Chapter -II

Method and Procedure
Research process is the combination of research method, formulation of the problem, selection of the subjects for investigation, validation of tools for data collection, analysis and interpretation of data, processes of inferences and generalizations. Whereas, research design is the research process that involves the overall assumptions of the research to the method of data collection and analysis (Creswell, 2009). This chapter deals with method of the study, field of investigation, criteria of selection of colleges, criteria of selection of students, sample and sampling technique, description of the tools and statistical techniques employed.

**Method of the Study**

Research can be classified in terms of their purpose. Accordingly, they are most often classified as exploratory, descriptive or explanatory (Saunders, Lewis & Thornhill, 2009). Burns and Grove (2009) define a research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings.

The method employed to study the present investigation was descriptive survey method. The descriptive survey method describes and interprets ‘what is’. It is concerned with conditions that exist, opinions that are held, and processes that are going on, effects that are evident or trends that are developing. It is primarily concerned with the present events, although it often considers past influences as they relate to current conditions. Descriptive research deals with the relationship between the variables, testing of hypotheses and the development of generalizations, principles or theories that have universal validity (Best & Kahn, 2010).

The present study was designed to study dependent variable of career decision-making in relation to independent variables of chance events, emotional intelligence and social context among undergraduate students from Degree colleges of Mohali and Chandigarh. It was also designed to find out the gender and academic stream differences on the variables of chance events, emotional intelligence, social context and career decision-making. The study was further designed to find out the significant predictors of career decidedness and career indecision from among the independent variables of chance events, emotional intelligence and social context.
In the present study, survey method was used to collect data from a large number of population within a particular time period by using appropriate tools as per the variables under study to test hypotheses. It is also descriptive in the sense that aims at exploring the nature and distribution of variables.

The study is also co-relational in nature and approach. Because it aims at co-relating the dependent variable of career decision-making with independent variable of chance events, emotional intelligence and social context.

Besides these, to find out the correlates and predictors of criterion variable of career decision-making from amongst predictor variables of chance events, emotional intelligence and social context, multiple regression analysis was employed.

**Field of Investigation**

The field of investigation for the present study were Degree colleges of Chandigarh and Mohali. In all, there are a total of 10 colleges in Chandigarh (N=8) and Mohali(N=2). Out of these, eight colleges fall under Panjab University, Chandigarh and two under Punjabi University, Patiala.

**Criteria of Selection of Colleges**

The present study was delimited to collect data from Chandigarh and Mohali. Chandigarh is divided into three phases. Phase I (Northern Sectors) comprise Sector 1 to 30, Phase II (Southern Sectors) Sector 31 to 47 and Phase III that comprises Sector 48 onwards. For the present study, Phase I and Phase II were determined for data collection as no college was located in Phase III of Chandigarh city. In order to give due representation of population, three colleges were selected randomly from the list of colleges of Chandigarh. The second area for data collection was Mohali District. There were two colleges in District Mohali. By using random sampling technique, one college was identified to collect the sample for the study. Thus, a total of three colleges were identified to collect the sample from Chandigarh and one college from Mohali. At the same time, care was also taken that only those colleges were selected which offered the three academic streams of arts, commerce and science.
The list of selected colleges is being presented vide Table 2.1

### Table 2.1: List of Selected Colleges

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Region</th>
<th>Name of College</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chandigarh</td>
<td>Guru Gobind Singh Khalsa College, Sector-26, Chandigarh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MCM DAV College, Sector- 36 A, Chandigarh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post Graduate Government College, Sector 46-B, Chandigarh</td>
</tr>
<tr>
<td>2.</td>
<td>Mohali</td>
<td>Government College, Phase-6, Mohali</td>
</tr>
</tbody>
</table>

### Criteria of Selection of Students

The first step of selection was to select the colleges for data collection. Following criteria was employed while selecting undergraduate students for the present study:

- First year undergraduate students pursuing their degree in academic streams i.e. arts, commerce, science (Medical and Non Medical)
- Only those students who were present on the days of data collection and those who completed all the research tools.

