: 0.177**</td>
</tr>
<tr>
<td></td>
<td>t-value: 2.262</td>
</tr>
</tbody>
</table>

Multiple R=0.356  R Square=0.127

*Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)

From the above table (Table no. 4.3.1(l)) it could be said that Information Technology, Intelligence, and Occupational Aspirations were the predictors of Conventional Jobs – area of Vocational Interests. The dimensions of Information Technology that were active predictors of Conventional Jobs – an area of Vocational Interests were IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT for Human Welfare (IT-6).

The R Square value indicated that 12.7 percent of variance of Conventional Jobs - area of Vocational Interests was contributed by these variables.

The positive beta values indicates that Conventional Jobs - area increased by 0.231, 0.097, 0.115, 0.099 and 0.075 units for every unit increase in IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Intelligence, Occupational Aspirations and IT for Human Welfare (IT-6).
### 4.3.1.13 DETERMINANTS OF ‘CREATIVE ARTS (V13)’

Table no. 4.3.1(m) Stepwise Regression

**DETERMINANTS OF ‘CREATIVE ARTS (V13)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta</th>
<th>Simple Correlation ‘r’</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.322**</td>
<td>0.334**</td>
<td>10.720</td>
</tr>
<tr>
<td>Use of IT Services (IT-2)</td>
<td>0.213**</td>
<td>0.266**</td>
<td>6.358</td>
</tr>
<tr>
<td>Intelligence</td>
<td>0.105**</td>
<td>0.077**</td>
<td>3.550</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.092**</td>
<td>0.217**</td>
<td>2.719</td>
</tr>
<tr>
<td>IT for Human Welfare (IT-6)</td>
<td>0.073*</td>
<td>0.117**</td>
<td>-2.174</td>
</tr>
</tbody>
</table>

Multiple R = 0.429  
R Square = 0.184

*Significant at 0.05 level (2-tailed)  
**Significant at 0.01 level (2-tailed)

The above stepwise regression table (Table no. 4.3.1(m)) exhibits the determinants of Creative Arts – an area of Vocational Interests, as IT & Artistic Jobs (IT-3), Use of IT Services (IT-2), Intelligence, Career Options in Computer (IT-4) and IT for Human Welfare (IT-6). As IT & Artistic Jobs (IT-3), Use of IT Services (IT-2), Career Options in Computer (IT-4), and IT for Human Welfare (IT-6) are the dimensions of Information Technology, so the investigator concluded that only Information Technology and Intelligence were instrumental in promoting the Creative Arts – an area of Vocational Interests.

The R Square value indicated that 18.4 percent of variance of Creative Arts Area of Vocational Interests was contributed by these two variables.

The positive beta values indicates that for every increase in per unit of IT & Artistic Jobs (IT-3), Use of IT Services (IT-2), Intelligence, Career Options in Computer (IT-4) and IT for Human Welfare (IT-6), there was an increase of 0.322 units, 0.213 units, 0.105 units, 0.092 units and 0.073 units in Creative Arts area of Vocational Interests.
4.3.1.14 DETERMINANTS OF 'MANAGERIAL SERVICES (V14)'

Table no. 4.3.1(n) Stepwise Regression

DETERMINANTS OF 'MANAGERIAL SERVICES (V14)' – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Managerial Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.179**</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.168**</td>
</tr>
<tr>
<td>Occupation Aspirations</td>
<td>0.073*</td>
</tr>
</tbody>
</table>

Multiple R=0.288 R Square=0.083

* Significant at 0.05 level (2-tailed)  ** Significant at 0.01 level (2-tailed)

It was observed from the above table (Table no. 4.3.1(n)) that IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), and Occupation Aspirations were the predictors of Managerial Services - an area of Vocational Interests.

Only 8.3 percent of this area of Vocational Interests was predicted by the variables - IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Occupation Aspirations as the R Square value was 0.083.

Again the positive beta values signifies that Managerial Services area of Vocational Interests increased by 0.179 units, 0.168 units and 0.073 units for every unit increase in IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Occupation Aspirations respectively.
### 4.3.1.15 DETERMINANTS OF 'AIRLINE SERVICES (V15)'

**Table no. 4.3.1(o) Stepwise Regression**

**DETERMINANTS OF ‘AIRLINE SERVICES (V15)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Airline Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>Knowledge of IT (IT-1)</td>
<td>0.183**</td>
</tr>
<tr>
<td>Use of IT Services (IT-2)</td>
<td>0.162**</td>
</tr>
<tr>
<td><strong>Occupational Aspirations</strong></td>
<td>0.110**</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.117**</td>
</tr>
<tr>
<td>IT for Human Welfare (IT-6)</td>
<td>-0.081*</td>
</tr>
</tbody>
</table>

| Multiple R=0.340 | R Square=0.115 |

*Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)

It was evident from the above table (Table no. 4.3.1(o)) that Knowledge of IT (IT-1), Use of IT Services (IT-2), Occupational Aspirations, IT & Entrepreneurial Services (IT-5), and IT for Human Welfare (IT-6) were the determinants of Airline Services – an area of Vocational Interests.

The value R Square was 0.115, which signifies that Knowledge of IT (IT-1), Use of IT Services (IT-2), Occupational Aspirations, IT & Entrepreneurial Services (IT-5) and IT for Human Welfare (IT-6) were instrumental in promoting only 11.5 percent of Airline Services – an area of Vocational Interests.

The beta value being positive signifies that whenever Knowledge of IT (IT-1), Use of IT Services (IT-2), Occupational Aspirations and IT & Entrepreneurial Services (IT-5) increased by a unit there was a increase of 0.183 units, 0.162 units, 0.110 units and 0.117 units in Airline Services – an area of Vocational Interests respectively, whereas for a unit increase in IT for Human Welfare (IT-6) there was a decrease of Airline Services by 0.081 units.
### 4.3.1.16 DETERMINANTS OF ‘INVESTIGATIVE SERVICES (V16)’

**Table no. 4.3.1(p) Stepwise Regression**

DETERMINANTS OF ‘INVESTIGATIVE SERVICES (V16)’—AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Investigative Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.194**</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.123**</td>
</tr>
<tr>
<td>Intelligence</td>
<td>-0.117**</td>
</tr>
<tr>
<td>Achievement Motivation</td>
<td>0.102**</td>
</tr>
</tbody>
</table>

Multiple R=0.301 R Square=0.091

*Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)*

From the above table (Table no.4.3.1(p)) it can be observed that of the six dimensions of Information Technology, IT & Entrepreneurial Services (IT-5), and Career Options in Computer (IT-4), Intelligence and Achievement Motivation were the variables instrumental in promoting the Investigative Services area of Vocational Interests.

The value of R Square was 0.091 signifies that these variables contributed only 9.1 percent in promoting this area of Vocational Interests.

IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Achievement Motivation contributed positively in promoting the Investigative Services area, as the beta value was positive for these variables whereas Intelligence contributes negatively. The Investigative Services area of Vocational Interests increased by 0.194 units, 0.123 units, 0.102 unit respectively for every unit increase in IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Achievement Motivation while this area of Vocational Interests decreased by 0.117 units for a unit increase in Intelligence.
4.3.1.17 DETERMINANTS OF 'MEDIA (V17)'

Table no. 4.3.1(q) Stepwise Regression

DETERMINANTS OF 'MEDIA (V17)' – AN AREA OF VOCATIONAL INTERESTS
(N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Media)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Artistic Jobs (IT-3)</td>
<td>0.249**</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.228**</td>
</tr>
<tr>
<td>Use of IT Services (IT-2)</td>
<td>0.070*</td>
</tr>
</tbody>
</table>

Multiple R=0.424 R Square=0.179

*Significant at 0.05 level (2-tailed)   **Significant at 0.01 level (2-tailed)

It was observed from the above table (Table no. 4.3.1(q)) that IT & Artistic Jobs (IT-3), IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) the three dimensions of Information Technology were the only determinants of Media - one of the areas of Vocational Interests.

These determinants contributed 17.9 percent in determining the Media area of Vocational Interests, as the R Square value was 0.179.

Here also the positive beta values indicates that Media area of Vocational Interests increased by 0.249 units, 0.228 units and 0.07 units for every unit increase in IT & Artistic Jobs (IT-3), IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) respectively.
4.3.1.18 DETERMINANTS OF ‘COUNSELLOR (V18)’

Table no. 4.3.1(r) Stepwise Regression

DETERMINANTS OF ‘COUNSELLOR (V18)’—AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Counsellor)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.215**</td>
</tr>
<tr>
<td>Career Options in Computer (IT-4)</td>
<td>0.118**</td>
</tr>
<tr>
<td>IT for Human Welfare (IT-6)</td>
<td>0.069*</td>
</tr>
<tr>
<td>Multiple R=0.308</td>
<td>R Square=0.095</td>
</tr>
</tbody>
</table>

* Significant at 0.05 level (2-tailed)  **Significant at 0.01 level (2-tailed)

The above table (Table no. 4.3.1(r)) indicated the determinants of Counsellor area of Vocational Interests as IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT for Human Welfare (IT-6) the three dimensions of Information Technology.

The R Square value was 0.095, was indicative of the fact that only 9.5 percent of variance of Counsellor area of Vocational Interests was accounted by these dimensions of Information Technology.

The positive beta value indicated that for a unit increase in these respective dimensions of Information Technology there was an increase of Counsellor area of Vocational Interests by 0.215 units, 0.118 units, and 0.069 units.
4.3.1.19 DETERMINANTS OF ‘LITERARY ARTS (V19)’

Table no. 4.3.1(s) Stepwise Regression

DETERMINANTS OF ‘LITERARY ARTS (V19)’ – AN AREA OF VOCATIONAL INTERESTS (N = 1000)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable (Literary Arts)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>IT &amp; Entrepreneurial Services (IT-5)</td>
<td>0.200**</td>
</tr>
<tr>
<td>Use of IT Services (IT-2)</td>
<td>0.120**</td>
</tr>
</tbody>
</table>

Multiple R=0.248  R Square=0.062

** Significant at 0.01 level (2-tailed).

The above stepwise regression table (Table no. 4.3.1(s)) exhibits the determinants of Literary Arts - the area of Vocational Interests as IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) the two dimensions of Information Technology.

The value of R Square being 0.062 was indicative of the fact that IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) predicted only 6.2 percent of Literary Arts - the area of Vocational Interests.

The positive beta value indicated that for every unit increase in IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2), Literary Arts - the area of Vocational Interests increased by 0.2 units and 0.12 units respectively.
4.4 DISCUSSION:-
The purpose of the present study was to determine the effect of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district. Data collected from secondary schools of Aligarh district were analyzed by using Product Moment Correlation of Coefficient, and Regression Analysis.

4.4.1 Discussions Based On Product Moment Correlation of Coefficient and Simple Regression Analysis:

4.4.1.1 Objective No.1. To find the effect of Information Technology on Vocational Interests of secondary school students.

The hypotheses of the present study, that there will be no significant effect of Information Technology on Vocational Interests were rejected as the investigator found positive and significant relationships between Information Technology and Vocational Interests for the total sample of secondary school students as well as for male and female students. As these relationships were positive and significant, therefore it could be concluded that Information Technology had a positive and significant effect on inculcating their Vocational Interests. The investigator found from various studies conducted in India and abroad that there was a positive effect in the use of Information Technology in teaching learning of various subjects. The teaching and learning process had been dramatically altered by the convergence of a variety of technological instructional and pedagogical developments in recent times (Bonk & King 1998; Marina 2001; Smith 2000). Sivin-Kachala and Bialo (1995) found educational technology enhanced student achievement attitudes and self-concept, as well as the quality of teacher-student relationship. Technology, when used regularly in the classroom brings positive effects on student’s cognitive and attitudinal outcomes (Cotton, 1997; King, 1997; Newhouse, 1998; Godfrey, 2001). As in the study of Mauther, M. Z. (1999) which revealed that when computer was used to its full potential, it helped the students to achieve more in learning vocabulary, grammar and comprehension to the learner’s with different I.Q, motivation and attitude. The students were found to have positive attitude towards Computer Assisted English Language Instruction. Developed information technology based instructional package
was found to be effective for teaching English grammar and the students were found to have positive reactions towards the developed Information Technology based instructional package Rathod, J. (2005). Yadav, K. (2004) also found a significant gain in terms of students’ achievement through Information Technology enabled instructional package. The investigator from the review of related literature on use of Information Technology in teaching learning process had found that most of the studies had positive effect of Information Technology on various subjects like Mathematics, Chemistry English, Sanskrit, etc. and also found positive effect of use of Information Technology on student’s achievement. Both male and female students had favourable attitude towards audio-video teaching-learning materials (Chentanal, N. 1998; Thatte, C. H. 1998). The developed software package was found to be effective in terms of academic achievement of the students. The teachers and students were found to have favourable opinion towards the software package (Khirwadkar, A. 1999). Both the Educational Television (ETV) Programmes of Doordarshan and the School Broadcast Programmes of the All India Radio (AIR) had positive effect on school achievement of pupils (Samal, Y. 2000). Siddique, U. (2013), also confirmed that Computer Assisted Instruction (CAI) was an effective tool for teaching and learning of Physical Sciences. Therefore, teaching through Information Technology tools would definitely lead to positive results, as students would be able to achieve higher academic results.

