CAREER DECISION-MAKING: RELATIONSHIP AMONG YOUTH CAREER CHOICES, CAREER KNOWLEDGE AND SELF KNOWLEDGE AT HIGHER SECONDARY LEVEL IN PAKISTAN

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ISLAMABAD-PAKISTAN
2019

Accession No. [illegible]

PhD
650.14
KHC

Career development

Career decision-making

Career counselling

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Submitted in partial fulfillment of the requirements for the degree of Ph. D in Education

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2019

بسم الله الرحمن الرحيم

DEDICATION

Dedicated

to

MUHAMMAD (PBUH)

Who is the Best Decision Maker in the World

ACKNOWLEDGEMENTS

All the praises to ALLAH, who created human beings and showered uncountable blessings on them. This is ALLAH who granted wisdom and power to the human beings and enabled man to search the opportunities and to make decisions on the basis of knowledge that is given to him.

The researcher is thankful to Dr. Asad Abbas Rizvi as he always showed kindness and guided at each step.

The researcher is also thankful to Professor Dr. Nabi Bux Jumani Ex-Dean Faculty of Social Sciences, International Islamic University, Islamabad who always welcomed regardless of his very busy professional activities.

The researcher is equally thankful to Prof. Dr. Samina Malik, Dean Faculty of Social Sciences, International Islamic University, Islamabad for her overall monitoring the scholaristic progress of the research.

Special thanks to Dr. Azhar Mahmood who checked the thesis twice with keen interest and provided feedback that was very helpful and made this thesis more valuable.

The researcher would like to thanks Dr. Muhammad Munir Kayani, Chairman, Department of Education, International Islamic University, Islamabad for his guidance and support as head of department.

The researcher is also thankful to school heads and officials of Federal Board of Intermediate and Secondary Education, Islamabad who helped in data collection.

Thanks, from heart to all those friends, who always show care and provided advice for completion of this hard work.

The researcher is thankful to all his family members who always prayed for him, especially kids who always felt distance while the researcher stayed away from home for this work.

Shahinshah Babar Khan

December, 2019

APPROVAL SHEET

Career Decision-Making: Relationship among Youth Career Choices, Career Knowledge and Self Knowledge at Higher Secondary Level in Pakistan

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It is certified that the contents and forms of thesis entitled "**Career Decision-Making: Relationship among Youth Career Choices, Career Knowledge and Self-Knowledge at Higher Secondary Level in Pakistan**" submitted by Mr. Shahinshah Babar Khan Reg No. 85-FSS/PHDEDU/F-11 have been found satisfactory for the requirement of the degree.

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ABSTRACT

This study aimed to explore the relationship among career choices, career knowledge and self-knowledge and contribution of each of them in predicting career decision making among the students of higher secondary level in Pakistan. The objectives of the current study were (i)to explore the relationship between youth career choices and career knowledge. (ii) to find out the association between youth career choices and self - knowledge. (iii) To investigate the connection between youth self-knowledge and career-knowledge and (iv) to explore the contribution of career choices, career knowledge and self- knowledge in predicting the career decision-making (v) to find out the significant difference in the mean scores of male and female students towards career decision making By purpose, the present study was correlational and by method it was survey research. The population for the current study was 2309 students of Higher Secondary School Certificate level who were enrolled in the institutions of Federal Directorate of Education, Islamabad. A total of 460 students were selected through proportionate stratified sampling technique. A career choice test designed on the basis of Holland's theory was used to investigate the personality type of the students. Three custom made questionnaires were used to measure the career choices, career knowledge and self-knowledge of the sample students. An adopted questionnaire Career Decision Self-Efficacy Scale (CDSE) was used for measuring confidence of students in career related tasks. Pearson's correlation coefficient was calculated for measuring relationship between career choices and career knowledge, career choices and self-knowledge and career knowledge and self-knowledge. Multiple regression was employed to explore the contribution of career choices, career knowledge and self-knowledge towards career decision making. The current study found a positive strong relationship between career choices and career knowledge, career choices and self-knowledge and between self-knowledge and career knowledge. Career knowledge makes the strongest unique contribution in explaining the career decision-making while career choices are the variable that contributes least in career decision-making. It was found that male and female students held different patterns while making decision about careers. Even within same subject groups, male and female students possessed different patterns towards career decision-making. In the light of the findings, it was concluded that career choices, career knowledge and self-knowledge bore strong positive relation and all these variables contribute in predicting confidence in career decision making among students of higher secondary level. It was recommended that the strategic plan developed for career related matters may be implemented in higher secondary schools where teachers, professional and trained counselors might guide students about selection of subjects and scope of these subjects in future while dealing with real life problems. For measuring students' potential and their personality type, Holland's personality test should be usable. Replication of the study on country wide population and gender related issues, desirably on longitudinal basis should yield more data and substance for generating generalizability of the study framed the areas for future research.

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LIST OF ABBREVIATIONS

Abbreviation	
ANOVA	Analysis of Variance
CDSE	Career Decision Self-Efficacy
FBISE	Federal Board of Intermediate and Secondary Education
FCT	Federal Capital Territory
FDE	Federal Directorate of Education
ICTs	Information and Communication Technologies
IMCB	Islamabad Model College for Boys
IMCG	Islamabad Model College for Girls
PAEC	Pakistan Atomic Energy Commission
UNESCO	United Nations Educational Scientific and Cultural Organization

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Defining career is not so simple, even in the 21st century; word career has different meanings and scope. Generally, it is considered as the selection of majors at school level while keeping in view the use of these majors at work place. United Nations Educational Scientific and Cultural Organization (UNESCO, 2002) defined a career for an individual as the relationship of work roles that individuals play at their work place and the roles that some individuals play in life, whether the work is paid or unpaid. Career plays an important role in different areas of individual life, including evaluation and emotional reactions to work life (Kirdok & Bolukbasi, 2018).

According to the Oxford English Dictionary, a career is "course or progress through life (or a distinct portion of life)" of some individual (Oxford Dictionaries, 2013). Career is aptly related to a range of features of an individual's life; it also includes learning and work (Wang et al., 2014).

It is obvious that over time, an individual's work experiences are evolving sequences (Woodd, 2000). Latif, Aziz, and Ahmed (2016) consider the career as exposure of some individual.

For youth, career is a combination of subject preferences at higher secondary level and work path comprises a vital aspect of life; add some role for whole lifetime (Herr, Cramer & Nile, 2004). Hooley, Watts and Andrews (2015) used two terms for selection of subjects and its utilization, first one was career and second one was employability, learning to explain the actions of youth to think about their future, to learn the skills needed and make transit successfully.

Selection of educational path influences the work path and sets out the future field of the individual. An individual who chooses logical subjects might be an engineer or scientist but would not be an artist. Khan (2012) in his article published in the daily "The Dawn" writes with reference of Napoleon Hill who is an American author "that a man cannot succeed in such a field to which he/she does not like". In the past, there was a tradition that parents passed on their skills and occupations to their next generation, even families renowned in local areas for some specialty in some specific field. They developed performance based confidence that their children could be successful in that field. But, with the passage of time, this trend ended due to impact of modernization. Now, there is a wide range of careers available for youth to choose according to their own interests and training. It reflected the mind and scope of the career beyond the family background, and geographical location. At present, making decisions about careers are no longer the only distinct choice made at some point whereas now people have options to have more than one position in different areas of employment (Angelopoulos & Kaliris, 2018). It opened up vertical and horizontal mobility.

Career choice is equally important for youths' future plans as today's career choice will affect the mind set of youth and will play a crucial role throughout their lives.

Currently, choosing a career has become such a difficult task for the youth that people never met in the past. But once selected a career is not an end for youth as there is a wide range of career options available as alternatives for youth to choose at any time according to their view capacities and skills. Keeping in the importance of career counseling and guidance, National Educational Policy (2009) of Pakistan documented that in schools at the secondary and upper secondary levels, such programs should be available.

It is also a fact that there is no such mechanism at school level and ultimately it is difficult to launch such program in each school, so it better to set a stage for guidance and counselling for careers in the schools which are approachable for other surrounding schools. School level students have not enough involvement in the activities that guide them towards selection of career in a suitable way. If someone is indulged in some job process, he/she learn about more available opportunities in the field as work exposure also set lines for future. When some student is involved in job practically, he/she come to know its other aspects that were not cleared or were difficult to understand at school level. UNESCO (2002) claimed that taking decisions for careers can happen at any age as it is an ongoing process; it is not an event that happens only one time in the whole life of a person.

In career decision-making, students face a series of uncertainties in personal interests and successful career choice. Today, a variety of career opportunities are available for youth to select irrespective of geographical location and race. Inventions of new technologies have changed the workplace situation which demands some new skills and concepts in the world of work. These innovations have also increased the span of career choices for youth to select a reliable career. Career choices are not a simple matter to select

one of the various available opportunities; rather, career knowledge and self-knowledge are necessary for better career choices.

Age, ability and work habits are important factors in career decision making. Age of students at higher secondary level is known as young adulthood where students have to take decisions about life and career as majority of the students enter into the world of work (Mortimer, Kim, Staff & Vuolo, 2016). At school, college or university level, for selection of subject as well as job, students are influenced by their educational career (Dichauser, Reuter & Hilling, 2005).

In Pakistan, higher secondary level is a point from where students enter into the fields of their future career, as subject selection made at this level defines their future career. After higher secondary level, students join fields with these main subjects. National Education Policy (1998-2010) documented the strong relationship between secondary education and higher education and states that to large extent the quality of higher education that is expected to produce trained workers and professionals for different fields of life depend on the quality of secondary education (IX-XII). National Education Policy (2009) envisaged that the functions of secondary and upper secondary education are to groom youth for the real life. This level of education provides skills to work in the marketplace and equip the students with such knowledge that students may use for higher education. What is the scope of the selected subjects in the future and what career opportunities are available for these subjects are important questions for the youth/young people? But in Pakistan, at school level, there is no well-designed system to explore the ways while selecting subjects at higher secondary level. Moreover, students do not know the scope of selected subjects that whether these subjects match their potential or not and

will be beneficial for his/her own life and for society as well. At this stage of life, career selection will lead to success if taken according to the interests.

Under the theme of career choices and career decision-making, various theories have been developed by different educationists. Theory of circumscription and compromise was launched by Gottfredson in 1981. Holland (1985) conceptualized six personality types (realistic, investigative, artistic, social, enterprising & conventional) and offered a model of personality type and work environment. He argues that if personality type matches with compatible work environment, it will lead to success and satisfaction. Self-concept theory of career development was presented by Super in 1990 and theory of work adjustment was introduced by Dawis in 1992.

These are some of the famous theories about career choices and career decision-making. All these theories provide basic relationships between personality type and work place.

For every individual, personality is unique and personality traits work in all the situations accordingly.

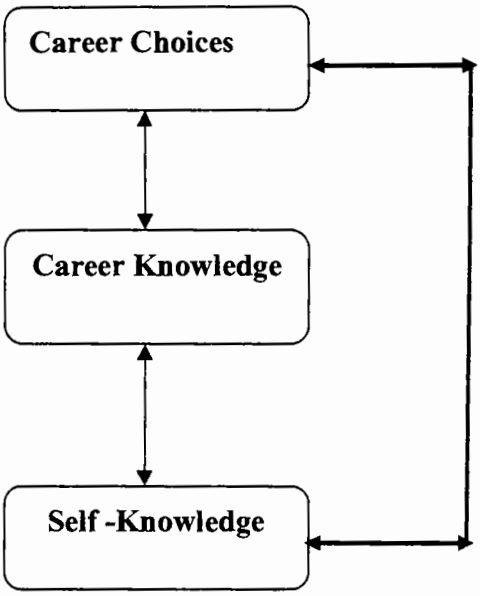

Figure 1.1: Relationship among career choices, career knowledge and self- knowledge.

Figure 1.1describes the theoretical framework of the study, i.e the relationship between career choices and career knowledge, career knowledge and self-knowledge and relationship between career choices and self-knowledge.

Career choice is a process of selection of career while using information of careers that an individual has, abilities that he/she possess while taking final decision for about selection of career.

Career knowledge and self- knowledge are considered important among the predictors for career choices. Individuals having adequate career knowledge can choose suitable careers for themselves as compared to the individuals with less or lack of career knowledge. It is a common perception that good career knowledge leads to better career choice. The rational is that there exists a connection between knowledge about career and its usage in selecting career.

Self -knowledge is a personal treasure about one's own-self. A person with good self- knowledge is capable to choose suitable career according to his/her interests. For the best selection of a career suitable to one's interests, it is essential that one must acquire self- knowledge for self-accomplishment. These are interrelated factors with each other and all of them are related with career decision-making. These variables are shown in the following figure.

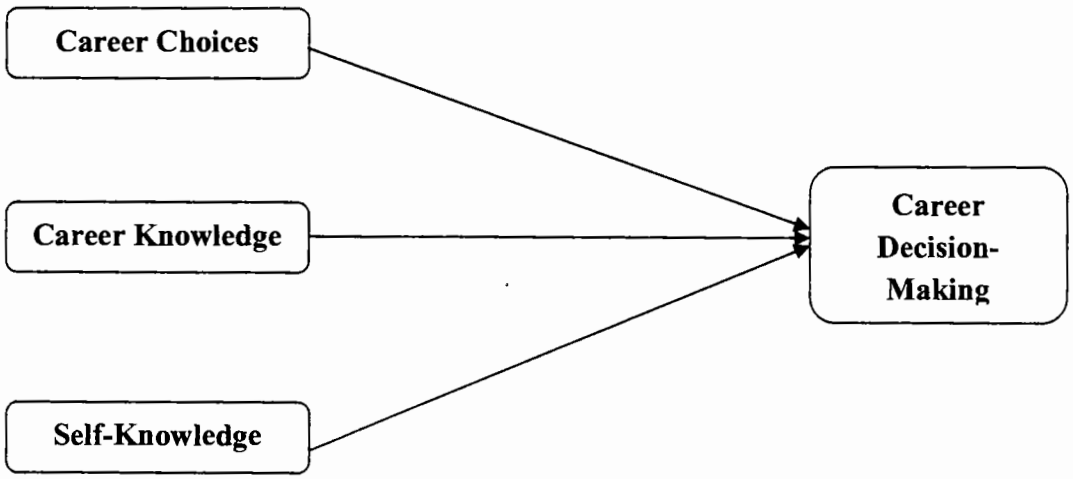

Figure 1.2: Contribution of career choices, career knowledge and self -knowledge in predicting career decision-making.

Figure 1.2 is showing the contribution of each independent variables career choices, career knowledge, self -knowledge towards dependent variable career decision-making.

Individuals remain involved in a wide range of work and career decision-making throughout their life span. Career decision-making depends on many factors; personal preferences, interests, market trends, plausible opportunities and external influences.

Career knowledge, career choices and self -knowledge richly contribute towards the process of career decision.

A work path joined once is not an end as one time decision. Individuals tend to change his/her career path for prospective future; this is the right of an individual. Career decision-making is not simply matching an individual to an occupation for the time being rather at any stage of life one can change careers to gain more success. It is an admitted fact that individuals perform well in the career fields matched with their genetic makeup interests and training. The stories of individuals, who are considered successful in their careers reveals that they have gathered information about available careers that matches to their taste, judged their self and then selected the best matched career. Mismatch can distort the life span. This leads to the argument that career choices, career knowledge and self-knowledge are the elements that play a vital role in making decisions about careers.

1.3 STATEMENT OF THE PROBLEM

For the current study, the problem to be investigated is the relationship among career choices, career knowledge and self-knowledge and the contributions of career choices, career knowledge and self–knowledge in predicting the confidence in career decision-making of higher secondary level students.

1.4 OBJECTIVES OF THE STUDY

The objectives of the study were:

1. To explore the relationship between youth career choices and career knowledge.
2. To find out the association between youth career choices and self -knowledge.

3. To investigate the connection between youth self-knowledge and career-knowledge.
4. To explore the contribution of career choices, career knowledge and self-knowledge in predicting the confidence in career decision-making.
5. To find out the difference in the mean score of male and female students towards career decision making.

1.5 RESEARCH QUESTIONS

To achieve the objectives of the current study, following research questions were designed:

1. What is the relationship between career knowledge and youth career choices?
2. How youth career choices and self- knowledge relate with each other?
3. How youth career knowledge and self- knowledge relate with each other?
4. What are the contributions of youth career choices, career knowledge, self-knowledge towards career decision-making?

1.6 HYPOTHESES

Following hypotheses of the study were determined:

H_0 1: There is no significant difference in the mean scores of male and female students regarding their career decisions.

H_0 2: There is no significant difference in the mean scores of students (male and female) of all subject groups (among subject groups) regarding their career decisions.

$H_0 3$: There is no significant difference in the mean score of male and female students (within subject group) towards career decision making.

1.7 SIGNIFICANCE OF THE STUDY

Career selection is an important as well as an essential aspect of youth's future. For youth, today's career selection will carve out his/her role in society and in the nation's future. Satisfied persons utilize whole potential at their workplace and ultimately produce the best results while dissatisfaction leads to doubts and kills many characteristics and potential of the individuals. In the past, careers were attached with families and used to shift from one generation to next generation. Once the career selected was considered forever. Now the scenario has changed with the impact of information and communication technologies. There are many variables such as, individual traits, social contexts, environmental circumstances and work experiences that lead to career decision-making. National Education Policy (2009) envisaged that at higher secondary level, career concerns counselling may be addressed to encourage the students to take up studies that matches their aptitude other than the accepted fields in the market. In Pakistan, there is lack of career guidance to the students through any of the source (Sarwar & Azmat, 2013). The present study would be beneficial for the following stakeholders:

1.7.1 Higher Secondary Level Teachers

The present study would be supportive for teachers of higher secondary school level to guide their students about career choices and would provide them diagnostic strategies about career selection. Moote and Archer (2018) reported with reference to Association of Colleges that they conducted a survey in 2012 to know the teacher's role in career related

matters and established that 44 % of school teachers confessed that in past they had provided a bad advice about career selection to the students and 82 % teachers owned that they held inadequate knowledge about career options.

1.7.2 Students of Higher Secondary Level

Chen and Fouad (2013) are of the view that in Asian culture, career of some individual represents the status of family and generally parents share their children achievements with others (Kodama & Huynh, 2017). While entering from school to world of work, students have to make decisions about their career (Saks, 2015). Young people, in the time of conversion from school to work feel themselves weak to overcome the changes of their surrounding but can be prepare to deal with the challenges of career process if they recognize themselves to manage these changes (Konstam, Demirtas, Tomek & Sweeney, 2015). Thus, study would highlight the factors which contribute positively in the youths' career decision-making. The study may assist the youth in career selection through offering different steps of career selection and enable them to choose the career according to their own choices and interests.

1.7.3 Administration of Higher Secondary Level Institutions

It is expected that the study may be helpful for the administration of higher secondary schools to guide their students towards right career selection and expose them to the relevant fields according to their interests. It may also be relevant to check the personality type of the students and guide them in selection of subjects consistent to their personality type.

1.7.4 Parents to Guide Their Children

Ozlen and Arnaut (2013) conducted a research study to know the career choices of the university students and found that families have a high influence on student career choices. The present study may equally be beneficial for parents to help their prime youth in the selection of the subjects that match to their personality type and interests.

1.8 DELIMITATION OF THE STUDY

In each provinces of Pakistan, there are Boards of Intermediate and Secondary Education (BISE) that work as external bodies for examinations of secondary and higher secondary level. It is compulsory for students of secondary and higher secondary schools (private or public attached with their respective BISE) to take the terminal exam conducted by the BISE.

In Federal Capital Territory (FCT), there is Federal Board of Intermediate and Secondary Education (FBISE), created in 1976. All schools and colleges in FCT under federal directorate of education, all institutions under the jurisdiction of cantonment and garrison and embassy schools/colleges form the jurisdiction of FBISE. The institutions have however choice to opt for O and A level examination streams. Generally, the institutions of high quality in private sector avail this choice. This study has been delimited to the institutions governed by federal directorate of education and affiliated with FBISE.

1.9 PRACTICAL IMPLICATION OF THE STUDY IN PAKISTANI CONTEXT

In Pakistan, at higher secondary level, pre-medical, Pre-Engineering and General

science are offered with specific subjects to the students with science background at secondary level and a range of humanities subjects is offered to the students with humanities and arts background at secondary level. The students with high scores in matriculation try to join pre-medical, pre-engineering or the general science group, while the students with low scores or with arts subjects at secondary level select the subjects from humanities group offered by the colleges or higher secondary schools. At college level/ higher secondary level, there is no phenomenon to guide the students while measuring their personality type or their interests. Obtained marks in matriculation examination guide students towards selection of subjects at higher secondary level. Parents and teachers believe that these marks are the set criteria for selection of subjects at higher secondary level.

The present study may offer a pathway to higher secondary schools/colleges to set a system for investigating the personality type of the newly entering students and suggest subjects according to their own choice.

1.10 DEFINITIONS OF KEY TERMS

1.10.1 Youth

Young people are considered as an asset for a nation and it is believed that they would be the future guardian of the nation because the progress and prosperity of a nation depends on youth. United Nations (2018) characterized a person young aged ranged from 15 to 24 years. For the current study, youth is considered as the students of higher secondary level who generally fall in the age group of 16 to 20 years.

1.10.2 Career

Career is individual's educational and work path which comprises a vital aspect of life, add some role for whole lifetime (Herr, Cramer & Nile, 2004) and has a significant role in different areas of some individual's life (Kirdok & Bolukbasi, 2018). Hutchinson (2013) conceptualized career learning has three components, first was career education containing self-development, investigation and management, second was work related learning that is kind of work and skills required for work and third was career information. Hooley, Watts and Andrews (2015) used two terms, first one was career and second one was employability learning to explain the actions of youth to think about their future, to learn the skills needed and make transit successfully.

