Chapter 3

Methodology

Be a Columbus to whole new continents and worlds within you, opening new channels, not of trade, but of thought. —Henri David Thoreau
In the present study, a set of scales were developed to assess the characteristics of people belonging to the various *Doshas* and *Gunas* (*Tridoshas* and the *Trigunas*) and their blends, and to identify their characteristic features. The methodology followed in the present work is detailed out here.

**Research questions:** The present study has attempted to answer the following research questions.
1. Is it possible to blend *Tridosha* and *Triguna* aspects to evolve a personality profile?
2. Can the personality of individuals be mapped using a grid of *Tridoshas* and *Trigunas*?
3. Is it possible to correlate Job Satisfaction of people to *Tridoshas* and *Trigunas*?

**Objectives:** The following objectives were set in the present study.
1. To develop a tool to assess *Tridoshas* and *Trigunas*.
2. To develop a grid based on *Tridoshas* and *Trigunas* in order to map individuals.
3. To study the relationship between the job satisfaction of people with *Tridoshas* and *Trigunas*.

**Hypotheses:** The following four hypotheses were set and tested in the present study.
1. There will be a significant correlation between *Tridosha* and *Triguna* measures.
2. The *Tridosha* and *Triguna* measures will have significant correlation with Job Satisfaction.
3. Teachers, Police and IT professionals differ significantly on *Vata, Pitta* and *Kapha*.
4. Teachers, Police and IT professionals differ significantly on *Sattva, Rajas* and *Tamas*.

**Methodology:**

**Research design:** The present research has two sections. The first section is the development of tests and their standardization, and the second section is verification of hypotheses based on the
developed tests. The researcher has developed scales on *Tridosha* and *Triguna*. The scales are based on the literature on *Tridosha* and *Triguna* drawn from various sources. Information about the *Pancha Mahabhutas* and *Tridoshas* was primarily collected from the *Ayurvedic* literature. The different explanations, definitions and meanings of words used in these texts were collected. The kinds of traits that each of the *Pancha Mahabhutas*, the *Tridoshas* and the *Trigunas* exhibit in human population has also been collected. Their interaction and methodology of action on human population was ascertained through the texts and various discussions with the experts in the field of *Ayurveda*, Sanskrit, Philosophy and Psychology.

Information related to the *Trigunas* was collected from the *Ayurvedic* texts as a starting point. Next, information about the *gunas* was accessed from various texts like *Vedas*, *Upanishads*, *Mimamsa*, *Samkhya*, *Yoga*, *Maha Puranas*, *Upa-Puranas*, *Mahabharata*, *Bhagavad Gita*, *Ramayana*, *Yoga*, *Yoga Vasistha*, *Samkhya*, *Nyaya—Vaisheshika*, *Nirukta*, *Dharma Shastras*, *Natya-Sastra of Bharata*, *Bhakti Rasamrta Bindu of Rupa Goswamin*, *Kala Tattva Kosa*, *Manu Smrti*, Elements of Hindu Iconography, etc., to name a few.

All information related to the *Pancha Mahabhutas*, *Tridoshas*, (*Vata*, *Pitta* and *Kapha*), *Trigunas* (*Sattva*, *Rajas* and *Tamas*) were collected, along with the sixteen personality types as delineated in the *Ayurvedic Samhitas* and enumerated for the different types. This vast amount of information about the various aspects of personality was then enumerated one by one and repeated statements were removed and a precise list of personality behaviours for each group—*Tridoshas* and *Trigunas*—along with the different types of *Sattva*, *Rajas* and *Tamas* was enumerated and listed in an orderly fashion.

After developing the items, the researcher administered to 5th Standard English medium students from a Government School in Bangalore to ensure that the items were easily understandable. The rationale behind this was that if the children of 5th standard can understand the items clearly, adults can also understand without any difficulty. With their help, items that were not being understood well, those that were ambiguous, etc., were all weeded out and rephrased to yield better understanding.
Information about the *Pancha Mahabhutas*, *Tridoshas*, and *Trigunas* was collected from various sources of Indian Philosophy, ancient texts and all other material related to Psychology from an Indian perspective. These texts and scriptures include the *Vedas*, *Upanishads*, *Mimamsa Sutras*, *Samkhya*, *Yoga Sutras of Patanjali*, *Yoga Vasistha of Valmiki*, *Seventeen Maha Puranas* (the researcher was unable to find one *Maha Purana* which was out of print), *Five Upa-Puranas* (the other 13 were ignored as they were found to be repetitive), *Srimad Ramayana of Valmiki*, *Mahabharata*, *Shrimad Bhagavad Gita*, *Dharmashastras*, *Ayurveda*, Encyclopaedia of Indian Medicines, *Nighantu* and *Nirukta*, *Bhaktirasamrta Bindu* of *Rupa Goswamin*, *Natya Sastra of Bharata*, *Iswara Samhita*, *Manu Smriti*, *Brhad Devata*, Elements of Hindu Iconography, to name a few.