In this 21st century, Information Technology has brought revolutionary changes in the teaching-learning process. Computers, audio, video, and other technologies can bring the outside world into the classroom making them appear more realistic and helping them to understand the abstract concepts. By the effective use of technologies, students could be motivated, make our lectures more dynamic and interesting, and renew teacher’s enthusiasm as they learn new skills and techniques of teaching. Information Technology helps to broaden the mental horizon of the students and also their field of interests. Electronic learning is an evolving, dynamic, and rapidly changing educational opportunity. The internet service, which is used by students, is the largest, most powerful computer network in the world. Through the internet service, all sources of information on different subjects as well as career options at different levels are available anytime, anywhere for the students. It is very clear from the findings that Information Technology
contributes effectively to the students of 21st century in exploring the world of work and selection of their career options.

4.4.1.2 Objective No.2 To find the effect of Intelligence on Vocational Interests of secondary school students.

The hypotheses that there will be no significant effect of Intelligence on Vocational Interests of the secondary school students and female students were rejected as the correlation of coefficient between Intelligence and Vocational Interests’ scores for the total sample and for female students were found to be negative and significant at 0.01 levels. Thus, it could be concluded that there was a negative effect of Intelligence on Vocational Interests i.e. higher the Intelligence, lower was the interests towards different vocations and vice-verse. Generally, brighter students always preferred to go for higher studies based on their interests and abilities instead of entering the world of work at an early stage. The findings of the present study was in line with the studies conducted by Bhardwaj, R.L. (1978) who had found Intelligence to consistently demoted Vocational Interests i.e. higher was the Intelligence, lower was the Vocational Interests. Noronha, A.P.P et al (2009) found low significant correlation between Vocational Interests and Intelligence of adolescence. Similar studies were also conducted by DeFruyt & Mervielde, 1997; Larson & Borgen, 2002; Tokar & Swanson, 1995; Ackerman & Heggestad, 1997; Demetriou, Kyriakides, & Avvraamidou, 2003; Sternberg & Ruzgis, 1994; Randahl, 1991; Bergmann & Eder, 2005; Lowman, 1991 (as cited in Proyer, R. T., 2006) which reaffirmed the above findings.

On the other hand, Vohra, H. B. L. (1977) had found that Intelligence played little role in choice of polytechnic students for technology group of occupations. Gaikwad, K. S. (1989) had found that students’ vocational choices were not related to Intelligence or aptitude. Jansari, A. (1995) concluded that cognitive style did not influence Vocational Interests except for the vocations classified under the computational area. Sharma, L., and Madan, P. (2014) found in their study that students scoring high on Intelligence had no or little entrepreneurial inclination. These findings reaffirmed the present finding for male students, where null hypothesis was accepted as the coefficient of correlation was found to be not significant which signifies that Intelligence had no or little effect in inculcating
their Vocational Interests. However, the studies of Uchat, D.A. (1981), and Yadav, R. (2000) found the level of Intelligence to influence the vocational preference of students. Vock, M. et.al (2013) had found that Intelligence had substantially contributed to the prediction of Vocational Interests. These studies reaffirmed the present finding for male students where a positive and significant relationship was found between Intelligence and areas of Vocational Interests like – Creative Arts, Airline Services, and Investigative Services. Proyer, R.T., et al (2012) and Vock, M., et al (2013) had also found intellectual strengths to have relations with investigative and artistic interests. However, male students had negative and significant relationships with Teaching, Clerical Jobs, Social Scientists, Social Services, and Conventional Jobs – areas of Vocational Interests which were similar to the studies of Bhardwaj, R.L. (1978).

Thus, vocational selection is not an exclusively intellectual process in which various possibilities are sorted out. Instead, decisions are based on the interaction of career selection with various social and psychological factors. According to Jansari, A. (1995) Vocational Interests depends on interactions of sociological variables and also such interactions varied from one area to another area of vocations. Studies have also substantiated the beliefs concerning the role of variables like Intelligence, socio-economic status, parental influence, school influence, needs, and values as motivating factors in specific career preferences of adolescents (Vasantha 1977).

Intelligence and socio-economic status are two factors, which start influencing the vocational preferences of adolescents much earlier than at the time of choosing their courses of studies. Intellectually brighter and economically better off students often go for science and commerce streams whereas economically less fortunate goes for arts and in turn their vocational preferences are by and large similar with their course of study. This conclusion extends support to Super's Developmental Theory of vocational behavior. Intellectually, academically and socio-economically superior adolescents were more definite and specific in their vocational preferences than their counterparts (Yadav, R.K. 1979). Moreover, Strenze, T. (2007) had also found Intelligence to be a powerful predictor of success but on the whole, not an overwhelmingly better predictor than parental socio-economic status on grades.
Though, Intelligence tests score had been found to be useful in educational and vocational guidance but this is one among the numbers of factors, which determine one’s educational and vocational achievement (Garrison, K.C., & Gray, J.S., 2011). Only mental ability can be touched by these tests. In fact, Intelligence test helps in knowing very little about the total make-up of the child’s potentialities. In order to know the child total potential one must also consider other important aspects like attitudes, cultural background, socio-economic conditions, education of parents, family atmosphere, etc.

4.4.1.3 Objective No.3. To find the effect of Achievement Motivation on Vocational Interests of secondary school students.

The hypotheses of the study that there will be no significant effect of Achievement Motivation on Vocational Interests were accepted as the analyses of data revealed that the coefficients of correlation between Achievement Motivation and Vocational Interests for the total sample as well as for male students were positive but not significant whereas it was negative and not significant for female students. These findings signifies that Achievement Motivation had no effect in inculcating their Vocational Interests which draw support from the result of Mubayi, 1974, (as cited in Desai, D. & Govind, A. 1979), wherein a negative and not significant relationship was evident between vocational aspirations and n-achievement among non-tribal students and Bhargava, V.P. (1972) had also found no correlation between level of aspirations and Achievement Motivation.

However, for the total sample, Achievement Motivation had positive and significant effect on Health Services, Airline Services, and Investigative Services; for male students, Achievement Motivation had positive and significant effect on Health Services, Sports Professionals, Airline Services, and Investigative Services. These findings are in line with the findings of Atkinson, (1966) who found Achievement Motivation to have significant effect on educational and vocational choice. Abrol, (1977) had found in his study that students who had high Achievement Motivation also had high Vocational Interests maturity. According to Salami (2004) Achievement Motivation significantly influenced students in making occupational choice, Inkson (2007) had found Achievement Motivation of adolescent boys to be related to vocational preferences and was also of the opinion that high n-achievement were relatively more attracted towards moderate-
probability than to high or low probability occupations. Tutar et al (2011) presumed Achievement Motivation and ambition was significantly positively correlated. Moreover, Achievement Motivation of secondary school students had negative and significant effects on Clerical Jobs, Entrepreneurial Services, and Gadget Technicians, and for female students, Achievement Motivation had negative and significant effects on Teaching, Clerical Jobs, Entrepreneurial Services, Gadget Technicians, and Social Services. The study of Yadav, R.K. (2005), revealed need achievement had negative correlation with biological sciences and need order had significant relationship with five fields of vocational preferences, which were biological sciences, computation, persuasive, linguistic and humanitarian. Mubayi, 1974, (as cited in Desai, D. & Govind, A. 1979) studied the vocational aspirations and n-achievement in tribal of South Gujarat and found a negative but significant relationship ($r = -0.3**$) between n-achievement and vocational aspirations. Lyngdoh, 1975, (as cited in Desai, D. & Govind, A. 1979) had also reported similar findings for tribal of Meghalaya ($r = -0.122**$). The negative trend in the relationship indicates that pupils who aspire for higher status tends to score low n-achievement. It indicated that increase in Achievement Motivation was associated with decrease in Vocational Aspirations.

Muola, J.M. (2010) found that students’ motivation to do well in academic work depends on the nature of their home environment and therefore, recommended that parents need to be aware of the importance of their role in their children’s academic Achievement Motivation so that they can provide the necessary facilities at home. Rani, S., and Kaushik, N. (2005) in their study found Achievement Motivation to be positively correlated with child’s perception of parents as demanding, loving, protecting and rewarding while negatively correlated to indifferent, neglecting, rejecting and punishing parent-child relationship.

Today, most of the parents are working parents. They have their own ambitions and therefore have very little time for their children. These may be the demotivating factors in the academic life of secondary school students. Thus, parents needs to devote time for their children, as good parenting is very essential for motivating the secondary school students in planning their future career. Sinha, J.C. (1978) found family environment,
characterized by amicable parent-child relationship to inculcate among children love and liking for vocations in the scientific and executive fields.

**4.4.1.4 Objective No.4. To find the effect of Occupational Aspirations on Vocational Interests of secondary school students.**

The fourth hypotheses that there will be no effect of Occupational Aspirations on Vocational Interests were accepted as the analyses of data for coefficients of correlation between Occupational Aspirations and Vocational Interests for the total sample and female students were found to be positive and not significant whereas, for male students it was negative and not significant. These findings indicate that Occupational Aspirations had no effect in inculcating their Vocational Interests. Kuvlesky & Bealer (1967) defined vocational choices as a manifestation of an individual's aspirations or preferences concerning work status but did not find strong evidence to support assumption that Occupational Aspirations was a good prediction of Vocational Interests. A majority of the students had high educational and vocational aspirations, but did not have clear plans relating to selecting a vocation (Annamma, A.K. 1984). The present findings were also reaffirmed by the study of Sodhi, T.S. (1988), who found that very few adolescent girls were able to make correct occupational choices in accordance to their Vocational Interests. Maqsud, M. (1992), found that significant proportions of the subjects restricted their Occupational Aspirations to few occupations, and Patton, W. and Creed, P. (2007) found that adolescents generally aspired to or expected to work within a small range of RIASEC (Realistic, Investigative, Artistic, Social, Enterprising and Conventional) occupational categories.

The findings of the present study revealed that the relationship between Occupational Aspirations and Vocational Interests of the secondary school students were positive and significant in Engineering Services, Health Services, Conventional Jobs, Managerial Services, and Airline Services areas of Vocational Interests. A positive and significant relationship was also found between Occupational Aspirations and Vocational Interests for male students in Health Services, Social Services, and Airline Services areas of Vocational Interests, whereas, female students of secondary schools had a positive and significant relationship between Occupational Aspirations and Engineering Services,
Health Services, Conventional Jobs, Airline Services, and Investigative Services areas of Vocational Interests. The present findings are in line with the findings of Kakkar, V. (1983), who found a positive correlation between Occupational Aspirations and Vocational Interests for girl students and for Lhundim, (2000) aspirations of the adolescents reflect their interests in a particular profession and subject. However, a negative and significant relationship was also found between Occupational Aspirations and Vocational Interests for secondary school students in the areas of Clerical Jobs, Gadget Technicians, and Social Services; for male students, Clerical Jobs, Entrepreneurial Services, and Gadget Technicians had negative and significant relationship; female students had negative and significant relationship with Social Services. The present findings has the support of Beal and Crockelt (2010), who found that Occupational Aspirations were positively related to academic activities and negatively related to vocational activities. Moreover, the result of Chopra, S.L. (1984) revealed that the percentage of students aspiring for professional, administrative and executive occupations gradually declined as one go down the different occupational groups.

Sewall, W. (1963), indicated that occupational choice was related to socio-economic status, academic attainments of parents, school and community attitudes, and Intelligence. These variables interacted to such an extent that no single one could by itself, provide an adequate explanation for the formation of aspirations. Gender is considered one of the most powerful and persistent in the career development of adolescents (Rojewski & Hill, 1998) and a large body of research has consistently reported gender differences with female adolescents aspiring to either high or low-prestige occupations and males to moderate-prestige occupations (Betz & Fitzgerald, 1987; Davey & Stoppard, 1993; Gottfredson & Holland, 1975; Haller, E & Virkler, S. 1993; Rojewski, 1996; Rojewski & Yang, 1997). Besides gender, there are other cognitive-personal and contextual variables that may influence on adolescents’ Occupational Aspirations. Socio-economic status was also an influential variable on Occupational Aspirations and according to Lee (1984), higher socio-economic status levels have a positive effect on adolescents’ aspirations while for McWhirter, E.H. et.al, (1998), lower socio-economic status levels reflect a perceived lack of parental support for
adolescent Occupational Aspirations. Another important variable that affects Occupational Aspirations is academic performance. Students with good academic records usually select occupations of greater prestige (Rojewski, 1995) in comparison to students with low academic performance who are more likely to have lower Occupational Aspirations.