1.10.3 Career Choices

Career choices are the selection of an occupational path from the available careers in the market. Ozlen and Arnaut (2013) conducted a research about the role of family, learning and technological environment towards career decisions among university students. It was found that university students were decidedly conscious in matter of career choices while knowing their self-abilities, available careers and their alternates for future. How to choose the career for the future is important for the students of higher secondary level because this is the stage from where planning for their future starts and this stage shapes the future of the youth.

It is very important for students of higher secondary to know about their potentials and must have knowledge of available careers and choose the career keeping in view the future. Also, once the career is chosen is not the final one. Stability in decision is important

yet change is possible both vertically or horizontally for better future should the performance be met.

1.10.4 Career Knowledge

Career knowledge is the information about the paid work in the labor market. It is necessary that students have knowledge of emerging fields in the world and are preparing themselves for working in the global market place. Stead and Watson (2006) state that career knowledge is the information that some person has about career alternates [on the base of education and paid work] that are available to them. This c annotation was adopted in this study.

1.10.5 Self-Knowledge

For the present study, self-knowledge is the self-information that an individual has about himself/herself that tells them the capabilities he/she possess (Mbetse, 2002), it is the measure of abilities and to know about the taste and potential of someone. The students who know more about their abilities perform better in the selected fields and can manage themselves according to their potential. Self-knowledge highlighted strong and weak areas of the personality and provide opportunity to overcome weak areas and shape the future according to their will.

1.10.6 Career Decision-Making

Career decision-making is a process of deciding about the selection of a career. There is no set criterion for selection of subjects at higher secondary level. In local context, selection of subjects at higher secondary level is directly related to marks of matriculation.

In research, students' decision making concerning career choices has gained much consideration of researchers for the previous two decades (Ozlen & Arnaut, 2013).

1.11 RESEARCH METHODOLOGY

By purpose, the current study is correlational and by method it is survey research. A career choice test designed on the basis of Holland's theory was used for determining the personality type.

The population for the current study was 2309 students of higher secondary school certificate level who were enrolled in the institutions of Federal Directorate of Education (FDE), Islamabad. Gay (2009) suggested if the population size is around 1500, 20 % should be enough as sample. Through proportionate stratified sampling technique, 20 % of boys and 20 % of girls students were selected from each stratum who appeared in the Annual Examination 2014. Finally, 460 students were selected through proportionate stratified sampling technique as sample for the current study.

For measuring career knowledge, career choices and self-knowledge, custom made questionnaires were used. In the present study, adopted questionnaire Career Decision Self-Efficacy Scale (CDSE; Betz, Klein & Taylor, 1996) was used. It is developed for the students of college level for measuring confidence in career decision-making.

1.12 DATA COLLECTION

Data were collected at two stages, at first stage; hard copy of Holland's Career Selection Test was given to the students to determine the personality type. The researcher personally visited the sample institutions. In some cases, it was difficult to reach. Some

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1.9 PRACTICAL IMPLICATION OF THE STUDY IN PAKISTANI CONTEXT

In Pakistan, at higher secondary level, pre-medical, pre-engineering and general

CHAPTER 2

REVIEW OF LITERATURE

2.1 CAREER

Historically, people were known by their occupations. These occupations were transferred from one generation to the next. This trend worked until 19th century. The trend changed during 20thcentury, when the role of each individual gained importance for society. Currently, it is considered that every individual has a unique role to play in the form of some career for the progress of society. A career is a role which one plays in the society for himself/herself initially. It expands as one moves ahead to family, society and nation at large. The variety of forms keeps on changing. Every individual's role is crucial for every other individual in the society and for their nation as well because the progress of a nation depends upon the role of its people. Woodd (2000) is of the view that career is work experiences an individual faces over time while Jones, George and Hill (2006) hold that career is the sum of total work-related experiences throughout a person's life. About career, Patton and McMahon (2014) are of the view that the meaning and definition of career lacks conceptual clarity as it is understood differently. It results in a lack of common thinking in this area. In view of Blomerus (2016) defining career is a complex matter.

In progressive societies, role of every person is equally important as each person supports or facilitates the others. This mutual chain enables everyone to work for the

nation. Every nation offers a range of occupations to its masses. Choosing an occupation depends on its natural resources and local context. Within the society, people want to choose the career of their interest. Gati and Levin (2014) consider the selection of career is one of life's difficult decisions. When a number of paths are available to choose, it is obviously a difficult task for someone to have such information and know the ways to manage that information to select the best one from the available options.

About choices, UNESCO (2002) states that for an individual, to some extent, it depends on social, economic and cultural context. It is a fact that if a person performs well in a field of his/her own interest that individual contributes to the overall prosperity of the country. Career is a process of moving within a selected domain at different levels and times. The reliability is linked with gaining experiences and demonstrating performance in diverse positions.

2.2 CHANGING CONTEXT AND WORLD OF WORK

In the past, people remained engaged with one career for a long time as options were limited. Scenario in the 21st century is entirely different. There are many agents which are responsible for this situation.

Argyropoulou and Kaliris (2018) state that presently, the variables that generally contribute towards labor market such as political situation, social paradigms, economics conditions and environmental changes do not remain stable because of this situation, it became difficult to predict the future of the labor market.

Information and Communication Technologies (ICTs) are the major change agents. It has converted the entire world into a globe. While staying at a large distance, one can

know all the activities of the whole world. This phenomenon has extended the concept of careers from to work for a nation within the local boundaries and to work for the whole world without boundaries.

Information and Communication Technologies (ICTs) shrink the distances. It has made the whole world a globe. Distances do not matter. One can buy and sell products around the world. Currently, in the age of globalization, many career options are available for an individual to choose. Collin and Young (2000) declared that new careers have emerged beyond organizational and occupational boundaries. Robert (2006) states the changes that have been occurring in the market have increased the opportunities and at the same time generated doubts in careers. The opportunities provided by the technologies and threats because of these technologies are attached with behavior towards job and with future plan in some field and the relationship between these is important to moderate through work experience towards technologies (Zhang, Guan, Zhou & Lu, 2019). At present, making decisions towards a career for young people are different from the people of 1960's and 1970's (White, 2007). Today's labor market is uneven and unpredictable and in this situation career decisions is a difficult task (Choi et al., 2011; Metheny & McWhirter, 2013).

Currently, it is not necessary that once a career is selected, it is forever. Now globalization has offered a wide range of careers to select. People can change their career path at any stage of life due to many reasons such as availability of more attractive careers in terms of pay and environment or career advancement etc. Choosing a career path shows the way and role of a person that he/she will play for a society and nation. But choosing a career from the available range is not so easy for an individual nor is it easy to play his/her

role in an effective way. Choosing a career is a difficult task and it becomes even more difficult when there is a little experience, low level knowledge about career related tasks and there is insufficient self- knowledge. Atamian and Mansouri (2013) claim that college students rarely know about the set of skills and requirements of the career that they want to adopt. They further state that students often pursue those degrees for which they have no passion and remain unable to find a suitable job after completion their degree.

Studies show that more than 50 % of university students experience career related problems due to lack of confidence and insufficient knowledge of work (Talib & Aun, 2009). Atamian and Mansouri (2013) conducted a study on preferences of students in the modern era and state that there are more careers available for students to choose then the majors offered at university level. Wise career decision maker gets career related information from different career preparation activities; explore his/her career in the light of that information and getting reforms (Kaur, 2016; Kim & Kim, 2016).

McDaniel and Snell (1999) advocate the importance of career knowledge and career counseling services and narrate that career counseling services educate the individuals about career options and the world of work. This information guides the individuals to explore the career options and choose according to their interests and characteristics.

In the current era, there is a wide range of careers available in the same domain that needs the same basic skills relevant to the careers. Equally they need some soft skills. Social intelligence, cooperative behavior and adapting thinking are becoming tools to flourish more in that career. Ketter (2011) noted that soft skills ensure success at workplace.

Around the world, different universities offer career courses at graduate level to help the undergraduate student to search out occupations. Relevant education and training, provide self-knowledge while keeping in view the interests and personality type, skills required for different occupations, and develop skills for career decisions (Sampson, Reardon, Peterson, & Lenz, 2004). Relevant career course enables the students to be more confident about career choice, making right way to choose career and affect the career decision state (Miller, Osborn, Sampson, Peterson & Reardon, 2018).

2.3 CAREER CHOICES

Career choice is a way to select a profession that will play a role in society. Choosing a career is concerned with cognitive operation for selecting a specific job while keeping in view future perspectives (Kolawole, Osundina, James & Abolaji, 2012). But this selection of profession is not an easy task as the whole life of an individual depends on the career he/she has chosen. Changing environment of work place, expanding scenario of careers and working in 21st century are the factors that have made career choices more difficult (LaVeck, 2018).

Kazi and Akhlaq (2017) support the argument career choice is not so simple for students, choosing a career is one of the biggest dilemma and challenge in any student's life. Many factors inter play in the process of analyzing career choices. Also, it is not a straightforward to choose from the available careers. It involves a difficult process of decision making about selection of a career.

In the past, the most important factor that influenced the career choice was available careers and home environment. It was not possible to move far away from home

for some careers, so people join the careers which were available in the surrounding areas. Technological advancements have brought a lot of changes in the life style of humans and also have affected their thinking. Now, technological advancements have broken the distance barrier and individuals can select career beyond the limits of distance. Even then in career selection home environment counts, employees make career decisions with advice of family members (Greenhaus & Powell, 2012). Schooreel, Shockley and Verbruggen (2017) conducted a research study in which the sample was employees and found that the employees who were guided in selection of career from home lost confidence in their own abilities and could not pursue future career goals with satisfaction. Such guidance for selection of career produce negative career consequences.

Parental support and guidance, available opportunities, and self-potential are some of the other factors that influence career choices. Shahhosseini, Abedian, Jannati and Khaki (2013) state that among many decisions, some individuals take, the most important decision is changing a career. To choose a job takes time and its consequences affect the whole life. Muraguri (2011) reports that many factors play important roles in the selection of careers and selection of career is affected by family background, personal values and cultural values. Kazi and Akhlaq (2017) provide the list of some factors which influence career choice. They include family, parents, friends, culture, academic achievement, health factors, existing income level and financial constraints, media influences, prospective levels of income, employment opportunities, and the social acceptability of profession, recognition, and work satisfaction.

Pickworth (1997) identified three factors that work in choosing a career: self-analysis, occupational analysis and self-information and occupational information.

Borchert (2002) conducted a study for finding the factors that effected career choices of high school students and recommended that career choice must be focused from the elementary school stage and continuing beyond. Choosing a career is a process that consists of experimentation. He found, trial and error, an important variable and suggested actions needed to be done and students educated about this career process.

2.4 CAREER CHOICES AMONG YOUTH IN PAKISTAN

National Educational Policies of Pakistan (1998-2010, 2009) envision that the functions of higher secondary education are to prepare the youth for the future. On the ground, there are no career guidance services available.

National Educational Policy (2009) explains that Pakistan's education system must have potential to enable students to realize their potential and contribute for the development of the society and nation. At the same time must create the sense of Pakistani nationhood, social justice, democracy and tolerance. The education system must prepare students to care for their local culture and ideology that is given in the Constitution of the Islamic Republic of Pakistan (1973).

This vision highlights that Pakistan's education must be able to enable students to realize their potential. It is a general view that marks obtained in a subject show the interest of the students in that particular subject. At the same time, educational system is also criticized that it only checks the memory of the students. In this situation, it is difficult to draw a conclusion that interest in some subject and marks obtained in that subject are aligned.

In reality, students choose subjects stream on the basis of their academic marks. Majority of the students who got good marks at secondary level want to join pre-medical

or pre-engineering at higher secondary level with the aim to be a doctor or engineer, and the students with average marks join general science groups or commerce groups. All these students have no knowledge or low-level knowledge about the scope of their selected subjects in the real market. It is very difficult for the students to select subjects keeping in mind their future career when parents' guide students about the selection of the subjects. It is a common practice that parents decide the selection of the academic subjects. Nawaz and Gilani (2011) conducted a study that found that there was a positive relationship between parental-peer attachment and career decision-making.

Career decision making difficulties in school/college students in local (Pakistan) context highlights lack of readiness factors as the most crucial category in career decision making at school/college level. Beenish, Najam and Saima (2017) stated that at adolescence stage, making a choice of a career in further education as the most important decision. In a cross-sectional study, the researchers explored career decision making difficulties across three educational levels in school and college level. With 418 students, using convenient sampling technique, sampled students between 14-20 years of age drawing from 9-13 years classes from public and private sector schools of Lahore, the study analyses a range of factors using descriptive statistics, pearson product movement, correlation, one-way ANOVA. Results exposed the score for lack of readiness was higher while considering the decision for career, followed by motivation, indecisiveness and dysfunctional belief. Ninth class students faced more difficulties in this process.

2.5 CAREER KNOWLEDGE

Barker and Kellen (1998) believe that information is what categorizes people as failed or successful and those people who have the best information succeed. The individuals who have taken career decisions with an uncertain professional concept, they faced uneasiness in their career related decisions (Kim et al., 2013).

Knowledge about career is the information about the world of work. Stead and Sources of career knowledge range from media, parents, family members and peers to school/college's career advisors.

Albro and Turner (2019) illustrated the following six principles that can enable the students to know their career interests, enhance their career knowledge, look into future opportunities and while working on these can achieve the career goals:

1- Generate a learning environment with choice for career examination.

2- Construct career knowledge through discussion.

3- Involve community speakers to tell their occupations and skills required.

4- Encourage students to share their career interests.

5- Offer chances to students to search careers.

6- Provide space to students to contribute their learning about careers.

2.6 SELF KNOWLEDGE

Self -knowledge is essential for choosing a career and career decision-making. Mbetse (2002) defines self -knowledge as to look into the personality aspects which make an individual to know about his/her capabilities. Self-knowledge is relevant to one's own

personality and preferences (Tanguay et al., 2017). Self -knowledge enables individuals to choose a career according to their interests and preferences. Self –knowledge involves self-evaluation and contains knowledge about one's own personality and choices (Renoult et al., 2012). The individuals who were unclear about the concept of self-made unsatisfactory career decisions and in future faced discomfort due to their decisions (Kim et al., 2013).

Kulpa (2014) states that at work place, today's workers must be creative and adventurous, and they must have belief in their own abilities, furthermore, workers may be encouraged to develop their skills to perform well. Gubler, Arnold and Coombs (2014) state that world of work in 21st century is volatile, apprehensive and non-linear. Patton and McMahon (2006) argue that a match between self-knowledge and the knowledge about the world of work helps students to make a sound career choice.

Figure 2.1: Career Development Cycle

(Source: www.lifecoachview.com/wp-content/uploads/2012/08/Self-knowledge3)

2.7 DECISION-MAKING

Making decision is a mental process to choose one option from the plausible alternatives. At face value, it looks easy. In practice, it creates problems for individuals to choose the right one. Different options are offered but the clients (students) are not trained to select the suitable one.

Selection process requires wisdom, a product of logical order in mind. This is known as decision-making. A good decision is based on ranking the positive and negative aspects of each option. In other words, the act of performance analysis. (http://www.businessdictionary.com/definition/decision-making.html)

2.8 CAREER DECISION-MAKING

2.8.1 Background

In 1909, Frank Parsons was ranked at highest place in the field of vocational guidance and is considered the pioneer in developing the concept of vocational choice and also stated that for each individual, choosing a career is a major decision. He held that there must be a match between an individual's traits and job characteristics. Parsons (1909) introduced the "three steps" approach, that later was known as the universal approach to guidance, the three steps were: knowledge of self, knowledge of occupation and true reasoning. Among these three steps, the last step "true reasoning" is regarded the heart of the decision-making process. It is a vision, a philosophy.

2.8.2 Career Decision-Making in the 21st Century

Technological advancements have changed the old phenomenon of many fields of life and provided them new faces. The utilization of modern concepts of knowledge has

also opened many windows for students to look at many careers. Barker and Kellen (1998) state that technological advancements are affecting career decisions and at the same time also challenging the boundaries of work.

Roberts (2006) held that careers are in the phase of uncertainty and instability because of rapid changes. Any substituted investment causes risks. UNESCO (2002) argues that career decision-making is a process that can take place at any stage of life, it does not happen once in the whole life of a person. Blustein, Palladino and Flum (2004) provide that career related interventions, such as career counselling, are effective in enhancing career decidedness, satisfaction with work, and confidence about decision-making skills.

Gati, Krausz and Osipow (1996) are of the view that Career decision-making is not so simple but rather it is a complex process. Wambu, Hutchison and Pietrantoni (2017) argue that for students, career decision making is an uphill task and for searching occupational information and for understanding of self, they need help of some one. In career decision making process, parents play a significant role for their children (Workman, 2015). Presently, labor market has become more complex because of the emergence of new actors that are contributing towards it and at the same time it has become more elastic, because of these changes, people are developing their skills that are essential for career decision making (Argyropoulou & Kaliris, 2018)

There are many factors which contribute in career decision-making; these factors may be positive or negative. These factors play different roles in career decision-making, where one wrong step may affect the whole life of an individual. Dzuiban, Tango and Hynes (1994) state that in contemporary society, career decision-making among students

has not been understood. Furthermore, successful people have adapted their career decisions (Mubiana, 2010).

Changes occurring around the world also are changing careers' roles. These changes are forcing students to change their educational paths, even sometimes; students make decisions against their interests and characteristics keeping in view the trend of the market. Cunningham and Anthony (2014) conducted a study and found that the combination of career cruising and subsequent academic advising help in career decision-making process.

Donahue (2006) has mentioned six tools involved in career decision-making: making a choice, self-understanding, list of possible options, plan, implementation of the plan and making decision.

Bimrose and Barnes (2007) narrate with reference to Harren's decision-making theory that was developed from career decisions made by college students and highlighted the following three career decision-making styles of college students:

I. **Rational Style:** The style using logical and systemic approach is used to reach some decision.
II. **Intuitive Approach:** Making decision, more reliance is made on internal affective states.
III. **Dependent Style:** Making decisions, seeking reactions of friends, peers and family members are considered more appropriate.

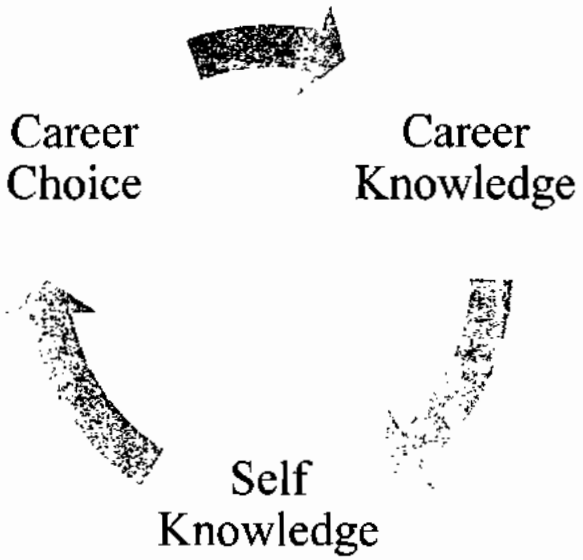

Figure 2.2: Processing Model of Career Decision-Making

Gati, Krausz and Osipow (1996) provided that for each individual there are a number of options to select from. They narrate that in case of career decision-making, there are some more features that also contribute in career decision-making. They highlighted the following four features that count while making career decision:

i. The range of alternatives (they need the plausible and time tested).

ii. Adequacy of information is available about each alternative (they need cost benefit analysis and cost effective analysis approaches.

iii. Availability of different aspects (full range of coverage and side effects)

iv. Emerging for individual's characteristics and the impact of future roles: combining of human and job roles.

2.9 BARRIERS TO CAREER DECISION-MAKING

In the process of decision-making for career, barriers occur when there is lack of required information, shortage of the resources which are necessary and lack of awareness about information that is necessary to make a decision. Creed, Patton and Bartrum (2004) conducted a study on one hundred and thirty final year high school students and concluded that many internal and external factors work as barriers for decision-making. Lack of self-knowledge, lack of confidence, lack of career knowledge, personality problems and wrong perceptions about selection of subjects are internal barriers. External factors included: lack of career opportunities, competition in the market, parent's pressure in selection of subjects and lack of access to career. In more precise terms, Joslyn (2015) highlighted two kinds of barriers in career development: one is perceived educational barriers and second is perceived career barriers.

Morgan and Ness (2003) highlighted that career indecision is one of the factors that contributes to career decision-making. Rojewski (1994) consider career indecision as an uncertainty about career choice where individuals do not care for career selection or do not possess such traits that are necessary for career decision-making. Morgan and Ness (2003) held that lack of readiness and lack of inconsistent information generally leads to career indecision. The indecision or belated decisions relates to psychological inability in problem solving.

2.9.1 Lack of Readiness

To undertake a work, motivation is the first parametric variable. It generates individual's initiative. It is motivation that leads an individual to move ahead. Lack of motivation leads man's unenergic and passive mind to undertake a serious work.

Sometimes, it is assumed that a student cannot make wise decision about career selection, it also decelerates readiness.

2.9.2 Lack of Consistent Information

Consistency assumes the reliability of a measure. Information must be dependable and current. It helps to understand it in a better way. Similarly, while deciding for career, lack of reliable information about career leads towards poor career decision-making. Poor self-knowledge about individual's abilities, interests and personality traits ultimately tend to wrong career decisions. Inconsistent knowledge of careers and their applications to cultural context and level of nation's development becomes an issue in career decision-making.

2.10 PERSONAL FACTORS

There are several factors bearing impact on career decision-making: interests, educational path and abilities form the critical ones in career decision-making.

2.10.1 Interest

In some cases, students join those streams of subjects in which they are not really interested. The parental pressures or trends force them to choose the subjects which do not match to their interest. This phenomenon ultimately affects the career decision-making. Mismatch of student's personality with academic subjects and lack of interest in the adopted subject amounts to risk taking. It results in student's dissatisfaction, de-motivation, and unproductivity culminating in increased drop outs and rate of career failure. The performance of the students increases if the area of study is matching with the personality of the students (Ahmed, Sharif & Ahmad, 2018). Mau (2004) describes that both internal

and external factors affect the career decision-making. Success of family members, personality type, and advice of parents or elders function as internal factors towards enhancing interest, while monetary benefits, power attached with career and opportunities in the field works as external factors that affect the career decision-making.

