CHAPTER 3
RESEARCH METHODOLOGY

Design and Variable Network.

*Independent Variables*: Managerial position and organizational hierarchy age, work-experience, birth-order, migration to city, family system, place of upbringing & educational qualification

*Intervening Variable*: Personality factors

*Dependent Variable*: Managerial Performance

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<th>Independent Variables</th>
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<td>managerial position, experience, age, birth-order, qualifications, managerial grade, department, upbringing, migration to city, family system.</td>
<td><em>personality factors of managers</em></td>
<td>managerial performance as measured by the managerial effectiveness scores</td>
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The study has been restricted to studying personality factors as the only intervening variable. However, the researcher is well aware that other variables as organizational culture, climate and structure are also significant in understanding managerial effectiveness. This has also been accepted as a limiting feature of the study. Alternative designs are possible too.

All variables were studied in relation to managerial performance (dependent variables). It means that all the demographic and situational variables were studied in relation to managerial performance and personality factors were also studied in relation to managerial performance.

The interactional effect of the independent - intervening variables on the dependent variable was left out. The main focus of the study from the onset was to identify the personality factors that influence managerial performance.

Operational Definitions:
The relevance of the below stated variables to the objectives of the present study are discussed at the Introduction (refer to pg. ?? - ??). The operational definitions in terms of levels at which the particular variables are treated are mentioned below:

1. **Personality**: Personality is the organization of the individuals perceptual, cognitive, emotional, moral and motivational systems that determine his unique response to his environment.

2. **Managers**: Two groups of managers were identified depending on their nature of involvement in the study — the target and the reference groups. The target group consisted of middle and junior managers whereas the reference group consisted of senior, middle and junior managers.
3. **Effective manager**: An effective manager can be defined as one who has achieved high levels of quality and quantity of work performance, generating high levels of satisfaction and commitment amongst employees.

4. **Total experience in industry**: Managers in this study were categorized into the following categories:
   1. less than five years
   2. 6 - 10 years
   3. 11 - 15 years
   4. 16 and above

5. **Experience in this organization**: Managers in the study were categorized into the following:
   1. less than five years
   2. 6 - 10 years
   3. 11 - 15 years
   4. 16 and above

6. **Age**: Managers of the study were categorized into the following categories:
   1. 20 - 30 years
   2. 31 - 40 years
   3. 41 - 50 years
   4. 51 and above

7. **Birth - order**: Managers were grouped in the following ways:
   1. First born
   2. Second born
   3. Third / middle born
   4. Last born

8. **Maximum educational qualification attained**: Managers were categorized into the following categories:
   1. H.S.C and below
   2. Graduation / diploma
   3. Post - graduation
   4. Degree in engineering / M.B.A.

9. **Managerial grade**: Two hierarchies of managers were selected namely:
   1. Middle manager
   2. Junior managers
10. **Migration to city**: Managers were categorized into the following categories;
   1. Grandfather  
   2. Father  
   3. Self

11. **Place of upbringing — (school and college)**: Managers were grouped into the following categories:
   1. Village  
   2. Town  
   3. City

12. **Family system**: Managers were grouped into the following categories namely:
   1. Joint / extended family  
   2. Nuclear family

13. **Self - rating**: In order to gain confidence in the technique of Rating scales and to establish its reliability it was put to test. Each manager of the target group rated himself, as he perceived himself on a 5 - point scale on the twenty dimensions of the California Psychological Inventory.

14. **Senior’s rating**: The senior manager were asked to rate the manager on the same dimensions as stated above.

15. **Colleague’s rating**: The colleague of the target manager was asked to rate the manager on the 20 - dimensions of the C.P.I. on a 5 - point scale.

16. **Junior’s rating**: The target managers immediate junior was asked to rate him on the same dimensions as given above.