4.4.2 Discussion Based on Multiple Regression Analysis:

4.4.2.1 Objective No.: To find the combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary schools students.

The statistical method — Multiple Regression Analysis of which stepwise regression method was used to analyse the scores in order to find the combined effect of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on all the areas of Vocational Interests of secondary school students. Investigation of the data had revealed that Information Technology had a positive role towards all the areas of Vocational Interests of the secondary school students. One or the other dimensions of Information Technology, which had six dimensions, always had a positive role in contributing towards the areas of Vocational Interests. It could be concluded that students who were highly accustomed with Information Technology had high knowledge of different vocations. Thus, it could be said that Information Technology had a great role in inculcating interests about different vocations among the students.

The present finding may be due to the change that had been brought about by new technologies which has had a significant effect on the way people live, work, and play. Information Technology is having a major influence across all fields. Rapid, easy, and increased access to Information Technology in home, at work and in educational establishments has made learning a lifelong activity. The influence of Information Technology on everyday life is no surprise for today's young generations. Today's generation are already engrossed in 21st century communities and lifestyles. In recent years, there was a steady increase of interests among students in playing with Information Technology gadgets like computers, iPods, game systems, or even cell phones. They connect with their friends via e-mails, instant messaging and chat rooms online; search
the Web to explore their interests; express themselves fluently using new media; learn with educational software; play video and computer games in virtual realities; manipulate digital photos; go behind the scenes on DVDs; channel surf on television; and chat on and take photographs with cell phones. Through the media, they identify themselves with their peers in the global culture through music, games, toys, fashion, animation, and movies.

Increase in students' technology proficiencies is also associated with ubiquitous technology. (Rockman et al. as cited Shapley, K. & Sheehan, D. 2011) reported that students with laptop considered themselves more proficient users of Word, Excel, PowerPoint, the Internet, e-mail and CD-ROMs than did non laptop students. Similarly, elementary students who received laptops reported increased computer skills and better internet research capabilities (Lowther, Ross, & Morrison, as cited Shapley, K. & Sheehan, D. 2011), and high school students with laptops made greater gains than comparison students on measures such as Internet use and in Henrico County, Virginia, researchers related increased students motivation, engagement, and interests with one-to-one computing (Schaumburg, as cited Shapley, K. & Sheehan, D. 2011).

Internet has a major role in transforming the way we carry out our routine activities. Internet and cellular phone technology have given us new opportunities and new challenges. These developments and advancements have brought the classrooms to our homes. Even a single day without computers leaves us feeling paralytic. Information Technology is changing the way we work, learns, play, think, our interest, and how we entertain ourselves. In other words, Information Technology has revolutionized the human thought, feeling, and behaviour by enabling any person anywhere in the world to exchange visual and aural experiences with any other person at any other place in the world.

Not only Information Technology, which had a positive influence on all the areas of Vocational Interests, Intelligence too had a positive effect on Social Scientists, Conventional Jobs, and Creative Arts – areas of Vocational Interests. The studies conducted by (Yadav, 1979; Uchat, 1981; Sharma, 1988; Yadav, 2000; Proyer, 2006; Sparfeldt, 2007; Noronha, et.al, 2009 Proyer, et.al, 2012) reaffirm the present finding.
The present finding is very true as far as the young generation of today is concerned. An article by Chowdhary, P. (2012) published in *The Times of India*, dated 15th April 2012 in which R. Kaul, Principal of a leading school of Agra, personally feels that students deciding their own career path are a healthy trend although it is in sharp contrast from what she experienced in the past. In her days, Science as a subject was most revered followed closely by Commerce. The feeling was that people exceptionally talented in creative fields or literature pursued Arts stream while Science was for the academically inclined. According to her, today many science students are opting for Economics and Psychology along with Science subjects. This represents a change in the mindset of students who are willing to experiment. This has also made it easier for schools to offer diverse subjects and more options to students as unconventional subjects have more takers than they did say around ten years back. A Humanities stream, which was the dark horse in the education race, is a surprise winner in today's context. In school, kids can now opt for subjects that will support their ambitions to become musicians, artists, designers, or even social activists.

This finding has also found support from an article by Krishnan, S. K. (2014) published in the *Ascent part of The Times of India* dated 26 February 14 that says around ten of the participants who were interviewed for the research mentioned about doing something different. They mentioned about doing something different like becoming a National Geographic photographer, a hairdresser for celebrities, bring rural arts to the forefront, being an image consultant, etc. There were others five participants who wanted to be doctor, engineer, IAS officer, etc. From the above discussion, it can be concluded that the mindset of the young generation are changing and are opting for something different.

Besides Information Technology and Intelligence, Achievement Motivation and Occupational Aspirations also contribute in inculcating the different areas of Vocational Interests among the total sample. Achievement Motivation was instrumental in inculcating the Health Services, Entrepreneurial Services and Investigative Services areas of Vocational Interests in the present study. In the above-mentioned article of Krishnan, S. K., he had found that more than fifty percent of his participants saw a good life and good money as drives for choosing a career. The new middle class gen Z saw career as an opportunity to create their own life. They wanted to be somebody who can influence.
Occupational Aspirations had contributed positively towards the Health Services, Engineering Services, Social Scientists, Conventional Jobs, Managerial Services, and Airline Services - areas of Vocational Interests. The reasons for Occupational Aspirations having no contribution towards other areas may perhaps be attributed to the fact that most of the students may lack information about the vocations they expect to enter after school. It may also be that some may have information about the nature of work and entry qualifications but they may hardly know about the nature of special training needed, the duration of the training and the location of the training institutions. Secondary school students should therefore be encouraged to explore the various occupational avenues and to explore various pathways to access educational opportunities. In this regard, the stories of successful individuals and alumnae’s career journey could be helpful.

In a nutshell, it can be concluded from the present study that though Intelligence, Achievement Motivation and Occupational Aspirations had contributed in inculcating some of the areas of Vocational Interests among the secondary school students but all the dimensions of Information Technology was instrumental in promoting one or the other area of Vocational Interests among the cyber craze young generation.

Summary, conclusion, educational implications, recommendations and suggestions are presented in the next chapter i.e. Chapter - 5
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Chapter-5

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND SUGGESTIONS

5.1 Summary of the Study

5.1.1 Objectives

5.1.2 Hypotheses

5.1.3 Methodology

5.1.4 Findings

5.2 Conclusion

5.3 Educational Implications

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Chapter-5

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS, AND SUGGESTIONS.

At the secondary education stage adolescents faces the problem of choosing the right type of vocation that is compatible with his interests, aptitude and socio-economic status, because the choice of a vocation is regarded as one of the critical development task of adolescents. The rapid changes in the economic, social and political conditions of the society are having a direct effect on the educational structure. Today, life has become more complex, modern day life demands production to speed up and business to progress and science and technology to get greater attentions. There is need for work force planning so that the human resources are properly utilized and unemployment is reduced. With the rapid march towards industrialization and globalization, there is a need for greater number of skilled work force in order to find the right person for the right vocation. It is possible only when the field of interest of a particular person i.e. his or her field of Vocational Interests is known. So far as the role of interest in the choice of vocations are concerned, the interest plays an important role in every one's life, because they determine, to a large extent what one will do and how well one will do it. Several factors that affect Vocational Interests of a person are – intelligence, socio-economic status, father's occupation, personality, etc. It is not possible to carry out a study to know the effect of all these factors on Vocational Interests and therefore in the present study only Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations of secondary school students of Aligarh district were considered.

In the light of the findings of the study, this chapter is divided into five sections. The first section contains a summary of the study comprising the objectives, hypotheses, methodology and findings, while the second section contains the conclusion. The third section is devoted to the implications of the finding whereas the fourth section is the recommendations based on the research work done and the fifth section is the suggestions for further study.
5.1 Summary of the Study:
This research study analysed the effect of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district. This section comprising the objectives, hypotheses, methodology and findings of the study are described as follows:

5.1.1 Objectives:
Following were the objectives and sub-objectives of the study.

**Objective 1.** To find the effect of Information Technology on Vocational Interests of secondary school students.

**Sub-Objective 1(a).** To find the effect of Information Technology on Vocational Interests of male students studying in secondary schools.

**Sub-Objective 1(b).** To find the effect of Information Technology on Vocational Interests of female students studying in secondary schools.

**Objective 2.** To determine the effect of Intelligence on Vocational Interests of secondary school students.

**Sub-Objective 2(a).** To determine the effect of Intelligence on Vocational Interests of male students studying in secondary schools.

**Sub-Objective 2(b).** To determine the effect of Intelligence on Vocational Interests of female students studying in secondary schools.

**Objective 3.** To find the effect of Achievement Motivation on Vocational Interests of secondary school students.

**Sub-Objective 3(a).** To find the effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

**Sub-Objective 3(b).** To find the effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.
Objective 4. To determine the effect of Occupational Aspirations on Vocational Interests of secondary school students.

Sub-Objective 4(a). To determine the effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.

Sub-Objective 4(b). To determine the effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.

Objective 5. To find the combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation, and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary school students.

5.1.2 Hypotheses:
In order to achieve the above objectives the following null hypotheses (H₀) were formulated:

Ho.: 1 There will be no significant effect of Information Technology on Vocational Interests of secondary school students.

Ho.: 1(a) There will be no significant effect of Information Technology on Vocational Interests of male students studying in secondary schools.

Ho.: 1(b) There will be no significant effect of Information Technology on Vocational Interests of female students studying in secondary schools.

Ho.: 2 There will be no significant effect of Intelligence on Vocational Interests of secondary school students.

Ho.: 2(a) There will be no significant effect of Intelligence on Vocational Interests of male students studying in secondary schools.
Ho.:2(b) There will be no significant effect of Intelligence on Vocational Interests of female students studying in secondary schools.

Ho.: 3 There will be no significant effect of Achievement Motivation on Vocational Interests of secondary school students.

Ho.:3(a) There will be no significant effect of Achievement Motivation on Vocational Interests of male students studying in secondary schools.

Ho.:3(b) There will be no significant effect of Achievement Motivation on Vocational Interests of female students studying in secondary schools.

Ho.: 4 There will be no significant effect of Occupational Aspirations on Vocational Interests of secondary school students.

Ho.:4(a) There will be no significant effect of Occupational Aspirations on Vocational Interests of male students studying in secondary schools.

Ho.:4(b) There will be no significant effect of Occupational Aspirations on Vocational Interests of female students studying in secondary schools.

Ho.:5 There will be no significant combined effect of six dimensions of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on the nineteen areas of Vocational Interests of secondary school students.

5.1.3 Methodology:
The Research Design was descriptive as the information collected from the subjects was not manipulated. The population used for the study was students of secondary schools of Aligarh district. The Methodologies that were used in the present research were discussed in details in Chapter-3. Five hundred male and five hundred female students constituted the sample for this study, taken from secondary schools of Aligarh district by using simple random technique. For the purpose of collection of data, the investigator developed two scales - Vocational Interests Scale and the Scale on Effect of Information Technology for Vocations. Before administering these tools, the investigator checked the
reliability and validity of these scales. Non-Verbal Intelligence Test by Sharma, A., Rao Achievement Motivation Test by Rao, D. G. and Occupational Aspirations scale by Grewal, J.S. were the other standardized tools used in the present study. Product Moment Correlations of Coefficient and Regression Analysis were used as the collected data were normally distributed. Product Moment Correlation of Coefficient and Simple Regression Analysis were used for the first four objectives whereas Stepwise Multiple Regression Analysis was used for the fifth objective. All these had been achieved with the help of SPSS version 16.0. The results of the analyses along with the necessary tables, its interpretations and discussions were presented in Chapter-4.

5.1.4 Findings:
The following were the findings of this present study:

5.1.4.1 Finding based on Product Moment Correlation of coefficient and Simple Regression Analysis:

Information Technology and Vocational Interests:

1. Positive and significant relationship was found between Information Technology and Vocational Interests of secondary school students. 30.6 percent of the variance of Vocational Interests was contributed by Information Technology in case of the total sample.

2. Positive and significant relationship was found between Information Technology and Vocational Interests of male students of secondary schools. 35.3 percent of the variance of Vocational Interests was contributed by Information Technology in case of male students.

3. Positive and significant relationship was found between Information Technology and Vocational Interests of female students of secondary schools. 23.8 percent of the variance of Vocational Interests was contributed by Information Technology in case of female students.

Intelligence and Vocational Interests:

4. Negative and significant relationship was found between Intelligence and Vocational Interests of secondary school students. Intelligence had a negative
significant effect of 1.8 percent of variance of Vocational Interests among secondary school students.