2.10.2 Educational path

Selection of subjects at school level is an important step. This contributes to the selection of career path. A wrong selection of subjects at school level may create problems in career decision-making in the long run.

2.10.3 Abilities

Right selection of academic subjects and career path at right time according to one's abilities intrinsically influence career decision-making positively. An individual will excel in the field that meets his/her abilities.

2.11 DIFFICULTIES IN CAREER DECISION-MAKING

2.11.1 No Guidance from Parents

Parents may provide career support in the different forms such as encouragement for desired outcomes and facilitation for their own inclination, such elements can improve the confidence level of the young people to achieve their careers (Kanten et al., 2016). Different forms of parental support may help adolescents to explore their selves and working atmosphere and provide them a foundation to face the career related challenges and make a picture of their future (Marcionetti & Rossier, 2017).

In Pakistan, a larger part of the population (around two-third) lives in rural areas. They are inaccessible to information and have no exact idea of the pace of the world. Even then they want to educate their children as they see education is the only tool that can change their fate. For the education of their children, they encounter several problems, essentially high cost to seek access to institutions. But they are uncertain about the future of their children. Thus the role of parents and family members in the career decision-making of students is limited. Yet it is well documented in literature (Hughes & Thomas, 2004). Kazi and Akhlaq (2017) interviewed female students of graduate level to know their opinion about the career decision and found that one of the female students joined media studies while her parents were of the opinion that it is not a respectable profession for girls. Another female student joined mass communication seemed unhappy about her choice. They felt that it was not a safe job for females.

2.11.2 No Guidance from Institutions

For the students of high school and college level, career decision making in the form of choosing a major at school/college is a challenge (Farnia, Nafukho & Petrides, 2018). Almost all secondary and higher secondary schools tend to offer groups such as science group or humanities at secondary and higher secondary level, based on previous performance. They are known as: pre-medical and pre-engineering or some other ones which offered some specific subjects. If a student got good marks in middle level exam, he/she can opt science stream otherwise he/she may be offered arts subjects. Whether or not they have a taste for the subjects which are offered to them, there is no other choice. There is no process to check and ensure in which subjects a student can do well in or in which field he/she can gain success. Majority of the students join higher secondary level

with same knowledge and skills. Although, they are unable to guide their peers in learning process, yet peer confidence prevails. After getting certificate most of them join market in different capacities. Ruschoff, Salmela-Aro, Kowalewski, Dijkstra and Veenstra (2018) conducted a study about the peer networks in school-to-work transition. A positive relationship between peer network and engagement in job search activities was found in this study. This is an institutional gap.

2.11.3 No Career Guidance from Teachers

Throughout the year, teachers put stress to train the students to get maximum marks in the terminal examination by all means. They have no interest whether students know the reasons behind the concept or they know the applications of what they have learned because the performance of the teachers is judged on the basis of pass percentage, so they use all methods to increase this pass percentage. In all these efforts, students' abilities remain far behind. Sometime, talent does not come to the screen. Lazarides and Fani (2019) conducted a study on the high school students in Germany to determine the girls' and boys' motivational belief and career plans in Mathematics and Language Arts and recommended that teachers must speak to girls and boys about their future career plans and guide them about specific careers available for girls and boys in specific fields. Career guidance can be provided to students in face to face sessions, individual's training sessions or in the form of formal or informal meetings (Blondeau & Awad, 2017).

2.11.4 No Self-Concept

To know about self-potential or to know what abilities one has can lead someone to success in Pakistan, there is system gap at school or college level to measure the abilities of the students. As majority of the students have no awareness of their strengths or

weaknesses, they tend to choose the subjects which are popular in the market without knowing their future implications.

2.12 CAUSES OF DIFFICULTIES

For any kind of difficulty, it is necessary to understand its causes. Difficulties may be of two kinds:

1- Internal Difficulties

2- External Difficulties

About internal difficulties, Gati and Ram (2000) explain that these stem from within the individual while external difficulties come from outside. In career decision-making process, internal difficulties are related to self- knowledge and career knowledge while external difficulties are related to the institutions and environment.

2.13 CONSEQUENCES OF DIFFICULTIES ON CAREER DECISION-MAKING

When an individual has difficulties in career decision-making process, he/she will not be able to choose the field matched to his/her personality. Gati et al. (1996), Gati and Tal (2008) stated the following three possibilities, individuals face when he/she feels difficulties in career decision-making:

1- Cannot start the process of making decision about career

2- Career decision-making process halts before it reaches some conclusion or final decision

3- Making a non-optimal decision

All these three situations can change the path of a student from progress to an unknown destination. If there is no beginning of career decision-making at higher secondary level, the students would go to the field that does not match to their personality or if the process of decision is halted, it ultimately affects the students' future.

Non-optimal decision-making causes a waste of time, money and energy of a student. He/she does not know what he/she is doing. Thus this trend of decision affects their future even if he/she gets a degree with high grades.

2.14 CAREER COUNSELING IN PUBLIC SCHOOLS IN PAKISTAN

In Pakistan, career related matters have not gained priority and adequate attention. Students select subjects without knowing the utilization in the field. Young students depend on others for the decisions for themselves. Majority of the young students choose a career that is already in their family or the career that is chosen by friend. Rarely, someone chose career while using scientific methods for choosing a career such as measuring aptitude or through some psychological tests (Arif, Iqbal & Khalil, 2019)

Government documents admit the importance of career selection, career decision-making and other career related matters but in actual situation, no attempt has been made to achieve these objectives. There is a wide range of career paths that appear around the globe which have affected every country without borders.

In Pakistan, at school or college level, no proper system of guidance for career related matters has been evolved. Students choose academic subjects without knowing their interests and abilities which pose a huge problem in career decision-making. Students put all their energies in memorizing facts from the textbooks with the only aim to get maximum

marks as this is the only criteria for admission in the next class. Many students select those subjects with which people around them got success in the field without knowing present situation or its scope in the labor market.

2.14.1 Governmental Agencies for Career Counseling

National Education Policy (2009) made promise that at higher secondary level, counseling will be provided to the students about career matters but in practice, the system is far behind. Vanin (2015) argues that a career counsellor helps students with their educational needs at school and their post-secondary school pathways. Students choose subjects of their own or as guided by the friends or relatives. The majority of the students select general subjects without knowing the importance of these subjects with the only reason being to pass the degree program. When they enter the market, they feel many pitfalls. To work in the changing world, National Education Policy (2009) promised to generate entrepreneurial and business skills among the students. The entrepreneurial studies was stream lined in the general education with the objectives of self-orientation and productivity.

In early seventees, at elementary level, there were elective subjects such as wood work, electricity and agriculture to choose. The objectives behind teaching these subjects were to enable students to carry some technical knowledge and skills to apply. At secondary level, there was a stream related to technical education named Matric-Tech which was abolished in the nineties, National Education Policy (2009) claimed that this stream would be launched. The reason behind this phenomenon is owning the policies of successive governments.

Many promises were made in educational policies which were launched time to time, but until now, in public sector institutions, these promises remained only promised. While National Education Policy (2009) recommended the following action plans to match the curriculum with the employment market:

1. Revision of curriculum of secondary and higher secondary to make them more vibrant and according to the needs of the market so that the students who left school must be able to work in the market.
2. To evaluate the impact of technical matriculation for secondary level and to find the ways for improving it, a study shall be conducted. This stream will be linked with academics and with higher level of technical knowledge.
3. Modern ways should be adopted to prepare the students for international market. The basic concept behind this approach is to attach students with local enterprises and institutions so that they could be familiarized with the world of work.
4. At cluster level, for students of secondary and higher secondary level, career guidance and counselling shall be introduced. Local employers would be called for providing information about job openings and the nature of work requirements.

2.14.2 Career Counseling in Private Sector Institutions

Keeping in view, the modern trends of market and globalization factors, private sector institutions claimed that they have career counseling units where students are guided by the experts about available careers. Private institutions also claimed that they have linkage around the globe and share expertise with international partners and manage lectures and seminars in collaboration with their international partners.

2.14.3 Private Career Counseling Consultancies

In private sector, there are some career counseling consultancies which are run by individuals or a group of people who have knowledge and expertise of career counseling. These agencies offer different kinds of services, such as:

1. Psychological tests
2. Helps in subject's selection
3. Career guidance
4. Information about available careers
5. Visa related information and guidance
6. Information about scholarships

Another fact is that these private career counseling agencies are working in some big cities and charge heavy fees and their clients are in a small number while a large number of people have no access to these career counseling services.

2.15 CAREER CENTERS IN WORLD UNIVERSITIES

With the innovations in different fields of life and advancements in the information and communication technologies (ICTs), in many careers, new sub fields have emerged. As the emergence of new fields open the windows of careers for youth, universities and colleges established new departments and centers to meet the growing needs of new fields. Around the world, universities and colleges attract students through offering new and unique courses that can prepare youth for the future. The academic programs which are presented at graduate level by different institutions and career centers are facing pressure about outcomes and performance of both can be enhanced if both collaborate more closely

to uplift the confidence of the students in their own abilities to choose a career path (Mallinson & Burns, 2018). These universities and colleges also established career centers to introduce its students to new careers and to help them in achieving their goals. These career centers offer different career related services. A resume of three international universities is outlined here:

2.15.1 Career Center of University of Michigan

University of Michigan has an exemplary largest career centers. They offer different kinds of career services. The mission statement of career center of the university is to inspire and supports student to transition confidently and have clarity through their process of self-discovery.

2.15.1.1 Principles of Service

i- Expectation: To Assist Students in Achieving their Goals

The center considers students their priority and tries to enhance their educational experience.

ii- Approach: Educational, Respectful, Flexible and Creative

The center claims that they used team-oriented approach that challenges and supports students and the staff of the center.

iii- Impact: Helping Students to Contribute to a Multicultural Society

The university career center strives for some unique experiences that will contribute towards learning and ultimately will enrich the contribution for multicultural society.

iv-Practice: Intentional, Continuous, Improvement

The university Career Center has belief in input from students and remain engaged for continuous improvement.

The career counseling center provides the following services to the students:

2.15.2 Career Guides by Majors

Through this service, students are provided the broader discipline, its scope and related fields, abilities and skills. The subject has an open environment; it can be learnt in classrooms and outside the classrooms. Students are also guided and provided web addresses of professionals in the relevant field. They are suggested to join groups and read blogs in their area of interest.

2.15.3 Career Center Blog

This service offers information on the latest career related events such as career expo, career fairs and their dates and venues. Information on jobs and internships are also provided through this service, as well as information of upcoming events.

2.15.4 Career Assessment Tools

This service offers a variety of career assessment tools that can help students to choose their majors and future careers. Services of career counselors are equally offered to help the students in measuring their skills and making some decision for future career.

2.15.5 Career Related Workshops

Workshops/seminars are arranged to familiarize students to a variety of available careers and to help them in selecting the career that matches their personality and capabilities.

2.15.6 Career Tracks

By joining career tracks, students can get emails and alerts related to selected career tracks. This service helps students to get information about events, jobs and resources of the selected track. Thus the students are provided path analysis approach in decision making.

2.16 CAREER CENTER OF UNIVERSITY TORONTO CANADA

The career center of University of Toronto offers different unique services about careers such as career related information, career development models, career by majors etc.

Following are the services that are offered by career center of University of Toronto:

2.16.1 Career Counselling

Through this service one can seek help by career counselor for academic selection and its scope at the work place after completing a program.

The career center states that the undergraduate and graduate students often want to talk about:

1. What he or she can do with the degree, he or she has earned?
2. For help whether he or she is on right track
3. He or she is in graduate school and he/she needs help for future
4. What skills are needed and what skills he or she possesses?

The career center also helps students in selection of academic subjects and career decision-making.

2.16.2 Employment Strategies

The service guides students for searching jobs, preparing a cover letter and help in enhancing interview skills.

2.16.3 Workshops and Programs

Various career related workshops and programs are managed by career center of University of Toronto to introduce the students to different careers and career development. These interventions help students to have adequate information of careers and make apt decision for future.

2.16.4 Network Events

I-Career Fairs

These fairs offer an opportunity to the students to know about career paths. Also provide an opportunity to see the employers and to know about the skills needed to work in the market.

II- Networking Nights/Breakfasts and Other Networking Events

In such programs, students are introduced to the opportunities to link themselves with industry related to their programs. Students can talk to the persons who are working already and can better guide them. Thus the mission is service delivery.

2.17 CAREER CENTER OF THE UNIVERSITY OF ARIZONA USA

2.17.1 Career Exploration

This service offers

1- List of majors

2- Broader area for future careers and sub areas

3- List of employers

4- Strategies for seeking careers, skills to enhance for achieving these careers

2.17.2 Help of Career Educators

Career center of University of Arizona offers services of educators who can help students in the following ways:

i- Provide deeper understanding of skills that are needed for careers.

ii- Provide knowledge for jobs

iii- Provide skills necessary for writing up cover letter and personal statements

iv- Guide in showing confidence during interview

2.18 CAREER COUNSELING AND CAREER DEVELOPMENT CENTERS IN PAKISTANI UNIVERSITIES

Services of three universities are described here.

2.18.1 Career Development Center of COMSATS University

COMSATS University states the following objectives of the Career Development Center:

1. To help students in choosing career paths and making decision about careers
2. To enable the students to foster their career interests and lineup their goals
3. Provision of available scholarships
4. To provide assistance in selection of a career.

5. To manage capacity building seminars or other such programs for professional development.
6. To manage such seminars which enhance their personnel skills and enable them to seek job
7. To bridge the students and different organizations
8. To provide career counseling
9. Create awareness among the students for further study in Pakistan or abroad.
10. Provide service of placement
11. To provide opportunities to students, professionals and employers to interact

COMSATS University is providing the following services to its students:

1. Placement Bureau
2. Reference Letter
3. Industry – Academia Linkages
4. Internship Programs
5. Graduate Recruitment
6. Campus Recruitment
7. Capacity Building Workshop
8. Job Fairs
9. Job Search Assistance
10. Mock Interview Session

2.18.2 Career Development Center of National University of Sciences and Technology

The objectives of Career Development Center of National University of Sciences are:

1- To help students in exploring and making effective career choices

2- The center helps in personal and professional development as well as provides support in achieving career and life goals

3- The center provides programs and services to students and alumni in exploring and making effective career choices

Career Development Center is providing the following services to its students and alumni:

1. Career Advisory Group
2. Career Counseling (One-to-One/Group)
3. Resume and Cover Letter Assistance
4. Interviewing Skills
5. Internship Guidelines
6. Job Search Strategies
7. Letter of Recommendation
8. Career - Development Seminars

2.18.3 Office of Career Services of University of Management and Technology Lahore

Office of the Career Services of University of Management and Technology Lahore provides career related guidelines to its students. It offers the following career related opportunities to the students:

1. Career fairs
2. Mock Interviews for jobs
3. Recruitment drives
4. Corporate liaison

The Office also provides a career toolkit that guides students about different stages of career development. The detail of the plan of this toolkit is as follows:

2.18.3.1 Assessing Self

It helps students in identifying the different aspects of personality such as interests and abilities etc. It also helps to know about the skills and values needed for work in the market.

2.18.3.2 Exploring Career and Educational Option

To enhance awareness about different options for career availability in the market and to observe the future demands in the field of interest and reading of relevant career literature. The range of discussions with professionals about fields of interests and growing needs of the fields of interest may ensure the rapid growth in the career.

2.18.3.3 Making Decisions and Setting Goals

Making choices from the available options in the fields of interests that matches to personality type, students feel satisfaction. Moreover, searching for an internship that may enhance the skills and capabilities relevant to the career chosen, at the same time doing relevant part time job in a field of interest can broaden the span of skills required to excel in the field of interests.

2.18.3.4 Taking Action

When a decision is made about the selection of some career, this is the right time to put this decision into action. Also search jobs in the relevant fields/areas while using different available mechanism or tools such as Internet, networking, job blogs etc.

2.18.3.5 Adjusting and Evaluating

Have an eye on ongoing changes and manage plans accordingly. Evaluate choices time to time and do work for career development.

2.19 CAREER GUIDANCE/COUNSELING SERVICES AT SCHOOL LEVEL IN PAKISTAN

National Educational Policy (2009) envisaged launching career related guidance mechanism at secondary and upper secondary level. Though seemed difficult to manage such set up at each school, however, this would be established at cluster level where employers would be invited to share the skills required for opening some business and talk to students about the work environment. In reality, it remained a policy statement. Furthermore, policy makers realized that higher secondary level was the point from where youth entered into the field of work and the subjects selected at this stage defined their career. The Policy went ahead in the same line and highlighted the importance of career choices and envisaged that young students must choose subjects that matches their aptitude. In practice, young students tend to choose such subjects which are acceptable at the present era and ignore their personal interests and their future scope and outcome.

Information and communication technologies open new horizons in the same field where more sophisticated skills are required and this gives birth to new careers. Keeping in view the expanding canvas of careers, some schools and colleges in Pakistan have taken some steps to equip their students with the skills that are necessary for career.

2.19.1 Career Counseling at the City School System

The City School network is considered a famous school system in Pakistan. This school system has guidance and counseling system where students are guided about academics and career related matters. The school system claims that their counselors keep in mind the personal challenges of the students and guide them according to their interests. Moreover, family members, peers and school administration are also involved in the counseling process. All these efforts support students in their career decision process.

2.19.2 Career Counseling at Pakistan Atomic Energy Commission Model College, Islamabad

Pakistan Atomic Energy Commission has constituted a network of four Model College (PAEC Model College, Islamabad, PAEC Model College Joharabad, PAEC Model College Chashma, and PAEC Model College Dera Ghazi Khan) at its working sites. PAEC Model College, Islamabad has not an established career counseling center and permanent counselors. The college manages following career related awareness programs for its secondary and higher secondary level students:

i. Lectures by the professional career information providers who are running private career consultancies.
ii. Interaction between students of secondary and higher secondary level with employees of Pakistan Atomic Energy Commission.
iii. Talks with prominent personalities of different fields.
iv. Tours of job fairs in Islamabad.

2.20 ROLE OF MEDIA IN CAREER COUNSELING

2.20.1 Electronic Media

In the current era, the role of media cannot be denied. Sarwar and Azmat (2013) conducted a study to know the role of media in career related matters and found that students agreed that media was playing a positive role in providing career information.

In Pakistan, after 2000, electronic media spread at a great speed. Now, electronic media is in action in far flung areas of the country. The media groups air career counseling programs for the youth. They invite experts from academia and industry and discuss current trends and scope of subjects to educate the youth about careers.

2.20.2 Print Media

Print media is equally playing an important role in educating the youth regarding careers. In the past few years, it has been seen that print media advertised awareness programs for career selection and manage career exhibition in universities and hotels. Here national and international organizations display their stalls and guide students about the programs their institutions are offering and introduced them the scope of the degrees. Thus combination of print and electronic media plays a vital role in career planning.

2.21 CAREER GUIDANCE IN TEACHER TRAINING PROGRAMS

Zhang, Yuen and Chen (2018) analyzed 18 studies about teacher support for career development and concluded that it has significant association with students' career development. In teacher training programs, there seemed no concept of career counseling. Future teachers learn courses which are related to teaching learning process. In the changing environment, where the role of teacher has already been changed, it is expected by the teacher

that he/she would guide the students about careers so that students may choose the subjects according to their taste and career. It is important that the prospective teachers may be trained to guide the students about available careers. They may also be trained to conduct different types of test to measure the abilities, Intelligence Quotient (IQ) etc.

2.22 FAMILY ROLE IN CAREER DECISION-MAKING

Jung and McCormick (2010) conducted a study on 492 students of grade 11 selected from six schools and concluded that family members including parents, brothers or sisters, uncles and other family people affect the career decision process of the students. They also concluded that the setting of an example by elder siblings also motivate the students to select the same career as set by the elder family member. In Pakistan, majority of the people seem unaware how to guide their children in career decision. Majority of the students depend on their teachers or see examples from the family. If elder brother or sister is already having set an example in any field, the youngers also consider that field fit for them without knowing their interests and potential.

Saleem, Hanan, Saleem and Shamshad (2014) conducted a study to know the role of parents' profession, mass media and personal choice of Pakistani students and concluded that parents' profession has an important role in career selection process of the student; moreover, parents' profession has direct relation with career choices among the students. In Pakistan, students pursue their career in fields as of their fathers (Sarwar & Azmat, 2013), thus revising indigenous system.

Three decades ago, new emerging fields such as computer sciences and business appeared in the market. Students joined these fields without knowing whether they

possessed taste of these subjects or not. A time came when there was no space in the market for the students having degrees in computer sciences and business. In present scenario, information and communication technologies have increasing impact on career related decisions.

2.23 CAREER THEORIES

Choosing a career and career decision-making remains lifelong as learning experiences and changing environment offer new opportunities. There are number of theoretical voices directing to career choice and career decision-making. Career theories facilitate to understand how people make decision about career selection. Stead and Watson (2006) state that career theories make possible to draw some parameters and then understand and hypothesize career behavior and choice.

Savickas (2008) argue that all career theories agree on (a) future orientation (b) control/ownership (c) information (d) self-efficacy (e) exploration and (f) behavior.

Frank Parsons is known as the exponent of the vocational psychology (Patton & McMahon, 2006). He introduced the trait and factor theory of occupational choice (http://www.careers.govt.nz/educators-practitioners/career-practice/career-theory-models/parsons-theory/). Parson's developed a model for career decision-making that has great importance for career development and counseling (Hartung & Blustein, 2002). Mubiana (2010) states with reference to Osepow (1976) that the main concept of Parson's theory is a relationship of matching of personality traits and knowledge of jobs and the objective judgment between these two groups.