17. **Self - report inventory**: The California Psychological inventory was identified to study the personality profiles of managers. It is self - administrative inventory, consisting of 462 statements to be answered in yes or no. The study uses the revised version (Gough, 1987). It measures 20 - folk- concepts, three vector scales and special scales.
18. *Senior's nomination*: The senior's nomination was used as a measure to study the performance effectiveness of managers at work. The senior manager(s) were asked to identify managers who were more effective at work than the remaining managers. This criterion was later correlated to other objective measures of managerial performance.

19. *Managerial performance effectiveness scale*: Managers belonging to the senior positions and academicians were asked to describe in their own words what went into making the manager effective. Based on their responses three dimensions of performance evaluation were identified namely:

- Orientation towards work, attitude towards others and attitude towards the self.
- Managers were to rate the target managers on a 7-point scale on the three clusters, which were then compiled into a single score thus indicating the over-all effectiveness.

20. *Managerial potential scale*: This scale has been taken from the C.P.I. to measure and identify supervisory talent. The scale measures behavioral effectiveness, self-confidence and cognitive clarity.

21. *Vector 1. scale*: This scale studies the level of extroversion on one end and introversion on the other. A low score on v1 would mean an introverted, and reserved person and vice versa for high score.

22. *Vector 2 scale*: This scale studies the norm-favoring tendencies of a person. A person scoring high on v.2 would mean the person is conscientious, self-disciplined and rule-following and vice versa for a person scoring low on the V2 scale.

23. *Vector 3. scale*: This scale is also drawn from the C.P.I. It identifies the level of self-realization achieved by managers, depicted on the 7-point scale, with level-1 signifying very low ego-integration and level 7 signifying the highest level of ego-integration.
Sample:
The study consisted of managers selected from five organization and across various departments. It was an incidental sample. The selection of organizations was based on the following criteria:

The Organizations should be of Indian origin

Private Sector Organizations

Large or Medium - Scale Organizations

A total of one hundred and twenty (120) managers belonging to the senior, middle and junior hierarchies were selected, of which thirty five (35) managers formed the main focus of the study. The remaining managers served as raters to the above stated managers.

The Instrument Used:
After an extensive review of the literature on personality tests, the California Psychological Inventory was selected. The researcher found the reliability and the validity of the test to be adequate for the study. Secondly it was found to be most suitable for the objectives under consideration, hence the C.P.I. was selected.

*The CPI is a self-administrative inventory, consisting of 462 statements, to be answered in true or false. The CPI is based on the following five axioms:*

1. The goals of the inventory are to assess the kind of everyday variables that ordinary people use in their daily life to understand, classify and predict their own behavior and that of others.
2. The CPI is conceptualized as "an open system", one from which elements can be removed and to which new elements can be added as their need is recognized. The present set of twenty folk concepts scales is sufficient to permit explication and prediction of a broad range of interpersonal behavior.

3. Another major intention of the CPI is to represent or map the social - psychological topography as it actually exists as opposed to providing a set of scales uncorrelated with each other. Each scale in this inventory is intended to assess the cluster or complex of qualities subsumed under the same name of concept by folk.

4. The CPI highlights intensification or saturation of measurement with domain as opposed to single scale measurement.

5. Lastly consideration was to make the items as subtle as possible, so as to reduce the influence of manipulative response sets. A subtle item is one whose scale membership and direction of scoring is hard to determine on the basis of its content.

Construction Of The Instrument. : The construction of Gough's CPI is based on two constructs namely - Eysenck's model of Personality- on which he based his 20- factors of personality: & Vernon's Personality Dimensions - on which he based the vector 1 & 2 classificatory grid of life - styles. For the schematic model given by Eysenck kindly refer to pg. 41. Gough identified five broad areas of personality dimensions as measured by the 20 factors which were further represented by the 462 statements of the inventory.

Given on the next page is the adaptation of Eysenck's model.
The adaptation of Eysenck’s model to Gough’s C.P.I. factors.