5. Negative and not significant relationship was found between Intelligence and Vocational Interests of male students of secondary schools. Because of this not significant relationship, Intelligence of male students had no or little role in inculcating their Vocational Interests.

6. Negative and significant relationship was found between Intelligence and Vocational Interests of female students of secondary schools. Intelligence had a negative significant effect of 3.6 percent of variance of Vocational Interests in case of female students.

**Achievement Motivation and Vocational Interests:**

7. Positive and not significant relationship was found between Achievement Motivation and Vocational Interests of secondary school students. As this relationship was not significant, therefore Achievement Motivation had no or little effect on their Vocational Interests.

8. Positive and not significant relationship was found between Achievement Motivation and Vocational Interests of male students of secondary schools. As this relationship was not significant, therefore Achievement Motivation was not instrumental in promoting their Vocational Interests.

9. Negative and not significant relationship was found between Achievement Motivation and Vocational Interests of female students of secondary schools. Because of not significant relationship, Achievement Motivation had no or little effect on Vocational Interests of female students.

**Occupational Aspirations and Vocational Interests:**

10. Positive and not significant relationship was found between Occupational Aspirations and Vocational Interests of secondary school students. As this relationship was not significant, therefore Occupational Aspirations did not play any significant effective role in promoting their Vocational Interests.

11. Negative and not significant relationship was found between Occupational Aspirations and Vocational Interests of male students of secondary schools. This
relationship signifies that Occupational Aspirations had no significant effective role in promoting their Vocational Interests.

12. Positive and not significant relationship was found between Occupational Aspirations and Vocational Interests of female students of secondary schools. As this relationship was not significant, therefore Occupational Aspirations of female students did not play any significant effective role in promoting their Vocational Interests.

5.1.4.2 Finding based on Multiple Regression Analysis:

Multiple Regression Analysis (Stepwise Regression Analysis) was applied on the total sample in order to explore the combine effect of six dimensions of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on all the nineteen areas of Vocational Interests. This analysis revealed the following findings:

1. IT & Entrepreneurial Services (IT-5), IT & Artistic Jobs (IT-3), Career Options in Computer (IT-4), IT for Human Welfare (IT-6), were found to contribute positive significantly to the Teaching area of Vocational Interests, whereas Intelligence made a negatively significant contribution to the Teaching area of Vocational Interests.

2. IT & Artistic Jobs (IT-3), and Use of IT Services (IT-2) were found to contribute positive significantly to the Performing Arts area of Vocational Interests.

3. Career Options in Computer (IT-4), Knowledge of IT (IT-1), Occupational Aspirations and IT & Entrepreneurial Services (IT-5), were found to contribute positive significantly to the Engineering Services area of Vocational Interests whereas IT & Artistic Jobs (IT-3) made a negatively significant contribution to this area.

4. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Achievement Motivation, IT & Artistic Jobs (IT-3), Occupational Aspirations and IT for Human Welfare (IT-6) were found to contribute positive significantly to the Health Services area of Vocational Interests.

5. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT & Artistic Jobs (IT-3) were found to contribute positive significantly to the Clerical
Jobs area of Vocational Interests whereas, Intelligence and Occupational Aspirations made a negatively significant contribution to this area.

6. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), IT & Artistic Jobs (IT-3) and Achievement Motivation were found to contribute positive significantly to the Entrepreneurial Services area of Vocational Interests.

7. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Use of IT Services (IT-2) and IT & Artistic Jobs (IT-3) were found to contribute positive significantly to the Sports Professionals – area of Vocational Interests.

8. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Intelligence and Occupational Aspirations were found to contribute positive significantly to the Social Scientist area of Vocational Interests.

9. Career Options in Computer (IT-4) and IT & Entrepreneurial Services (IT-5) were found to contribute positive significantly to the Gadget Technicians – area of Vocational Interests whereas, Occupational Aspirations made a negatively significant contribution to this area of Vocational Interests.

10. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Knowledge of IT (IT-1) were found to contribute positive significantly to the Finance & Accounts area of Vocational Interests.

11. IT & Artistic Jobs (IT-3) and IT & Entrepreneurial Services (IT-5) were found to contribute positive significantly to the Social Services area of Vocational Interests whereas, Occupational Aspirations made a negatively significant contribution to this area of Vocational Interests.

12. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4), Intelligence, Occupational Aspirations and IT for Human Welfare (IT-6) were found to contribute positive significantly to the Conventional Jobs area of Vocational Interests.

13. IT & Artistic Jobs (IT-3), Use of IT Services (IT-2), Intelligence, Career Options in Computer (IT-4) and IT for Human Welfare (IT-6) were found to contribute positive significantly to the Creative Arts area of Vocational Interests.

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14. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Occupational Aspirations were found to contribute positive significantly to the Managerial Works area of Vocational Interests.

15. Knowledge of IT (IT-1), Use of IT Services (IT-2) Occupational Aspirations and IT & Entrepreneurial Services (IT-5), were found to contribute positive significantly to the Airline Services area of Vocational Interests whereas, IT for Human Welfare (IT-6) made a negatively significant contribution to this area of Vocational Interests.

16. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and Achievement Motivation were found to contribute positive significantly to the Investigative Services area of Vocational Interests, whereas Intelligence made a negatively significant contribution to this area of Vocational Interests.

17. IT & Artistic Jobs (IT-3), IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) were found to contribute positive significantly to the Media area of Vocational Interests.

18. IT & Entrepreneurial Services (IT-5), Career Options in Computer (IT-4) and IT for Human Welfare (IT-6) were found to contribute positive significantly to the Counsellor area of Vocational Interests.

19. IT & Entrepreneurial Services (IT-5) and Use of IT Services (IT-2) were found to contribute positive significantly to the Literary Arts area of Vocational Interests.

5.2 CONCLUSION:

The main purpose of this study was to know the effect of Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on Vocational Interests, for which responses were collected from one thousand (1000) secondary school students of Aligarh district. Data were collected by using standard methodologies for answering this research problem. Various appropriate statistical techniques were used for analysing the collected data. After analysis of the data, it was concluded from the findings of the first objective that students who were accustomed with Information Technology were found to be more interested to explore the world of vocations. This was true for both male as well as female students. From the findings of the second objective it could be concluded that low intelligent students were more interested towards different
areas of vocations and vice versa. The findings of the third and fourth objectives signify that both Achievement Motivation and Occupational Aspirations had no significant contributory effect in inculcating Vocational Interests of secondary school students. It may be concluded from the findings of the fifth objective that Information Technology played a very effective role in inculcating Vocational Interests among secondary school students. This trend is because of Information Technology revolution that is affecting the whole world and India is also suddenly witnessing a new age of careers, careers that were unheard of and undiscovered in previous years.

5.3 EDUCATIONAL IMPLICATIONS OF THE STUDY:

It has been realized by policy makers that the need of the hour is to redirect our education system of academic type into an education system which will provide diversified vocational courses along with the traditional education that will prepare our secondary school students for life i.e. making our educational system job-oriented and productive. In this regard, our educational system needs to be upgraded in terms of job-oriented, work experience as well as development of skills and attitudes for self-employment. Vocational Education has gained considerable importance in recent years as it helps in reducing the unemployment problem. The need for skill-oriented courses, which will take care of the individual's abilities and interests and adequately respond to the labour market requirement, has become the need of the hour. In this context, it is important to mention the educational implications of the present study.

1. Inculcating interest of this society towards vocational education will help to reduce the unnecessary rush towards higher education. In fact, vocational courses leading to employment as well as career progression should contribute in reducing the dropout rate in schools and hence produce skill work force, which will help to reduce demand and supply gap of industries. Not only this, vocational education would assist in proper utilization of human resources and help to reduce juvenile delinquency among adolescents by channelizing their energy in right direction.

2. The Vocational Interests Scale developed by the investigator should be helpful to parents, teachers, and guidance counsellor in knowing the areas of interests of their
students. This in turn will help to reduce the mismatch between education and employment and help in selecting the right person for the right job.

3. The finding of the present study supports for the provision of a trained and professional guidance counsellor who would not only help students with wide range of information regarding appropriate career choices, information about nature of work, entry point, training facilities available and other details related to their chosen vocation but should also cater to the individual interests.

4. In present era, Information Technology has played an important role in every sphere of life and education is no exception to it. The result of the present study also found that the use of Information Technology tools had a positive effect on Vocational Interests. This signifies that Information Technology plays an important role in inculcating students’ Vocational Interests. Information Technology has opened up a completely new potential in technology-based learning. The present findings should motivate every educational institution to use and infuse Information Technology into their curriculum i.e. a curriculum based on the needs of the children and which will add to children’s occupational interests, opportunities and experiences. In order to achieve this, every educational institution should be well equipped with Information Technology facilities to help their students explore the world through these devices and teacher too has to create an environment in which student become aware and is able to explore the world through various Information Technology devices and then act on their explorations.

5. The Scale on Effect of Information Technology for Vocations developed by the investigator should be helpful to parents, teachers, policy makers and guidance counsellor in knowing the effect of Information Technology as well as help them in knowing, how far students are taking advantage of Information Technology in selecting their career options.

6. Mental level of a person is of paramount importance and one cannot overlook this aspect when planning a career. Different types of mental abilities are necessary for different types of occupations. Parents and society have some unrealistic expectations from their children without knowing their abilities and interests. In this regard, Intelligence Test will be helpful to them in knowing their children’s abilities, which
in turn will save considerable effort, time, money and disappointments, when instead of embarking on cherished hopes from their children; they could know beforehand what their children were intellectually capable of i.e. help to prevent resources and opportunities from being wasted. In the present study, the negative and significant relationship between Intelligence and Vocational Interests signifies that schools should use Intelligent Tests score to differentiate the high from the low intelligent students and then guide them accordingly i.e. high intelligent students should be guided to go for higher education, whereas students with low intelligence should be encouraged to go for vocational education of their choice as well as their interests, which will help them to make a bright future.

7. In the present socio-economic and cultural setup, achievement is of paramount importance and it has been seen that great emphasis is placed on achievement right from the beginning of formal education. From the findings of the present study it has become imperatives for every school to provide the necessary guidance to enhance students’ Achievement Motivation towards vocational courses of their interests. Parents, schools and communities should take initiatives for explicating the stories of great personalities and their achievements from different walk-of-life like Dhirubhai Ambani (a successful business personality), Sachin Tendulkar (a great cricket legend), etc in order to promote Achievement Motivation of students towards different fields of jobs or vocations. Students should also be encouraged to read the life history of these great personalities. Programmes like work experience and visit to places of work should also be organized so that the students have a taste of world of work to inculcate interests.

8. The relationship between Occupational Aspirations and Vocational Interests in the present study was found to be positive and not significant. This not significant relationship signifies the fact that secondary school students might not have much information on different vocations. This might be because students may not be much aware of occupational information. Therefore, there is an urgent need to provide occupational information in the school’s guidance programmes which will provide the necessary resources to the students needed in making career plans, choices and adjustments. Moreover, occupational information is also useful in inculcating
Vocational Interests among the students and therefore plays an important role in
career development. There is a need to encourage students to have realistic
Occupational Aspirations based on their interests and therefore schools should
provide them with information about occupations related to their field of interest and
help them to realize their aspirations.

5.4 RECOMMENDATIONS:

Based on the findings of the present study, the following could be recommended:

1. Teachers, students, parents, school administrators and indeed the public in general
should have a favourable attitude towards vocational education. Their acceptability
of these courses is crucial. They must realize that vocational education is nothing
less than technical courses and therefore need to change their mindsets; that
vocational education is not only for the poor or downtrodden but it is for people who
have talents and abilities in the area of manipulative skills leading to technology
transformation of Indian society. When students pass out with adequate skills and
are able to find jobs or become self-employed, the programmes would gain
popularity leading to wider social acceptability.

2. Sound vocational goals are not identified early – they emerge late. Vocational
guidance in the secondary school should not be guidance in the choice of an
occupation or of a career; rather, it should be guidance in the development of
potential Vocational Interests, goals and aptitudes. Therefore, counsellor,
psychologist, curriculum specialists, teachers and personnel specialists need to work
together to devise effective methods for vocational exploration and self-exploration
of students so that schools may provide proper direction and motivation to its
secondary level students in selecting a skilled-based course according to their
interests and try to develop them to maximum.

3. The rising standards and aspirations, demands of the economy and more recently, a
variety of options available and difficult employment situations has made the
selection of a right career for our young generation a difficult process. These
manifestations of change in our social and economic context seem to be proceeding
at an accelerated pace, thus adding to the complexity and tension in career planning
choices. This has created a rapid increase in demand for occupational information
and guidance among school students to help them to relate their intrinsic aspirations to study, work and life. Occupational information will help the students to understand themselves better, improve relations with others and fulfill their needs to a large extent. Therefore, every school should have a well-established Occupational Information cell in order to guide the students with better occupational information.

