Chapter III

CHAPTER III

RESEARCH METHODOLOGY

This chapter presents the methodology adopted while conducting this research. It starts with research purpose, research strategy and research approach, followed by the measures used, sampling pattern, data collection and details about the statistical tools and techniques used for analysis.

3.1 RESEARCH PURPOSE

The research purpose and research questions reveal that this study is descriptive in nature. Descriptive research design describes what exists and help to uncover new facts and meaning of the study. Here, this study attempts to find out the influence of personality dimensions and approaches to learning on the female students Career planning attitude by using a questionnaire. Thus, descriptive research design is mostly suitable for this study and the same is applied.

3.2 RESEARCH STRATEGY

Research questions are considered as the first and the most important condition for differentiating among the different research strategies. Since, this research uses a questionnaire to identify the influence of personality on the approaches to learning on the female student's Career planning attitude, survey strategy is appropriate.

3.3 RESEARCH APPROACH

This research adopted quantitative approach. Since responses for the dimensions of the study is collected using a 5 point Likert's scale ranging from 1-5, 1-Strongly Disagree, 2-Disagree, 3-Neither Agree nor Disagree, 4- Agree,5- Strongly agree, which is quantifiable and used for analysis.

3.4 INSTRUMENT VALIDATION

Initially, as said by Churchill Jr. (1979) domain of the constructs is identified through literature review to understand the definitions of the constructs of interest and to identify an exhaustive list of factors. Following the above guidelines, as discussed in

Chapter 2 the study identifies the Personality, Learning approaches and Career planning attitude as the study variables.

3.4.1 Questionnaire used for the study

The scaling technique is a tool used to convert the qualitative information into a quantitative one. This study adopts Likert's 5 point scaling technique to assess the Personality, Learning approaches and Career planning attitude of the respondents.

The researcher used a multi-measure survey questionnaire to assess the Personality, Learning approaches and Career planning attitude along with demographic questions such as Age, Educational Qualification, and Location of residence (Appendix I :Q1-Q3).

Measures used for the study: To assess the study variables namely Personality, Learning approaches and Career planning attitude, the measures adopted for the study are explained in detail.

PERSONALITY

According to Sidek (2005), personality is the dynamic organizations of psychophysical systems in an individual which determines the characteristic behavior and his cognitive abilities. Personality of a student can usually be seen through his interests in particular subjects, recreational activities, hobbies and quality of work he has done. The study considers the most commonly used theory among the personality assessment tools developed by psychologists and social science researchers the Big Five Personality Traits.The study uses the 20 item Big Five factor personality inventory proposed by Buchanan, (2001), which comprises five sub dimensions namely, Conscientiousness, Openness, Extraversion, Agreeableness and Neuroticism.

- Conscientiousness refers to the ability, or inability, of one to one's impulses or desires, i.e. being strong-willed, determined, and high achieving.
- Openness refers to the individuals who are more open to new and non-traditional ideas and are curious about the world around them.
- Extraversion refers to the person's sociability and preference for large groups, in addition to assertiveness, activity level, and talkativeness.

- Agreeableness refers to the general altruistic tendency, being sympathetic and eager to help others.
- Neuroticism refers to the individuals who typically experiences, negative effects, including sadness, anger, embarrassment, and guilt.

APPROACHES TO LEARNING

The concept of approaches to learning has been established in the educational research literature for several decades. Originally, Säljö (1975) and Marton (1976) used a research approach to reveal differences between students in how they approached a specific task. This combination of intention and related processes is called as 'approach to learning'. Although all these components affect the quality and effectiveness of learning outcomes, it is difficult to conceptualize all of the influences on the process of teaching and learning. However, many research findings point out that the approach to learning and study skills are significant factors affecting the quality of student learning. It is also known that the quality of teaching-learning environment and assessment procedures affect student's approaches to learning and ultimately quality of learning outcomes (Marton & Saljo, 1976; Entwistle & Ramsden, 1983; Ramsden, 1988; Biggs, 1993; Hounsell, 1997; Entwistle, 2000a; Entwistle, 2000b; Smith & Miller, 2005; Prosser & Trigwell, 2006; Byrne, et al., 2009). The study uses the three common approaches to learning which contains 52 items generally referred to as Revised Approaches to Students Inventory proposed by Richardson (2005).

Deep Approach: The deep motive is based on internal motivation or curiosity. In the deep approach, there is a personal commitment to learning, which means that the student relates the content to personally meaningful contexts or to existing prior knowledge. Deep processing involves processes of a higher cognitive level than rote learning; searching for analogies, relating to previous knowledge, and theorizing about what is learned.