Career theories can be classified into the following two categories:

1- **Structural Theories:** Focus on individual's characteristics and effects of personality on the career decision-making process. Trait and factor theory and Holland's theory fall in this category.

2- **Developmental Theories:** Focus on long term career development. Super's theory cover this domain.

Leung (2008) has reviewed the following five most famous career related theories in his chapter "The Big Five Career Theories" published in International handbook of Career Guidance:

1- Theory of work adjustment—developed in 1965

2- Self-concept theory of career development—developed in 1990

3- Gottfredson's theory of circumscription and compromise —developed in 1981

4- Social cognitive career theory —developed in 1994

5- Holland's Theory of Vocational Personalities in Work Environment —developed in 1959

A brief of each theory is described below:

2.23.1 Theory of Work Adjustment

The Theory of Work Adjustment was developed in 1965 by Rene Dewis and Lofquist. It is also known as Person-Environment Correspondence Theory. For work, a person (P) searches such environment (E) that suits to his/her personality while organizations search such persons who have abilities to help to achieve the objectives of the organization while working in the given environment. Leung (2008) states that a person would stay in some organization if there is a positive relationship between person's satisfaction (P) and Environment's satisfaction (E).

In addition, Leung identified the four adjustment styles: flexibility, activeness, reactiveness, perseverance.

Dewis and Lofquist listed a set of six values/conditions that a person seeks for his/her job satisfaction: achievement (accomplishment & progress), comfort (lack of stress), status (recognition and prestige), altruism (foster harmony /service to others), safety (establish predictability and stability), autonomy (increase personal control and initiative).

2.23.2 Self-Concept Theory of Career Development

Generally, self-concept is how a person views himself/herself and thinks about his/her own personality. It is a subjective view, working within oneself. Self-Concept Theory was developed by Super in 1990. In his analogy, when different factors interact or mix, a complex product appears. This is self-concept such as cognitive growth, self-experiences and environmental factors. As a person gains experiences and interacts with different elements in the environment, his/her self-concept changes. Super (1990) maintains that a person goes through five stages of life which have different ages range and characteristics.

Table 2.1

Super's (1990) Life Stages Developmental Framework

Stage	Age Range	Characteristics
Growth	Between the ages of 0 and 14	Developing self-concept, attitudes, and understanding needs within the general world of work
Exploration	Between the ages of 15 and 24	Drawing out different roles through classes, work experiences, habits and hobbies
Establishment	Between the ages of 25 and 44	Focus on establishing career
Maintenance	Between the ages of 45 and 65	Focus to maintain one's self
Decline	Above 65	

2.23.3 Gottfredson's Theory of Circumscription and Compromise

In 1981, Gottfredson developed a theory that is known as Theory of Circumscription and Compromise. He envisaged that career choice needed high level cognitive proficiency. He argues a person learns with the passage of time and comes to know more about career information as his age increases. As a corollary, increase in age and experiences firm up the career decision. He disagrees with the notion of choice from the available careers; instead he introduced the concept that career choice is a process of

eliminating or circumscription of some occupations from the list of available careers for selection of career from the alternatives.

Gottfredson (1981) suggested that development of career process consisted of two stages:

1- Circumscription: Guided by self-concept

2- Compromise: Response to environmental realities

Table 2.2

Gottfredson (1981) Proposed Model of Four Stages of Circumscription

Stage	Age	Characteristics
Orientation to size and power	3-5 years	Child perceives occupations as roles taken by adults
Orientation to Gender-roles	6-8 years	Norms and attitudes emerge as definite aspect of a child's self-concept. A child judges an occupation whether it suits his/her gender or not
Orientation to social evaluation	9-13 years	Social class and status appeal to a child's self-concept
Orientation to the internal, unique self	14 years and above	Concepts regarding personality, skills and interest appeal to the child.

Compromise deals with realities of the world. If a person has such taste of career that has no demand in the market, so he/she is bound to select some other career to fulfill his/her needs. At this stage, different elements such as market trend, hiring practices,

available choices, family background and social aspects also play a role. However, Gottfredson's age range is seemingly pre-mature to arrive at making sound decision.

2.23.4 Social Cognitive Career Theory

In 1994, Lent, Brown, and Hackett developed a theory known as Social Cognitive Career Theory. It is based on social cognitive theory. Originally developed by Bandura.

This theory explained the following three aspects of career development:

(i) Development of academic and career interests

(ii) The ways to choose educational course and career choices

(iii) The pattern of academic and career success

SCCT was built on three pillars which are self-efficacy beliefs, outcome expectations and goals. Lent (2005) explains self-efficacy is a sum of beliefs that are inter-related to some particular performance domains and activities.

Lent, Brown, and Hackett (2002) state outcome expectations are some personal beliefs which are related to some consequences while performing some particular behavior. Goals are some specific actions for some desired outcome (Lent, 2005). To take it further, in academic context, goals are criterion based; where as in occupational case, goals are performance based i.e. measurable.

2.23.5 Holland's Theory

In 1997, Holland wrote in the preface of his book "Making Vocational Choices" that it was his sixth time and that he had tried five times to produce a satisfactory theory about careers. But he was never satisfied that the theory was right.

In 1959, Holland presented his theory vocational personalities and work environments for the first time which emphasized to search an environment that is fit for

an individual. He supported that no doubt, personal characteristics were very important, but environment also played its role for an individual and an individual performed well in the environment that fitted to his/her personality. Holland viewed personal factors and environmental characteristics at the work place were equally important. Allison (2007) added that stability of vocational choices depended on environmental patterns. He also described that Holland's theory consisted of the following three major components:

1- Categorizing the people into six types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.
2- Work environment also has resemblance to six model environments.
3- The match between persons and environment leads to predictable outcomes.

Holland's theory predicts that individuals choose those careers which match with their personality characteristic. It is not necessary that individual's choice always match with his/her personality characteristics. This is because of lack of career information or any other reason and this results in a poor match with personality characteristics causing the individual to perform poor at work place.

Holland introduced concept of congruence for the relationship between personality type and the work environment. He claims that high degree of congruence shows high vocational satisfaction while low degree of congruence shows low level satisfaction with job. Millar (2006) says that closer the types in the hexagon, more relationship will be there.

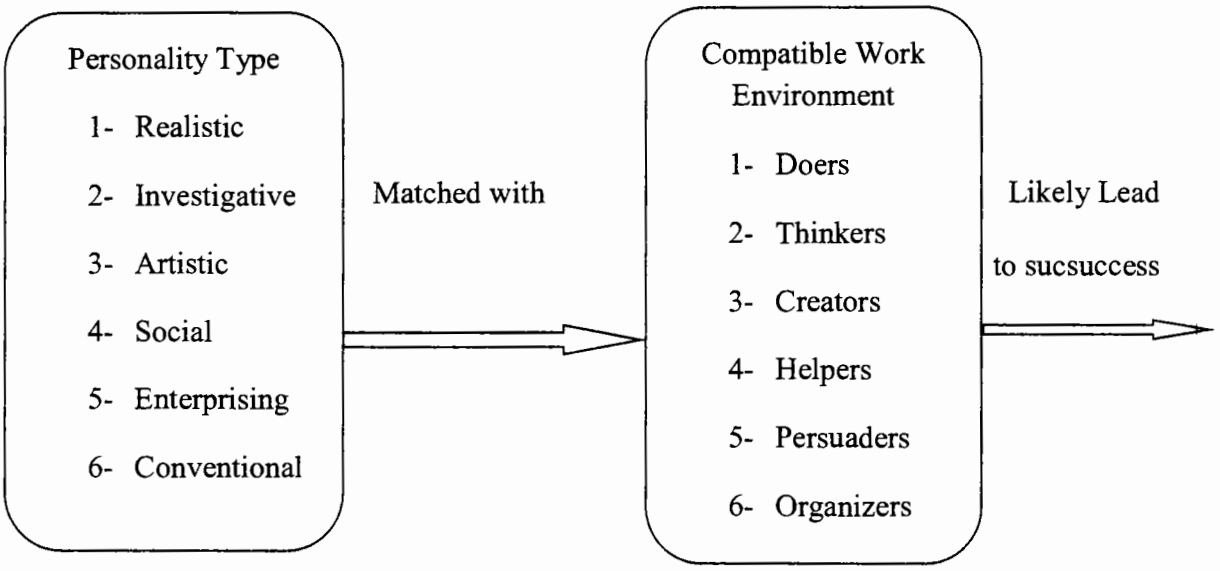

Figure 2.3: Holland's (1985) Model of Personality Type and Work Environment

Figure 2.3 is depicting the personality type as described by Holland and compatible work environment that matches the personality.

The details about personality type and work environment is available on next page.

Table 2.3

Holland's Personality Typology and Suitable Professions

Type	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Preferences for activities and occupations	Machines, tools and things	Exploration, understanding and prediction or control of natural and social phenomena	Literary, musical, or artistic activities	Helping, teaching, counseling or serving others through personal interaction	Persuading, manipulating or directing others	Establishing or maintaining orderly routines, application of standards
Values	Material rewards for tangible accomplish ments	Development or acquisition of knowledge	Creative expression of ideas, emotions or sentiments	Fostering the welfare of others, social service	Material accomplishment and social status	Material or financial accomplishment and power in social, business, or political arenas
Type	**Realistic**	**Investigative**	**Artistic**	**Social**	**Enterprising**	**Conventional**
Sees Self as	Practical, conservative and having manual and mechanical skills – lacking social skill	Analytical, intelligent, skeptical, and having academic talent – lacking interpersonal skills	Open to experience innovative, intellectual or office skills	Empathetic, patient, and having interpersonal skills lacking mechanical ability	Having sales and persuasive ability – lacking scientific ability	Having technical skills in business or production, lacking artistic competencies
Others see as	Normal, Frank	A Social Intellectual	Nurturing, disorderly, creative	Agreeable , Extroverted	Energetic, Gregarious	Careful, Conforming
Avoids	Interaction with people	Persuasion or sales activities	Routines and conformity to established rules	Mechanical and technical activity	Scientific, intellectual, or abstruse topics	Ambiguous or unstructured under- takings

Holland (1996)

Table 2.4

Holland's Personality Topology and Work Environment

Type	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
Requires	Manual and mechanical competencies, interaction with machines, tools, and objects	Analytical, technical, scientific, and verbal competencies	Innovation or creative ability, emotionally expressive interaction with others	Interpersonal competencies, skill in mentoring, treating, healing, or teaching others	Skills in persuasion and manipulation of others	Clerical skills, skills in meeting precise standards for performance
Occupations or Other Environments Involve	Concrete, practical activity; use of machines, tools, materials	Analytical or intellectual activity aimed at trouble shooting or creation and use of knowledge	Creative work in music, writing, performance, sculpture or unstructured intellectual endeavors	Working with others in a helpful or facilitative way	Selling, leading, manipulating others to attain personal or organizational goals	Working with things, numbers, or machines to meet predictable, organizational demands or specified standards
Sample Occupations	Carpenter, Truck operator	Psychologist, microbiologist	Musician, interior designer	Counselor, clergy member	Lawyer, Retail store manager	Production editor, Book keeper

Holland (1985) introduced the concepts of congruence, consistency and differentiation.

2.23.5.1 Congruence

Congruence states the relationship between person and environment interactions. The stronger the relationship between person and-environment interaction, result in stronger congruence. High level congruence shows stability and satisfaction. Congruence is a match between a person's Holland code and work environment (Spokane & Guet, 2005). Low level congruence will occur if there is weaker match between personality type and work environment. Holland (1997) later describes that if there is a high-level congruence between one's personality and the environment, there will be more vocational satisfaction and stability. For providing guidance to students in selecting career paths, personality is considered significant (Linan, Urbano & Guerrero, 2011; Rosique, Guijarro & Lema, 2018).

2.23.5.2 Consistency

Consistency is the internal harmony of an individual's type score (Spokane & Guet, 2005). In Holland's hexagon, consistency is closeness of one's first and second choices. It is related to reliability.

2.23.5.3 Differentiation

Differentiation means the distinguishable patterns between high interest and low interest of a person's interest report.

2.24 RELATED RESEARCHES

Pisarik, Rowell and Thompson (2017) conducted a study on 7 graduate students to know their opinion about career anxiety and found that there was lack of career guidance and career knowledge at school level and even at college level, there was lack of career guidance with the result that students have low level knowledge of different occupations that affects the career development process.

A student face many challenges in student life and career choice is the biggest one (Kazi & Akhlaq, 2017). Stead and Watson (2006) state that career knowledge is the information that some person has about career alternates [on the base of education and paid work] that are available to them. Self-knowledge is the self-information that an individual has about himself/herself that tells them the capabilities he/she possess (Mbetse, 2002). Mansouri (2013) claim that college students rarely know about the set of skills and requirements of the career that they want to adopt.

Patton and McMahon (2014) are of the view that the meaning and definition of career lacks conceptual clarity as it is understood differently. It results in a lack of common thinking in this area.

Lichtenstein et al., (2009) conducted a study to know the ways students use to select their careers and found that students chose those professional options that do not have any relationship with the majors at undergraduate level.

Rowell and Thompson (2017) found that lack of self-knowledge creates fear among the graduates while deciding career, they do not know whether their decision is right for them or not. Sab and Kampa (2019) provided that at upper secondary level, the most powerful determinant of course selection is students' self-concept.

There are many career theories that help students in selection of majors at school and the college level and suggest the suitable criteria for the selection of future careers. Career theories provide such parameters which help us to understand and hypothesize about career behavior choices (Stead & Waston, 2006).

Among these theories, the career development theory of Holland (1985) got much attention across the world. This theory offers a simple match between vocational interests and satisfaction at a job.

Holland (1985) conceptualized six personality types (Realistic, Investigative, Artistic, Social, Enterprising & Conventional) and offered a model of personality type and work environment. He argues that if personality type matches with compatible work environment, it will lead to success and satisfaction.

Holland's theory (1985) states that individuals who join a career according to their interests remain most contented with their career as compared to those who select careers against their vocational interests.

Rayman and Atanasoff (1999) states that Holland's topology creates a match between personality and work environment, enabling the individual to understand personal and environmental situations better. As a result, this relationship will help students to gain success in their careers.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

By purpose, the present study is correlational and by method it is survey research. To find the strength and direction of relationship of two variables, correlation analysis is used (Pallant, 2005) while studying a sample from a population; survey research is used that offers a quantitative description of trends or opinions (Creswell, 2009). Those research strategies that allow the researcher to describe the existence of variables and their underlying facts or the relationship between/among those variables are known as descriptive designs (Heppner, Kivlighan & Wampold, 1999).

This chapter summarizes the research procedure, method of sample selection, instruments used for the study, data collection and analysis techniques employed.

3.2 DATA ANALYSIS

1- Pearson's correlation coefficient "r" was found for measuring of correlation between career choices and career knowledge, career choices and self-knowledge and career knowledge and self-knowledge.

2- Multiple regressions were conducted to explore the interrelationship of dependent variable (career decision making) and the predictors (career knowledge, self-

knowledge and career choices). Regression tells the strength of contribution of each independent variable towards prediction of dependent variable.

3- Two-way between- groups analysis of variance (Two-Way ANOVA) was used to test the effect of independent variables i'e gender (male and female) and subject groups on the dependent variable (career decision-making).

3.3 RESEARCH PROCEDURE

The research procedure consisted of the following steps:

1. A career choice test designed on the basis of Holland's theory (available at www.123test.com/career-test/) was used for determining the personality type according to the Holland's topology (Annexure-). It is an online available test consisting 15 sets of four pictures; each picture shows a specific work activity. From the set of four pictures, one have to tick the picture that appeals the most and cross the picture that appeals the least and leave the remaining two pictures unattended. At the end, the test provides personality type from Holland's Hexagon of personality types (realistic, investigative, artistic, social, enterprising, and conventional) and a list of suitable professions/occupations associated with personality.

As internet facility was not available at each school, the researcher used hard copy of downloaded career choice test (constructed on the basis of Holland's test) for the sampled students to complete the test according to the given instructions in the test. The researcher collected the given information provided by the sample students on the hard copy of the Career Choice Test and entered the data from hard copy to online test and recorded the results for each case. After measuring personality type and list of suitable

professions/occupations for each student, the researcher developed questionnaires on a five-point Likert scale to gauge the students' career choices, career knowledge and self-knowledge. The career test results with personality type and list of suitable occupations were provided to sampled students with custom made questionnaires.

2. Choosing one career from the available careers is a complex undertaking. Several factors are involved in this process. Forced choice pattern is followed. It becomes difficult for students to choose the career because they do not know what will happened in the future. Parental support and guidance, present trend, scope of selected careers in the future, technological advancements and personal potential constitute some of the factors. All are equally important for the students while selecting a career. A custom-made questionnaire for measuring career choices was used (Annexure-C).

3. Career knowledge counts while choosing a career. A custom-made questionnaire for measuring career knowledge was used for collecting information from the sampled students about the career knowledge, they possessed (Annexure -D). The students were asked whether they collected knowledge about careers of their interest. They consult different sources of career information, analyzed this information and discussed the scope of the professions with family members and teachers. Students use print and electronic sources, make increased efforts such as attend seminar/ exhibition related to career education, read newspapers and magazines, internet etc. to seek multiple information about the fields of their interests.

4. There are many factors that work behind the career choices of youth. The more self-knowledge an individual has, the more suitable careers will be considered. A custom-made questionnaire for self- knowledge was used for collecting information from the sample

students about their self-knowledge. The students were asked about their future plan and whether they were clear about their plan and what they thought about the way through which they were working at present for future plan. Were they well aware about the things and tasks they could do well and how to choose the career according to their interests? Were they working on the set patterns for success in the field they had chosen? (Annexure -E)

5. Career Decision Self-Efficacy Scale (CDSE; Betz, Klein & Taylor, 1996) was administered to the students to measure their degree of confidence in career related tasks (Annexure -F).

3.4 POPULATION

Federal Directorate of Education (FDE), Ministry of Education has divided federal area into five educational sectors namely City-Urban, Bharakau, Sihala, Nilore and Tarnol. The detail of higher secondary schools for males and females in each sector are given in table 3.1:

Table 3.1

Sector Wise and Gender Wise number of Schools

Sr. No.	Sector	Male	Female	Total
1	City-Urban	5	4	9
2	Bharakau	3	7	10
3	Sihala	6	6	12
4	Nilore	2	7	9
5	Tarnol	1	2	3
	Total	17	26	43

A total of 2309 students of higher secondary level for session 2013-15 from Islamabad Model Collages for Boys (IMCBs) and Islamabad Model Collages for Girls (IMCGs) affiliated with Federal Board of Intermediate and Secondary Education (FBISE) were taken as population for the current study. In research, population is the target group in which the researcher is interested; it is the sum to whom some results of the study are applied (Fraenkel & Wallen, 2000). Each unit of the population is known as its element (Balikie, 2010).

3.5 SAMPLE

The selected elements from the population that have all the characteristics from which they chosen is called sample of that population. The process of selection of those elements for a study is called sampling (Gay, 2005). The process of selecting sample for a study requires two interrelated steps: strategy to select the sample (sampling scheme) and sample size.

In the present study, multi stage sampling technique was used. In multi stage sampling technique, sample is selected in two or more stages.

1- At first stage, all (43) Islamabad Model Collages for Boys (IMCBs) and Islamabad Model Collages for Girls (IMCGs) were selected through universal sampling technique. Students from 24 higher secondary schools (15 Female schools and 9 Male schools) appeared for the higher secondary school certificate –I annual examination 2014.

2- At second stage, a request through email was forwarded to the chairman of Federal Board of Intermediate and Secondary Education, Islamabad to provide the list of higher

secondary schools with the number of students appeared from these schools in each group for higher secondary school certificate –I annual examination 2014. The Board provided the required list containing name of institution (gender based) and number of students appeared in each stream. Out of 43 higher secondary schools, students from 24 schools (15 girls' schools and 9 boys' schools) appeared in Higher Secondary School Certificate –I Annual Examination 2014. The purpose for getting the list from Board was to match the number of students get registered for examination and appeared in the final examination of higher secondary school certificate (HSSC).

3- Furthermore, the following information was extracted from the list that was provided by the Board as shown in table 3.2

Table 3.2

Subject Group Wise Students

Subject Group	Females	Males	Total
Pre-Engineering	43	86	129
Pre-Medical	90	50	140
Humanities	1376	199	1575
G. Science	327	138	465
Total	1886	423	2309

Proportionate stratified random sampling technique was used for selecting sample students, as proportionate stratified sampling technique ensures desired representation of relevant subgroups. The population of the current study was divided into four strata on the basis of subject groups i.e. Humanities, Pre-Medical, Pre-Engineering, and General Science.

Gay (2009) suggested if the population size is around 1500, 20 % would be sample. Through proportionate stratified sampling technique, 20 % of boys and 20 % of girl students were selected from each stratum appeared in the Annual Examination 2014. Summary of sample is given in table 3.3:

Table 3.3

Total Schools and Students of Higher Secondary Level of FDE institutions

Item	Number of Higher Secondary Schools	Number of higher secondary students enrolled in the session 2014-15.
FDE Higher Secondary Schools and their students	43	2309
Sample	43 (Universal Sample)	460 (According to Gay, 2009)

The detail of the sample taken from each subject strata (20% males and 20 % females) through proportionate stratified random sampling technique is given in table 3.4:

Table 3.4

Number of Students Taken as Sample from Each Group

Sr. #	Gender	Pre-Engineering	Pre-Medical	Humanities	G. Science	Total
1	Girls	09	17	275	65	366
2	Boys	18	10	39	27	94
	Total	27	27	314	92	460

3.6 RESEARCH INSTRUMENTS

Following research instruments were used to collect data for getting the answers of the research questions and hypotheses of the present study.