### Sample and Sampling

Research work is governed by inductive thinking in which researcher proceeds from specific situation to general one. A sample is a small and representative proportion of a population selected for observation and analysis. It is a collection consisting of a units or sub-units of the individuals of population which is selected for the purpose of representing the population. By observing and analyzing the disposition of the sample, certain inferences can be made for the population from which it is drawn. A sample is a relatively small window through which the investigator hopes to see the outlines of some larger, more inclusive reality, while in other cases it might misrepresent it, leading the investigator to erroneous conclusions (Lowry, 2013).
Thus, it is essential that the study should have an adequate and representative sample size.

The process through which a sample is extracted from a population is called as sampling. Sampling means selection of individuals from the population in such a way that every individual has equal chance to be taken into the sample. The more the sample is representative of the population, the higher would be the accuracy of inferences and better would be the results for generalisation. Sampling may be defined as the act, process or technique of selecting a representative part of a population for the purpose of determining parameters or characteristics of the whole population (Agresti & Finlay, 2009).

The present study employed probability sampling which states that every member of the population has a known (non zero) probability of being included in the sample. For the present study, a sample of undergraduate students (first year students only) was planned to be drawn from Degree Colleges of Chandigarh and Mohali by employing random sampling technique. The representativeness of the sample was ensured with respect to class and availability of arts, commerce and science streams.

At the first stage, list of degree colleges in Chandigarh and Mohali was prepared. The list of colleges was taken from official website of College Development Council, P.U., Chandigarh and official website of Punjabi University, Patiala. At the second stage, three colleges of Chandigarh were selected by employing random sampling technique. Also sample was drawn from the two colleges of Mohali, One out of two colleges was selected by using random sampling technique. At the third stage, from the final list of colleges, one section of the students from the academic streams i.e. arts, commerce and science, were selected randomly. Finally, at the fourth stage, the selected students were administered the tools used for the present study.

Besides this college-wise, stream-wise and sex-wise breakup of the sample from Degree colleges of Chandigarh and Mohali has been presented in Table 2.2.
Table 2.2: College-wise, Stream-wise and Sex-wise Breakup of the sample from Degree Colleges of Chandigarh and Mohali

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the College</th>
<th>Gender</th>
<th>Arts</th>
<th>Commerce</th>
<th>Science</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Guru Gobind Singh Khalsa College, Sector-26, Chandigarh</td>
<td>Male</td>
<td>27</td>
<td>27</td>
<td>10</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>8</td>
<td>12</td>
<td>39</td>
<td>59</td>
</tr>
<tr>
<td>2.</td>
<td>MCM DAV College, Sector-36 A, Chandigarh</td>
<td>Male</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>40</td>
<td>49</td>
<td>49</td>
<td>138</td>
</tr>
<tr>
<td>3.</td>
<td>Post Graduate Government College, Sector 46-B, Chandigarh</td>
<td>Male</td>
<td>30</td>
<td>15</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>8</td>
<td>27</td>
<td>-</td>
<td>35</td>
</tr>
<tr>
<td>4.</td>
<td>Government College, Phase-6, Mohali</td>
<td>Male</td>
<td>25</td>
<td>34</td>
<td>27</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>12</td>
<td>23</td>
<td>20</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>150</td>
<td>187</td>
<td>145</td>
<td>482</td>
</tr>
</tbody>
</table>

Tools Employed

Following research tools were employed to collect data:

- Career Decision-Making Inventory by Singh (2014)
- Chance Events Questionnaire (self-constructed by Investigator)
- Emotional Intelligence Scale by Hyde, Pethe and Dhar (2002)
- Social Context Scale (self-constructed by Investigator)

Description of the Tools

A brief description of the tools employed in the present study is being presented as under:

- **Career Decision-making Inventory (CDMI; Singh, 2014)**

Career Decision-making Inventory (CDMI) is an 18 item self-report measure to assess the career decidedness and career indecision. It consists of career decidedness (5 items) and career indecision (13 items). The test items are printed in a reusable booklet designed to be used with a separate answer sheet, respondents are asked to circle the three options i.e. exactly like me, somewhat like me and not at all like me, on the basis of how closely the items describe them.

  i. **Decidedness Scale**: Decidedness scale provides a measure of the degrees of decidedness in having made a decision about career. To obtain the raw scores for decidedness scale ratings of item 1 through 5 are added. The decidedness scale score which are at the 15th percentile or less should be considered significant suggested that the student is uncertain about the selection of career.
ii. **Indecision Scale:** It is a measure of career indecision. Total ratings for items 6 through 18 are added and thus raw scores are obtained for the indecision scale. The score on indecision scale which equals or exceed the 85th percentile are considered significantly indicating a serious level of indecision.