Surface Approach: A typical surface strategy is rote learning, and surface-motivated students focus on what appears to be the most important items and memorizes them. Because of this focus, they do not see interconnections between the meanings and implications of what is learned.

Strategic Approach: This approach is characterised by the students' intention to excel in assessed work with the focus on effective organisation, time management and self-regulation and achieves higher quality learning outcomes. The strategy approach is adopted to maximize the chances of obtaining high marks.

CAREER PLANNING ATTITUDE

The process of choosing a career is very important in one's life because the choice he or she makes would determine his or her future. An individual has to know the nature of the career that he has chosen whether or not it is suitable to his interests and potentials. If the career suits an individual, ultimately he would like the profession and would feel satisfied towards the job. Meanwhile, choosing a career would involve interests, capabilities, attitude and self-personality. Students who have clear pictures on their interests, capabilities, skills, attitudes and personality would have a high level of self motivation to study and work hard in order to improve their academic achievements with their plans for the future. Rohany (2003) believed that secondary school students usually face problems when it comes to career choice. Some of the factors contributing to this phenomenon would be lack of confidence in decision making, not informative enough about certain career, no interests in planning a career and not mature enough in choosing a career. Career theorists have agreed that to attain Career Decisiveness, the most desirable state of career decision making requires immense amount of planning and a level of career maturity (attitude and competency) that is characterized by an exploration of one's ability, knowledge of available careers, employment, and training opportunities (Gottfredson, 1981). Rottinghaus et al. (2005) developed the Career Futures Inventory (CFI), which is popular and measures the career identity status or career plan. It measures positive career planning attitude through career-related Adaptability, Optimism, and Knowledge. These three factors appear to be an essential basis for successful career planning which leads to career decisiveness.

Career Adaptability: It is an individual's readiness to deal with and adjust to changes in the future, the willingness to take increasing work responsibilities, as well as the capability to adjust quickly in case of unexpected alteration of the career plan.

Career Optimism: Relates to the attitude of expecting the best possible outcome for the future career. Furthermore, it describes individuals who are optimistic and positive concerning the prospects of their career development and feel comfortable with completing career planning tasks.

Career Knowledge: Measures the individuals' perceptions concerning their comprehension of job market and employment trends. Generally, students who are informed with regard to the job market are able to make better career-related decisions.

Table 3.1. Measures used for the study

Construct	Operational definition	Author	Number of Items
Agreeableness(A)	Portrays people's attitude to interact with others, considered to be trusting, friendly and cooperative.	Buchanan (2001)	4
Extraversion(E)	They are considered to be energetic and tend to have the company of others		4
Neuroticism(N)	Reflects one's tendency to experience negative thoughts and feelings and to be prone to insecurity and emotional distress.		4
Openness (O)	Reflects open mindedness, imaginative, creativity and the seeking out for cultural and educational experiences.		4
Conscientiousness (c)	Observed to be organized and persistent in pursuing goals.		4
Deep Learning (DL)	Students using a deep approach start with an intention to understand for themselves, linking new ideas to what they already know, and looking for recurring patterns and underlying principles (holist thinking).	Richardson, (2005)	20
Surface Learning (SL)	Student's motive to learn is to only carry out the task because of external positive or negative consequences.		16

Construct	Operational definition	Author	Number of Items
Strategic Learning (STL)	Focus is to obtain high marks, highly organized approach		16
Career adaptability (CA)	The way an individual views his or her capacity to cope with and capitalize on change in the future, level of comfort with new work responsibilities, and ability to recover when unforeseen events alter career plans.	Rottinghaus et al. (2005)	11
Career Knowledge(CK)	Assesses perceptions of how well an individual understands job market and employment trends.		11
Career optimism(CO)	A disposition to expect the best possible outcome or to emphasize the most positive aspects of one's future career development, and comfort in performing career planning tasks.		3

Following this, the study ensures Content validity. Mason & Bramble (1989) defined validity as the degree to which a test measures what it is supposed to measure. According to Cronbach & Meehl (1955) the researchers need to check Content validity and Criterion oriented validity to ensure that the construct and sub constructs represented the domain areas promptly.