Table 3.5

Table of Instruments Used for the Study

Sr. No	Instrument	Purpose	Data Type	Data Source	Objective No.
1	Career selection test	For determination of suitable career and personality Type	Quantitative	Students	1,2,4
2	Questionnaire	To know about career choices	Quantitative	Students	1,2,4,5
3	Questionnaire	To gauge the career knowledge	Quantitative	Students	1,3,4,5
4	Questionnaire	To determine the self-knowledge	Quantitative	Students	2,3,4,5
5	Adopted questionnaire Career Decision Self- Efficacy Scale (CDSE)	To check the confidence level with career related tasks.	Quantitative	Students	4

3.6.1 Career Selection Test

Career Selection Test is an online multi steps test designed on Holland's (1985) theory (Annexure-A). At each step, four pictures are provided to tick one at highest level of choice and cross one at the lowest level of choice. Each picture shows a profession, name of the profession is also given. For better understanding of the students, some professions were more elaborated. It takes ten to fifteen minutes to tick one and cross one and at the end. It provides one of the personality types described by Holland with a list of suitable careers.

3.6.2 Procedure of Development of Questionnaires

1. Literature review was utilized in the present study to search out items related to the study. Available questionnaires that were already used for the relevant research were also consulted.
2. The selected items from the literature review were rephrased according to the cultural context and level of the respondents.
3. The developed items were revised and some of them were deleted which were not directly related to the study.
4. The developed questionnaires were presented to the experts and according to their suggestions, suitable changes were made.

3.6.3 Career Choices

For knowing the pattern of career choices, a questionnaire was developed on five-point Likert scale (Annexure-C). For each statement, there were five options ranging from strongly agree to strongly disagree. The items of the questionnaire were of the following type:

1. I discuss the available careers with my parents to know what they think about my future career.
2. I use new technologies for searching information about my career.

3.6.4 Career Knowledge

For measuring career knowledge of the students, a questionnaire was developed on five-point Likert scale (Annexure-D). For each statement, there were five options ranging from strongly agree to strongly disagree. The items of the questionnaire were of the following type:

1. I am aware about the range of available careers of my interest.
2. I know about the skills required for career of my interest.

3.6.5 Self-Knowledge

For measuring self-knowledge of the students, a questionnaire was developed on five-point Likert scale (Annexure-E). For each statement, there were five options ranging from strongly agree to strongly disagree. The items were of the following type:

1. I know my interests and abilities.
2. I am able to perform well at the job for which I am going to choose etc.

3.6.6 Career Decision Self Efficacy Scale (CDSE)

For measuring confidence in career decision-making, three most popular scales were available: Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico & Koschier, 1976), the Vocational Identity Scale (VIS; Holland, Daiger & Power, 1980) and the Career Decision Self-Efficacy Scale (CDSE; Betz, Klein & Taylor, 1996).

The CDSE- Short Form (Betz, Klein and Taylor, 1996) is a 25-item psychometric scale. It is used to quantify an individual's belief about his/her own abilities. Successful completion of the tasks are regarded necessary to make significant career decisions.

For the present study, Career Decision Self-Efficacy Scale (CDSE; Betz, Klein & Taylor, 1996) was selected and adopted (Annexure-F). It was selected on two counts: one, it matched with the variables of the study; two, the population of the study i.e high school students and college students who are working towards career Decision-Making. CDSE is a copyright instrument. Formal permission was sought for administering the instrument for the current study (Annexure-H):

CDSE consists of five sub scales:

1. Accurate Self-Appraisal (what is favorite job)
2. Gathering Occupational Information (discussion with some relevant person who is already working in the field of one`s interest
3. Goal Selection (select the career suits to interest)
4. Making Plans (planning for next five years)
5. Problem Solving (continuously work for achieving goals)

Each scale contained five items. Internal consistency for the total scale has been found 0.94 (Betz et al., 1996). Paulsen (2001) conducted a study with 603 students and found the internal consistency of each sub scale of CDSE having the following values of alpha: Accurate Self-Appraisal (0.81), Gathering Occupational Information (0.82), Goal Selection (0.84), Making Plans (0.84) and Problem Solving (0.80). Smith (2001) conducted another study with 423 students and found the following alpha values for each scale of CDSE: Accurate Self-Appraisal (0.81), Gathering Occupational Information (0.82), Goal

Selection (0.87), Making Plans (0.82) and Problem Solving (0.81).Taylor and Popma (1990) stated that the ''CDSE can be best characterized as a generalized career self-efficacy measure''

3.7 VALIDITY OF RESEARCH INSTRUMENTS

The research instruments were developed following comprehensive review of the literature. Content validity was checked through experts' opinion. Self-developed questionnaires were presented to four academicians (Annexure-G) who were dealing with career related subjects at graduate level These academicians suggested to change some statements for more clarity. Also, they suggested for adding more statements to explore the opinion of students about career related matters in depth. They further suggested, translating the questionnaires in National Language Urdu so that language should not be barrier in understanding the questions. For translation of the questionnaires into Urdu language, the services of a professional translator were utilized. The Urdu version of the questionnaires was again translated into English to check that the true meanings were maintained. Urdu version of each statement was also pasted with English version in the questionnaire. Finally, the questionnaires were printed and distributed to the sample students. Construct validity was determined by selecting relevant variable through authentic literature review.

3.8 RELIABILITY OF RESEARCH INSTRUMENTS

A pilot study was conducted with 100 students (boys 50 and girls 50) to measure the reliability of the instruments. These 100 students were randomly selected from the

colleges which were affiliated with the FBISE. They were parallel institutions and working under the Federal Directorate of Education. These students were not included in the final sample of the study. Cronbach's alpha was used to measure the reliability of each questionnaire. For questionnaire of career knowledge, Cronbach's alpha was 0.72 and for questionnaire of self-knowledge, it was 0.73.

Another instrument was Career Decision Self-Efficacy Scale (CDSE).It was culturally adopted. It is a standardized instrument and for the present study, it was used without any change with the permission of the agency as stated earlier.

3.9 DATA COLLECTION

Data were collected at two stages. At first stage; hard copy of Holland's Career Selection Test was given to the students to determine the personality type. The researcher personally visited the sample institutions. Where it was difficult to reach, some help was taken by the friends and colleagues to trace the teachers from the sample institutions and they were contacted through mobile phone.

At second stage, questionnaires for career choices, career knowledge and self-knowledge were distributed among the same students who were given the Holland's Career Selection Test.

3.10 RESPONSE RATE

In the first stage when Holland's Career Selection Test was given to the sample students, their contact numbers were taken to contact them telephonically. When custom made questionnaires and Career Decision Self-Efficacy Scale (CDSE) were administered to the sample students, the researcher guided the sample students about the objectives of

the research and the value of their response. They were requested to respond carefully their response held importance. The researcher also provided his mobile number to the sample students to contact in case of some problem, also the contact number of students or their elder brother, sister or /father was also taken to follow the sample students. After that the researcher contacted sample students continuously to ask them if they were facing any problem. As a result of continuous follow up, the entire sample students (100 %) provided filled in the questionnaires and returned. While feeding data; it came to know that four female students missed some statements. So, their questionnaires were excluded. At the end, 456 questionnaires (362 females (79%) and 94 males (21%)) were found accurate and their responses were managed and tested.

3.11 DATA ANALYSIS

Data was analyzed to find out the relationship between career choices and career knowledge, career choices and self-knowledge and relationship between career knowledge and self-knowledge was explored while using Pearson's correlation coefficient "r". Multiple regressions were conducted to explore the contribution of career choices, career knowledge and self-knowledge in predicting the career decision making. Multiple regressions are regarded appropriate where the relationship between two or more independent variables and one dependent variable is required. It gives prediction about dependent variable on the basis of independent variables (Kerr, Hall & Kozub, 2002). Two-way ANOVA (between- groups) was used to test the effect of independent variables i.e. gender (male and female) and subject groups on the dependent variable (career decision-making).

CHAPTER 4

DATA PRESENTATION AND ANALYSIS

Achieving success is the goal of every student. Its attainment possess many hurdles. Many variables interplay. This is what the data treatment revealed. Among these variables, self-knowledge is most important, serves the base line that guides an individual about his/her potential and give confidence to the individual. Career knowledge forms the second important variable that contributes a lot for success. Information technology has helped to access a wide range of careers availability. Selection of the right career from the available career choices can be a reason of success for an individual.

The current study was aimed at investigating the relationship among youth's self-knowledge, career knowledge, and career choice. In addition, exploring the relationship of career choices, career knowledge and self- knowledge was examined in predicting the career decision-making.

In the context of study data, a total of 456 filled career selection tests were collected out of 460 sample students. The return over rate was 99 %. The high return rate could be accounted through continuous follow up for data collection. The researcher fed the data from the filled career selection test to check the personality type of each student in relation to their career plans and personal variables.

Table 4.1

Gender and Subject Groups

Sr. #	Gender	Pre-Engineering	Pre-Medical	Humanities	G. Science	Total
1	Female	09 (2 %)	17 (5 %)	275 (75 %)	65 (18 %)	366
2	Male	18 (19 %)	10 (11%)	39 (41 %)	27 (29 %)	94
	Total	27	27	314	92	460

Table 4.1 provides the detail of gender wise students, group wise percentage of male and female students in each subject group and total number of students in each subject group. The data reflect the general trend of female's preference to medical and male's towards pre-engineering. Humanities formed the highest rate of participation.

In case of female students, the maximum female students were enrolled in subject group humanities that is 275 and 75 % of the total female sample students. Among female students, general science is the second subject group in which students were enrolled that is 65 and it is 18 % of the total female sample students. In the remaining two subject groups that are pre-engineering and pre-medical (also known as pure science groups), only 26 female students (only 7 % of the total female sample students) were enrolled.

In case of male students, there is same picture of enrollment as it was among female students, the maximum male students were enrolled in subject group humanities that is 39 and it is 41 % of the total of male sample students. Similarly, among male students, general science is the second subject group in which second highest enrollment is seen that is 27 and it is 29 % of the total male sample students. In the remaining two subject groups that are pre-engineering and pre-medical (also known as pure science groups), only 28 male students (30 % of the total male sample students) were enrolled.

Table 4.2

Subject Wise Holland's Personality Type among Female Students

Gender	Type	Pre-Engineering	Pre-Medical	Humanities	G. Sci	Total
	Realistic	2	3	76	11	90 (25%)
	Investigative	3	7	23	05	39 (11 %)
Female	Artistic	0	1	63	17	82 (22%)
	Social	1	1	72	18	92 (25 %)
	Enterprising	0	2	22	6	30 (8 %)
	Conventional	3	3	19	8	33 (9 %)
Total		9	17	275	65	366

Table No 4.2 predicts, among female students, the maximum 92 female students (25 %) were of social type. Similarly, 90 female students (25 %) were of the realistic type and 82 female students (22 %) were of artistic personality type. It means, 72 % female students were of the three personality types, i.e. social, realistic and artistic. The remaining 28 % of the female students were of the remaining three personality types. Among female students, the minimum 30 (8 % of the sample among females) were of the type enterprising.

Table 4.3

Subject Wise Holland's Personality Type among Male Students

Gender	Type	Pre-Engineering	Pre-Medical	Humanities	G. Sci	Total
Male	Realistic	6	04	8	2	19 (20 %)
	Investigative	8	03	6	3	20 (21 %)
	Artistic	1	00	9	2	12 (13 %)
	Social	1	01	5	11	19 (20 %)
	Enterprising	0	00	6	6	12 (13 %)
	Conventional	2	02	5	3	12 (13 %)
Total		18	10	39		27

Table No 4.3 depicts, among male students, the maximum 20 male students (21 %) were of investigative personality type. Similarly, 19 male students (20 %) were of the realistic type and 19 (20 %) were of social personality type.

It means, 61 % male students were of the three personality types, i.e. social, realistic and investigative. The remaining 39 % of the male students were of the remaining three personality types.

Table 4.4

Personality Type and Gender Wise Students

Sr. No	Type	Female	Male	Total
1	Realistic	90 (25 %)	19 (20 %)	109 (24 %)
2	Investigative	39 (11%)	20 (21 %)	59 (13 %)
3	Artistic	82 (22%)	12 (13%)	94 (20 %)
4	Social	92 (25 %)	19 (20%)	111 (24%)
5	Enterprising	30 (8%)	12 (13 %)	42 (9%)
6	Conventional	33 (9%)	12 (13 %)	45 (10%)
	Total	366 (80 %)	94 (20 %)	460

Table 4.3 provides the total number of students and percentage in each category (male and female) according to the Holland's personality topology. It is evident that in the sample, there were 366 (80 %) female and 94 (20%) male students. It is also clear that the maximum students i.e. 111 (24 %) in the sample belong to the social category. When gender wise personality type is investigated, it is found that maximum 92 (25 %) females belong to Social category as compare to 19 (20%) male students in this category. While in case of male students, 20 (21 %) male students belong to investigative category of personality type as compare to female students that is 39 (11%) in this investigative category of personality type.

Table No. 4.5

Congruence between Personality Type and Subject Groups

Sr. No	Type	Total	Subjects Match with Personality Type (Congruence)	Subjects Do Not Match with Personality Type
1	Realistic	109	52 (47%)	57 (53%)
2	Investigative	59	41 (69%)	18 (31 %)
3	Artistic	94	42 (44%)	52 (46%)
4	Social	111	45 (41 %)	66(56%)
5	Enterprising	42	21 (50%)	21 (50%)
6	Conventional	45	31 (69%)	14 (31 %)
	Total	460	366	

Table 4.5 provides that among the students with realistic type of personality, subjects groups of 52 students (47 %) were congruent with the preferences for activities and occupations given by the Holland. This shows that remaining 57 students (53 %) with realistic personality type were engaged in the subjects that were not suitable for their personality types.

In case of Investigative, 41 students (69 %) chose the subjects that were congruent with the preferences for activities and occupations given by the Holland. The data show that among the Investigative type students and 18 students (31 %) have chosen those subjects that were not congruent with their personality type.

Also, among 94 students who formed artistic type of personality, 42 students (44 %) selected subject groups that were congruent with their personality type as described by Holland in his personality topology. The remaining 52 students (46%) were not engaged in the subjects matched with their personality type.

The maximum number of students that was 111 appeared in the social category as explained by the Holland in his personality topology, when the subject groups of these students were compared with the preferences highlighted by Holland in his personality topology. It was found that 45 students (41%) were congruent with the domains mentioned by Holland in his personality topology and remaining 66 students (59 %) adopted such subject groups which were not congruent with the personality type as mentioned by Holland in his personality topology.

From the sample students, 42 students formed placement in entrepreneur category, when the subject groups of these students were matched with the areas that were highlighted as suitable by Holland. It was thus found that 21 students (50 %) were studying those subject groups that matched to their personality type as mentioned by Holland in his personality topology while 21 students (50%) have selected the subject groups that do not match to were their personality type.

Holland suggested establishing or maintaining orderly work for the people who have conventional personality type. When the data of this category of students were matched with the fields/areas provided as appropriate by Holland, it was noticed that 31 students (69%) were congruent with the preferences for activities and occupations as suggested by Holland for such a personality type in his topology while in this group, 14

students (31 %) were engaged with the subjects that do not match with their personality type.

4.1 RELATIONSHIP AMONG CAREER CHOICES, CAREER KNOWLEDGE AND SELF KNOWLEDGE

The data collected through research instruments from sample students was organized and Pearson's correlation coefficient "r" was applied for measuring of correlation between career choices and career knowledge, career choices and self-knowledge and career knowledge and self-knowledge.

Pearson's correlation coefficient "r" calculates the strength and the direction of the relationship between variables (Levin & Fox, 1993), so it was used to calculate the relationship among the variables (career knowledge, self-career and career choices). The current study described a strong positive relationship among career knowledge, self-knowledge and career choices. Mean and standard deviation were computed for the whole sample.

4.2 MULTIPLE REGRESSIONS TO PREDICT THE CONTRIBUTION OF CAREER CHOICES, CAREER KNOWLEDGE AND SELF-KNOWLEDGE TOWARDS CAREER DECISION-MAKING

Multiple regressions helps to explore the relationship between dependent and independent variables. It tells how well a set of variables is able to predict a particular outcome (Pallant, 2005). It is used when independent variables have internal correlation

with dependent variable (Coakes, Ong & Stead, 2009). Multiple regressions were conducted to explore the interrelationship of dependent variable (career decision-making) and the predictors (career knowledge, self-knowledge and career choices). Regression tells the strength of contribution of each independent variable towards prediction of dependent variable.

4.3 TWO-WAY ANOVA TO FIND THE DIFFERENCE IN THE MEAN SCORE OF GENDER AND SUBJECT GROUPS

Two-way between- groups analysis of variance (ANOVA), here two-way shows that there are two independent variables and between groups point out that different people are in each of the groups) was used to find the difference in the mean score of gender (male and female) and subject groups (pre-engineering, pre-medical, humanities, general science) on the dependent variable (career decision-making).

4.4 PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENT FOR MEASURING CORRELATION AMONG CAREER CHOICES, CAREER KNOWLEDGE AND SELF-KNOWLEDGE

For the current study Pearson Product-Moment correlation coefficient was used as it provide the strength and direction of linear relationship of two variables, correlation analysis is used (Pallant, 2005). Correlation has the following assumptions:

1. Level of measurement: The scale must be interval or ratio.
2. Related pairs: Each element of sample provides a score on both independent and

dependent variable.

3. Independence of observations
4. Normality
5. Linearity
6. Homoscedasticity

All the above mentioned assumptions of correlation were considered before using Pearson Product-Moment correlation coefficient to avoid the effects of violation of these assumptions on the outcome.

Table 4.6

Mean, Standard Deviation and Number of Students

Variable	Mean	Std. Deviation	N
CAREER KNOWLEDGE	107.07	6.71	456
SELF KNOWLEDGE	85.21	5.38	456
CAREER CHOICES	85.65	5.38	456

Table 4.6 provides mean, standard deviation and N (number of students) for career knowledge, self-knowledge and career choices. The mean for career knowledge is 107.07 while standard deviation is 6.71 for 456 participants. Similarly, mean for self-knowledge is 85.21 and for career choices is 85.65 and for each case standard deviation is 5.38.

Table 4.7

Correlations of Career Knowledge, Self-Knowledge and Career Choices

		CAREER KNOWLEDGE	SELF KNOWLEDGE	CAREER CHOICES
CAREER KNOWLEDGE	Pearson Correlation	1	.97	.98
	Covariance	45.10	35.40	35.74
	N	456	456	456
SELF KNOWLEDGE	Pearson Correlation	.97	1	.97
	Covariance	35.40	28.98	28.23
	N	456	456	456
CAREER CHOICES	Pearson Correlation	.98	.974	1
	Covariance	35.74	28.23	29.00
	N	456	456	456

Table 4.7 indicates the relationship among career knowledge, self-knowledge and career choices. It is observed that there was positive strong relationship between career knowledge and self-knowledge (r=.98, n=456), career knowledge and career choices (r=.98). The relationship is too high, and multicollinearity is visible. Multicollinearity exists when the independent variables are highly correlated (r=.9 and above) (Pallant, 2005).

4.5 REGRESSION TO CALCULATE THE VARIANCE IN THE CAREER DECISION MAKING EXPLAINED BY THE CAREER CHOICES, CAREER KNOWLEDGE AND SELF KNOWLEDGE

Multiple regressions was applied to calculate the variance in the dependent variable (career decision making) that is explained by the career choices, career knowledge and self-knowledge. Multiple regression is based on correlation. It is used for investigating interrelationship among a set of independent variables and a dependent variable.

Multiple regression has the following assumptions:

1- Sample size (it is not used for small samples with high skewed).

2- Multicollinearity and singularity

3- Outliers (very high or very low scores): (For both independent variables and dependent variable, outliers were checked)

4- Normality, linearity, homoscedasticity and independence of residuals

All these four assumptions were checked before using multiple regressions on the data for the current study.

Table 4.8

Variance Explained by Independent Variables (career choices, career knowledge, self-knowledge)

Mode 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.98	.97	.97	1.20

Table 4.8 provides R square that explaining the degree of variance in the dependent

variable (career decision-making). It is explained by the model which includes the variables career knowledge, self-knowledge and career choices. Here the value of R square is .97. This means that the model (consisting independent variables career knowledge, self-knowledge and career choices) explains 97 percent of the variance in career decision-making.

Table 4.9

Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21211.27	3	7070.42	4910.01	.00
	Residual	654.28	452	1.44		
	Total	21865.55	455			

Table 4.9 furnishes content about levels of variability within a regression model, also the value of F (the ratio of the mean square for regression to the mean square for the residual) and significant value at level .05 that is .00

The significance level associated with the value of F is .00. It means there is a significant relationship between the set of independent variables (career knowledge, self-knowledge and career choices) and the dependent variable (career decision making).

Table 4.10

Coefficients of Independent Variables in the Model

	Standardized Coefficients	Sig	Correlations			Collinearity Statistics	
	Beta		Zero-Order	Partial	Part	Tolerance	VIF
Constant		.03					
Career-Knowledge	.69	.00	.97	.47	.09	.01	55.67
Self-Knowledge	.68	.00	.98	.61	.13	.03	25.32
Career Choices	-.39	.00	.95	-.32	-.06	.02	44.00

Table 4.10 predicts that tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model. As the values of tolerance are less than 0.10 for each independent variable (career knowledge, self-knowledge and career choices), it indicates that there is multicollinearity among these variables.

Beta values indicate the contribution of each independent variable to the prediction of dependent variable. From table 4.8, the largest Beta coefficient is .69 for the career knowledge; it means that career knowledge makes the strongest unique contribution in explaining the dependent variable when the variance explained by all other variables in the model is controlled for.

The second highest Beta coefficient is .68 for self-knowledge; it means self-

knowledge form the second variable that contributes a major role in explaining the career decision-making. The Beta coefficient for career choices is .39 that is the least among the three variables; it means that career choices contribute least in predicting the career decision-making.