**Scoring**

Each item alternative is assigned a weightage ranging from 3 to 1. 3 is given to exactly like me, 2 is given to somewhat like me and is given to not at all like me.

**Reliability**

The test retest reliability coefficients for career decidedness scale and career indecision scale were found to be 0.97 and 0.94 respectively.

**Validity**

The criterion related with Career Decision Scale (Osipow, 1986) yielded significant coefficients of correlation of 0.69 and 0.59 for career decidedness scale and Career Indecision scale.

**Norms**

Grade wise and sex wise percentile norms to categorise the students as either decided, tentative or undecided were used as per manual.

- **Chance Events Questionnaire (Developed and Standardized by Investigator)**

In order to measure influence of Chance Events of undergraduate students in the present study, Chance Events Questionnaire was developed and standardized by the investigator. Chance events questionnaire was developed on the basis of nine factors i.e. Interaction or Connections, Activities, Witness, Obstacles, Modelled Careers, Situational, Recommendations, Restrictions and Other unexpected or unpredictable events. Although, the investigator is assessing influence of chance events only on the basis of total score of Chance Events Questionnaire The tool is closed-ended questionnaire comprising of 35 items (events) that influence career or academic decisions of undergraduate students. The tool was found to be valid on the basis of Face and Content Validity. Split-half method of reliability co-efficient of correlation was found to be 0.51 and Cronbach’s Alpha reliability was calculated found to be 0.59. The details of development and standardization of Chance Events Questionnaire is being presented in Chapter III.
Emotional Intelligence Scale (Hyde, Pethe & Dhar, 2002)

Emotional intelligence scale was developed by Hyde, Pethe and Dhar (2002). The scale is consisted of 10 domains having 34 items, each to be rated on a five-point scale ranging from ‘strongly agree’ (5) to ‘strongly disagree’ (1). The statements relate different components of emotional intelligence like self-awareness (4 items), empathy (5 items), self-motivation (6 items), emotional stability (4 items), managing relations (4 items), integrity (3 items), self-development (2 items), value orientation (2 items), commitment (2 items), and altruistic behavior (2 items). The obtainable score ranges from 34 to 170 where higher score indicates higher level of emotional intelligence. There are no negative items.

Reliability

The reliability of the scale has been determined by calculating reliability coefficient on a sample of 200 subjects. The split-half reliability coefficient has been found to be 0.88.

Validity

Besides face validity, as all items are related to the variable under focus, the scale has high content validity. It is evident from the assessment of experts that items of scale are directly related to the concept of emotional intelligence. In order to find out the validity from the coefficient of reliability (Garrett, 1981), the reliability index has been calculated, which indicated high validity on account of being 0.93.

Detail of items pertaining to various domains:

1. **Self-awareness** was measured by item number 6,12,18,29.
2. **Empathy** was measured by item number 9, 10, 15, 20 and 25.
3. **Self motivation** was measured by item number 2, 4, 7,8,31 and 34.
4. **Emotional stability** was measured by item number 14, 19, 26 and 28.
5. **Managing relations** was measured by item number 1,5,11 and 17.
6. **Integrity** was measured by item number 16, 27 and 32.
7. **Self-development** was measured by item number 30 and 33.
8. **Value orientation** was measured by item number 21 and 22.
9. **Commitment** was measured by item number 23 and 24.

10. **Altruistic behavior** was measured by item number 3 and 13.

**Scoring**

All the items or statements were scored 5 for strongly agree, 4 for Agree, 3 for Neutral, 2 for Disagree and 1 for Strongly Disagree. The sum of score of these items gives the total score for emotional intelligence.