Source: Eysenck 1953, pg13

The classificatory grid as represented by the v1 & v2 scales depicting the four possible life - styles is based on Vernon’s dimension’s of personality.

In 1953, Vernon surveyed all psychometric works on Personality and concluded two fundamental dimensions to be: extroversion - introversion and dependability - undependability.

According to Gough this model was too evaluative and judgmental so that the undependable pole has entirely negative and pejorative implications. Keeping Vernon’s model in view Gough put forth a model which could be assessed in a value - free or neutral way. Thus he created the 3- vector model. Vector 1 assessed by the v.1 scale measures extroversion - introversion: Vector 2, as assessed by the v.2 scale measures the normative orientation of the respondent, going from the norm - favoring to the norm - questioning at the other end. Vector 3 assessed by the v.3 scale measures the psychological competence.
It measures the level of ego-integration. When the three vector model is used in its entirety, four ways of living or four life-styles are defined namely - alpha, gamma, beta and delta. For each life-style there are 7 - levels of possible integration.

Diagram no. 3.2

Four Theoretical Life Styles Defined On The C.P.I.
By The V1 & V2 Scales At Level Four On The V3 Scale

Norm Favouring

ALPHAS
Ambitious
Assertive
Enerprising
Outgoing
Self-seeking

BETAS
Cautious
Conservative
Conventional
Moderate
Unassuming

Extranality

GAMMAS
Adventurous
Clever
Head strong
Progressive
Rebellious

INTERNALITY

DELTAS
Preoccupied
Quiet
Reserved
Sensitive
Worrying

Norm Questioning

The two basic dimensions of personality (extroversion - introversion and dependability - undependability) as formulated by Philip. E. Vernon. Personality tests and assessments. (London: Methuen & Co. Ltd.)

What was left out of Vernon's model was the concept of ego- integration and self-realization. Hence Gough's cuboid model is an attempt at an improvisational updating of Vernon's Personality model. Applying Vernon's model to Gough's vector model it would typically look like the given model on the next page:
It should be noted that the placement of the factors are not in the order of their presentation. It is just to be seen as a hypothetical construct.

Diagram no. 3.4

Gough’s Adaptation of Vernon’s Personality Dimensions.

Structure And Development Of Scales: In the first edition of the CPI there were 18 folk measures. Over a period of time, both additions and subtraction's have been made. 13 of the 20 folk scales were developed by the method of criterion key in which items were selected that correlated significantly (P< .05) with external criteria such as nomination by peers, grades in high school and scores on measures of cognitive ability. 4 of the 20 folk scales were developed by internal consistency method. The remaining 3 scales were developed by mixed strategies in which both internal consistencies and relationships to non test criteria were considered.
For scale interpretation standard scores on the profile sheet are helpful. Standard scores are linear transformations of the raw scores, with the average of 50 and a standard deviation of 10 scores. Scores in the 40-60 range will be more or less differentiating.

The 20 folk scales measure four broad areas of functioning. They are:

- Interpersonal Style and Orientation
- Normative Orientation and Values
- Cognitive and Intellectual and Functioning
- Measures of Role and Personal Style

The Structural Scales: The first of these scales called V.1 (vector 1) assesses the interpersonal factor. The second scale V.2 (vector 2) assesses the normative factor. These two scales taken co-jointly define four life-styles or ways of living - they are the Alpha, Beta, Gamma and Delta.

The V3 scale developed to index the level of self realization and competence all research findings seem to be constant with the stated aims of the V3 scale as a measure of feelings of self realization and competence. For each life style or type there are 7 levels of realization, going from the lowest or unintegrated level at the bottom to the highest or well realized level at the top.

The third category of scales for the inventory is composed of measures for use in a particular situation. For example, the Managerial Potential Scale (MP) was developed by Gough in 1984 to assess interest in and talent for managerial pursuits.