**Development of Tridosha based Scale (Section 1, Part 1):**

*Tridosha* tool comprises items on *Vata*, *Pitta* and *Kapha*. While there are already some check lists/ inventories based on *Tridoshas*, used to categorize people, they have been developed by *Ayurvedists* for use by *Ayurvedic* doctors for the purpose of *Prakriti* Assessment and *Dosha* classification of patients. These were referred to for understanding the salient features that are most important for *Prakriti* classification from *Ayurvedic* perspective. This is in addition to the *Brhad Traayi* (*Charaka, Sushruta* and *Vagbhata’s Samhitas*) and the *Laghu Traayi* (*Bhava Prakasa, Yoga Ratnakara* and *Sarangadhara Samhita*) triads of texts that were consulted in the *Ayurvedic* domain of scriptural authorities. Some of the check lists/ inventories consulted other than the *Ayurvedic Samhitas* were as follows:


From all these sources the characteristics necessary for assessment of Deha Prakriti was collated and a list was made. From this list only those characteristics that were amenable for psychological assessment and observation was selected. Those constructs or characteristics which were not amenable for psychological testing were ignored and not taken into consideration.

The constructs that were not taken into consideration for psychological assessments are as follows:
Descriptions of:
1. Body build, chest, calf, joints and gait, veins and tendons
2. Complexion and countenance
3. Skin texture, wrinkling of skin, nails, hair texture, forehead, eyes, teeth and eye-brows
4. Perspiration and micturition, odour of body, mouth, armpit and sweat
5. Sexual potency
6. Tremors

The constructs that were taken into consideration to develop the items for the Tridosha check list are as follows:

Descriptions of:
1. Food habits, hunger, appetite, thirst and digestion
2. Dietary likings, taste preferences
3. Liking for coldness, warmth, tolerance to heat
4. Fondness for flowers and garlands
5. Courteous behaviour
6. Piousness, belief in God
7. Courage and boldness
8. Calmness of mind
9. Grasping power, memory, intelligence, concentration
10. Speed of activities and movements, speed of speech
11. Bowel movements
12. Immunity to diseases, strength
13. Sexual behaviour
14. Friendship
15. Anger, fear
16. Character
17. Duration of sleep
18. Hobbies
19. Problem facing ability
20. Various behaviours exhibited  
21. Control over senses, desires  
22. Style of working  
23. Pattern of excitement  

These constructs were delineated for each of the three doshas from the Ayurvedic concepts and made into a tabular format and was shown to Ayurvedic Doctors for their approval, to see if they felt that Deha Prakriti could be assessed by these factors, omitting the aforementioned six constructs.

On speaking to all of them personally, they were of the opinion that Prakriti is a concept that has been developed taking into consideration all aspects of a person—physical, physiological, anthropometric, psychological and spiritual. Since this protocol is not considering physical, anthropometric and some physiological constructs, (since it cannot be assessed by a person from the domain of psychology), they were of the opinion that this protocol is only assessing the Psychological aspects of the Tridoshas. This is in acceptance with our own mandate for the assessment as well as all the Ayurvedic doctors’ analysis and concordance with the Protocol’s usability. **Hence this is a scale which assesses the Psychological aspects of the Tridoshas of Vata, Pitta and Kapha** and not the exact Deha Prakriti as specified in Ayurvedic texts which Ayurvedic doctors use to categorize people and administer medicines for disease manifestation. This is in total agreement with the mandate that was initially set.

After the concordance from the Ayurvedic doctors was obtained, the items were generated and developed. These items were again shown to eighteen Ayurvedic experts/ doctors for their concordance with the statements.