4. The need of the fast changing modern sophisticated techno-scientific global society of 21st. century will be a professional who will have to assume both social and moral leadership. Success of any vocational programme always needs a proper mechanism for monitoring, evaluating and up-gradation of vocational courses in the light of emerging technology. Therefore, every school should engage a professional in order to keep abreast of the emerging technology, make necessary changes in the curriculum when needed and hence guide the students accordingly.

5. Today, the market is in dire need of professionals who not only have good practical knowledge but also equally good theoretical knowledge. To serve this purpose, there is a need for thorough reorientation of the curricula and syllabi of the vocational courses in secondary schools. These courses need to be broad based, flexible and susceptible to continuous change with fast changing requirement of time. Therefore, policy-makers and educational administrators must put more emphasis in order to groom a workforce that can be more compatible with the local industrial requirements.

6. The CBSE is currently offering forty skill-based courses in senior secondary level whereas National Vocational Education Qualification Framework (NVEQF) under The Ministry of Human Resource Development (MHRD) standardizes vocational courses for Class-IX onwards (All India Council for Technical Education, AICTE). This was being done to integrate vocational education with its current educational streams across school and higher education and introduce the students to a large universe of career options. Therefore, policy-makers and educational administrators should encourage all the secondary school administrators to introduce skill-based courses in order to inculcate Vocational Interests among the students.

7. A country's economy depends on its educational system that trains a workforce that is skilled, adaptable, creative and equipped to compete in the marketplace. In order
to integrate skill development in higher educational system with flexible learning formats, the Government of India has initiated the formation of National Vocational Education Qualification Framework (NVEQF) (All India Council for Technical Education, AICTE) for standardization of vocational courses so that these courses are widely accepted among the employer. The Government of India, under the aegis of National Skill Development Policy, 2009 (Ministry of Labour & Employment, Government of India), is anticipating to create a skilled work force of 500 million by 2022 to meet the future requirement of the industry and other sectors of the employment market; otherwise our demographic dividend will become a demographic debt. In order to achieve this target of National Skill Development Policy, 2009 it is the right time to set-up new ITIs, Polytechnics and Skill Development Centres with new vocational courses as per the need of the local industries.

Skill Development has been an integral part of every educational system worldwide, be it USA, Germany, Canada, UK, Japan, China or any western country. Somewhere it starts at school level while at other places, it starts at college level. They are known by different names in different countries and more popular among them is Community College (University Grant Commission). Realizing the importance of Community colleges for uplifting of people, The Ministry of Human Resource Development, Government of India, should expedite the setting up of Community Colleges in various parts of the country. As ITI and Polytechnics offer courses in secondary and senior secondary levels respectively, therefore these Community Colleges should offer degree level courses. These colleges should be based on demographic and local industry needs in order to facilitate the students to select a relevant and interests’ based course, which will empower them with the right skill.

8. The National Policy on ICT in school Education, 2012 (The Ministry of Human Resource Development, MHRD, Government of India), has recommended that a programme on ICT literacy that should be implemented across all secondary schools both government and private in the State, within the XII Plan period, and a model Curriculum for ICT in Education (CICT) should be developed at National level and States would be encouraged to adopt it. Therefore, the Government should provide
financial support to both public and private secondary schools of India, to set-up state-of-the-art computer lab with internet facilities, Multi-media Room, Smart Rooms, etc. The technologies must be harnessed to provide widespread access to vocational courses in order to inculcate Vocational Interests among the secondary school students so that the governments' programmes on vocational education in secondary level are successful.

9. Realizing the importance of Information Technology from the present study, particularly in contributing for better employment information, and the relevance of local languages in Information Technology tools from TARAhaat, a portal designed to serve villages in rural India, providing information on job opportunities on local websites in local language (Reddy, C.S., 2010), has made it indispensable for every school to provide Information Technology devices with suitable software with relevant context even in local languages.

5.5 Suggestions for Further Researches:
Any research work cannot have a final say on the problem because it is very difficult for investigators to touch all the aspects of the problem as research is an ongoing process and no research can be proved true forever as the world is in the process of continuous change. Therefore, every area needs more and more continuous study. The present study has thrown some light and insight into the effect of four independent variables i.e. Information Technology, Intelligence, Achievement Motivation and Occupational Aspirations on Vocational Interests of secondary school students of Aligarh district. Many factors directly or indirectly play convincing role in the selection of vocations apart from the above-mentioned variables, which play an inevitable role in the process of selection of vocations. Therefore, the present study brings to light a good number of new areas to be studied by future investigators.

1. The present investigation was restricted only to students studying in class X of CBSE Board of Aligarh district; the findings cannot be generalized for all secondary school students. Hence, in order to generalize these findings, further research could be done with students of other Boards.
2. In order to get better, authentic and generalized results for secondary school students, districts other than Aligarh could be considered in the future.

3. The present study was confined to secondary school students of Aligarh district only. Further research could be done with a sample of senior secondary school students.

4. Future studies on Vocational Interests could be undertaken with factors like socio-economic status, demographic factors, parental occupations, caste and creed as the present study did not consider these factors.

5. Further studies could be undertaken on the government policies on Vocational Education.

6. Comparative study could be conducted on the implementations of government policies on vocational education between developed countries and India.

7. Study may be conducted on the priorities of students in Vocational and Technical Education in relation to the available facilities.

8. Effect of Anxiety and Achievement Motivation on Vocational Interests of the secondary schools students.

9. A study of vocationally adjusted and mal-adjusted person in service in relation to their interests and their contemporary vocations.

10. Vocational Interests of students with respect to their maturity as compared to level of frustration.

11. A comparative study of Vocational Interests of Tribal and non-Tribal secondary school students in relation to their Intelligence.

12. A comparative study of Vocational Interests of senior secondary school students of Arts, Commerce and Science streams in relation to their level of Anxiety, and Achievement Motivation.


15. A comparative study of Vocational Interests of secondary school student’s attitude towards Information Technology in relation to their socio-economic status and Academic Achievement.

The findings of the present study would be helpful to policy-makers, schools, parents and society as a whole in knowing how far students are using Information Technology devices in knowing about vocational courses of their interests offered in their surroundings. Based on this information, school administrators and local policy-makers will be able to upgrade their IT facilities and increase the number of vocational courses offered in their schools. With this information, the Government of India too will be benefitted in knowing how far their policies on vocational education are successful and the changes needed to make, so that their policies on vocational education are successful.
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Appendices
APPENDIX – I

VOCATIONAL INTEREST SCALE

NAME______________________________________________

MALE/FEMALE _______ AGE_______ CLASS________

NAME OF SCHOOL_____________________________________

Personality is a very complex psychological concept difficult to define. It is a concept by which we understand and view ourselves. In terms of vocational selection, people vary in personality type in terms of sheer tolerance. Matching occupational requirements with personality characteristics is a very important part of career guidance.

Indicate your interest by putting a tick (✓) mark on the five point scale, as given below:-

<table>
<thead>
<tr>
<th>VOCATION</th>
<th>Strongly Like</th>
<th>Like</th>
<th>Undecided</th>
<th>Dislike</th>
<th>Strongly Dislike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Your response will help us to explore your Vocational Interests. No answer is right or wrong. Though there is no time limit, yet you can complete it within 20 to 25 minutes.

Your response will be kept confidential.

Thank you for your kind participations and cooperation.
<table>
<thead>
<tr>
<th>S.No</th>
<th>VOCATIONS</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>STRONGLY LIKE</td>
</tr>
<tr>
<td>01.</td>
<td>Middle School Teacher</td>
<td></td>
</tr>
<tr>
<td>02.</td>
<td>Elementary School Teacher</td>
<td></td>
</tr>
<tr>
<td>03.</td>
<td>High School Teacher</td>
<td></td>
</tr>
<tr>
<td>04.</td>
<td>College Teacher</td>
<td></td>
</tr>
<tr>
<td>05.</td>
<td>Kindergarten School Teacher</td>
<td></td>
</tr>
<tr>
<td>06.</td>
<td>Principal of Schools</td>
<td></td>
</tr>
<tr>
<td>07.</td>
<td>Actor</td>
<td></td>
</tr>
<tr>
<td>08.</td>
<td>Modeling</td>
<td></td>
</tr>
<tr>
<td>09.</td>
<td>Film/Video Editor</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Fashion Designer</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Musician and Singer</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Choreographer</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Professional Hairdresser</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Electronics Engineer</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Electrical Engineer</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Mechanical Engineer</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Civil Engineer</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Aeronautical Engineer</td>
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</tr>
<tr>
<td>19.</td>
<td>General Physician</td>
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</tr>
<tr>
<td>20.</td>
<td>Surgeon</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Medical Scientist</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Dentist</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Radiologist</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Psychiatrist</td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Physiotherapist</td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Library Clerk</td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>Bank Clerk</td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Office Worker</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Receptionist</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Librarian</td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Typist</td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Cashier</td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Sales Representative</td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Travel Agent</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>Insurance Agent</td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>Reservation/Ticketing Agent</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Property Dealer</td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Sports Coach</td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>Aerobics Trainer/Fitness Trainer</td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>Referee/ Umpire</td>
<td></td>
</tr>
<tr>
<td>41.</td>
<td>Sports Rehabilitator</td>
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<td>---</td>
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<td></td>
</tr>
<tr>
<td>42.</td>
<td>Sports Commentator</td>
<td></td>
</tr>
<tr>
<td>43.</td>
<td>Geographer</td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>Economist</td>
<td></td>
</tr>
<tr>
<td>45.</td>
<td>Political Scientist</td>
<td></td>
</tr>
<tr>
<td>46.</td>
<td>Agricultural Scientist</td>
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</tr>
<tr>
<td>47.</td>
<td>Sociologist</td>
<td></td>
</tr>
<tr>
<td>48.</td>
<td>Agricultural Inspector</td>
<td></td>
</tr>
<tr>
<td>49.</td>
<td>Mobile Phone Technician</td>
<td></td>
</tr>
<tr>
<td>50.</td>
<td>Computer Technician</td>
<td></td>
</tr>
<tr>
<td>51.</td>
<td>Home Appliance Technician</td>
<td></td>
</tr>
<tr>
<td>52.</td>
<td>Electronic Equipments Technician</td>
<td></td>
</tr>
<tr>
<td>53.</td>
<td>Building Equipments Technician</td>
<td></td>
</tr>
<tr>
<td>54.</td>
<td>Chartered Accountant</td>
<td></td>
</tr>
<tr>
<td>55.</td>
<td>Accountant/Auditor</td>
<td></td>
</tr>
<tr>
<td>56.</td>
<td>Tax Consultant</td>
<td></td>
</tr>
<tr>
<td>57.</td>
<td>Share Broker</td>
<td></td>
</tr>
<tr>
<td>58.</td>
<td>Personnel Finance Advisor</td>
<td></td>
</tr>
<tr>
<td>59.</td>
<td>Philanthropist</td>
<td></td>
</tr>
<tr>
<td>60.</td>
<td>Social Worker</td>
<td></td>
</tr>
<tr>
<td>61.</td>
<td>Public Health Service Officer</td>
<td></td>
</tr>
<tr>
<td>62.</td>
<td>Social Reformer</td>
<td></td>
</tr>
<tr>
<td>63.</td>
<td>Section Officer</td>
<td></td>
</tr>
<tr>
<td>64.</td>
<td>Public Relation Officer</td>
<td></td>
</tr>
<tr>
<td>65.</td>
<td>Animator</td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td>Interior Designer</td>
<td></td>
</tr>
<tr>
<td>67.</td>
<td>Professional Photographer</td>
<td></td>
</tr>
<tr>
<td>68.</td>
<td>Construction Manager</td>
<td></td>
</tr>
<tr>
<td>69.</td>
<td>Purchasing Manager</td>
<td></td>
</tr>
<tr>
<td>70.</td>
<td>Fighter Pilot</td>
<td></td>
</tr>
<tr>
<td>71.</td>
<td>Commercial Pilot</td>
<td></td>
</tr>
<tr>
<td>72.</td>
<td>Air Traffic Controller</td>
<td></td>
</tr>
<tr>
<td>73.</td>
<td>Criminal Investigator</td>
<td></td>
</tr>
<tr>
<td>74.</td>
<td>Geologist</td>
<td></td>
</tr>
<tr>
<td>75.</td>
<td>Translator</td>
<td></td>
</tr>
<tr>
<td>76.</td>
<td>News Analyst/Journalist</td>
<td></td>
</tr>
<tr>
<td>77.</td>
<td>Radio/Video Jockey</td>
<td></td>
</tr>
<tr>
<td>78.</td>
<td>Educational/Vocational Counselor</td>
<td></td>
</tr>
<tr>
<td>79.</td>
<td>Child Care Counselor</td>
<td></td>
</tr>
<tr>
<td>80.</td>
<td>Poet/Lyricist/Novelist</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX – II

SCALE ON EFFECT OF INFORMATION TECHNOLOGY
FOR VOCATION

NAME__________________________________________

MALE/FEMALE _______ AGE_______ CLASS_________

NAME OF SCHOOL________________________________

Dear Respondent,
Below are 30 items to know the effect of Information Technology helpful for Vocational selection. You are resurrected to reach each of the statement given below carefully and put a tick (✓) mark on any one of the five (5) alternative responses that represents your feeling truly.