3.4.2 Content Validity

Cronbach & Thorndike (1971) and Rogers (1995) state that, Content validity measure the degree to which items in an instrument reflected the content universe to which the instrument would be generalized. One of the common methods to establish the content validity is through discussion and arriving at consensus with experts or panel members (Lawshe, 1975; Guion, 1978; Tittle, 1982; Lynn, 1986; Hambleton & Rogers, 1991). Panel members identify that the questions in that construct related to that construct or not and tend to measure the characteristics of that construct or not. The present study ensures content validity using two practitioners and three academicians as panel members. Based on the

recommendations of the panel members the following items were reworded thus strengthening the constructs and thereby ensuring content validity. From the Big five personality traits, Question 1) “My remarks, sometimes, deeply, offend other students” was reword as “My comment sometimes deeply hurt other students”. 2) “I prefer voting for conformist leaders of students.” was reworded as “I prefer voting for accepted leaders of students”.

From the Learning approaches, Question 1) “I usually set out to understand for myself the meaning of what we have to learn.” was reword as “I usually try to understand by myself the meaning of what we have to learn”. 2) “I like to play around with ideas of my own even if they don't get me very far.” was reworded as “I like to play around with ideas of my own even if it is not very useful”. 3) “I like to be told precisely what to do in essays or other assignments.” was reworded as “I like to be told exactly/in exact terms what to do in essays or other assignments”. 4) “I gear my studying closely to just what seems to be required for assignments and exams.” was reworded as “I learn only what is required for exams”.

From the Career Futures Inventory, Question “Planning my career is a natural activity” was reworded as “Planning my career is a natural practice, etc…” Accordingly, the questions were modified based on the feedback provided by the panel thus strengthening the constructs and thereby ensuring content validity.

3.4.3 Reliability of the constructs

Reliability of the instrument is ensured after ensuring the content validity of the constructs, sequence of the questions in each construct and the inference of the questions through literature review and expert opinion. This needed empirical data. Consequently, a pilot study was conducted. A sample of fifty five respondents from five educational institutions are contacted to validate the instrument. The respondents for the study are the students in their final year of their Undergraduate and Postgraduate programmes, since they are in the stage of making a career decision.

Reliability is the degree to which measurements are free from error and therefore yield consistent results. According to Carmines and Zeller (1979) reliability concerns the extent to which an experiment, test or any measuring procedure yields the same results on

repeated trials. As a pre-requisite for reliability analysis Churchill (1979) highlights the need to purify the items. Purification of constructs is normally done by observing the corrected Item Total Correlation (CITC) score of each item of a construct and deleting items with a score of less than zero and any item that produces a considerable or sudden drop in CITC scores (Cronbach, 1951). The CITC score is a good indicator of how well each item contributes to the internal consistency of a particular construct as measured by the Cronbach's Alpha (α) coefficient. The low CITC score (below 0.5) suggests that some items did not share equally in the common core and therefore needs elimination. Further, following the guidelines established by Nunnally (1978) this research considers an Alpha score of higher than 0.70 as acceptable.

Table 3.2. Reliability of the constructs

Constructs	No. of items	Reliability (Cronbach alpha)	
Agreeableness	4	0.875	0.914
Extraversion	4	0.781	
Neuroticism	4	0.784	
Openness	4	0.720	
Conscientiousness	4	0.842	
Deep Learning	20	0.917	0.902
Surface Learning	16	0.728	
Strategic Learning	16	0.834	
Career Adaptability	11	0.889	0.942
Career Knowledge	11	0.733	
Career Optimism	3	0.911	

From table 3.2, it is inferred that all the constructs satisfies the guidelines established by Nunnally (1978). Therefore, further purification is not needed pertaining to the constructs.

3.4.4 Construct Validity

Construct validation measures how well the test or measure reflects the target construct (Cronbach & Meehl, 1955) and is ensured through convergent and discriminant validity (Fornell & Larcker, 1981). Convergent validity measures the extent to which each item in a construct correlates with other items in the same construct. According to Chau (1997) high inter-item correlation within each construct indicates convergent validity.

The convergent validity for each construct is determined by checking the average variance extracted (AVE) values and their correlation coefficients. The AVE represents the proportion of the overall variance in the items of a latent construct that is explained by the latent construct itself. AVE represents the average squared loading (i.e. average communality) of the items constituting a latent construct. A latent construct is deemed to have acceptable convergent validity if it had an AVE greater than 0.5. Convergent validity is ensured using Partial Least Square Method (PLS) a Structural Equation Modeling (SEM) technique (Bagozzi & Fornell, 1982). Convergent validity is assessed by checking whether the AVE of each construct is greater than 50 percent and composite reliability greater than 70 % (Fornell & Larcker 1981; Diamantopoulos & Winklhofer 2001; Rossiter 2002).