**Norms for Interpretation of Raw Scores**

Norms for interpretation of raw scores of emotional intelligence (total) and dimensions of emotional intelligence were as follows in Table 2.4:

**Table 2.4 Norms for Interpretation of Raw Scores of Emotional Intelligence Scale (Total)**

<table>
<thead>
<tr>
<th>Range</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>51 and below</td>
</tr>
<tr>
<td>Normal</td>
<td>52-84</td>
</tr>
<tr>
<td>High</td>
<td>85 and above</td>
</tr>
</tbody>
</table>

**Table 2.5. Norms for Domain wise Interpretation of Raw Scores of Emotional Intelligence Scale**

<table>
<thead>
<tr>
<th>Domain Name</th>
<th>Low</th>
<th>Normal Range</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Awareness</td>
<td>3 and below</td>
<td>4-10</td>
<td>11 and above</td>
</tr>
<tr>
<td>Empathy</td>
<td>6 and below</td>
<td>7-14</td>
<td>15 and above</td>
</tr>
<tr>
<td>Self-motivation</td>
<td>8 and below</td>
<td>9-17</td>
<td>18 and above</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>3 and below</td>
<td>4-10</td>
<td>11 and above</td>
</tr>
<tr>
<td>Managing Relations</td>
<td>4 and below</td>
<td>5-11</td>
<td>12 and above</td>
</tr>
<tr>
<td>Integrity</td>
<td>3 and below</td>
<td>4-7</td>
<td>8 and above</td>
</tr>
<tr>
<td>Self-development</td>
<td>1 and below</td>
<td>2-5</td>
<td>6 and above</td>
</tr>
<tr>
<td>Value orientation</td>
<td>1 and below</td>
<td>2-5</td>
<td>6 and above</td>
</tr>
<tr>
<td>Commitment</td>
<td>1 and below</td>
<td>2-5</td>
<td>6 and above</td>
</tr>
<tr>
<td>Altruistic Behaviour</td>
<td>1 and below</td>
<td>2-5</td>
<td>5 and above</td>
</tr>
</tbody>
</table>
➢ **Social Context Scale (Developed and Standardized by Investigator)**

In order to measure influence of social context of undergraduate students in the present study, Social Context Scale was constructed and standardized by the investigator. Social Context Scale was developed on the basis of four dimensions i.e. Influence of family, influence of friends influence of teachers and influence of media. The tool is a five point Likert scale comprising of 25 items that influence career or academic decisions of undergraduate students. The tool was found to be valid on the basis of Face and Content Validity. Split-Half method of reliability co-efficient of correlation was found to be 0.70 and Cronbach’s Alpha reliability was calculated found to be 0.72. The details of development and standardization of Social Context Scale has being present Chapter III.

**Statistical Techniques Employed**

To analyze the data at different stages of investigation in accordance with various objectives of the study, different statistical techniques were used for the present study. These are as follows:

- Descriptive statistics (Mean, Standard Deviation, Skewness and Kurtosis)
- Differential Analysis
- Bivariate Analysis
- Multivariate Analysis

**Descriptive Statistics**

Descriptive analysis was carried out to find the nature of variables under study viz. chance events, emotional intelligence, social context and career decision-making. Measures of central tendency such as mean, standard deviation, skewness and kurtosis were worked out to describe the nature of variables.

**Differential Analysis**

‘t’-test was employed to:

- Compare male and female undergraduate students on the variables of Chance events, Emotional Intelligence, Social Context and Career decision-making.
One-way ANOVA was employed to:

- Compare undergraduate students pursuing academic stream i.e. arts, commerce and science on the variables of Chance Events, Emotional Intelligence, Social Context and Career decision-making.

**Bivariate Analysis**

To find out how the independent variables are associated with the career decision-making, bivariate analysis was employed. The product moment coefficient of correlations was worked out to obtain the nature and extent of relationship between Career decision-making and Chance events, Emotional intelligence and Social context.

**Multivariate Analysis**

Stepwise multiple correlations and multiple regression coefficients were computed in order to find out the level of contribution of independent variables i.e. Chance events, Emotional intelligence, Social context towards the dependent variable of Career decision-making.

In order to statistically analyse the data, SPSS Version 21.0 was employed.