The tool underwent several revisions, as many as 38 times. Each one was corrected for various reasons. One such is as follows. At one point these items were finalized and administered to three groups of people. The three groups were in accordance with the Ayurvedic tenet of classifying all people into these three basic categories. The three groups are—Balya (childhood), Madhyama (youth) and Vrddha (elderly) categories of people. In the three groups, one group was
that of children up to the age of 18 years (Balya group), youth in the age group of 19-50 years (Madhyama group) and elderly people in the age group of 50 years and above (Vrddha group). This was also followed as it was suggested that the types of answers obtained in each of the three groups would be such that there would be a dominance of Kapha in the Balya group, of Pitta in the Madhyama group and Vata in the Vrddha group. These were 165 questions of Yes/No type. They were jumbled up and presented in random order. Here, the triple statements of each construct were not together but were separated and presented in random order.

For the Balya group, children were selected from a leading English Medium school in Bangalore. Both boys and girls comprised the group. There were 13 students from the 9th standard and 12 students from the 11th standard, bringing the total number of students to 25. For the Madhyama group, youth studying in a leading University of and at Bangalore were selected and the test was administered to a total of 35 individuals, both men and women, from India and different nationalities. For the Vrddha group, elderly people who were members of a Laughter Club in a locality of Bangalore were approached and were administered the test. A total of 30 people, both men and women were administered the test. For all the three groups, an Ayurvedic doctor was also independently analyzing their Deha Prakriti using the Nadi Pareeksha methodology, to see if there was concordance with that of the test being developed by the researcher. Since all the statements were jumbled up and presented without any heading for each construct, people found it difficult and confusing to answer, and there were a lot of complaints about the same.

Thereafter, the tool was revamped with each situational construct having three options, and was administered to another 45 people. Here because the triple statements concerning each construct was placed together, confusions about the similarity was alleviated. All people found this to be easier to answer and also to be clear, without any confusion. Hence this pattern of the tool presentation was retained.

In yet another attempt to make the test development authentic and robust, the researcher attempted one more strategy. To try and bring in concordance between the present tool under development and an external Ayurvedic tool that is in use and is accepted, a protocol developed
by Baghel (2004) which is from an Ayurvedic perspective, was used to verify the validity of the present tool under development. This contained 23 constructs wherein the Ayurvedic doctor had to put a tick mark against each construct depending on the characteristics’ the person exhibited. On tallying the total number of tick marks for each dosha, a total for each dosha is obtained. This tool was used by the Ayurvedic doctor to assess the respondents along with the tool under development simultaneously, to check for concordance between the two procedures. Another group of people were assessed using both the present tool under development and Baghel’s (2004) checklist. Amongst the 45 people who responded, 33 people’s assessment matched; 8 people’s assessment did not match; 3 people’s assessment matched only half; and there was one incomplete assessment which could not be taken into consideration. Since the Ayurvedic assessment and the assessment by the tool under development did not match fully, another effort was made.

To this end, another effort was made to visit Sri Dharmasthala Manjunatha Ayurvedic College at Udipi, as it is a renowned college in Ayurvedic studies and research, where under a senior Professors’ guidance the tool was administered to a group of 10 students. He himself has developed a tool to assess Prakriti from the Ayurvedic perspective and has computerized it for his own personal professional use. The responses of both the tools matched to around 80%. It was opined that since many physical-physiological factors were missing, to get this much of concordance was the most—as the present tool was assessing the psychological correlates of the same doshas and not the doshas themselves as studied by Ayurvedic specialists/doctors. This was seconded by another Ayurvedic Doctor, a Lecturer at another Ayurvedic College at Belgaum and another senior-most professor of IPGT&RA, Gujarat Ayurved University, Jamnagar. Thus, several attempts were made and the items kept on improving.

The tool was prepared as pre-final one. At this stage, 5 questions were chosen to be repeated randomly so that they could act as check items to determine if the respondents are faking or if they are giving genuine answers. Hence, there were 55 questions that needed to be answered by a respondent in this phase. But most people could identify the repetitive questions and found it disturbing to answer them as they felt that they were being doubted. Many started finding out the repeats for the answering pattern and copied them too. Hence this method of
trying to introduce check items was eliminated after the pre-final level. On introducing the Rating method for respondents to answer the scale, the problem of introducing check items to identify malingering in respondents was taken care of.