Factor Analysis: Inter-correlation among the 20 folk concepts scales, were computed on the basic of normative samples of 1,000 persons of each sex. The two matrixes have essentially positive manifolds, as is to be expected because of the scoring of each scale except F/M in the conventionally favored direction.
The two matrixes were factored using squared multiple correlation's in the diagonals, followed by Kaiser Normal Varimax Rotation. Each analysis produced four factors with age values greater than one. The four factors namely-extroversion, control, flexibility and consuality are reasonably close to the factors from previous studies of the original CPI, as summarized by Megargee (1972).

Diagram No. 3.5
Intercorrelations Among The 20 Folk Concept Scales Of The CPI

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The Detection of Invalid Protocols: In psychological assessment based on self-reports the question of validity arises. The interpreter of the personality inventory needs to have some way of knowing whether any of these modes of responding have been carried to the point of rendering the protocol unreliable or invalid.

Good-impressions, well-being and communality scales carry important interpretive implication for normal protocols. A critical level for all these factors has been indemnified any value above or below the critical levels signifying suggesting fake good, fake bad or random scoring response pattern.

Reliability of scales: Reliability coefficients for the folk concept and the structural scales were computed. First the inter consistency (alpha) correlation's were computed in samples of 200 college males and 200 college females. The alpha coefficients for males ranged from .45 on F / M to a high of .85 for V. 3. The median was .72. For females the range was .39 for F / M to a high of .83 for V.3 scale. the range for the total sample was from .52 for Sa to .85 for V.3.

The next pair of columns reports correlation on the scales for high school students on both the English and French versions of the inventory. For males, the range of correlation was from .50 for Py to .83 for Sc and Wb, with a median of .68. For females the range was from .42 for Em, Cm, and Fx to .83 for Sc, with a median of .70.

In the third set of columns the test - retest correlation for high school students in the 11 grade and then in the 12 grade were tested. The correlation for males ranged from a low of .43 for Cm to a high of .76 for Sc and Wb, with a median of .68. For females, the value ranged from .58 for Em and Ai to a high of .79 for le, with a median of .71.
Diagram no. 3.6

Reliability Coefficient Findings For The CPI:

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Source: CPI Administrators Guide pg 34

In general, the consistency of measurement was high enough to permit use of this scales in both group and individual testing.

Validity of Scales: For a scale like Re (Responsibility) the validity was estimated by correlating it with subjective ratings of responsibility. But the ratings are themselves inexact and fallible. For other scales, such as Ac (Achievement via Conformance), the problem was simple because school grades, for example, were used as a direct and acceptable criterion against which the scale was checked.
Likewise, in every instance, the evidence presented is drawn from cross-validation studies of the inventory. The validity of the group was based on the extreme groups. Validity was presented in terms of the Correlation between the means and standard deviations of two extreme groups for each sub-test. The p-value was found to be significant at the .01 level for all factors.

Reliability & Validity for the Vector Scales: Attempts in the revised CPI (1987) were made to develop new measures of interpersonal and intrapersonal axis that would be independent of the measures for elevation. There were 34 items in v.1, 36 in v.2, and 58 in v.3. Alpha coefficients for the three structural scales in college samples of 200 males and 200 females were .81 and .77 for v.1, .78 and .81 for v.2, and .85 and .83 for v.3.

Weiser, Nicole & Lawerence (1993), examined the reliability and validity of Gough's (1987), revised CPI's vector three (v.3) self-realization scale by administering it and other personality questionnaires to 388 female and 140 male introductory Psychology students. Coefficient alpha for the v.3 scale was .85 for the entire sample and was .84 and .86 for the males and females respectively. The v.3 correlated .47 with the Inner Directed Scale of the Personal Orientation Inventory, the most widely used measure of self-realization. It was hence concluded that v.3 is a valid measure of Gough's self-realization construct.