The significant value for all the three independent variables, career knowledge, self-knowledge and career choices are 0.00. It means that all the three independent variables, career knowledge, self-knowledge and career choices are making a significant unique contribution in predicting the dependent variable that is career decision-making.

Squaring the part correlation coefficients provide an indication of the contribution of each variable to the total R squared. It means, these values explain how much of the total variance in the dependent variable is uniquely explained by that variable and how much R squared would drop if it was not included in the model. Career knowledge has a part correlation coefficient of .09; it means career knowledge explains 0.86 percent of the variance in the total career decision making score. For self-knowledge, the part correlation coefficient value is .13, meaning self-knowledge contributes 1.85 % to the variance in total career decision-making score. For career choices, part correlation coefficient value is .06; it means the share of this variable is 0.36 percent to the variance in the total career decision-making.

4.6 TWO-WAY ANOVA

The output was generated by applying TWO-WAY ANOVA tables:

1- Subject Groups and Number of Students: This shows subject group and its number of students (male and female)

2- Descriptive Statistics: provides mean score, standard deviation and number of participants from each subject group.

3- Levene's Test of Equality of Error Variances: "This test provides a test of one of the assumptions underlying analysis of variance" (Pallant, 2005)

4- Tests of Between-Subjects Effects: This table provides the interaction effect and main effect and main effect

5- Multiple Comparisons: This provides the comparison of each group towards other groups in terms of career decision-making.

Two-Way ANOVA entails the following assumptions:

1- Level of measurement: The dependent variable is measured at the interval or ratio level.

2- Random sampling

3- Independence of Observations

4- Normal distribution

5- Homogeneity of variance

All these assumptions were checked before running Two-Way ANOVA to avoid the violation of assumptions.

Table 4.11

Subject Groups and Number of Students

	Sr. No.	Subject Group	N
	1	Pre-Engineering	27
	2	Pre-Medical	27
	3	Humanities	314
	4	General Science	88
Gender	1	Male	94
	2	Female	362

Table 4.11 describes the number of students (total male and female students) from each subject group, also total number of male and female students participated in the study.

Table 4.12

Gender Wise and Subject Group Wise Mean and Standard Deviation

Subjects Group	Gender	Mean	Std. Deviation	N
Pre-Engineering	Male	103.22	7.33	18
	Female	102.44	8.56	9
	Total	102.96	7.60	27
Pre-Medical	Male	103.00	7.48	10
	Female	112.47	5.26	17
	Total	108.96	7.62	27
Humanities	Male	103.64	6.36	39
	Female	106.20	6.79	275
	Total	105.88	6.78	314
Gen. Science	Male	108.33	6.34	27
	Female	108.57	6.35	61
	Total	108.50	6.31	88
Total	Male	104.84	6.93	94
	Female	106.80	6.88	362
	Total	106.40	6.93	456

Table 4.12 provides mean for male and female students of pre-engineering, pre-medical, humanities and general science groups. It highlights the mean for male students of pre-engineering is 103.22 and standard deviation is 7.33 and mean for female students of pre-engineering is 102.44 and standard deviation is 8.56 while overall mean for pre-

engineering group is 102.96 and standard deviation is 7.60. The table provides mean for male students of pre-medical is 103.22 and standard deviation is 7.48 and mean for female students of pre-medical is 102.44 and standard deviation is 5.2 while overall mean for pre-medical group is 108.96 and standard deviation is 7.62. The mean for male students of humanities is 103.64 and standard deviation is 6.36 and mean for female students of humanities is 106.20 and standard deviation is 6.7 while overall mean for humanities group is 105.88 and standard deviation is 6.78. The mean for male students of general science is 108.33 and standard deviation is 6.34 and mean for female students of humanities is 108.57 and standard deviation is 6.35 while overall mean for humanities group is 108.50 and standard deviation is 6.31.

Table 4.13

Test of Homogeneity of Variance

Levene Statistics (F)	df1	df2	Sig.
.712	7	448	.66

Table No. 4.13 tests the assumption that the error variance of the dependent variable is equal across the groups. As the significant value is 0.66 that is greater than .05, it means that the homogeneity of variances assumption has not been violated.

Table 4.14

Effects of Gender and Subject Groups on Career Decision Making

Source	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7	251.55	5.60	.00	.08
Intercept	1	1761208.63	39245.′	.00	.98
Gender	1	323.95	7.21	.00	.01
Group	3	308.41	6.87	.00	.04
Gender * Group	3	154.08	3.43	.01	.02

Table 4.14 provides the significant value for gender * group that is .01. It is less than .05, it implies a significant interaction effect.

The significant values for gender and group are .00 and .00 respectively. Both significant values are less than .05. This suggest that there is a significant main effect of the independent variables; gender and subject groups.

4.7 TESTING NULL HYPOTHESIS 1 (There is no significant difference in the mean scores of male and female students regarding their career decisions)

The significant value for gender is .00 that is less than .05; it suggests that students differ in terms of gender (male and female) towards career decision-making. Thus, null hypothesis No.1 that there is no significant difference in the mean scores of male and female students regarding their career decisions is rejected.

4.8 TESTING NULL HYPOTHESIS 2 (There is no significant difference in the mean scores of students (male and female) of all subject groups (among subject groups) regarding their career decisions)

The significant value for subject groups is .01. It is less than .05; it suggests that students differ in terms of subject groups towards career decision-making. Thus, null hypothesis No.2, that there is no significant difference in the mean scores of students (male and female) of all subject groups (among subject groups) regarding their career decisions is also rejected.

For gender* group Partial Eta Squared is .02, though this effect reaches statistical significance, the actual difference from descriptive table 4.12 in the mean scores for male, female and for both are 104.84, 106.80 and 106.40 respectively that is very small.

Table 4.15

Comparison of Each Subject Group with Other Subject Groups

Group (I)	Group (J)	Mean Difference (I-J)	Std. Error	Sig
Pre-Engineering	Pre-Medical	-6.00	1.82	.00
	Humanities	-2.92	1.34	.13
	Gen. Science	-5.53	1.47	.00
Pre-Medical	Pre-Engineering	6.00	1.82	.00
	Humanities	3.07	1.34	.10
	Gen. Science	0.46	1.47	.98
Humanities	Pre-Engineering	2.92	1.34	.13
	Pre-Medical	-3.07	1.34	.10
	Gen. Science	-2.61	.80	.00
Gen. Science	Pre-Engineering	5.5370	1.47	.00
	Pre-Medical	-.4630	1.47	.98
	Humanities	2.6115	.80	.00

Table 4.15 shows the comparison of each group towards other groups in terms of career decision-making. While comparing pre-engineering group, the significant values for pre-medical and general science groups are less than .05, it means that the students of pre-engineering differs from the students of pre-medical and general science in terms of career decision-making.

In case of humanities group, the significant value for general science group is less than .05. This implies that the students of humanities differ from the student of general

science in terms of career decision-making.

In case of general science group, the significant values for pre-engineering and humanities are less than .05. It implies that the students of general science group differ from the students of pre-engineering and humanities in terms of career decision-making.

As there is a significant main effect for the independent variables gender and subjects' groups, it means that students differ in terms of gender (male and female) and their subject groups towards career decision-making scores.

To explore the difference in terms gender and subject groups, the file was broken down gender wise and subject group wise.

SPLIT FILES (GENDER WISE: MALE)

4.9 TESTING NULL HYPOTHESIS 2 (There is no significant difference in the mean score of male students among subject groups towards career decision making) for male students

Table 4.16

Test of Homogeneity of Variance

Levene Statistics (F)	df1	df2	Sig
.10	3	90	.95

Table 4.16 provides the Levene's test for homogeneity of variances. This examine whether the population variances for the groups are significantly different from each other. The value of Levene Statistics (F) is 0.10 and the significant value is .95. The significant value .95 is greater than .05. It signifies the assumption of homogeneity of

variance has not been violated.

Table 4.17

Career Decision of Male Students among Subject Groups

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	466.52	3	155.50	3.49	.01
Within Groups	4006.08	90	44.51		
Total	4472.606	93			

Table 4.17 provides the degree of freedom, mean score for between the groups and within groups and significant value.

As significant value is .01 that is less than .05; it means there is significant difference in the mean scores of male students between the groups. The null hypothesis 2, there is no significant difference in the mean score of male students among subject groups towards career decision making is rejected.

Table 4.18

Comparison of Each Subject Group with Other Subject Groups

Group (I)	Group (J)	Mean Difference (I-J)	Std. Error	Sig
Pre-Engineering	Pre-Medical	.22	2.63	1.00
	Humanities	-.41	1.90	.99
	Gen. Science	-5.11	2.03	.06
Pre-Medical	Pre-Engineering	-.22	2.63	1.00
	Humanities	-.64	2.36	.99
	Gen. Science	-5.33	2.46	.14
Humanities	Pre-Engineering	.41	1.90	.99
	Pre-Medical	.64	2.36	.99
	Gen. Science	-4.69	1.67	.03
Gen. Science	Pre-Engineering	5.11	2.03	.06
	Pre-Medical	5.33	2.46	.14
	Humanities	4.69	1.67	.03

Table No. 4.18 provides multiple comparison of one subject group to other subject groups. It is evident that the significant value for general science and humanities is .03. It means that among male students, the students of humanities and general science differ significantly in terms of their career decision-making.

SPLIT FILES (GENDER WISE: FEMALE)

4.10 TESTING NULL HYPOTHESIS 2 (There is no significant difference in the mean score of female students among subject groups towards career decision making) for female students

Table 4.19

Test of Homogeneity of Variance

Levene Statistics (F)	df1	df2	Sig
1.53	3	358	.20

Table 4.19 predicts the Levene's test for homogeneity of variances. It measures whether the population variances for the groups are significantly different from each other. The value of Levene Statistics (F) is 1.53 and the significant value is .20. As the significant value .20 is greater than .05, it means the assumption of homogeneity of variance has not been violated.

Table 4.20

Career Decision of Female Students among Subject Groups

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	1005.90	3	335.30	7.45	.00
Within Groups	16098.56	358	44.96		
Total	17104.46	361			

Table 4.20 tells us the degree of freedom, mean score for between the groups and within the groups and significant value. As significant value is .00 that is less than .05; it

means there is significant difference in the mean scores of female students. The null hypothesis No.2, there is no significant difference in the mean score of female students among subject groups towards career decision making is rejected.

Table 4.21

Comparison of Each Subject Group with Other Subject Groups

Group (I)	Group (J)	Mean Difference (I-J)	Std. Error	Sig
Pre-Engineering	Pre-Medical	-10.02	2.76	.00
	Humanities	-3.76	2.27	.34
	Gen. Science	-6.12	2.39	.05
Pre-Medical	Pre-Engineerir	10.02	2.76	.00
	Humanities	6.26	1.67	.00
	Gen. Science	3.89	1.83	.14
Humanities	Pre-Engineerir	3.76	2.27	.34
	Pre-Medical	-6.26	1.67	.00
	Gen. Science	-2.36	.94	.06
Gen. Science	Pre-Engineerir	6.12	2.39	.05
	Pre-Medical	-3.89	1.83	.14
	Humanities	2.36	.94	.06

Table No. 4.21 provides multiple comparison of one subject group to other subject groups. It is evident that the significant value for the female students of pre-engineering and pre-medical is .00. It means the female students of these subject groups differ in terms of their career decision-making score. Similarly, the significant value for the female

students of pre-medical and humanities is .00. It shows these students differ in terms of their career decision-making score.

RESULTS OF SPLIT FILES (SUBJECT GROUP WISE)

4.11 TESTING NULL HYPOTHESIS 3 (There is no significant difference in the mean score of male and female students towards career decision making) for subject group pre-engineering

Table 4.22

Number of Students in Pre-Engineering, Mean Score, Standard Deviation and Standard Error

Gender	N	Mean	Std. Deviation	Std. Error
Male	18	103.22	7.33	1.72
Female	9	102.44	8.56	2.85
Total	27	102.96	7.60	1.46

Table 4.22 provides total number of male and female students in pre-engineering group, the mean for male students is 103.22 , standard deviation is 7.33 and standard error is 1.72 while mean for female students is 102.44, standard deviation is 8.56 and standard error is 2.85. It also provides the mean for both groups that is 102.96 and standard deviation 7.60 while standard error is 1.46.

Male students of pre-engineering have slightly higher mean score (0.78) towards career decision making as compare to female students of pre-engineering. The difference

is so small that it can be negligible. It leads towards the opinion that there is no difference in mean score of male and female students of this towards career decision making.

Table 4.23

Test of Homogeneity of Variance

Levene Statistics (F)	df1	df2	Sig
.29	1	25	.59

Table 4.23 predicts the Levene's test for homogeneity of variances. It tells whether the population variances for the groups are significantly different from each other. The value of Levene Statistics (F) is .29 and the significant value is .59. As the significant value .59 is greater than .05, it establishes non violence of homogeneity of variance.

Table 4.24

Career Decision among Students of Pre-Engineering

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	3.63	1	3.63	.060	.80
Within Groups	1501.33	25	60.05		
Total	1504.96	26			

Table 4.24 provides sum of squares, degree of freedom, mean square and significant value.

As the significant value is .80 that is greater than .05. It suggests that there is no significant difference in the mean score of male and female students of pre-engineering group towards career decision-making. Null hypothesis No. 3, there is no significant difference in the mean score of male and female students (within subject group) towards

career decision making is accepted for pre-engineering group.

4.12 TESTING NULL HYPOTHESIS 3 (There is no significant difference in the mean score of male and female students towards career decision making) for subject group pre-medical

Table 4.25

Number of Students in Pre-Medical, Mean Score, Standard Deviation and Standard Error

Gender	N	Mean	Std. Deviation	Std. Error
Male	10	103.00	7.48	2.36
Female	17	112.47	5.26	1.27
Total	27	108.96	7.62	1.46

Table 4.25 provides total number of male and female students in pre-medical group, in this group. In mean for male students is 103.00 , standard deviation 7.48 and standard error is 2.36 while mean for female students is 112.47, standard deviation 5.26 and standard error 1.27. It also provides the mean for both groups being 108.96 and standard deviation 7.62 and standard error 1.46.

Female students of pre-medical have higher mean score (9.0) towards career decision making as compare to male students of pre-medical. The data shows that difference in mean score of male and female students of this group towards career decision making exists.

Table 4.26

Test of Homogeneity of Variance

Levene Statistics (F)	df1	df2	Sig
1.43	1	25	.24

Table 4.26 predicts the Levene's test for homogeneity of variances. It tests whether the population variances for the groups are significantly different from each other. The value of Levene Statistics (F) is 1.43 and the significant value is .24. As the significant value .24 is greater than .05, it means the assumption of homogeneity of variance has not been violated.

Table 4.27

Career Decision among Students of Pre-Medical

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	564.72	1	564.72	14.88	.00
Within Groups	948.23	25	37.92		
Total	1512.96	26			

Table No. 4.27 provides sum of squares, degree of freedom, mean square for between groups and within groups, also significant value. As significant value is .00 that is less than .05, it suggests that there is significant difference in the mean score of male and female students of pre-medical group towards career decision-making. Thus Null hypothesis 3, there is no significant difference in the mean score of male and female students (within the subject group) is rejected for pre-medical group.

4.13 TESTING NULL HYPOTHESIS 3 (There is no significant difference in the mean score of male and female students towards career decision making) for subject group humanities

Table 4.28

Number of Students in Humanities, Mean Score, Standard Deviation and Standard Error

Gender	N	Mean	Std. Deviation	Std. Error
Male	39	103.64	6.36	1.01
Female	275	106.20	6.79	.40
Total	314	105.88	6.78	.38

Table 4.28 provides total number of male and female students in humanities group. In this group, the mean for male students is 103.64, standard deviation 6.36 and standard error 1.01 while mean for female students is 106.20, standard deviation 6.79 and standard error .40. It also provides the mean for both groups that is 105.88 and standard deviation 6.78 while standard error for both groups .38.

Female students of humanities have higher mean score (2.56) towards career decision making as compare to male students of pre-medical. This leads to the view difference exists in mean score of male and female students of this group towards career decision making.

Table 4.29

Test of Homogeneity of Variance

Levene Statistics (F)	df1	df2	Sig
.38	1	312	.53

Table 4.29 shows the Levene's test for homogeneity of variances that is whether the population variances for the groups are significantly different from each other. The value of Levene Statistics (F) is .38 and the significant value .53. As the significant value .53 is greater than .05, it means the assumption of homogeneity of variance has not been violated.

Table 4.30

Career Decision among Students of Humanities

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	224.93	1	224.93	4.94	.02
Within Groups	14186.16	312	45.46		
Total	14411.09	313			

Table No. 4.30 provides sum of squares, degree of freedom, mean square for between groups and within groups, also significant value. As significant value is .02 that is less than .05. It suggests that there is significant difference in the mean score of male and female students of humanities group towards career decision-making. Thus Null hypothesis 3, there is no significant difference in the mean score of male and female students is rejected for the students of humanities group.

4.14 TESTING NULL HYPOTHESIS 3 (There is no significant difference in the mean score of male and female students towards career decision making) for subject group general science

Table 4.31

Number of Students in General Science, Mean Score, Standard Deviation and Standard Error

Gender	N	Mean	Std. Deviation	Std. Error
Male	27	108.33	6.34	1.22
Female	61	108.57	6.35	.81
Total	88	108.50	6.31	.67

Table 4.31 forecasts total number of male and female students in humanities group, in this group. In this group mean for male students is 108.33 , standard deviation 6.34 and standard error 1.22 while mean for female students is 108.57, standard deviation 6.35 and standard error .81. It also provides mean for both groups that is 108.50 and standard deviation 6.31 while standard error for male and female students .67.

Male and female students of general science group have close mean score with a small difference of 2.56 towards career decision making. This difference is so small that it can be neglected.

Table 4.32

Test of Homogeneity of Variance

Levene Statistics (F)	df1	df2	Sig
.01	1	86	.89

Table 4.32 shows the Levene's test for homogeneity of variances that is whether the population variances for the groups are significantly different from each other. The value of Levene Statistics (F) is .01 and the significant value .89. As the significant value .53 is greater than .05, it means the assumption of homogeneity of variance has not been violated.

Table 4.33

Career Decision among Students of General Science

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	1.08	1	1.08	.027	.87
Within Groups	3468.91	86	40.33		
Total	3470.00	87			

Table No. 4.33 provides sum of squares, degree of freedom, mean square for between groups and within groups, also significant value.

As significant value is .87 that is greater than .05. It suggests that there is no significant difference in the mean score of male and female students of general science group towards career decision-making. Thus Null hypothesis No.3, there is no significant difference in the mean score of male and female students is accepted for the students of general science group.

4.15 SUMMARY

Analysis of the data yields that career knowledge, self-knowledge and career choices are interconnected elements that play vital role in the success of an individual's life career. Each of career knowledge, self-knowledge and career choice plays its unique part in predicting career decision-making. An individual who has adequate career knowledge and self-knowledge can choose the best from the available choices and these elements can assure success for him/her in future. Table No. 4.9 provided that there is a significant relationship between the set of independent variables (career knowledge, self-knowledge and career choices) and the dependent variable (career decision making).

From table 4.10, the significant value for all the three independent variables, career knowledge, self-knowledge and career choices are 0.00. This means that all these independent variables are making a significant impact in predicting the dependent variable (career decision-making).

The study found that career knowledge as the most important element that contributes maximum impact in career decision-making (from table 4.10, Beta coefficient for career knowledge was .69), Career knowledge explains 0.86 percent of variance in the total career decision-making score. Self-knowledge was the second highest contributor variable in the model with Beta coefficient .68 (from table 4.10). For Self-knowledge, the part correlation coefficient value was 0.13, indicating 1.85 percent unique contribution to the variance in the total career decision-making score. Career choices showed the minimum impact .39 (from Table 4.10) in career decision-making. Career choices added 0.36 percent unique contribution to the variance in the total career decision-making score.

The study established that there was a strong positive relationship (0.97) between career knowledge and self-knowledge (Table 4.7) and the relationship between self-knowledge and career choices was 0.97 (Table 4.7) while the relationship between career knowledge and career choices was .98 (Table 4.7). The results of the study showed that while making decision for a career, the variables career knowledge, self-knowledge and career choices make a significant unique contribution that was 97 % (Table 4.8).

The study provided evidence that career knowledge made the strongest unique contribution in explaining career decision-making. Self-knowledge was the second variable that contributes in explaining career decision-making while career choices were the third variable that contributes in predicting career decision-making.

The study rejected the null hypothesis No. 1 that there is no significant difference in the mean scores of male and female students regarding their career decision (Table 4.14). Also rejected the null hypothesis No. 2 that there is no significant difference in the mean scores of students (between subject groups) regarding their career decisions (Table 4.14). The study data indicated that students differ in terms of gender (male and female) and subject groups towards career decision-making (Table 4.14).

The students of pre-engineering differ from students of pre-medical and general science group (Table 4.15) in terms of career decision-making while the students of general science group differed from students of humanities in terms of career decision-making (Table 4.15).

When the data was analyzed on gender basis, for male students, it was found that there was significant difference in the mean score (Table 4.18). For students of pre-engineering, pre-medical and humanities, there was no significant difference in terms of

career decision-making (Table 4.18), while the students of general science and humanities differ significantly in terms of career decision-making (Table 4.18).

For female students, it was found that there was significant difference among the mean score (Table 4.21). It was found that female students of pre-medical differed from the students of pre-engineering and humanities in terms of career decision-making (Table 4.21). On the basis on these results, null hypothesis No. 2, "there is no significant difference in the mean scores of students of all subject groups (between groups) regarding their career decisions" was thus rejected.