For the final study, the scale had a total of 50 items in it, with each item having three statements indicative of Vata, Pitta and Kapha which a respondent could select based on the dominance of his dosha and his mode of expression in various situations. But because the question on tastes had 6 alternatives this question was divided into 2 questions with three alternatives each, same as the rest of the questions. Thus the scale comprised 52 statements to identify Vata, 52 statements to identify Pitta and 53 statements to identify Kapha. The total number was thus 157, though subjects only see 51 questions with triple statements each while answering. The other four values are adjusted in the back end while calculating the answers and assessing them. Adjustment in the backend can be explained as follows. For instance, there is a question on “Taste preferences” that respondents need to answer. Here, the “sweet” taste, if selected by a person, has to be marked as present for all the three constructs of Vata, Pitta and Kapha. Similarly all the six tastes of sweet, sour, salty, bitter, spicy and astringent have different combinations wherein some have to be marked as present for one or more doshas. Though respondents see only the six options from which they have to select their preferences, the adjustment for each of the Tridoshas is made at the back end and the differences for the total number of items for the three constructs crop up and is resolved.

Development of Triguna based Scale (Section 1, Part 2—A):

Triguna scale comprises Sattva, Rajas and Tamas items. As a first step, information about the Trigunas was collected from the Ayurvedic texts. The combinations of the Pancha Mahabhutas leading to the Trigunas were noted. The Tridosha that evolves into the Triguna and vice versa was also noted and understood.

The Bhagavad Gita and the Bhagavata Purana mention the constructs that are to be taken into account while assessing a person—to decide whether he is Sattvic, Rajasic or Tamasic. These constructs were noted down along with the qualities of people who can be categorized as comprising relative dominance of the three gunas.
The details of information collected for delineation of items from the classical texts are as follows:

_Bhagavata Purana, Vol. 5; pg. 2080/2081:_

1. Substance (food)
2. Place of residence
3. Fruit of actions
4. Time
5. Knowledge
6. The act
7. The doer
8. Faith
9. State of consciousness
10. Form of existence
11. Final destination
12. _Jnana_ (knowledge)
13. _Vijnana_ (realization of the Self)

_Matsya Purana, pg. 278:_

1. Fate or the result of one’s effort

_Bhagavad Gita (throughout the Gita):_

1. Speech
2. Cleanliness
3. Work
4. Concentration
5. Memory
6. Will power/diligence to work
7. Truthfulness
8. Honesty
9. Creativity
10. Food
11. Need for sleep
12. Day sleep
13. Control of Self
14. Anger
15. Fear/bravery
16. Desire and covetousness
17. Pride
18. Intake of drugs
19. Intake of alcohol
20. Intake of coffee/ tea and other stimulants (for today’s circumstance, added by author)
21. Depression
22. Love
23. Violent behaviour
24. Sexual activity
25. Sensuality
26. Attachment to money
27. Equanimity
28. Forgiveness
29. Belief in God (Higher Power)
30. Respect to others and Self
31. Spiritual injunctions and study
32. Prayer and religious traditions
33. Loyalty
34. Ambition
35. Sacrifice
36. Discretion
37. Gifting
38. Fruit of actions
39. Meditation
40. Peace of mind
41. Service to others
42. Clarity of thought
43. Identification with body
44. Social interactions
45. Activity preference
46. Energy levels/ enthusiasm
47. Acceptance of grief
48. Temptation
49. Non-violence
50. Non-stealing
51. Faith
52. Charity
53. Types of chitta
54. Tolerance
55. Discrimination/ delusion
56. Mercifulness
57. Modesty
58. Straight forwardness
59. Quarrelsomeness
60. Expectation
61. Renunciation/ possessiveness

From these various sources, mentions about the terms relevant to the area of study were noted. The principal text that was consulted for a starting point of reference was the Ayurvedic texts as there is a complete delineation of Sattva, Rajas and Tamas along with the 16 different types of Classical personalities. The different meanings and connotations with reference to different types of personalities in the various texts gave a good view about them and also gave layers to their personalities in addition to what was delineated in the Ayurvedic texts. All these were noted down and a detailed compilation was made for each and every personality.

The differentiation and classification was then showed to experts and traditional scholars in the field of Philosophy and Sanskrit to get their view about the veracity of the compiled information. The same was shown to experts in the field of Ayurveda for their opinion too. The information given to the Scholars was in two groups. One group consisted of the items generated to assess whether people are Sattvic, Rajasic or Tamasic or a blend of two or three gunas and the next group consisted of the items that were drawn up on the sixteen different personality types as is delineated in the Ayurvedic texts.