Evaluation of the CPI as a Personality Inventory: Some of the salient features of the California Psychological Inventory are as follows:

1. It has been given to over a million persons and is well validated.

2. It emphasizes on the positive and the normal aspects of personality rather than the pathological.
3. It has been developed using the technique that differentiates real groups of people who differ on some characteristics rather than yielding mathematically pure scales that measure a characteristic that is of little practical importance.

4. Conversion of standard scores are fairly simple from the raw scores, which is incorporated on the profile sheet.

5. The scales are more relevant to interpersonal relationships than are those of most of the large personality inventories.

6. It has multidimensional norms enveloping almost all kinds of professionals and population in general, hence it suitable to the research design of the current study.

Tools:
The CPI, the Demographic Data Sheet, Personality Rating Scale (based on the CPI factors) and the Performance Effectiveness Rating Scales were used to study the personality and performance of the Managers.

The following tools were used to study the different variables in the study:

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Rating — self and cross on the 20 - factors of the C.P.I. The California Psychological Inventory</th>
<th>measurement of the performance criteria:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seniors' Nomination</td>
<td>1. Seniors' Nomination</td>
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<tr>
<td>Managerial Effectiveness Rating Scales</td>
<td>2. Managerial Effectiveness Rating Scales</td>
<td></td>
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<tr>
<td>Managerial Potential Scale</td>
<td>3. Managerial Potential Scale</td>
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</table>
Data Collection Procedure Used:
The research study consisted of two phases:

1. Identifying the universe which involved the pilot study
2. Systematic study with questionnaire construction and questionnaire administration.

Phase one- Pilot Study: In order to establish confidence in rating scales, as a measure to study personality and performance, they were put to test. The organizational chart was drawn, based on which managers who participated in the study were identified. The map of hierarchies was drawn to enable the researcher to identify the three cross raters for the identified manager. This decision was based on the following factors - the managers experience in the company, years of acquaintance, familiarity, motivation of participating in the study and his working relationship with the manager. So a network of rater based on the organizational chart was determined at the start of the study.

Having identified the above managers a meeting was decided with each manager individually. He was explicitly stated the purpose of the study and his role. After this he was free to decide whether he wanted to participate in the study. With this exercise it became easier to keep the motivation of managers to an optimum level. The next step was to identify the appropriate cross-raters comprising of the identified manager’s senior, colleague and junior. The cross raters were asked to rate objectively the manager on the twenty factors of personality based on the explanation of each factor translated from the Administrators Guide to the CPI (Kindly refer to pg. no. 103 for details). This effort was, made in order to minimize distortions in interpretation of terms. Confidentiality was emphasized more so because it involved rating of seniors, which was rather a difficult task. The concerned manager was given the same rating scale for self evaluation. Right at the onset of the study senior managers were approached to identify and nominate effective managers according to criteria which was functionally determined by the senior managers themselves.
Later in the study senior nominations were correlated to other objective criteria, in an attempt to establish its credibility, as an objective technique of performance measurement.

The working definition of the term effective manager was derived using the following technique: managers were asked to enlist adjectives which in their view describe an effective manager. Besides this they were also asked to differentiate between effective and successful managers. The list was drawn by senior managers belonging to various organizations. This list was further rated by experts according to their understanding of effectiveness. A content analysis was worked out for effective managers based on the frequency with which adjectives appeared. Based on the information derived, the researcher was convinced that the term effective was more appropriate, hence it was retained.

Initially it was decided that three hierarchies of managers would be studied namely: Junior, middle & senior. Hence rating scales were administered to managers belonging to all the three hierarchies. For the main study however, the senior level managers were dropped, since it was difficult for senior managers to devote that much of time over a few months and besides the researcher had decided on testing a homogenous group in terms of managerial functions. The general managerial functions were identified and the specialized functions were not considered. So in this sense the group of middle and junior managers were considered as homogenous.

The pilot study helped to gain confidence in the procedure to be used and to test the soundness of methodology required for the systematic study. Changes and modifications were made wherever necessary.