The results provided that there was no significant difference in the mean score of male and female student of pre-engineering group (Table 4.24) and general science groups (Table 4.33) in terms of career decision-making. Null hypothesis No.3 "there is no significant difference in the mean score of students (male and female) within subject group towards career decision making" was evidently accepted for pre-engineering group and general science group, while significant difference in the mean score of male and female student of pre-medical group (Table 4.27) and humanities group (Table 4.30) was observed. Null hypothesis No.3 "there is no significant difference in the mean score of students (male and female) within subject group towards career decision making" was eventually rejected for pre-medical group and humanities groups.

CHAPTER 5

SUMMARY, FINDINGS, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The first chapter of this study dealt with theoretical framework of the study, statement of the problem, objectives of the study, research questions, hypotheses, significance of the study and delimitation of the study. The second chapter of the study provided a comprehensive literature review related to the present study. Chapter three articulated research procedure, population, sample and research instruments used for the study. Chapter four dealt with analysis of data and provided results obtained from the data.

5.2 FINDINGS

5.2.1 The first objective of the study was to explore the relationship between youth career choices and career knowledge. It is found that:

5.2.1.1 It is clear that there exists a strong positive relationship (0.98) between career choices and career knowledge (Table 4.7)

5.2.1.2 It is evident that career knowledge makes the strongest unique contribution that is .69 in explaining career decision-making while career choices are the

variable that contributes least that is .39 in career Decision-Making (Table 4.10)

5.2.1.3 Career knowledge has a part correlation coefficient of 0.09 (Table 4.10). It means career knowledge explains 0.86 percent of variance in the total career decision-making score while for career choices; part correlation coefficient value is 0.06 (table 4.8), indicating 0.36 percent unique contribution to the variance in the total career decision-making score.

5.2.2 The second objective of the study was to find out the association between youth career choices and self -knowledge. From analysis of the data, it is found that:

5.2.2.1 There is a strong positive relationship between self-knowledge and career choices exists that is 0.97 (table 4.7)

5.2.2.2 It is found that self-knowledge is the second variable that contributes most in the career decision-making process with Beta coefficient .68 (table 4.10).

5.2.2.3 For Self-knowledge, the part correlation coefficient value is 0.13, indicating 1.85 percent unique contribution to the variance in the total career decision-making score (table 4.10).

5.2.3 The third objective of the study was to investigate the relationship between youth self-knowledge and career- knowledge. Analysis of the data yield:

5.2.3.1 There exists a strong positive relationship (0.97) between career knowledge and self-knowledge (table 4.7).

5.2.4 The fourth objective of the study was to explore the contribution of career choices, career knowledge and self- knowledge in predicting the career decision-making.

5.2.4.1 The study found that the significant value for the independent variables career knowledge, self-knowledge and career choices is 0.00. It means all three independent variables are making a significant unique contribution in predicting the dependent variable that is career decision-making (table 4.10).

5.2.4.2 It is clear that the variables career knowledge, self-knowledge and career choices explain 97 percent of variance in career decision-making (table 4.8).

5.2.4.3 The Beta values (table 4.10) indicate the contribution of each independent variables career knowledge, career choices and self-choices to the prediction of dependent variable (career decision-making). The largest beta coefficient is 0.69 for career knowledge (table 4.10). It means that career knowledge makes the strongest unique contribution in explaining the dependent variable (career decision-making). Self-knowledge forms the second independent variable that contributes in explaining the dependent variable with beta coefficient 0.68 (table 4.10). Career choices are the variables that contribute least in predicting the career decision-making with beta coefficient 0.39 (table 4.10).

5.2.5 The fifth objective of the study was to find out the difference in the mean scores of male and female students towards career decision-making.

5.2.5.1 The study found a significant difference in the mean score of male and female students towards career decision making (table 4.14).

5.2.5.2 Among male students, the students of humanities and general science differ significantly in terms of career decision making (table 4.18).

5.2.5.3 Among female students, the students of pre-engineering and pre-medical differ in terms of career decision making (table 4.21). Also the female students of pre-medical and humanities differ towards career decision making (table 4.21).

5.2.6 The data analysis also provided the following information while analysis was made on the basis of gender and subject groups:

5.2.6.1 It is clear that the significant value for gender * group is 0.01 (table 4.14) that is less than .05; it means there is a significant interaction effect. While the significant value for gender and group are .00 and 0.00 respectively (table 4.14), both are less than .05. This suggests there is a significant main effect for the independent variables (gender and subject group). It proposed that students differ in terms of gender (male and female) and subject groups (pre-engineering, pre-medical, humanities and general science) towards career decision-making.

5.2.6.2 While considering the case of pre-engineering group, table 4.15 provided that the significant value for pre-medical (.00) and general science (.00) are less than 0.05. This means that the students of pre-engineering differ from students of pre-medical and general science in terms of career decision-making.

5.2.6.3 While taking case of pre-medical group, table 4.15 further suggests the significant value for humanities is .10 that is less than 0.05. This means that the students of the pre-medical group differ from the students of humanities in terms of career decision-making.

5.2.6.4 While considering the case of the humanities group, table 4.15 also provided that the significant value for general science is .00 that is less than .05.This means that the students of general science group differ from the humanities in terms of career decision-making.

5.2.6.5 While considering the case of general science group, table 4.15 further provided that the significant value for pre-engineering and humanities are .00 and .00 respectively that are less than .05. This indicates that the students of general science differ from the students of pre-engineering and humanities in terms of career decision-making.

5.2.7 The data analysis also provided information whether there is significant difference within the subject groups (pre-engineering, pre-medical, humanities and general science) or not.

5.2.7.1 For pre-engineering group, table 4.24 provided the significant value is .80 that is greater than 0.05. This suggest that there is no significant difference in the mean score of male and female student of pre-engineering group.

5.2.7.2 For pre-medical group, table 4.27 provides the significant value is 0.001 that is less than 0.05. This suggests that there is significant difference in the mean score of male and female student of pre-medical group.

5.2.7.3 For humanities group, table 4.30 provides the significant value is 0.02 that is less than 0.05. This suggests that there is significant difference in the mean score of male and female students of the humanities group.

5.2.7.4 For the general science group, table 4.33 provided the significant value is .87 that is greater than 0.05, suggest that there is no significant difference in the mean score of male and female student in the general science group.

5.2.8 The data analysis provided the following information when subject groups were compared with the suitable as described by Holland in his personality topology and suitable professions, percentage of students whom subject groups match with the personality types provided by Holland.

5.2.8.1 Among realistic personality type, there was match of only 47 % students between selected subjects and the personality type as described by Holland.

5.2.8.2 Among investigative, 69 % students selected the subjects match with their personality type as described by Holland.

5.2.8.3 In case of artistic, subjects of 44 % students match with the personality type as described by Holland.

5.2.8.4 Among social personality type, 41 % students have chosen the subjects that were suitable for their personality type as recommended by Holland.

5.2.8.5 A total of 50 % students falling in enterprising category have chosen the subjects that are suggested by Holland.

5.2.8.6 In case of conventional type, 69 % students have chosen those subjects that were suggested suitable by Holland.

5.3 CONCLUSIONS

5.3.1 Career Choices

It is concluded that:

1 Among three variables (career knowledge, self-knowledge and career choices) that were considered in the current study, career choices are the variable that contributes least in career decision-making (Finding No 5.2.4.3).

2 Career choices play 0.39 percent unique contribution to the variance in the total career decision-making score (Finding No.5.2.4.3).

5.3.2 Career Knowledge

It is concluded that:

3 Career knowledge has strong positive relationship with self-knowledge and career choices (Finding No.5.2.1.1 & 5.2.1.2).

4 The variables career knowledge, self-knowledge and career choices explain 97 percent of variance in career decision-making (Finding No 5.2.4.2).

5 Career knowledge plays the strongest contribution towards career decision-making (Finding No 5.2.1.2).

6 Career knowledge explains 0.86 percent of variance in the total career Decision-Making score (Finding No 5.2.1.3).

5.3.3 Self Knowledge

It is concluded that:

7 Self-knowledge is the second variable that contributes most with Beta coefficient .686 in career decision-making (Finding No 5.2.2.2)

8 Self-knowledge explains 1.85 percent unique contribution to the variance in the total career decision-making score (Finding No 5.2.2.3).

5.3.4 Subjects Groups Difference towards Career Decision-Making

It is concluded that:

9 The students of pre-engineering and pre-medical differ in terms of career decision-making (Finding No 5.2.5.2).

10 The students of humanities differ from the students of general science in terms of career decision-making (Finding No 5.2.5.3).

5.3.5 Gender Difference towards Career Decision-Making

11 There is significant difference in the mean score of male and female students towards career decision-making (Finding No 5.2.5.1).

12 Among male students, the students of humanities and general science differ significantly in terms of career decision making (Finding No 5.2.5.2).

13 Among female students, the students of pre-engineering and pre-medical differ in terms of career decision making (Finding No 5.2.5.3).

14 Also the female students of pre-medical and humanities differ towards career decision making (Finding No 5.2.5.3).

5.3.6 Congruence (Subjects Match with Personality Type)

It is concluded that:

15 From each personality type as described by Holland, many students have chosen such subject groups that were not in congruence with their personality type as

explained by Holland in Holland's personality topology and suitable profession (Finding No. 5.2.8)

5.4 DISCUSSION

For an individual, career is a sequence of positions occupied by a person during the course of a lifetime, also known as one's objective career (Kamawi, 2011). Career cannot be selected or changed quickly, it starts from selection of subjects at high school level and extends in the same line gradually. Information about available careers is the first element that enables an individual to select the right career from the available range of careers also about the selection of majors in the light of career knowledge and self-knowledge. The current research shows that there is a strong positive relationship between career choices and career knowledge. Occupational knowledge (career knowledge for this study) is the accuracy one has in understanding information related to careers (Schmitt-Wilson & Welsh, 2012). The study also found that career knowledge is the variable that contributes most in explaining career decision-making. This supports the findings of Miller and Hayward (2006) that there is a significant relation between female participants' self-estimates of knowledge and their preferences for occupations, while no significant relation was found for male participants.

Self-knowledge is the status of understanding one's self. A person, who knows what he is and what he can do, ultimately will perform better and effectively in his future career. Self-knowing is a way that leads towards success; it provides confidence and encouragement for doing. The current study found a strong positive relationship between self-knowledge and career decision-making that is similar to the finding of Pisarik, Rowell

and Thompson (2017) who found that lack of self-knowledge creates fear among the graduates while deciding career, they do not know whether their decision is right for them or not. This finding also matches the finding of Sab and Kampa (2019) provided that at upper secondary level, the most powerful determinant of course selection is students' self-concept.

Career choices are the third element that plays a role in the career selection. It is found that career knowledge; self-knowledge and career choices have positive correlations and are important for selecting a career.

Each of career knowledge, self-knowledge and career choices have its own role and impact on career decision-making. Among these three variables, career knowledge is the element that plays the most unique contribution towards career decision-making and career choices is the variable that contribute minimum towards career decision-making.

The study provides that male and female students have different patterns in terms of career decision-making. Even within the same subject groups, male and female students have different patterns towards career decision-making. This finding is corporate by the research of Lazarides and Fani (2019) who found that gender differences in selection of academic majors contribute in different ways for boys and girls in mathematics. Gender differences influence the connection of seeking career opportunities and self-directedness career. Women are found more proactive for searching career opportunities as compare to men (Wong & Rasdi, 2018)

The study found that students differ in terms of gender (male and female) and subject groups (pre-engineering, pre-medical, humanities and general science) towards career decision-making. This is consistent with the findings of the previous studies

demonstrating that from the school level to onward, the self-concept of male and female students towards career decision differs; it depends on the academic domain (Herbert & Stipek, 2005; Spinath et al., 2014).

In case of subject groups, it is found that the students of pre-engineering differ from the students of pre-medical and general science, the students of pre-medical differ from the students of humanities, students of humanities differ from general science students and students of general science differs from the students of humanities and pre-engineering in terms of career decision-making.

While in case of gender (male and female), it is found that among male students, there is no significance difference among the student of pre-engineering, pre-medical and humanities in terms of career decision-making while the male students of humanities and general science differ in terms of career decision-making.

In case of female students, it is found that female students of pre-engineering and pre-medical differ in terms of career decision making; also the female students of pre-medical and humanities also differ in terms of career decision-making.

The study established that there is no significant difference in the mean score of male and female students of pre-engineering group and general science group towards career decision making.

The study found that there is significant difference in the mean score of male and female students for pre-medical group and humanities group towards career decision making.

The study provides that many students selected those subject groups which do not match to their personality type as explained by Holland in his personality topology and

suitable profession. This finding is also strengthen by Lichtenstein et al.(2009) who state that students chose those professional options that do not have any relationship with the majors at undergraduate level. Students remain confuse with their job and career decision later at a stage when they have become senior. Young people should be provided help and support for managing career decision making process (Argyropoulou & Kaliris, 2018).

The current study adds to the literature about career knowledge, self-knowledge and career choices available to the students studying in Pakistani higher secondary schools. The study focused on Pakistani higher secondary level students and explored their personality type, self-knowledge, career choices and career knowledge and the contribution of self-knowledge, career knowledge and career choices in predicting career decision-making. The findings show that while selecting career, male and female students think on different patterns, moreover, subject groups also affect the career decision-making process.

Another important contribution of this study is that it dealt with the students of higher secondary level while in Pakistan, there are career centers at university level but at higher secondary level there is no concept of career counseling while National Education Policy (2009) declares that career guidance shall be introduced at secondary and upper secondary level. The present study highlighted the importance and need of career centers at higher secondary level institutions that is similar to the recommendations of the Moote and Archer (2018) who proposed that schools make sure that career education must be provided to all students, especially those students who are in need of career education. This finding is also strengthened by study of Blotnicky, et al. (2018) whom results show that career knowledge of middle school students is limited and there is a need to expand the ways to increase authentic learning opportunities in secondary school in Atlantic Canada.

Arif, Iqbal and Khalil (2019) conducted a study with the sample students from University of Management and Technology to find out the satisfaction level of students with their career choices and suggested that career counseling must start from middle level. Students must be realized about their potential capacity and students must aware about the needs of the career they have selected.

5.5 RECOMMENDATIONS

On the basis of findings, following recommendations are made:

1- Career choices and career knowledge have strong positive relationship. On the basis of the findings, a strategic plan is developed (Annexure- I) that may be helpful for preparing the students about career knowledge and train them to choose career in the light of career knowledge for an efficient contribution at the work place and for a satisfactory role in the life.

2- It was found that career choices, career knowledge and self-knowledge contribute in career decision making. The developed career plan may be used to align the ways of career choices, career knowledge and self-knowledge to the whole school program through mapping a well-designed school curriculum.

3- It was established that career knowledge and self-knowledge have strong positive relationship. A general mechanism may be integrated in the curriculum that enhances the capabilities of the students about career knowledge and self-knowledge. It may be done through adding the broader fields and scope of each subject in the curriculum based text books.

4- It was found that students differ in terms of career decision making on the basis of subject groups. It is recommended that students may be guided about the connection of learning fields/areas and career. It can be done through inviting the individuals who are engaged in the real-life world, they may guide students about the actual use of theory in the field.

5- It was also revealed that difference in gender affects students' career decision making. It is recommended that subject groups may be offered that support the gender interests. Such exhibitions and seminars may be arranged by the schools that highlight the gender related issues and suggest their solutions so that students may consider while deciding careers.

6- The study highlighted that students select such subject groups that do not match their personality type. It happens because of low level self-knowledge and career knowledge. It is proposed that self-knowledge and career knowledge may be provided to the students through organizing workshops/seminars where experts from all fields of real world of work may be invited to share their experiences with the students.

7- It was found that many students selected such subjects that do not match to their personality type as explained by Holland in his personality type and suitable profession. If the personality type of the students is checked through Holland' personality test, it will help students to choose the subjects that are congruent to their personality.

In the light of findings of this study, a strategic plan has been developed to check the personality type and ways to guide students about selection of subjects in the light of

personality type (Annexure-I). The major steps of this strategic plan are articulated as under:

1. Checking personality type
2. Measuring Aptitude
3. Searching broader areas related to personality type
4. Guiding for subject selection
5. Meetings with Alumina through Social Media
6. Planning organized Visits of job fairs

Well planned implementation of these recommendations will enable the higher secondary schools to guide young students of higher secondary level for selecting subjects that will prepare them to work effectively in the market. If schools establish the career counseling centers where students are provided, the opportunity to check their personality type, career related information and available careers; the students will be able to join market with clear mind of available careers and will ultimately accelerate in the field of their choice.

5.6 FUTURE RESEARCHES

1- The current study explored the relationship of career choices, career knowledge and self-knowledge of the students of higher secondary level taken from Islamabad Model Colleges (Boys & Girls), Islamabad. This study focused the students who are enrolled in the Model Colleges of the Capital of Pakistan, however, the situation for the students in the other geographical regions of Pakistan is not identical with the situation to that of the students for the current study. It is suggested that a study

on the same pattern may be conducted while taking sample from the higher secondary schools of provinces. It will be more holistic if a longitudinal study may be designed to collect data across Pakistan so that on the basis of recommendations, some occupational choices and career knowledge may be included in the curriculum and textual materials.

2- The present study applied Holland's personality test to check the personality type of higher secondary level students of Islamabad Model Colleges; it is proposed that same personality test may be applied on the students of higher secondary level across Pakistan.

3- The study also found that gender and subject groups affect the career decision making. It is suggested that a study may be designed to check the reasons for gender base decisions and explore the factors that work behind these decisions.

4- From the field, the current study found that some of the schools are offering career related information and career education in the form of career related seminars and by inviting experts from the real world of work. For future research, it is suggested that comparison groups may be taken from the schools that engaged the students in career related activities. This would be helpful to explore the factors that shed light on the career related matters and what is the contribution of these variables towards career decision making.

5- Also, represent high participation of boys as a limitation of this research because boys tend to join urban colleges of Islamabad and girls stay on local institutions.

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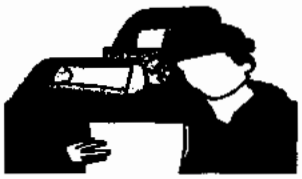
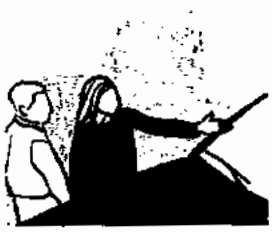
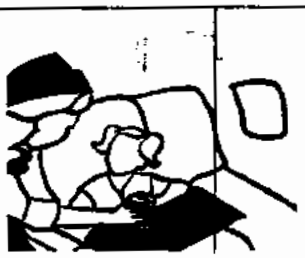
Annexure-A

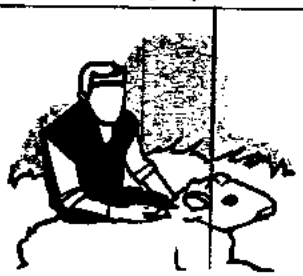
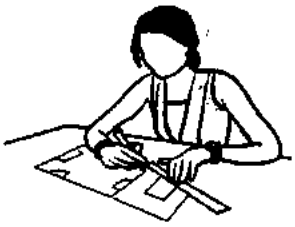
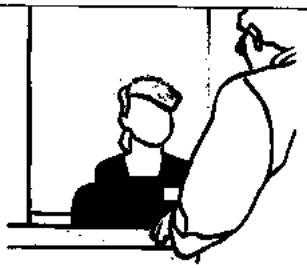
Career Choice Test

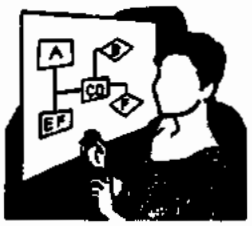
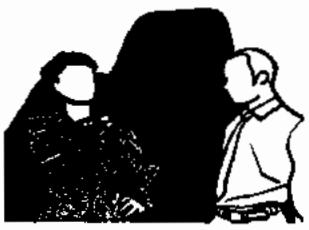
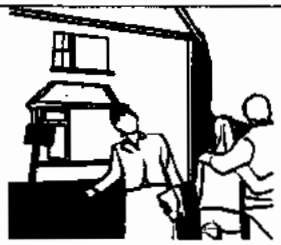
This is online available test used for career choice based on Holland code personality types. It takes 10 to 15 minutes to complete as there are fifteen steps in the test, at each step; a set of four pictures is presented with different activities.

It is required to imagine yourself in the picture performing the activity and choose one picture by using the sign √ that appeals you most to do and put sign (X) on the picture that you dislike. In this way, you will choose a like or a dislike for each set of pictures. At the end, the result will provide a list of profession fit to personality. This is Gender and race free test (available at www.123test.com/career-test/)

Step No.	Picture 1	Picture 2	Picture 3	Picture 4
1	 going to Office (Manager, Accountant etc)	 Research Job (In Laboratories)	 Construction and Engineering	 Creative Photography (Capture unique moments in camera)
2	 Auctioneer (A person who take bids and sale items)	 Teacher	 Mechanic (A person who deals with machineries like water pump, motorbike etc.)	 Chemist A person deals in chemistry

3	 Monitor and Record (Observe and keep record such as teacher trainer etc.)	 Sell and Convince (Marketing)	 Design and Paint	 Help and Care
4	 Social Worker (A person who helps others on humanitarian basis)	 Administrator	 Fire Fighter	 Manager (Manage the whole system of some office)
5	 Jewelry Creation	 Guide Children (Reconciliation)	 Medical Diagnostics	 Take Notes (Recording important points during the meeting)
6	 Sketch and Design	 Mobile Mechanic (Service provider at door step)	 Help Disabled	 Business Manager

7	 Study	 Styling and Decorating	 Close Business Deals (To finalize business deals)	 Fix It (Finishing wood, wood designing)
8	 Social Counselor (Help or guide others)	 Molecular Scientist	 Accountant	 Veterinarian
9	 Chairman	 Administration	 Gain Knowledge (To search information or knowledge)	 Landscape Architecture
10	 Dental Technicia	 Host (To provide services)	 Draw	 Information Clerk
11	 Controller (To control the system)	 Stockbroker (Dealing in stock exchange)	 Data Analyst	 Engineer

12	 Science	 Tools (To do technical work)	 Medical Support	 Arts and Drama
13	 Logical Reasoning	 Sorting and Organizing (Manage in some order to understand)	 Give Directions (To guide juniors or subordinates)	 To Teach and Explain
14	 Elderly Care (Tenderly approach towards old peoples)	 Estate Agent (Manage deals with seller and buyers)	 Fashion Designer	 Problem Solving (To think new ways of solutions)
15	 Electronics	 Creative Writing	 Archiving (Records keeping)	 Salesperson (Attractive way of selling goods)

Annexure-B

Dear Respondent,

I am a Ph. D (Education) scholar at International Islamic University, Islamabad. I am working on my thesis entitled "Career Decision-Making: Relationship among Youth Career Choices, Career Knowledge and Self Knowledge at Higher Secondary Level in Pakistan.