These two groups of constructs—one for classifying people according to Sattva, Rajas and Tamas and the other to classify people according to the types of behaviour they exhibit—was given to a total of seventeen (17) traditional scholars of Philosophy and twenty-three (23) experts in the field of Ayurveda. Their ratings were taken.

For the final appearance of the tool, the markings indicating the statements to be Sattva, Rajas or Tamas were removed. In each construct itself, the three statements were jumbled up so that there was no definite order of appearance of the three types of statements in all the construct wise statements. The tool had a total of 63 constructs, with each construct having three statements indicative of Sattva, Rajas and Tamas which a respondent could select based on the
dominance of his *Guna* and his mode of expression in various situations. So there were a total of 189 statements that a person had to look into.

For the pre-final form of scale, --after various revisions -- there were 7 questions that were chosen to be repeated so that they could act as check items, to determine if the respondents are faking or if they are giving genuine answers. Hence, there were (63 + 7) 70 questions that needed to be answered by a respondent during this phase. But most people could identify the repetitive questions and found it disturbing to answer them as they felt that they were being doubted. Many started finding out the repeats for the answering pattern and copied them too. Hence this method of trying to introduce check items was eliminated after this phase. On introducing the rating method for respondents to answer the tool, the problem of introducing check items to identify malingering in respondents was taken care of.

**Development of *Triguna* based Scale (Section 1, Part 2—B):**

The *Triguna* scale has two parts. The description above relates to *Triguna* part A. The description of part B is as follows. A list of all the traits which are characteristic of the 16 Classical Personality Types—16 CPT (seven types of *Sattva* personalities, six types of *Rajas* personalities and three types of *Tamas* personalities) was drawn up. Some traits which were repetitive were removed though its occurrence in the respective personality type was noted. These traits were numbered and 189 Traits were thus identified—which covers the gamut of human behaviour and manifestation. This is as per the *Ayurvedic* scriptures. On comparing these 189 traits with statements of *Tridosha* and *Triguna* tools it was found that all of them were represented, except for 46 traits (with a few repetitions). These unrepresented 46 traits were developed into statements with Ratings. They were presented to people. Out of these 46 items, only 37 were shown to respondents. The other 9 statements were repeats of the 37 statements, hence were not shown to the respondents. This was taken care of by the researcher which is called the back end adjustment of scores. Hence with the addition of this *Triguna* Part 2 set of 37 (46) questions, all the traits as delineated for the 16 CPT are represented without any exception. This obviously excludes those traits that are not amenable for psychological testing and which were hence not considered at all in the first instance.
Rating pattern for the 3 scales:

In each of the three parts of the tool was added the Minimum/ Average/ Strong (MAS) concept wherein the respondent gives his interpretation of the degree to which each statement is present in him. In this way when a respondent answers the scale, each of the statements is given due attention and accorded its degree of presence. This step comprised the addition of Rating for all the statements of the scale.

The ratings for the statements are as follows:
[0 = Absence of the trait, (which is understood when the statement is not marked at all.)]
1 = Minimum presence of the trait. (M)
2 = Average presence of the trait. (A)
3 = Strong presence of the trait. (S)

These two parts—A and B of the Triguna scale, underwent about 18 revisions, before it was felt that it was sufficiently ready for administration on a small sample.

All the three scales—Part 1, Part 2—A and Part 2—B (Part 1 is Tridosha Scale, and Part 2 A and B are the Triguna Scales) were given to about ten psychologists for their ratings and the same were obtained, thereby validating it from this perspective too. The salient characteristics for all the constructs were already obtained from experts and the same was used, at the time of profiling of respondents.

Psychometric properties of the Scales:

The researcher intended to study three different sets of adults of occupational groups covering Teachers, IT Professionals and Police Personnel. Along with this another group of people from different professions other than the three already mentioned was also selected as general group. This covered male and female subjects. To this end, many different colleges, IT companies and the Police Department were approached for their cooperation. Adults from all groups were drawn randomly, based on a set of criteria indicating job satisfaction, absence of any psychiatric problems, and a minimum of five years of continuous practice in their chosen vocation.
Sample for establishing validity measure:

Validity of the tools was established for Tridosha and Triguna using the following methodology.

**Tridosha scale:**

Content validity was established by getting the items approved by Ayurvedic specialists, Sanskrit scholars, and Psychologists. Ayurvedic doctors were consulted to find out if the constructs identified by the researcher as being amenable for psychological assessment were enough to assess the psychological manifestations of the physical types of Vata, Pitta and Kapha or not. 27 Ayurvedic doctors were consulted. Their ratings were sought.