The pilot study further helped to formalize the operation of identifying managers and the corresponding cross-raters. Since it was an ongoing process and managers would need to involve themselves for longer duration’s of time spread over months.
They were made to give a commitment of time. In order to increase their involvement and motivation, at the beginning an orientation was given, highlighting the objectives and implications of the study.

Twenty four managers belonging to the senior, middle and junior levels of management were interviewed. Four managers belonged to the senior cadre and ten managers to the middle and junior levels each. The criteria of selection of the organization was that it should be an Indian Organization, a private sector and a large scale organization.

The following observations were made based on the pilot study:

1. Ratings on personality traits were more or less objective and correlated with each others rating on the same traits.

2. There was a great deal of involvement of managers in the study.

3. The terms “communality and femininity” were not easily understood. (Communality is not a term used in every day language). Hence the explanation of terms taken from the CPI manual was provided.

4. It seems there was more congruence between the self and cross ratings of managers who were nominated as effective; as compared to those who were not so effective.

5. Managers agreed more or less on the same adjectives in describing an effective manager.

6. There were about twenty adjectives in all, used to describe an effective manager, out of which five of the adjective showed very high frequency of occurrence.
Phase Two: Systematic Study: Development of the instrument: Initially several studies were scanned which made use of effectiveness as a criteria of performance evaluation. However none of the studies provided an appropriate answer to the meaning of “effectiveness”. Hence a working definition of performance was constructed. Boyatzis in his book ‘The Competent Manager’ (1982) has made a reference of validation of performance effectiveness criteria. He used superior rating, nominations of perseverance and other objective data as criteria of studying performance in an organized set up. He utilized both the input and output methods to study performance. Input consisted of competencies needed for carrying out the job successfully and it also consisted of traits, skills and motivations.

The output method consisted of the quantitative measurement of performance measured in terms of the managers actual accomplishments and achievements. Both Boyatzis’ criteria and the data collected from managers on effectiveness were put together and it resulted in the identification of three main clusters to measure performance.

Three main clusters which emerged would measure both the input and output of managers overall performance. The rating scale was in the form of a seven point interval scale. Before each rating was a brief description of what the rating actually meant and cross-raters rated the given manager on the three clusters.

In the effectiveness at work scale the cross rater had to rate the given manager on his approach towards work, included in this is his effectiveness to control and Coordinate resources, his ability to take quick and rational decisions, his ability to perceive and operationalize organizational goals, his receptivity towards change and innovation (training, research and development), his job knowledge, his output level (qualitative and quantitative) and lastly his effectiveness in meetings deadlines and targets.
Included in the attitude towards others scale is the managers attitude towards others. The effectiveness with which he initiates and directs group activities, his leadership qualities, his ability to develop, influence, motivate and carry forward his subordinates. His participation in team activities, his effectiveness to understand and empathize with people.

In the attitude towards the self, the cross raters had to rate the given manager on his attitude towards himself. This included his level of self confidence, his need for achievement, his dependability and his willingness to undertake responsibilities and lastly his flexibility and open mindedness.

Raters rated the managers on a seven point scale ranging from Very Ineffective (-3) to very Effective(+3) with the average (0) as the mid point.

<table>
<thead>
<tr>
<th>Rating scale of Managerial Effectiveness</th>
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<tr>
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The final instruments consisted of four questionnaires namely 'The Demographic Data Sheet', Personality Rating Scales, Performance Effectiveness Rating Scales and the California Psychological Inventory.

The Demographic Data Sheet consisted of basic information about the manager, his age, birth order, his years of experience in the industry, as well as in the present Organization, his educational qualification, his grade as a Manager, his department, his upbringing, - whether rural or urban, and lastly the family system - whether he was brought up in a nuclear or joint family set up.
All the questionnaires were personally administered and collected. As a rule no managers were permitted to take home the questionnaires. This was done to keep in check any extraneous factors from entering the study. There were times when it became difficult to meet managers individually at such times they were seen in small groups. Since the researcher assured confidentiality, managers felt at ease and openly expressed their view-points.