Following the above guidelines the convergent validity of the constructs pertaining to the study is ensured. Table 3.3 portrays the convergent validity scores i.e. AVE and Composite Reliability values for all the constructs. Table 3.2 reveals that all the constructs have their AVE values greater than or equal to 0.5 and Composite Reliability greater than 70 percent thereby revealing no problems of convergent validity.

Table 3.3. Convergent validity of the constructs

Constructs	Composite Reliability	Average Variance Extracted (AVE)
Agreeableness	0.914	0.728
Extraversion	0.861	0.612
Neuroticism	0.861	0.610
Openness	0.794	0.512
Conscientiousness	0.894	0.678
Deep Learning	0.929	0.622
Surface Learning	0.707	0.498
Strategic Learning	0.827	0.617
Career Adaptability	0.908	0.576
Career Knowledge	0.821	0.605
Career Optimism	0.925	0.580

After ensuring convergent validity, discriminant validity of the constructs is ensured. Discriminant validity measures the extent to which the items of a construct did not correlate well with items of other constructs and shares more variance with its own items than with other constructs (Chin, 1998). Chau (1996) and (1997) claims a construct to possess discriminant validity when an item correlates more highly with items intended to measure the same construct than with items used to measure a different construct. Sufficient discriminant validity exists when the square root of the AVE of a construct exceeds the correlations between the latent construct and all other latent constructs (Fornell & Larcker, 1981; Gefen et al., 2000). Following the above guidelines the square roots of the AVE values of the latent constructs are calculated for the constructs.

The values are compared with the absolute value of the construct correlation between the latent constructs. As detailed in table 3.4 the inter-correlations and square roots of AVE's reflected no problems with discriminant validity.

Table 3.4. Discriminant measure of the constructs

Constructs	A	C	CA	CK	CO	DL	E	N	O	SL	STL
A	**0.853**										
C	0.402	**0.823**									
CA	0.514	0.519	**0.758**								
CK	0.286	0.552	0.689	**0.778**							
CO	0.385	0.573	0.726	0.609	**0.762**						
DL	0.544	0.515	0.720	0.602	0.530	**0.788**					
E	0.738	0.528	0.669	0.381	0.513	0.729	**0.782**				
N	0.577	0.575	0.656	0.521	0.574	0.644	0.662	**0.781**			
O	0.368	0.556	0.479	0.398	0.458	0.522	0.512	0.477	**0.716**		
SL	0.320	0.326	0.484	0.286	0.423	0.388	0.383	0.398	0.360	**0.706**	
STL	0.565	0.585	0.618	0.501	0.498	0.744	0.722	0.629	0.467	0.363	**0.785**

3.4.5 Criterion Validity

Criterion related validity is the degree to which a measurement instrument can predict a variable that is designated as a criterion. Coefficient of determination (R^2) is the percentage of the total variation in the dependent variable explained by the independent variables. In order to examine criterion validity, the coefficient of determination is analyzed and tested whether it is greater than 25% (Heiman, 1998). Table 3.5 portrays the R^2 value of the constructs Career Adaptability, Career Knowledge and Career Optimism. Since the R^2 value of the constructs Career Adaptability, Career Knowledge and Career Optimism are greater than 25%, criterion validity is ensured. To ensure criterion validity Smart PLS software is used.

Table 3.5. Criterion validity of the constructs

Construct	R^2 value
Career Adaptability	0.628
Career Knowledge	0.487
Career Optimism	0.466