Based on these ratings, those components were converted into items. They were modified and revised several times. The final version of the scale was shown to 18 Ayurvedic specialists and their ratings were sought. Simultaneously 10 Psychologists were also consulted and requested to rate items based on the description given to them for each of the components of Vata, Pitta and Kapha. Thus, content validity was established.

The researcher could not establish any other validity as there is no other tool from the psychological domain to assess personality based on the Tridoshas. Therefore, it was not possible to compare the present Scale with any other to establish concurrent validity.

**Triguna scales:**

For both the Triguna scales—Part A and B, the Content validity was established by getting the items rated by 23 Ayurvedic specialists, 17 experts in the field of Philosophy and Sanskrit and 10 Psychologists. Concurrent validity was also established by administering the present scale along with Renu Sharma’s SRT Scale.

Since there is no other tool, scale or test that assesses people based on the 16 Classical Personalities from the Indian classical literature and scriptures, the researcher had no option but to establish only the content validity for the present Triguna Scale, Part B, by getting the ratings of 23 Ayurvedic specialists, 17 experts in the field of Philosophy and Sanskrit.
Sample for establishing reliability measure:

The sample consisted of respondents from each of the three groups, namely, Teachers, IT Professionals and Police Personnel. Teachers from various schools of Bangalore were approached and requested to take the test. Along with this, Professors from a reputed Engineering college in Belgaum were also approached to take the test. The total number of people in the Teachers category who took the test was 104. Similarly IT Professionals were approached. There were 170 people who completed the tests. The Karnataka Police Department was approached for the purpose of collecting the Data from their personnel. There were a total of 222 police personnel of whom only 111 (exactly 50%) of the people could be considered based on inclusion criteria. Of these only 88 people were present on the day of the test administration.

There was a group of people who belonged to various professions—some specified and some not. They were all categorized in the General Adult category for ease of grouping. This group consists of 45 people. Hence the data collected for establishing reliability comprised 407 people.

Table 3.1: Sample for reliability of scales

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Group</th>
<th>Total No. of people</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Teachers</td>
<td>104</td>
</tr>
<tr>
<td>2</td>
<td>Police Personnel</td>
<td>88</td>
</tr>
<tr>
<td>3</td>
<td>IT Professionals</td>
<td>170</td>
</tr>
<tr>
<td>4</td>
<td>General adults</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>407</strong></td>
</tr>
</tbody>
</table>

All the items of the *Tridosha* scale and the *Triguna* scale were subjected to Item analysis, with specific reference to Discrimination Index of items. 407 respondents served for this exercise. It was found that some items from both the scales had low and some negative discrimination too. These items were identified, and shown to the experts—*Ayurvedic*, Philosophy and Sanskrit. But all of them unanimously were of the opinion that even though statistically the items were not discriminating well, it strongly recommended not to remove even one item as they were all very necessary for assessing personality from the Indian perspective of *Tridoshas* and *Trigunas*. While, those items which had low/ negative discrimination were
rephrased as per the experts’ suggestions and all of them were retained. None of the items were removed.

**Sample used for establishing norms:**

The sample used for the norms comprised 4 groups of people, Teachers, IT Professionals, Police Personnel and a group of adults belonging to different professions and careers, as follows. This group was bigger as it is desirable to develop norms on a bigger group. This group could not be used for establishing reliability and validity as this is too huge a group.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Group</th>
<th>Total No. of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teachers</td>
<td>358</td>
</tr>
<tr>
<td>2</td>
<td>Police</td>
<td>414</td>
</tr>
<tr>
<td>3</td>
<td>IT Professionals</td>
<td>346</td>
</tr>
<tr>
<td>4</td>
<td>General adults</td>
<td>430</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>1548</strong></td>
</tr>
</tbody>
</table>

The sample used for development of norms comprised 358 teachers, 414 Police personnel, 346 IT professionals and 430 general adults. All these respondents who served as sample were selected based on a set of criteria of inclusion which are given below.