The 20 Folk Concept Scales of the CPI and their Intended Meanings:

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<thead>
<tr>
<th>Scale Name</th>
<th>Intended Implications of Higher and Lower Scores</th>
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<tr>
<td>Do (Dominance)</td>
<td>Higher: confident, assertive, dominant, task-oriented</td>
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<td>Lower: unassuming, not forceful</td>
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<td>Cs (Capacity for Status)</td>
<td>Higher: ambitious, want to be a success, independent</td>
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<td>Lower: unsure of self, dislikes direct competition</td>
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<td>Sy (sociability)</td>
<td>Higher: sociable, likes to be with people, friendly</td>
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<td>Lower: shy, feels uneasy in social situations</td>
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<td>Sp (Social Presence)</td>
<td>Higher: self-assured, spontaneous, good-talker</td>
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<td>Lower: cautious, hesitant to oppose own views</td>
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<tr>
<td>Sa (Self-Acceptance)</td>
<td>Higher: has good opinion of self, as talented</td>
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<td>Lower: self-doubting, sees others as better</td>
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<tr>
<td>In (Independence)</td>
<td>Higher: self-sufficient, resourceful, detached</td>
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<td>Lower: lacks confidence, seeks support from others</td>
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Em (Empathy)  
Higher: comfortable with self & others; understands others  
Lower: ill at ease in many situations, unempathetic

Re (Responsibility)  
Higher: responsible, reasonable, takes duties seriously  
Lower: not overly concerned about duties, may be lazy

So (Socialization)  
Higher: finds it easy to conform & accept rules  
Lower: resists rules & regulations, not conventional

Sc (Self-control)  
Higher: tries to control emotions & temper. Takes pride in being self disciplined  
Lower: has strong feelings & emotions & expresses them freely, speaks out when angry or annoyed

Gi (Good Impression)  
Higher: wants to make a good impression, tries to do what will please others  
Lower: insists on being himself or herself even if this causes friction or problems

Wb (Well-being)  
Higher: feels in good physical & emotional health, optimistic about the future  
Lower: concerned about health and personal problems; worried about the future

To (Tolerance)  
Higher: is tolerant to others beliefs and values, even if different from or counter to own beliefs
| Ac (Achievement via Conformance) | Higher: Has strong drive to do well; likes to work in settings where tasks & expectations are clearly defined. |
| Lower: Has difficulty in doing best work in situations with strict rules & expectations. |
| Ai (Achievement via Independence) | Higher: Has strong drive to do well; likes to work in settings that encourage freedom & individual initiative. |
| Lower: Has difficulty in doing best work in situations that are vague, poorly defined and lacking in clear cut methods. |
| Ie (Intellectual Efficiency) | Higher: Efficient in use of intellectual abilities; can keep on at a task where others can get bored or discouraged. |
| Lower: Has a hard time getting started on things and seeing them through to completion. |
| Lower: More interested in the practical & concrete than the abstract; looks more at what people do than what they feel & think. |
Fx (Flexibility)  
Higher: Flexible; likes change & variety; easily bored by routine life & everyday experience; may be impatient or even erratic.  
Lower: Not changeable, likes a steady pace and well organized life, may be stubborn and even rigid.

F/M (Femininity Masculinity)  
Higher: Sympathetic; helpful; sensitive to criticism; tends to interpret events from a personal point of view; often feels vulnerable  
Lower: Decisive; action-oriented; takes the initiative; not easily subdued; rather unsentimental

Hypothesis:  
While reviewing the previous literature there was enough ground to put forth some alternate hypothesis in certain areas, whereas in the other areas there were no grounds to put forth alternate hypothesis, hence the null hypothesis were presented. The entire range of hypothesis is presented below:

1. Work experience has no influence on managerial effectiveness.

2. Age has no influence on managerial effectiveness.

3. Birth order of managers will not influence managerial effectiveness.

4. Educational Qualification will not influence managerial effectiveness.

5. Managerial grade will not influence managerial effectiveness.
6. The generation of migration of the manager to a city would have no influence on managerial performance.