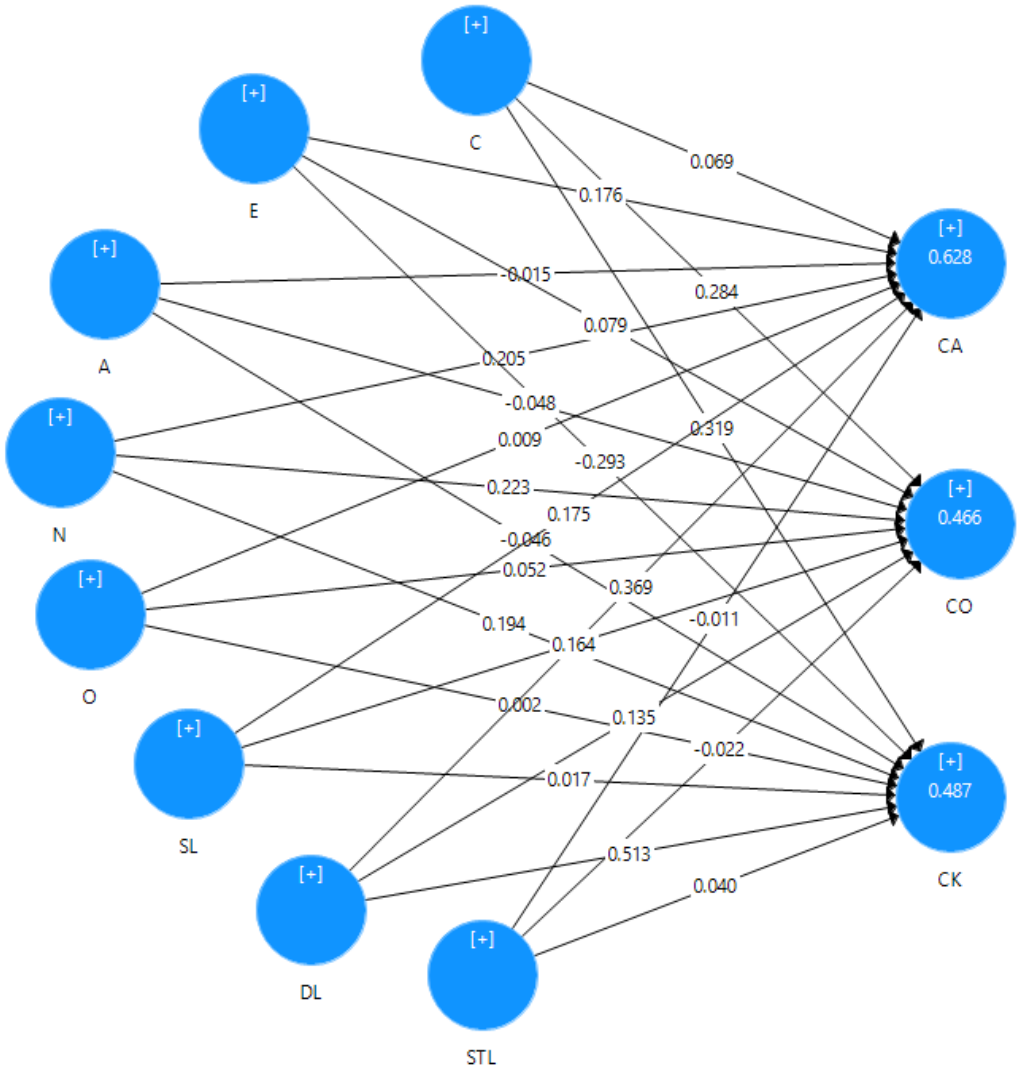

Figure 3.1. Criterion validity of the Constructs

Note: The values inside the construct indicates R^2 values

3.5 SAMPLING AND TARGET POPULATION

According to Malhotra and Birks, (2003) researchers should define the target population in terms of elements, sampling units, extent and time. An element is an object from which information is desired. In survey strategy the element is usually the respondent. A sampling unit is a unit that contains the element that is available for selection at some stage of the sampling process. Extent refers to the geographical boundaries of the research and time refers to the period under consideration.

The purpose of this study is to identify the influence of personality and the approach to learning on the female student's career planning attitudes. The respondents for the study are the female students belonging to Arts and Science, Engineering and Management disciplines. The study excluded students pursuing Medicine and Law. The present research felt the population too exhaustive since there are many colleges in India. Coimbatore is placed second in Tamil Nadu after Chennai with respect to the number of educational institution. Hence, as a representation of the Education sector in Tamilnadu the study identified its sampling frame as those Colleges within the boundaries of Coimbatore city.

There are 93 colleges offering Arts and Science programmes (as per Bharathiar University list), 73 colleges offering Engineering programmes (as per Anna University list). The respondents for the research comprises of the under graduate and post graduate female students. The research adopts Systematic Random sampling with regard to the selection of Colleges and convenience sampling with regard to the selection of students from each college. The list of colleges are arranged in alphabetical order and every fifth college from Arts and Science stream and Engineering Stream were included for the study. Therefore the study included 18 Arts and Science Colleges and 14 Engineering Colleges. From each college responses are collected from 30 students, of which 18 were pursuing final year of their Undergraduate programme and 12 were pursuing final year of their postgraduate programme. 960 questionnaires were distributed (18 Arts and Science Colleges + 14 Engineering Colleges *30 students) of which 900 questionnaires were received. Of the 900 questionnaires, received 120 questionnaires were eliminated due to incompleteness. Therefore, the sample size for the study is 780 respondents. The response rate is 81.25%.