The obtained raw scores were converted to Stanine scores (Ferguson, 1981). The conversion tables for both the Tridosha and Triguna (Part A) scales are developed. Since the Triguna Scale, Part B cannot be used by itself to categorize a person as being Sattvic, Rajasic or Tamasic, and this scale has to be used in conjunction with the Triguna (SRT) Scale Part A for all purposes, norms were not developed. The scores obtained here were added to the Triguna (SRT) Scale Part A and the 189 Trait analyses and the categorization of the person to be similar to one of the 16 CPT is derived. This comprised the second and third level of analyses that a respondent’s answers are subjected to.
Criteria for inclusion and exclusion:

A question which cropped up during test development process was to answer how “Normal” the sample of people selected for answering the tests was. Hence a set of criteria for inclusion had to be developed to establish the normalcy of the respondents who comprised the sample for standardization and development of norms.

The criteria followed for the inclusion of people’s data into the final study and standardization of the scales was as follows:

1. **Job Satisfaction Scale**: (Singh & Sharma, 1999). Only those people who had job satisfaction were included in the final analysis. This was included, because, the second section of the study attempts to assess people of different professions for their personality characteristics and to compare one group with the other. So it was necessary to include only those who were satisfied in their jobs in order to accept them as professionals belonging to a certain profession.

2. **Modified MINI**: (Sheehan, *et al.*, 1998). This addresses basic Mental Health of the respondent and is relatively short with 22 questions. Data of people with only “No” answers were included. It was necessary at this point of time to include only those who had no problems on mental health issues. Therefore this criterion was used.

3. **The Alcohol Use Disorders Identification Test (AUDIT)**: (Babor, *et al.*, 2001). This addresses drinking behaviour. Scores up to 7 indicates Social Drinking which was accepted and included. It was necessary at this point of time to include only those who had no problems on drinking behaviour. Therefore this criterion was used.

4. **Fagerstrom Test for Nicotine Dependence (FTND)**: (Heatherton, *et al.*, 1991). This addresses smoking habits. Only non-smokers were taken into consideration and included. Even low level of Nicotine addiction as revealed by scores between 0-3 was also ignored and such data was not included. Therefore this criterion was used.

5. Another criterion for inclusion into the study comprised people practicing in the profession for a minimum of 5 years consecutively. This was included, because, the second section of the study attempts to assess people of different professions for their personality characteristics and to compare one group with the other. So it was necessary to include only those who had served in profession for a minimum period of 5 years in order to identify them as professionals in conjunction with their job satisfaction.
Only those people who satisfied all the above mentioned criteria were included in the study. There were 2142 respondents for initial screening and finally 1548 were selected after satisfying various inclusion criteria.

**Tools and techniques:**

Other than the above mentioned tests, a personal data sheet to assess the socio demographic details of people was also administered. After all the inclusion criteria were satisfied the following Scales were administered to the respondents to assess their Personality:

1. **Tridosha Psychological Personality Assessment Scale:** A scale to assess the Tridoshas and/or their blends in people. The answers have to be rated on a 3 point scale by the respondent. (Developed by the investigator).

2. **Triguna Personality Assessment Scale: (Part A):** This is a scale to assess the Trigunas and/or their blends in people. The answers have to be rated on a 3 point scale by the respondent. (Developed by the investigator).

3. **Triguna Personality Assessment Scale: (Part B):** This is an addendum to the Part A scale above. A scale to assess traits which do not have triple statements for selection, but have only Yes/No type of answers, where the “Yes” answers need to be rated on a three point scale by the respondent, (Developed by the investigator).

Only after an individual completed the first five questionnaires and after a gap of 24 hours to ensure that there was no fatigue and tiredness, were respondents allowed to answer the actual Personality Assessment Tests Level 1, 2 and 3 being developed by the researcher.

**Section 1: Part 3—189 VPK and 189 SRT Trait analyses:**

The 16 Classical Personalities have been delineated as comprising traits which are characteristic of each of them. There are 189 such exclusive traits. There are 100 traits of Sattva Guna, 60 traits of Rajas Guna and 29 traits of Tamas Guna. Since some of them are common to 2 or more personalities, these common traits were taken into account for numbering just once. But their occurrence in different personalities was noted. On combining the items of the Tridosha and the Triguna scales, in different (and prescribed) permutations and combinations,
the 189 traits were obtained. This combination of VPK (Physical—Tridosha) and SRT (Psychological—Triguna) trait combination (Section 1: Part 3) was developed by the researcher, shown to Ayurvedic Doctors and their approval obtained. Hence each of the 189 Traits were now consisting of unique combinations of VPK at the Physical level and SRT at the Psychological level, thereby giving each person who answered the scales, a description of all the 189 traits, along with their scores, as answered by them.