The sample of my research study is Higher Secondary School Certificate (HSSC) students of higher secondary schools/colleges of FDE for the session 2013-15

I have developed three questionnaires

1. **Questionnaire for Career Choices** consisting 20 statements
2. **Questionnaire for Career Knowledge** consisting 26 statements
3. **Questionnaire for Self-Knowledge** consisting 20 statements

For each statement, five options are given (SA= Strongly Agree, A= Agree, UD = Undecided, DA = Disagree, SDA= Strongly Disagree). You are required to tick (√) the most appropriate option.

The information provided by you will be used for research purpose only.

Yours Truly,

Shahinshah Babar Khan

0333-6696550

Annexure-C

Questionnaire for Career Choices

Name: ----------

Institution: ----------

Contact # (Student-If any) ----------

Age: ---------- Years Class: 2nd year

For each statement, five options are given. You are required to tick (√) the most appropriate.

SA= Strongly Agree A= Agree UD = Undecided DA = Disagree SDA= Strongly Disagree

Item No.	Statement	SA	A	UD	DA	SDA
1	I discuss the available careers with my parents to know what they think about my future career. میں دستیاب ملازمتوں کے بارے میں اپنے والدین کیساتھ تبادلہ خیال کرتا ہوں تاکہ میں جان سکوں کہ وہ مستقبل کی میری ملازمت کے بارے میں کیا سوچتے ہیں؟					
2	My parents discuss with me their work at job and skills needed for success. میرے والدین اپنی ملازمت پر کام کے بارے میں اور کامیابی کیلئے درکار مہارتوں/ہنر کے بارے میں مجھ سے چیت کرتے ہیں					
3	My parents tell me the career they like for me. میرے والدین مجھے اس ملازمت کے بارے میں بتاتے ہیں جو انہیں میرے لئے پسند ہے					
4	My parents tell a lot about pros and cons of different careers with respect of future success. میرے والدین مستقبل میں کامیابیوں کے ضمن میں مختلف ملازمتوں کی خوبیوں اور خامیوں کے بارے میں مجھے بتاتے ہیں					
5	My parents introduce me to the relatives who are working in the fields of my interest. میرے والدین مجھے ان رشتہ داروں کے بارے میں بتاتے ہیں جو کہ میری دلچسپی کے شعبوں میں کام کر رہے ہیں					

6	Parental motivation for choosing a career gives me confidence to do hard work to achieve the goals of my career. ملازمت کا انتخاب کرنے کیلئے والدین کی ترغیب سے مجھ میں اپنی ملازمت کے اغراض و مقاصد /اہداف کے حصول کیلئے اعتماد پیدا ہوتا ہے					
7	My parents are ready to send me away from home to get education necessary for my career. مجھے ملازمت کیلئے درکار تعلیم کے حصول کیلئے میرے والدین گھر سے دور بھیجنے کیلئے بھی تیار ہیں					
8	To enrich my career related information, I read newspapers and magazines. کیریئر سے متعلق معلومات سے بھرپور استفادہ کیلئے میں اخبارات اور میگزین پڑھتا ہوں					
9	I make analysis of available careers to calculate the scope of my career in future. میں دستیاب کیریئرز کا تجزیہ کرتا ہوں تاکہ میں مستقبل میں اپنے کیریئر کی وسعت کار کا پتہ چلاسکوں					
10	I use new technologies for searching information about my career. میں اپنی ملازمت کے بارے میں معلومات کی تلاش کیلئے ٹیکنالوجیز استعمال کرتا ہوں					
11	I use technologies for knowing skills required for my career. میں اپنی ملازمت کیلئے درکار مہارتوں کے بارے میں جاننے کیلئے ٹیکنالوجیز استعمال کرتا ہوں					
12	Changing context of working environment force me to change my selected career. میں کام کرنے کے ماحول میں تبدیلیوں کے تناظر میں اپنی منتخب کردہ ملازمت کو تبدیل کرنے پر مجبور ہوجاتا ہوں					
13	I use available tools for career decision. یں ملازمت کا فیصلہ کرنے کیلئے دستیاب تمام ذرائع استعمال کرتا ہوں					
14	I choose the career keeping in view the market trends. میں مارکیٹ کے تمام رجحانات کو مدنظر رکھتے ہوئے ملازمت کا انتخاب کرتا ہوں					
15	I select my career from the accepted fields of study among the students. میں طلباء میں مطالعہ کرنے کے قابل قبول شعبہ جات میں سے اپنے کیریئر کا انتخاب کرتا ہوں					
16	From time to time, I measure self-potential through different ways (online tests, interest inventories, quizzes etc.). میں وقتاً فوقتاً مختلف طریقوں (آن لائن ٹیسٹس میں دلچسپی کی ایجادات ،ماخذوں اور سوال وجواب وغیرہ سے اپنی صلاحیتوں کو جانچتا ہوں					

17	I get counseling to choose career from peers and elder brothers and sisters. میں ہم عصر اور بڑے بہن بھائیوں سے کیریئر کا انتخاب کرنے کیلئے مشورہ کرتا ہوں					
18	The career of successful people appeals me to choose that career as my future. کامیاب ترین لوگوں کے کیریئر سے متاثر ہو کر میں مستقبل میں وہی کیریئر اپنانے کی طرف مائل ہوتا ہوں					
19	I choose career that congruence my interpersonal characteristics and psychology. میں اپنی نفسیات، ذاتی، باہمی، ابلاغی خصوصیات کی مناسبت سے کیریئر منتخب کرتا ہوں					
20	I make changes in my career choice while see from the window to the world of work. میں کام کرنیوالی دنیا کے کسی حصہ کو دیکھتے ہوئے اپنی ملازمت میں تبدیلیاں لاتا ہوں					

Annexure-D

Questionnaire for Career Knowledge

Name: ----------

Institution: ----------

Contact # (Student-If any) ----------

Age: ---------- Years Class: 2nd year

For each statement, five options are given. You are required to tick (√) the most appropriate.

SA= Strongly Agree A= Agree UD = Undecided DA = Disagree SDA= Strongly Disagree

Item No.	Statement	SA	A	UD	DA	SDA
1	I am aware about the range of available careers of my interest. میں اپنی دلچسپی کی ملازمتوں کی تمام اقسام کے متعلق آگاہ ہوں					
2	I know the sources to collect more relevant information about the professions of my interest. میں اپنی دلچسپی کے پیشہ سے متعلقہ زیادہ سے زیادہ معلومات جمع کرنے کے ذرائع کے بارے میں جانتا ہوں					
3	I am aware about sources to enrich my career related information for future plans. میں مستقبل کے منصوبوں سے متعلقہ اپنی ملازمت کو بھرپور فعال بنانے کے ذرائع سے بھی آگاہ ہوں					
4	I make efforts to get new things and ideas about careers of my interest. میں اپنی دلچسپی کی ملازمتوں کے بارے میں آئیڈیاز اور نئی اشیاء کے حصول کیلئے کوششیں کرتا ہوں					
5	I have ideas and plans to attain my career related goals. میرے پاس اپنی دلچسپی کے کیریئر سے متعلقہ اہداف کے حصول کے لئے آئیڈیاز اور منصوبے ہیں					
6	I know about the skills required for career of my interest. میرے پاس اپنی دلچسپی کی ملازمت کیلئے درکار مہارتوں کا علم ہے					

7	From time to time, I analyze the available career options. میں ملازمت کے انتخاب کیلئے دستیاب مواقع کا وقتاً فوقتاً تجزیہ کرتا ہوں					
8	I get counseling from family members about careers of my interest. میں اپنی دلچسپی کی ملازمتوں کے بارے میں اپنے اہلخانہ سے مشورہ کرتا ہوں					
9	I get counseling from teachers about careers of my interest. میں اپنی دلچسپی کی ملازمتوں کے بارے میں اساتذہ سے مشورہ لیتا ہوں					
10	I discuss the scope of careers of my interest with family members. میں اپنی دلچسپی کی ملازمتوں کی وسعت کار کے بارے میں خاندان کے اراکین سے بات چیت کرتا ہوں					
11	I discuss the scope of careers of my interest with teachers. میں اپنی دلچسپی کی ملازمتوں کی وسعت کار کے متعلق اساتذہ سے تبادلہ خیال کرتا ہوں					
12	I meet the persons working in the field of my interest to discuss the knowledge needed for the field. میں اپنی دلچسپی کے شعبہ میں کام کرنیوالے افراد سے ملاقات کرتا ہوں تاکہ میں ان سے اس شعبہ کیلئے درکار علم کے بارے میں بات چیت کروں					
13	I meet the persons working in the field of my interest to discuss the skills needed for the field. میں اپنی دلچسپی کے شعبہ میں کام کرنیوالے افراد سے ملتا ہوں تاکہ میں ان سے اس شعبہ کیلئے درکار مہارتوں کے بارے میں تبادلہ خیال کر سکوں					
14	I am sure that my choice of career is right for me. مجھے یقین ہے کہ میں نے جس شعبہ کا انتخاب کیا وہ میرے لئے درست ہے					
15	I am able to use information technology to search the scope of my career interest. میں اپنی دلچسپی کے شعبہ کی وسعت کار کی تلاش کیلئے انفارمیشن ٹیکنالوجی استعمال کرنے کے قابل ہوں					
16	I attend seminars and job fairs to get information about careers of my interest. میں اپنی دلچسپی کی ملازمتوں کے بارے میں معلومات کے حصول کیلئے سیمینارز اور جاب فیئرز میں شرکت کرتا ہوں					

17	I read different books to know job search strategies of my interest. میں اپنی دلچسپی کی ملازمت کے بارے میں حکمت عملیوں کا علم حاصل کرنے کیلئے مختلف کتابیں پڑھتا ہوں					
18	I arrange my knowledge of career interest to lay a strong foundation. میں مضبوط بنیاد ڈالنے کیلئے اپنی دلچسپی کی ملازمت بارے معلومات حاصل کرنے کا انتظام کرتا ہوں					
19	I have short term, medium term and long-term goals about my career of choice. میرے پاس اپنی پسند کی ملازمت کے مختصر، درمیانی اور طویل مدتی اغراض و مقاصد کے اہداف ہیں					
20	I read advertisements in the newspapers relevant to my career of choice. میں اپنی پسند کی ملازمت سے متعلق اخبارات میں شائع ہونیوالے اشتہارات پڑھتا ہوں					
21	I read the criteria required for the career of my choice. میں اپنی پسند کی ملازمت کیلئے درکار معیار/شرائط پڑھتا ہوں					
22	I read about the duties and responsibilities of the career of my choice. میں اپنی پسند کی ملازمت کی ذمہ داریوں اور فرائض کے متعلق پڑھتا ہوں					
23	I read newspapers to know the role of the departments relevant to my career choice. میں اپنی ملازمت کے متعلق انتخاب میں اداروں کے کردار کی معلومات کے لئے اخبارات پڑھتا ہوں					
24	I watch programs/documentaries on TV relevant to careers of my choice. میں ٹی وی پر اپنی پسندیدہ ملازمتوں سے متعلقہ پروگرامز اور دستاویزی فلمیں دیکھتا ہوں					
25	I visit the web sites of the organizations related to the careers of my choice. میں اپنی پسندیدہ ملازمتوں سے متعلقہ اداروں کی ویب سائٹ پر بھی جاتا ہوں					
26	I search for the professional associations and networks related to career of my choice. میں اپنی پسندیدہ ملازمت سے متعلقہ نیٹ ورکس اور پیشہ ورانہ ایسوسی ایشنز بھی تلاش کرتا ہوں					

Annexure-E

Questionnaire for Self-Knowledge

Name: ----------

Institution: ----------

Contact # (Student-If any) ----------

Age: ---------- Years Class: 2nd year

For each statement, five options are given. You are requested to tick (√) the most appropriate.

SA= Strongly Agree A= Agree UD = Undecided DA = Disagree

SDA= Strongly Disagree

Item No.	Statement	SA	A	UNC	DA	SDA
1	I can take risk without thinking for long term consequences. میں طویل مدتی نتائج کے بارے میں سوچے بغیر خطرہ مول لے سکتا ہوں					
2	I consider all the available options carefully. میں تمام موجود امکانات پر بڑی احتیاط سے غور کرتا ہوں					
3	I know the professions in which I may excel. میں ان پیشوں کے متعلق جانتا ہوں جن میں شاندار کارکردگی دکھا سکتا ہوں					
4	At the same time, several professions appeal to me equally. مجھے ایک ہی وقت میں کئی پیشے یکساں طور پر مائل کرتے ہیں					
5	I have potential to meet the requirements of several professions. میں کئی پیشوں کے تقاضوں پر پورا اترنے کی صلاحیت رکھتا ہوں					
6	I know my strengths for the career of my interest. میں اپنی دلچسپی کی ملازمت میں اپنی قوتوں کے بارے میں جانتا ہوں					

7	I know my weaknesses to work on to achieve career of my interest. مجھے اپنی دلچسپی کی ملازمت کے حصول کیلئے کام کرنے میں خامیوں کا علم ہے					
8	If the work matches with my interests; I may remain busy for hours. اگر کام میری دلچسپیوں سے مطابقت رکھتا ہو تو میں گھنٹوں مصروف رہ سکتا ہوں					
9	I have stability in my career interests. میں اپنی ملازمتی دلچسپیوں میں مستحکم ہوں					
10	I know what is important to me for my future career. مجھے اس بات کا بخوبی علم ہے کہ میری مستقبل کی ملازمت کیلئے میرے لئے کیا چیز اہم ہے					
11	I feel that I will be progressive in the role assigned to me in my career of choice. میں محسوس کرتا ہوں کہ میں اپنی پسندیدہ ملازمت میں سونپے گئے کام میں ترقی کروں گا					
12	I am ambitious to do extra efforts in the work of my interests. میں اپنی دلچسپیوں والے کام میں زیادہ کوششیں کرنے کا ارادہ رکھتا ہوں					
13	I will try my best to solve the problems to attain the career of my choice. میں اپنی پسندیدہ ملازمت کے حصول کیلئے مسائل کو حل کرنے کی بہترین کوشش کروں گا					
14	I show academic commitment to the subjects that match with the career of my choice. میں ایسے مضامین میں علم حاصل کرنے کے عزم کا اظہار کرتا ہوں جو میری پسندیدہ ملازمت کے مطابق ہوں					
15	I have confidence that good grades would assure career success. مجھے پورا اعتماد ہے کہ اچھے گریڈ میری ملازمت کی کامیابی کو یقینی بنائیں گے					

16	My family accomplishments give me confidence to attain the career of my choice. میرے خاندان کی کامیابیوں سے مجھے اپنی پسندیدہ ملازمت کے حصول کا اعتماد ملتا ہے					
17	I struggle to learn the skills necessary for attaining career of my choice. میں اپنی پسندیدہ ملازمت کیلئے ضروری مہارتیں سیکھنے کی جدوجہد کرتا ہوں					
18	I make comparison between the skills required for my career of interest and that I possess. میں اپنی دلچسپی کی ملازمت کیلئے درکار صلاحیتوں اور اپنی صلاحیت کا موازنہ کرتا ہوں					
19	I check my knowledge of my career interests through online available career related tests. میں اپنی ملازمتوں کی دلچسپیوں میں اپنا علم آن لائن دستیاب متعلقہ ٹیسٹوں کے ذریعے جانچتا ہوں					
20	I know the strategies to improve the skills necessary for career of my interest. مجھے اپنی دلچسپی کی ملازمت کیلئے ضروری مہارتوں میں بہتری لانے کی حکمت عملیوں کا علم ہے					

Annexure-F

Career Decision Self-Efficacy Scale (CDSE)

HOW MUCH CONFIDENCE DO YOU HAVE THAT YOU COULD?

For each statement below, please read carefully and indicate how much confidence you have that you could accomplish each of these tasks by marking your answer according to the following 5-point continuum. Mark your answer by filling in the correct circle on the answer sheet.

1 = No confidence at all, 2= Very Little Confidence, 3= Moderate Confidence, 4= Much Confidence

5 = Complete confidence

Item #	Statement	5	4	3	2	1
1	Use the internet to find information about occupations that interest you.					
2	Select one major from a list of potential majors you are considering.					
3	Make a plan of your goals for the next five years.					
4	Determine the steps to take if you are having academic trouble with an aspect of your chosen major.					
5	Accurately assess your abilities.					
6	Select one occupation from a list of potential occupations you are considering.					
7	Determine the steps you need to take to successfully complete your chosen major.					
8	Persistently work at your major or career goal even when you get frustrated.					
9	Determine what your ideal job would be.					

10	Find out the employment trends for an occupation over the next ten years.					
11	Choose a career that will fit your preferred lifestyle.					
12	Prepare a good resume.					
13	Change majors if you did not like your first choice.					
14	Decide what you value most in an occupation.					
15	Find out about the average yearly earnings of people in an occupation.					
16	Make a career decision and then not worry whether it was right or wrong.					
17	Change occupations if you are not satisfied with the one you enter.					
18	Figure out what you are and are not ready to sacrifice to achieve your career goals.					
19	Talk with a person already employed in a field you are interested in.					
20	Choose a major or career that will fit your interests.					
21	Identify employers, firms, and institutions relevant to your career possibilities.					
22	Define the type of lifestyle you would like to live.					
23	Find information about graduate or professional schools.					
24	Successfully manage the job interview process.					
25	Identify some reasonable major or career alternatives if you are unable to get your first choice.					

Annexure-G

List of the Experts/Academicians who validated the Questionnaires

Sr. No	Name of the Expert/Academician	Institution
1	Dr. (R) Manzoor Arif	PMAS Arid Agriculture University, Rawalpindi
2	Dr. (R) Aysha Akbar	Allama Iqbal Open University, Islamabad
3	Dr. Afzal Tanveer	Allama Iqbal Open University, Islamabad
4	Dr. Khalil ur Rehman	Pakistan Institute of Engineering and Applied Science, Islamabad

Annexure-H

Career Decision Self-Efficacy Scale

Instrument and Scoring Guide

by Nancy E. Betz and Karen M. Taylor

Published by Mind Garden, Inc.

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Sample Items:

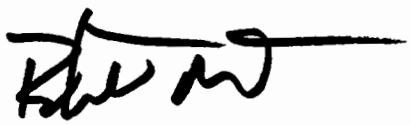
How Much Confidence Do You Have That You Could:

Summarize the skills you have developed in the jobs you have held?

Select one major from a list of potential majors you are considering.

Make a plan of your goals for the next five years.

Sincerely,



Robert Most

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Annexure- I

STRATEGIC PLAN FOR GUIDANCE OF CAREER SELECTION AT SCHOOL LEVEL

Stakeholders

1. Students
2. Teachers
3. Parents
4. School Leadership

Key Steps:

7. To check personality type
8. Measuring Aptitude
9. Searching broader areas related to personality type
10. Guidance for subjects selection
11. Meetings with Alumina
12. Visits of job fairs

STRATEGY – I: Create a mechanism to check the personality type of the students to help them in selection of subjects that matched to their personality type.

Action Plan

1. Assess students' aptitude and interest periodically and accommodate their career needs and skills

2. Maintaining students' dossier containing previous subject wise achievements history. Students may be guided towards the subjects that match their personality.
3. Creating students' clubs according to their interests.
4. Enabling students to select subjects according to their interests.
5. Arranging competitions based on same interests among students within club.

STRATEGY – II: Develop a mechanism that provide guidance to the students at secondary level about work experiences and opportunities in the field.

Actions Plan

1. Develop a list of available careers and mention skills required for them.
2. Engage students to write about the fields of their interests and the vision to achieve some position in the field of their interest.
3. Invite local employers to interact with students to share the skills and knowledge required in the field.
4. Arrange seminars in schools about the main fields of the career and its sub-fields.

STRATEGY – III: Use of Social Media for discussion with old students who are engaged in some job to share their experiences with new students and to inform students about the skills required in the field.

Action Plan

1. Develop an institution page on the social media to provide a platform to the students to interact with the alumni that reflect their competencies and field experiences.

2. The alumni may be invited on social media where they may interact with the students and share their views about their learning and actual demands of the field.
3. Discussion may be arranged on social media with the field workers and their views may be matched with the curriculum.

STRATEGY – IV: Measure the strong and weak areas of the teachers to train them in the light of their weaken areas and may be adjusted in their strong areas.

Actions Plan

1. Strong and weak areas of teachers may be highlighted.
2. Professional training may be arranged to enhance the capabilities of the teachers to cope the challenges of the time.
3. Mentoring facility may be offered to the teachers to fill the Grey areas of the subject.
4. Arrange seminars/workshops on the modern trends in the relevant fields

STRATEGY – V: Establishing Career Center at school level to guide students and to make participation of the students through mock exercises.

Actions Plan:

1. Develop a Career Counseling Center at school level.
2. Assist students in making career choices by using different online available tests.
3. Manage one to one counseling session

STRATEGY – VI: Utilize the option of Job Fairs

Action Plan:

1. Manage trips to job fairs.
2. Manage session with the people who are managing job fairs to discuss their requirements such as skills and knowledge etc.
3. Get information about the emerging sub-fields and the skills required for them.