7. Upbringing of the managers (urban/rural) has no influence on managerial effectiveness.

8. The family system (joint/nuclear) has no influence on managerial effectiveness.

9. Effective managers will score significantly higher on the Dominance scale of the CPI as compared to the less effective manager.

10. Effective managers will score significantly higher on the Capacity scale of the CPI as compared to the less effective manager.

11. Effective managers will score significantly higher on the Sociability scale of the CPI as compared to the less effective manager.

12. Effective managers will score significantly higher on the Social Presence scale of the CPI as compared to the less effective manager.

13. Effective managers will score significantly higher on the Self Acceptance scale of the CPI as compared to the less effective manager.

14. Effective managers will score significantly higher on the Independence scale of the CPI as compared to the less effective manager.

15. Effective managers will score significantly higher on the Empathy scale of the CPI as compared to the less effective manager.
16. Effective managers will score significantly higher on the Responsibility scale of the CPI as compared to the less effective manager.

17. Effective managers will score significantly higher on the Socialization scale of the CPI as compared to the less effective manager.

18. Effective managers will score significantly higher on the Self Control scale of the CPI as compared to the less effective manager.

19. Effective managers will score significantly higher on the Good Impression scale of the CPI as compared to the less effective manager.

20. Effective managers will score significantly higher on the Communality scale of the CPI as compared to the less effective manager.

21. Effective managers will score significantly higher on the Well Being scale of the CPI as compared to the less effective manager.

22. Effective managers will score significantly higher on the Tolerance scale of the CPI as compared to the less effective manager.

23. Effective managers will score significantly higher on the Achievement Via Conformance scale of the CPI as compared to the less effective manager.

24. Effective managers will score significantly higher on the Achievement Via Independence scale of the CPI as compared to the less effective manager.

25. Effective managers will score significantly higher on the Intellectual Efficiency scale of the CPI as compared to the less effective manager.
26. Effective managers will score significantly higher on the Psychologically Mindedness scale of the CPI as compared to the less effective manager.

27. Effective managers will score significantly higher on the Flexibility scale of the CPI as compared to the less effective manager.

28. Effective managers will score significantly higher on the Femininity/Masculinity scale of the CPI as compared to the less effective manager.

29. Managers in general will be over represented in the Alpha type scale of the CPI.
   
   a. effective managers will score lower on the v.1 scale measuring extroversion as compared to less - effective managers.

   b. effective managers will score higher on the v.2 scale measuring conformity of norms as compared to less - effective managers.

30. Effective managers will score significantly higher on the vector 3 scale of the CPI, measuring level of self actualization, as compared to the less effective managers.

31. Effective managers will have a significantly higher rating on the Managerial Effectiveness Rating Scales as compared to their less effective counterparts.

32. Effective managers will score significantly higher on the Managerial Potential scale of the CPI as compared to the less effective manager.
33. There would be a congruence between the following variables:

   a. C.P.I. scores and self-ratings
   b. C.P.I. scores and senior's ratings
   c. C.P.I. scores and colleague's ratings
   d. C.P.I. scores and junior's ratings
   e. Self and senior's ratings
   f. Self and colleague's ratings
   g. Self and juniors' ratings
   h. Seniors' and colleague's ratings
   i. Seniors' and juniors' ratings.

34. There would be a congruence between the various criteria of performance namely:

   a. seniors' nomination and managerial potential scale
   b. seniors' nominations' and managerial effectiveness rating scales.
   c. managerial potential scale and managerial effectiveness rating scales.