There is no wrong or right answer. Your response will be kept confidential.

Thank you for your kind participations and cooperation.
<table>
<thead>
<tr>
<th>S.No</th>
<th>STATEMENT</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Knowledge of IT provides me a lot of options to select my career</td>
<td></td>
</tr>
<tr>
<td>02.</td>
<td>Knowledge of IT enhanced my learning abilities</td>
<td></td>
</tr>
<tr>
<td>03.</td>
<td>New inventions in IT encouraged me to do something new</td>
<td></td>
</tr>
<tr>
<td>04.</td>
<td>Today IT knowledge has given me several options to select a job.</td>
<td></td>
</tr>
<tr>
<td>05.</td>
<td>Knowledge of IT helps me to know about job markets</td>
<td></td>
</tr>
<tr>
<td>06.</td>
<td>Knowledge of IT does not help me in determining my future</td>
<td></td>
</tr>
<tr>
<td>07.</td>
<td>Internet Services help me to update my knowledge about various educational institutions of the world</td>
<td></td>
</tr>
<tr>
<td>08.</td>
<td>Use of Computer, Internet, e-mail, etc. services have made my life easy, fast, and enjoyable</td>
<td></td>
</tr>
<tr>
<td>09.</td>
<td>Internet provides me a large number of entertaining and mind stimulating activities</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Information acquired through Internet does not help me in decision-making</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I become more confident after using IT devices</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>New electronics devices generate eagerness and curiosity among us</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Internet services help me in selecting my career according to my interest</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Fashion show in TV motivates me to be a Fashion Designer</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>TV serial motivates me to become a TV actor</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>TV advertisements motivate me to become an advertisement designer</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>FM radio motivates me to become a radio Jockey</td>
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<td>---</td>
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<tr>
<td>18.</td>
<td>I will prefer Computer Science as a subject if I get a chance to select my subject</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>I will never advise my juniors to pursue a career in Computer Science</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Short Term Computer Courses encouraged me to choose computer as a career option</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Computer education is not important for me</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Computer education improves the status of human vocation span</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Animation in Computer/TV motivates me to take animation course as a career</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Krishidarshan programmes in TV motivates me to be an Agricultural online Entrepreneur</td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Tele-Shopping encourage me to an Entrepreneur</td>
<td></td>
</tr>
<tr>
<td>26.</td>
<td>Various News channels discourage me to be a freelance Journalist</td>
<td></td>
</tr>
<tr>
<td>27.</td>
<td>e-business provides me various business options</td>
<td></td>
</tr>
<tr>
<td>28.</td>
<td>Working on Computer would be an interesting way to earn a living</td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>IT is an important means to serve mankind</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Computer knowing person never faces job problem</td>
<td></td>
</tr>
<tr>
<td>प्रश्न संबंधी (Q. No.)</td>
<td>प्रश्न संबंधी (Q. No.)</td>
<td>प्रश्न संबंधी (Q. No.)</td>
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<tr>
<td>----------------------</td>
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</tr>
<tr>
<td>1</td>
<td>9</td>
<td>17</td>
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<td>2</td>
<td>10</td>
<td>18</td>
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<td>3</td>
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<td>8</td>
<td>16</td>
<td>24</td>
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</table>

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Mrs. Manu Sharma, PSYCHO PUBLICATIONS
9, Shreshth Vihar, I.P. Ext. Part-II, Delhi-110092, Ph.: 011-22153017, 22153296
Example 1

E1

1  2  3

4  5  6
Do examples $E_2$ and $E_3$ and write the correct answer on the answer sheet.

उदाहरण $E_2$ और $E_3$ को स्वयं करिये और उत्तर-पत्र पर उत्तर लिखिये।

Example 2 उदाहरण
Now match your answers. The answer for example E₂ is 6 and for E₃ is 4.

There are 25 problems in the test for which maximum time is 15 minutes.

DO NOT TURN OVER THE PAGE UNTIL TOLD TO DO SO.

jab tak kaha n jaaye is prasth ko n utaritey.
Problem 2

1. 
2. 
3. 
4. 
5. 
6.
Problem 3

1

2

3

4

5

6
Problem 4 प्रश्न

1 2 3

4 5 6

?
Problem 5

1. 
2. 
3. 
4. 
5. 
6.
Problem 6 प्रश्न

1

2

3

4

5

6
Problem 7

- Square
- Shaded triangle
- Circle
- Shaded square
- Small circle
- Small square
- Question mark

1. Shaded triangle
2. Black triangle
3. Circle
4. Black circle
5. White square
6. Black square
Problem 8

1. Triangle with dot
2. Square with cross
3. Church with dot
4. Triangle with cross
5. Square
6. Church
Problem 9

1. Triangle with black fill
2. Square
3. Circle with triangle fill
4. Circle
5. Black square
6. Black triangle

Question mark in the bottom right corner.
Problem 10 प्रश्न

1  2  3

4  5  6
Problem 11 प्रश्न

1

2

3

4

5

6
Problem 14
Problem 16 प्रश्न

1

2

3

4

5

6
Problem 17

1
2
3
4
5
6
Problem 18 प्रश्न

1

2

3

4

5

6
Problem 19 🛞

1

2

3

4

5

6

?
Problem 20 प्रश्न

1

2

3

4

5

6
Problem 21

1

2

3

4

5

6

Non-Verbal Intelligence Test
Problem 22

1

2

3

4

5

6
Problem 23 प्रश्न

1
2
3
4
5
6
Problem 25
Rao Achievement Motivation Test
(For Grades 8 to 11)

By
Dr. D. Gopal Rao, M. A., M. Ed. Ph. D.
Reader in Education,
NCERT, NEW DELHI

1. Name .................................. 5. Date of birth ..................................
2. School .................................. 6. Father's occupations ..............................
3. Class .................................. 7. Parent's income ................................
4. Date .................................. 8. Address .....................................

DIRECTIONS

This is an attempt to understand you and help you to do well, whatever you want to do in life.

Below are given twenty incomplete sentences with two possible alternatives, A and B which complete the sense. Both the statements are correct. Put a tick mark against ONLY ONE of the alternatives which you prefer.

This has nothing to do with your examination. Feel free to answer all the questions frankly. There is no time limit, but work rapidly.

1. I enjoy reading ....
   (a) a comic book.
   (b) a book of adventure.

2. As a student I like to be called ....
   (a) a well dressed student in my class.
   (b) an intelligent student in my class.

3. When I grow up, I want ....
   (a) to do something which others have not done.
   (b) to lead a comfortable life.

4. As a doctor, I want ....
   (a) to be a well known surgeon,
   (b) to make a lot of money.

5. During the holiday, I want ....
   (a) to visit my friends and relatives,
   (b) to paint or write a story or a poem. I aim ....

6. While answering in the examination ....
   (a) at finishing before time.
   (b) at answering better than my classmates.

7. I want to become rich ....
   (a) by earning money by hard work.
   (b) by winning a prize in the lottery.
8. I take pride ....
(a) in standing first in my class.
(b) in helping poor students.

9. It is my nature ....
(a) to take life easily.
(b) to undertake difficult tasks.

9. I have a tendency ....
(a) to work on a task till it is completed.
(b) to change the task if I get bored.

1. I want to study well ....
(a) to avoid blame from my parents.
(b) to excel others in my class.

2. As an Engineer, I would like
(a) to construct a model building in
my town.
(b) to grow rich and buy a car.

3. After 10 years, I will be ....
(a) earning a lot of money.
(b) a well known person in my job.

4. As a student, I would like ....
(a) to study for my future carer.
(b) to visit different places in the world.

5. I feel very unhappy ....
(a) when some one knocks away my
purse.
(b) when I fail to do my best in the
examination.

6. I want to do something ....
(a) which will make me wealthy.
(b) which others can hardly do.

7. Generally I make friends ....
(a) with those who are intelligent.
(b) with those who are clean and neat.

8. I feel set up ....
(a) when I am blamed.
(b) when I fail to succeed.

9. I feel my success depends ....
(a) upon my hard work.
(b) upon my parents and relatives.

0. I want to practice hockey everyday ....
(a) so that I may be selected for the
Olympic game.
(b) so that I may keep myself fit and
healthy.
Please fill up the following informations:

Name__________________________
Age_________________Sex________________Date_________________
School__________________________

DIRECTIONS

This set of questions concern your interest in different kinds of jobs. There are eights questions. Each one asks you to choose one job out of ten presented. Read each question carefully. They are all different. Answer each one the best you can, by placing a Cross Mark (×) against the occupation of your preference. Please do not omit any item.

SCORING TABLE

<table>
<thead>
<tr>
<th>Questions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard Scores T. Score Percentile Rank

Estd.: 1971
NATIONAL PSYCHOLOGICAL CORPORATION
4/230, KACHERI GHAAT, AGRA - 282 004
Question 1. Of the jobs listed in this question, which one is the **BEST ONE** you are **REALLY SURE YOU CAN GET** when your **SCHOOLING IS OVER**?

1-01. ......Lawyer
1-02. ......Agriculture Inspector
1-03. ......Doctor
1-04. ......Primary School Teacher
1-05 ......Diplomat in the Indian Foreign Service
1-06. ......Barber
1-07 ......Psychologist
1-08 ......Motor Mechanic
1-09 ......Travelling Salesman for a Wholesale Firm
1-10. ......Postman

Question 2. Of the jobs listed in this question which one would you choose if you were **FREE TO CHOOSE ANY** of them you wished when your **SCHOOLING IS OVER**?

2-01. ......Govt. Contractor
2-02. ......Insurance Agent
2-03. ......Member of Parliament
2-04. ......Clerk in an Office
2-05 ......State Governor
2-06. ......Maid Servant
2-07 ......Owner-Operator of a Printing Press
2-08 ......Electrician
2-09 ......Priest (Pujari)
2-10. ......Truck Driver

Question 3. Of the jobs listed in this question which one would you choose if you were **FREE TO CHOOSE ANY** of them you wished when your **SCHOOLING IS OVER**?

3-01. ......Airline Hostess
3-02. ......Trained Machinist
3-03. ......Captain in the Army
3-04. ......Midwife (Dai)
3-05 ......Supreme Court Justice
3-06. ......Restaurant Waiter
3-07 ......Instrumental Musician
3-08 ......Machine Operator in a Factory
3-09 ......Librarian
3-10. ......Plumber

Question 4. Of the jobs listed in this question which one would you choose if you were **FREE TO CHOOSE ANY** of them you wished when your **SCHOOLING IS OVER**?

4-01. ......Novelist
4-02. ......Soldier in the Army
4-03. ......Bank Manager
4-04. ......Taxi Driver
4-05 ......Cabinet Minister in the Central Government
4-06. ......Petrol Pump Attendant
4-07 ......Artist who paints pictures
4-08 ......Lady Village Level Worker (Gram Sevika)
4-09 ......Photographer
4-10. ......Coal-Miner
Question 5. Of the jobs listed in this question, which is the \textbf{BEST ONE} you are \textbf{REALLY SURE YOU CAN HAVE} by the time you are 30 years old?

5-01. ..Dentist
5-02. ..Physical Education Instructor
5-03. ..Scientist
5-04. ..Carpenter
5-05 ..Chairman of a Large Municipality
5-06. ..Wood-Cutter
5-07 ..News-Paper Correspondent
5-08 ..Bus Driver
5-09 ..Steno-Typist to an Officer
5-10. ..Farm-Worker

Question 6. Of the jobs listed in this question which \textbf{ONE} would you choose to have when you are 30 years old, if you were \textbf{FREE TO HAVE ANY} of them you wished?

6-01. ..Accountant for a large govt. office
6-02. ..Revenue Record - keeper (Patwari)
6-03. ..College Lecturer
6-04. ..Fisherman
6-05 ..Director of a department in State Government
6-06. ..Night Watchman (Chaukidar)
6-07 ..Radio Announcer
6-08 ..Police Constable
6-09 ..Receptionist
6-10. ..Railway Signal-man

Question 7. Of the jobs listed in this question, which is the \textbf{BEST ONE} you are \textbf{REALLY SURE YOU CAN HAVE} by the time you are 30 years old?