3.6 DATA COLLECTION

According to Bernard, (2002) data gathering is crucial in research, as the data is meant to contribute to a better understanding of a theoretical framework. The respondents are contacted in person and the importance of the study is explained to them before administering the questionnaire. Sufficient time is given to the respondents for filling up the questionnaire. While collecting back the questionnaires it is ensured that all the questions are answered and no question is left unanswered. The entire data is consolidated and used for the analysis. Data is collected during July to September 2015. Secondary data is collected from journals, books, newspapers, survey reports, authorized websites and business magazines.

3.7 TOOLS USED FOR ANALYSIS

Data collection is a basic part of research, which must be performed for all researchers, such kind of data are investigated through various statistical tools. In this research the following statistical tools are applied and evaluated in line with the objectives of the study.

Percentage Analysis

The percentage analysis is used to express the percentage of respondents falling under each category. It describes the total frequency of respondents or responses in percent format. Percentage analysis is used to portray demographic profile which includes Age, Educational Qualification, and Location of Residence of the respondents.

Descriptive Statistics

Descriptive Statistics is carried out to examine the perceived level of importance of the dimensions of Agreeableness, Extraversion, Neuroticism, Openness and Conscientiousness, Deep, Surface and Strategic approaches to learning, Career adaptability, Optimism and Knowledge among the respondents.

Cross tabulation

Cross-tabs or cross tabulation is a quantitative research method appropriate for analyzing the relationship between two or more variables. Data about variables is recorded in a table or matrix. A sample is used to gather information about the variable.

In this study it is used to portray the distribution of students across disciplines and location of residence of the respondents.

Average score Analysis

Based on the consolidated opinion from five point scaling technique for different categories of respondents, the weighted average score is calculated to assess the level of agreeability of the respondents. Weights are assigned to the Likert scale responses as '5-Strongly Agree'; '4-Agree'; '3-Neutral'; '2-Disagree'; and '1-Strongly Disagree'. It is calculated for the study variables across the demographic factors namely Age, Graduation type, Location of Residence of the respondents.

Analysis of variance

Analysis of variance is a powerful and common statistical procedure in the social sciences. Anova is used to test the significant difference in the mean values of more than two groups. It is used to test the significant difference in the perception of respondents on demographic factors across the study variables Personality, Learning approaches and Career planning attitude variables.

Correlation Analysis

Correlation Analysis measures the relationship between two items. The resulting values called the "correlation co-efficient" shows the extent to which changes in one item will result in change in the other item. It is used to measure the relationship between the dimensions of Personality, Learning approaches and Career planning attitude variables.

Path Modeling

The hypotheses are tested using Structural Equation Modelling (SEM) technique. SEM enables researchers to answer a set of interrelated research questions in a single, systematic and comprehensive analysis by modelling the relationship between multiple and dependent constructs simultaneously. SEM assesses the structural model, the assumed causation among a set of dependent and independent constructs and evaluates the measurement model loading of observed items (measurements) on their expected latent (constructs). The result is hence a more rigorous analysis of the proposed research

model and Gefen et al. (2000) views it as a better methodological assessment tool. Hence, this study uses Smart PLS software to perform the analysis. Path modelling is performed to examine the:

- Influence of Personality and approaches to learning on Career Planning attitude
- Influence of Personality, Deep, Surface and strategic approaches to learning on Career Planning attitude
- Moderating effect of Learning approaches on the realtionship between Personality and Career Planning attitude
- Moderating effect of Deep approaches to learning on the realtionship between Personality and Career Planning attitude
- Moderating effect of Surface approaches to learning on the realtionship between Personality and Career Planning attitude
- Moderating effect of Strategic approaches to learning on the realtionship between Personality and Career Planning attitude

3.8 CONCLUDING REMARKS

The research study is descriptive in nature and adopts survey strategy. Content validity, Reliability of the constructs, Construct validity for each constructs is performed. The respondents for the study comprises the final year undergraduate and post graduate students from Arts and Science, Engineering discipline and final year students pursuing their MBA programme in Coimbatore district. The tools and techniques used for the analysis are discussed. The following chapter presents the results of the data analysis.