7-01. ..Chemist
7-02. ..Nurse
7-03. ..Owner of a factory which employs 100 people
7-04. ..Shop Attendant
7-05 ..District Magistrate
7-06. ..Shoe-Shiner
7-07 ..Commercial Artist
7-08 ..Typist
7-09 ..Social Welfare Worker
7-10. ..Cloth Presser in a Laundry

Question 8. Of the jobs listed in this question which \textbf{ONE} would you choose to have when you are 30 years old, if you were \textbf{FREE TO HAVE ANY} of them you wished?

8-01. ..Farm Owner and Operator
8-02. ..Railway Guard
8-03. ..Engineer
8-04. ..Door-to-door Salesman of Home-Products
8-05 ..Airline Pilot
8-06. ..Sweeper
8-07 ..Owner of a Small Hotel
8-08 ..Tailor
8-09 ..Cashier in a Firm
8-10. ..Restaurant Cook

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Occupational Aspiration Scale OAS-G
APPENDIX -- VI

LIST OF CBSE AFFILIATED SCHOOLS FROM WHERE DATA WERE COLLECTED:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>NAME OF INSTITUTIONS</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Boys</td>
</tr>
<tr>
<td>1.</td>
<td>Al-Barkaat Public School, Anoopshahar Road, Aligarh.</td>
<td>34</td>
</tr>
<tr>
<td>2.</td>
<td>Aligarh Modern School, Dhoerra, Quarsi, Aligarh</td>
<td>22</td>
</tr>
<tr>
<td>3.</td>
<td>Aligarh Public School, Civil Lines, Aligarh</td>
<td>19</td>
</tr>
<tr>
<td>4.</td>
<td>Ayesha Tarin Modern Public School, Anoopshahar Road, Aligarh.</td>
<td>22</td>
</tr>
<tr>
<td>5.</td>
<td>Blackdale Public School, Bhagwan Garhi Distt. Aligarh.</td>
<td>17</td>
</tr>
<tr>
<td>6.</td>
<td>Blue Bird Hr. Sec. School, G.T. Road, Aligarh.</td>
<td>15</td>
</tr>
<tr>
<td>7.</td>
<td>Brilliant Public School, Ram Ghat Road, Aligarh.</td>
<td>17</td>
</tr>
<tr>
<td>8.</td>
<td>City Convent School, Atrauli, Aligarh.</td>
<td>12</td>
</tr>
<tr>
<td>9.</td>
<td>Delhi Public School, Aligarh.</td>
<td>25</td>
</tr>
<tr>
<td>10.</td>
<td>Dharam Samaj Bal Mandir, Parao Dubey, Aligarh.</td>
<td>21</td>
</tr>
<tr>
<td>11.</td>
<td>G.D Public School, Khair Road, Aligarh.</td>
<td>12</td>
</tr>
<tr>
<td>12.</td>
<td>Gagan Public School, Khair Bye Road, Aligarh.</td>
<td>28</td>
</tr>
<tr>
<td>14.</td>
<td>Heritage International School, Ram Ghat Road, Aligarh.</td>
<td>24</td>
</tr>
<tr>
<td>15.</td>
<td>Ingraham Institute Eng Med School, Banna Devi, Aligarh.</td>
<td>22</td>
</tr>
<tr>
<td>16.</td>
<td>Ingraham Institute English School, Kasimpur, Aligarh.</td>
<td>11</td>
</tr>
<tr>
<td>17.</td>
<td>Iqra Public School, Iqra Colony, Aligarh.</td>
<td>29</td>
</tr>
<tr>
<td>18.</td>
<td>Jawahar Navodaya Vidyalaya, Sujanpur, Khair, Aligarh.</td>
<td>20</td>
</tr>
<tr>
<td>19.</td>
<td>Kendriya Vidyalaya, Devasini, Aligarh.</td>
<td>19</td>
</tr>
<tr>
<td>20.</td>
<td>Nechar Meera National High School, Aligarh.</td>
<td>15</td>
</tr>
<tr>
<td>21.</td>
<td>Our Lady of Fatima, Ram Ghat Road, Aligarh.</td>
<td>21</td>
</tr>
<tr>
<td>22.</td>
<td>Raghubir Bal Mandir, Ram Ghat Road, Aligarh.</td>
<td>19</td>
</tr>
<tr>
<td>23.</td>
<td>Raidiant Stars English School, Khair Road, Aligarh.</td>
<td>20</td>
</tr>
<tr>
<td>24.</td>
<td>Range Hills Public School, Dhanipur, G.T. Road, Aligarh.</td>
<td>12</td>
</tr>
<tr>
<td>25.</td>
<td>Saint Fidelis School, Tali Nagari, Aligarh.</td>
<td>14</td>
</tr>
<tr>
<td>26.</td>
<td>Saint Johns School, Atrauli, Aligarh.</td>
<td>17</td>
</tr>
</tbody>
</table>

**TOTAL** | **500** | **500** |
Publications
Vocational Interests and Gender Difference

Dr. (Mrs) Nasrin*, Parveen Begum**

ABSTRACT

The aim of this present study was to examine the Vocational Interests of boys and girls of Secondary School Students. A sample of 50 boys and 50 girls of Secondary Schools were selected for this study. Vocational Interest Record, by V. R. Bansal and Prof. D. N. Srivastava was employed to collect the data. Data was analyzed by using statistical techniques like Mean, S.D., t-test. The study revealed that — there was significant difference in the Vocational Interests of male and female Secondary School Students and girls were more Career-Oriented than boys.

Keywords: Vocational Interests, Secondary School, Students, Gender.

INTRODUCTION

Interests play an important role in one's life because they determine to a large extent, what they will do and how well they will do it. An interest is a learned motive which drives a person to occupy himself with an activity when he is free to choose what he will do. Interests are important because they serve as a source of strong motivation to learn.

Vocational Interests play an important role in the life of an individual as these determine what one will do and how one will do it. It refers to variety of choices which an individual makes with respect to activities in which he is engaged. Vocational Interest means the desire of a person to work in particular field as a means to earn his/her livelihood. According to the Dictionary of Education by Good, C.V., Vocational Interests is- (i) measured patterns of likes and dislikes that have been found experimentally to differentiate successful adults in one occupation from those in other occupations, (ii) a feeling of liking associated with a reaction, either actual or imagined, to a specific area or field of an occupation.

India is a fast developing economy having greater responsibilities in Educating, Developing and Managing its own Human Resources for both Domestic and Global Employment. Education along with economic, cultural growth and empowerment forms the core of every social and human development doctrines. But unfortunately a majority of the youth passing out from our universities and colleges do not have the specific skill sets as required by various sectors in the market. There is a mismatch between the skill manpower required and the skill manpower available and hence there is a huge shortage of skill talent. Vocational Education is surely going to be an enabler to help India shine as an economically empowered democratic country where all gets opportunities to develop their abilities. A very interesting article regarding Vocational Training was published in The Times of India dated the 14th of May, 2013, therein they have said that just 2% of India's youth and only about 7% of the whole working age population have received Vocational Training. Realizing the urgency of skills in our coming generation to fulfill the demand of our job market, the Government of India has formulated the National Policy on Skill Development (2009) and set a target for providing skills to 500 million people by 2022 and also CBSE has taken the initiative of introducing Skill-based courses that can help a student enter a job market soon after school.. The objective is to create a workforce empowered with improved skills, vocational knowledge and internationally recognize qualifications so as to gain access to decent employment and ensure India’s competitiveness in the dynamic Global market.

Secondary and Higher Secondary Education are important terminal stages in the system of general education. At this stage, the youth decide whether to pursue higher education or opt for technical training or join the workforce. Vocational Education is, therefore suitable to the specific

*Associate Professor, Department of Education, Aligarh Muslim University, Aligarh.
**Research Scholar, Department of Education, Aligarh Muslim University, Aligarh. E-mail: pbegum.2010@rediffmail.com
target groups who want to enter the world of work, help in solving the unemployment problem to a considerable extent by equipping these youth with tradable skills. Therefore, it is necessary to know the Vocational Interests of these youth so as to provide enough vocational subjects of their choice at the secondary level schools, which will facilitated them in finding suitable employments.

Today, the huge shortage of Skill talent is a burning topic in India. Realizing the urgency of Vocational Training, the investigator wants to know the Vocational Interests of boys and girls as various research studies were conducted on gender differences in career decisions of adolescents and had revealed mixed results. Kathuria, P. R. (1982) found significant difference, gender difference in the Vocational Interests of prolonged deprived Boys and girls whereas Srivastava, Lakmi (1988) found in her study that gender difference in Vocational Development was not significant. Robert (1988) found that both boys and girls had similar Vocational Choices as regards agriculture, arts, literature, executive work commerce, science and social work. However, he found girls to prefer household work more than boys. Chandra Prabhat (1990) found that the tribal boys had high score in business and scientific interest pattern and low in literacy, artistic and music Vocational Interest pattern as compared to the tribal girls. Salami, Samuel, O. (2004) had obtained significant differences in the outdoor, mechanical and musical areas when compared to the Vocational Interest Inventory scores of males and females. Nandwana Shobha and Asawa Nimmi (2007) found in their study that both high creative boys and girls had more focused on Vocational Interests as compared to their low counterparts.

It has therefore become imperative for the researcher to study the Vocational Interests of boys and girls of Secondary School, so as to guide them in the right direction so that they can excel in their future life. This will also help in minimizing the Education and Employment gap.

OBJECTIVE OF THE STUDY

To study the difference in Vocational Interests of boys and girls of Secondary School.

HYPOTHESIS OF THE STUDY

There is no significant difference in the Vocational Interests of boys and girls of Secondary School.

METHODOLOGY

For the present study Descriptive Survey Method was used by the investigator.

SAMPLE OF THE STUDY

The Sample of the study was selected from the Secondary Schools of Aligarh Muslim University, Aligarh. 100 students (50 boys and 50 girls) were selected from the following schools.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Institutions.</th>
<th>No. of Students.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>S.T. High School, AMU, Aligarh.</td>
<td>50 Boys.</td>
</tr>
<tr>
<td>2.</td>
<td>Abdullah Girls High School, AMU, Aligarh.</td>
<td>50 Girls</td>
</tr>
</tbody>
</table>

TOOL OF DATA COLLECTION

Vocational Interest Record, constructed and standardized by Prof. D. N. Srivastava and V. P. Bansal was used for collecting data.

STATISTICAL TECHNIQUE USED IN THE STUDY

For the analysis and interpretation of result, t-test was used by the investigator.
ANALYSIS AND INTERPRETATION

OBJECTIVE

To study the difference in Vocational Interests of boys and girls of Secondary School.

NULL HYPOTHESIS

There is no significant difference in the Vocational Interests of boys and girls of Secondary School.

Table-1: Showing Vocational Interests of boys and girls (Mean, S.D. and t-value)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Gender</th>
<th>Vocational Interests Score</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>1</td>
<td>Boys (n=50)</td>
<td>93.6</td>
<td>41.5957</td>
</tr>
<tr>
<td>2</td>
<td>Girls (n=50)</td>
<td>107.4</td>
<td>27.3398</td>
</tr>
</tbody>
</table>

*significant level at 0.01 level.

Vocational Interest Record constructed and standardized by Prof. D. N. Srivastava and V. P. Bansal was used and scores were established as per scoring procedure given in the manual. Mean and S. D. were calculated. t-test was employed to test the significant difference between the Vocational Interests of boys and girls.

The result revealed that there was significant difference in the Vocational Interests between the boys and girls as the calculated t-value was greater than the tabulated value at 0.01 significant level. The calculated t-value 1.96038 was greater than the table value 1.68 at 0.01 significant level. Hence the null hypothesis was rejected. Comparatively, girls were better in their Vocational Interests (as the Mean score of girls was greater than boys). From this study it can be interpreted that girls were more career conscious than boys.

FINDINGS

Significant difference was found in Vocational Interests of boys and girls.

SUGGESTIONS FOR FURTHER STUDY

No research is a complete research and it is also true that when one problem is solved, another problem springs up. We know that no research can be proved to be true forever as the world is the result of continuous process of change and so every area needs more and more continuous study. The researcher had conducted the study within a very short time and so there is a possibility of many things that needed to be studied, may have been skipped.

Therefore, further researches may be done in the relevant field such as-

1. Vocational Interests of Gifted and Retarded children,
2. Effect of father's profession on the Vocational choice of the children,
3. Study of Vocational Interests of boys and girls at district level, state level, etc.,
4. Effect of different Universities and Boards on the Vocational Interests of their students,
5. Effect of socio-economic status on the Vocational choice of students,
6. Vocational Interests of students belonging to different geographical conditions and climates,
7. Vocational Interests of students belonging to different castes, classes, communities, etc.,
8. Study should be conducted on how much Government Vocational policies are effectively implemented,
9. Study should be conducted on the problems of educated unemployment in technical area in order to suggest the prospect,
10. Comparative study should be conducted on the Vocational policy of developed countries and developing countries with the Vocational Interests of their children.

REFERENCES


Effect of Achievement Motivation on Vocational Interests of Secondary School Students of Aligarh City
Effect of Achievement Motivation on Vocational Interests of Secondary School Students of Aligarh City

By

Parveen Begum
Research Scholar
D/o Education
Aligarh Muslim University
Aligarh.
E-Mail: Pbegum.2010@rediffmail.com
Mobile: 9808585640

ABSTRACT

The present study was undertaken to find out the effect if any, of Achievement Motivation on Vocational Interests of secondary school students of Aligarh city. A sample of fifty (50) male and fifty (50) female secondary school students of Aligarh city were selected for this study. Rao Achievement Motivation Test by Rao, D.G. and Vocational Interests Record by Bansa, V.P. and Srivastava, D.N. were used to collect the data. Data were analyzed by using statistical techniques like Pearson product moment coefficient of correlation. The findings revealed that (1) as the relationship was found to be not significant it was concluded that Achievement Motivation had no significant effect on Vocational Interests of secondary school students, (2) since the relationship between Achievement Motivation and Vocational Interests of male students was not significant, the investigator concluded that Achievement Motivation was not instrumental in inculcating their Vocational Interests, and (3) the not significant relationship between Achievement Motivation and Vocational Interests of female students signifies that Achievement Motivation had no contributory effect in inculcating their Vocational Interests.

Key words: Achievement Motivation, Vocational Interests, Secondary school students.

The present 21st century is known as the age of science and technology with exciting discoveries and new inventions, which are influencing human beings in every sphere of life. One of the most challenging demands of this 21st century is to remove unemployment and poverty and attains a sustained economic growth. Therefore, it is necessary to preserve and utilize the human resources of a developing country like India, where job availability is limited but at the same time, huge human resources with varied abilities, aptitudes,
motivation and interests are available in abundance. Secondary education plays an important role in the training of our youth for taking an active part in the social reconstruction and economic development of our nation. However, the present secondary education system of India is aggravating the problem of unemployment. The large percentage of failures in different jobs and dropouts from schools is because of lack of proper guidance at the secondary education stage. Therefore, we need to make our secondary education so practical that the students after passing this stage become economically productive member of the society. Our education system could not keep pace with the rapid changes in technology and learning process. There is a mismatch between the workforce required for a modern economy and skilled workforce available.

In order to understand the reasons behind this mismatch between demand and supply, it is essential to know the Vocational Interests and Achievement Motivation of secondary school students. So, for as the role of interest in the choice of vocation is concerned, the interest play an important role for both male and female of secondary school students’ life because they determine to a large extent what one will do and how well one will do it. Not only this, motivation too, plays an important role in career planning and career success.

According to McClelland and his associates who developed the theory of Achievement Motivation in 1951, human beings differ from one another in the strength of Achievement Motive. It is due to this difference that some people are more successful in achieving their ambitions than others. Atkinson (1966) found Achievement Motivation to have significant contribution on both education and vocational choice. Mubayi, 1974, (as cited in Desai, D. & Govind, A. 1979), wherein not significant relationship was evident between vocational aspirations and n-achievement among non-tribal schools. Abrol (1977) in his study had found that students with high Achievement Motivation also had high Vocational Interest maturity. Dabir (1986) in his study found a positive and significant relationship between Achievement Motivation and vocational aspirations. Salami (2004), while going through various studies found a significant relationship between Vocational Interests and Achievement Motivation. According to Yadav, R.K. (2005) need achievement had negative correlation with biological sciences and need order have significant relationships with five fields of vocational preferences, which were biological sciences, computation, persuasive, linguistic and humanitarian. For Tutar et al. (2011) Achievement Motivation and ambition was significantly positively correlated.
From the above discussion, it is very clear that though various studies were conducted on Achievement motivation and Vocational Interests and their relationship with other variables by different authors, no study was conducted on effect of Achievement Motivation on Vocational Interests of secondary school students. Therefore, it has become imperative for the investigator to study on the above topic.

Definition of the terms:

According to Atkinson and Feather (1960),

"The achievement motive is conceived as a latent disposition which is manifested in overt striving only when the individual perceives performance as instrumental to a sense of personal accomplished".

According to Holland (1997):

"Vocational Interests is an expression of an individual’s personality in work, school subjects, hobbies, recreational activities and preferences".

According to New International Webster's Comprehensive Dictionary of English Language (2002) secondary school is

"High school or Preparatory school beyond the elementary or primary and below the college level".

Objectives:

Following were the main objectives of the study:

1. To find the effect of Achievement Motivation on Vocational Interests of secondary school students.

2. To find the effect of Achievement Motivation on Vocational Interests of male students of secondary schools.

3. To find the effect of Achievement Motivation on Vocational Interests of female students of secondary schools.

Hypotheses:

The following were the null hypotheses formulated by the investigator, in order to achieve the above-mentioned objectives.

H₀:1 There will be no significant effect of Achievement Motivation on Vocational Interests of secondary school students.

H₀:2 There will be no significant effect of Achievement Motivation on Vocational Interests of secondary school students.
Interests of male students of secondary schools.

H₀:3 There will be no significant effect of Achievement Motivation on Vocational Interests of female students of secondary schools.

Method of Research:

For the present study, the investigator employed Descriptive Survey Method.

Population:

The secondary school students of Aligarh city constituted the population for the present research.

Sample:

The sample comprised of one hundred (100) randomly selected students of whom fifty (50) male and fifty (50) female students were taken from three different schools of Aligarh city.

Table showing the school-wise distribution of students

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of Schools</th>
<th>Male Students</th>
<th>Female Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Al-Barkat Public School</td>
<td>17</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>2.</td>
<td>Aligarh public School</td>
<td>18</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>3.</td>
<td>Wisdom Public School</td>
<td>15</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Tools used in the study:

The following tools were used for collection of the data:

1. Rao Achievement Motivation Test by Rao, D. G.
2. Vocational Interests Record by Srivastava, D. N. and Bansal, V. P.

Statistical Techniques used:

For the analyses and interpretation of the findings, the investigator employed Pearson Product Moment Coefficient Of Correlation and Linear Regression Analysis.

Delimitations of the study:

1. The study has been delimited to students of class-IX CBSE based secondary schools of Aligarh city.
2. It has been delimited to the variables such as Achievement Motivation and Vocational Interests only.

Analyses and Interpretation of Data:

Objective 1. To find the effect of Achievement Motivation on Vocational Interests of secondary
school students.

H₀:1  There will be no significant effect of Achievement Motivation on Vocational Interests of secondary school students.

The first objective was concerned with finding the effect of Achievement Motivation on Vocational Interests of secondary school students, for which the investigator at the foremost analysed the scores of Achievement Motivation and Vocational Interests to find the relationship between them by using Pearson Product Moment Correlation of Coefficient. The following table depicts the correlation value.

Table no.1

Coefficient of Correlation between Achievement Motivation and Vocational Interests of secondary school students (N=100)

<table>
<thead>
<tr>
<th>Variables</th>
<th>df</th>
<th>Calculated ‘r’</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>98</td>
<td>0.063 NS</td>
<td>0.531</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NS: Not Significant (2-tailed).*

From the above table (Table no. 1), it could be said that the coefficient of correlation between Achievement Motivation and Vocational Interests of secondary school students was 0.063, which is positive but not significant at any level. This signifies a weak relationship between the variables.

As the relationship was not significant, the investigator could conclude that Achievement Motivation did not have any significant effect on the secondary school students in inculcating their Vocational Interests. Hence, the above-mentioned null hypothesis is accepted.

**Objective 2**  To find the effect of Achievement Motivation on Vocational Interests of male students of secondary schools.

H₀:2  There will be no significant effect of Achievement Motivation on Vocational Interests of male students of secondary schools.

In order to find the effect of Achievement Motivation on Vocational Interests of male students, the investigator first analysed the scores to find the relationship between these variables. The following table exhibits the coefficient of correlation between Achievement Motivation and Vocational Interests.
Table no. 2
Coefficient of Correlation between Achievement Motivation
and Vocational Interests of male students (N=50)

<table>
<thead>
<tr>
<th>Variables</th>
<th>df</th>
<th>Calculated ‘r’</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>48</td>
<td>0.088 NS</td>
<td>0.544</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td>48</td>
<td>0.088 NS</td>
<td>0.544</td>
</tr>
</tbody>
</table>

NS: Not Significant (2-tailed).

The above table (Table no. 2), exhibits the coefficient of correlation between Achievement Motivation and Vocational Interests of secondary school male students to be 0.088, which was positive but not significant at any level.

Since the relationship was not significant, it could be concluded that Achievement Motivation had not instrumental effect in inculcating the Vocational Interests of male secondary school students. Hence, the null hypothesis is accepted.

Objective 3 To find the effect of Achievement Motivation on Vocational Interests of female students of secondary schools.

H₀:3 There will be no significant effect of Achievement Motivation on Vocational Interests of female students of secondary schools.

In order to find the effect of Achievement Motivation on Vocational Interests of female students, the investigator first analysed the scores to find the relationship between these variables. The following table exhibits the coefficient of correlation between Achievement Motivation and Vocational Interests.

Table no. 3
Coefficient of correlation between Achievement Motivation
and Vocational Interests of female students (N=50)

<table>
<thead>
<tr>
<th>Variables</th>
<th>df</th>
<th>Calculated ‘r’</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>48</td>
<td>0.027 NS</td>
<td>0.851</td>
</tr>
<tr>
<td>Vocational Interests</td>
<td>48</td>
<td>0.027 NS</td>
<td>0.851</td>
</tr>
</tbody>
</table>

NS: Not Significant (2-tailed).
Table no. 3 depicts the coefficient of correlation between Achievement Motivation and Vocational Interests of secondary school female students as 0.027, which is positive but not significant at any level.

As the relationship was not significant, it could be concluded that Achievement Motivation had not contributory effect in inculcating the Vocational Interests of female secondary school students. Hence, the null hypothesis is accepted.

Therefore, the investigator has concluded that it has become essential to enhance the Achievement Motivation of students in order to inculcate interest towards vocational courses.

Findings:

1. Positive and not significant relationship was found between Achievement Motivation and Vocational Interests of secondary school students. Thus, it could be said that there was no significant effect of Achievement Motivation on Vocational Interests on secondary school students.

2. Positive and not significant relationship was found between Achievement Motivation and Vocational Interests of secondary school male students. Hence, it was concluded that Achievement Motivation was not instrumental in promoting their Vocational Interests.

3. Positive and not significant relationship was found between Achievement Motivation and Vocational Interests of secondary school female students. Hence, it could be
concluded that Achievement Motivation had no contributory effect on their Vocational Interests.

Discussion:

The coefficient of correlations between Achievement Motivation and Vocational Interests for the total sample, for male as well as for female of secondary school students respectively were found positive and not significant at any level. This weak and not significant relationship signifies that Achievement Motivation had no contributory effect on Vocational Interests. These findings signifies that Achievement Motivation had no effect in inculcating their Vocational Interests which draw support from the result of Mubayi, 1974, (as cited in Desai, D. & Govind, A. 1979), wherein not significant relationship was evident between vocational aspirations and n-achievement among non-tribal schools.

Muola, J.M. (2010) found that students’ motivation to do well in academic work depends on the nature of their home environment and therefore, it was recommended that parents need to be aware of the importance of their role in their children’s academic Achievement Motivation so that they can provide the necessary facilities at home. Today, most of the parents are working parents. They have their own ambitions and therefore have very little time for their children. These may be the demotivating factors in the academic life of secondary school students. Thus, parents needs to devote time for their children, as good parenting is very essential for motivating the secondary school students in planning their future career.

Implications:

From the findings of the present study, it has become imperative to enhance the Achievement Motivation of our secondary school students in order to inculcate their interest towards vocational courses. Therefore, teachers and parents should take responsibilities to enhance the Achievement Motivation of students, which they could achieve by telling stories of
successful personalities of their localities. Personalities from different walks-of-life like Dhirubhai Ambani (a successful business personality), Sachin Tendulkar a great cricket legend etc. should be included in order to inculcate interest towards different fields of jobs or vocations. Nowadays the Government of India has been emphasizing on skilled-based educations and accordingly planned number of vocational courses for our students at different levels has been introduced as vocational education, is one among the different steps undertaken to remove unemployment, unnecessary rush towards higher education, school drop-outs and juvenile delinquency among the young generations.

Suggestions for further studies:

The following are the suggestions for further studies:

1. As the present study has been confined to only one hundred students (100), the investigator would like to suggest that a larger sample should be taken in order to generalized the results.

2. The present study was restricted to only two variables and hence the investigator would like to recommend that more variables like socio-economic status, parental education, intelligence, etc. could be undertaken for further studies.

3. Different Boards like U.P. Board, AMU, ICSE, etc. could be considered for further studies.
REFERENCES