These 189 traits have been identified as comprising the gamut of human behaviour, from the highest of the Sattva to the last of the Tamas—the seven kinds of Sattva, six kinds of Rajas and three kinds of Tamas. The original set of traits which cannot be assessed by psychologists like hair colour, hair texture, skin colour and texture, etc., have been ignored in this analysis also, considering all the trait analyses of Section 1, Part 3 is based on answers obtained from an individual in Section 1, Parts 1 and 2 of the usual scale answering pattern which is common.

The combinations that comprised each of the Traits were frozen and kept as an absolute and each person’s answers were compared with them. The scores, including the Ratings for each of the answers given by respondents was tabulated and Stanine conversions for each of the 189 Traits—both physical and psychological were obtained. Hence, for each person at this juncture, there are 189 physical traits and 189 psychological traits—Stanine scores that are obtained. This is other than the Stanine scores that are obtained at the first instance—for Vata, Pitta, Kapha, Sattva, Rajas and Tamas answers. These Stanine scores were compared with the cohort group for each individual, for each and every one of the Tridoshas, Trigunas, 189 physical traits and 189 psychological traits. Where there was no cohort group, the Stanine scores and means were compared with that of the general adult group. This comparison of a respondent’s score for each trait against the absolute score and the cohort group scores yields the score and level of presence of that trait in the respondent. This gives a comparison for each Trait for a person and the group Stanine scores.

Section 1: Part 4: Comparison of 189 Traits (Part 3) with 16 CPT (Part 4):

Subsequent to this Section 1, Part 3 analysis, each of the 189 VPK-SRT traits were combined according to scriptural injunctions which mentions the characteristic traits of each of
the 16 CPT. This gave rise to each person having scores for each of the 16 CPT, thereby giving rise to the ability to compare every individual to the 16 CPT to derive the concordance—discordance scores. These scores can be interpreted and commonalities for each profession can be found, thereby indicating the “Fit” of a person to a particular profession or vice-versa. This comprises Section 1: Part 4 analysis.

Here a respondent’s scoring on both the physical-physiological as well as the psychological Traits are added and the total score is obtained, which is then compared with that of the 16 Classical Personality Types. The absolute scores and the combinations of the physical and psychological traits for the 16 CPT has already been derived, shown to Ayurvedic experts and validated. This gives a picture as to which of the 16 Classical Personality Types a respondent resembles and to what extent. Here also, the group trends have been identified and tabulated for the three professional groups of Teachers, Police Personnel and IT Professionals, along with the group of adults from different professions. This comparison gives a picture of the kinds of 16 Classical Personality Types that each professional group resembles. In this way, the Tridosha (1 scale) and the Triguna (2 scales) Tests can be used for various levels of analysis. The respondent answers only the three scales as has been explained and standardized. The answers obtained from every respondent are analyzed at three different levels so as to obtain different kinds of analysis.

Different kinds of analysis that a respondents’ answers are subjected to:

At the first instance, to categorize a respondent as being Vata, Pitta or Kapha dominant or one of the blends, and also as being Sattva, Rajas or Tamas dominant or one of the blends—Stanine scores and interpretations as well as salient characteristics for the same have been developed and standardized.

At the second instance, the respondents’ answers are combined in different permutations and combinations so as to yield the 189 physical and 189 psychological traits. Stanine scores and interpretations for the same have been developed and standardized.

At the third instance the 189 physical and 189 psychological traits of the second instance is re-organized to compare it with the 16 Classical Personality Types. The raw scores
are taken into consideration at this point and each respondents’ raw scores are obtained for comparison with each of the 16 CPT. The exclusive raw score ranges for the three different professions for each of the 16 CPT has been developed. Hence a respondents’ score is compared with that of the cohort group and can be observed whether there is a “Fit” with the scores of the particular cohort group or not. Raw scores are used at this point of analysis at it can yield a better range than Stanine scores. Exclusive raw score ranges for all the three professions for each of the 16 CPT have been developed based on which the respondents’ “Fit” to a particular profession can be observed.

This methodology can be evolved in the same manner to bring in as many professional groups as possible for the personality analysis from the Indian perspective of Tridoshas and Trigunas, which are embedded in the 16 CPT analysis—the third instance of analysis that a respondents’ answers are subjected to. Thus, a workable methodology has been developed by the researcher which was used in the present study.

In the second section of the study, the researcher has tested and verified four different hypotheses.

**Descriptions of others’ tests used in the study for inclusion criteria**

   The present scale draws motivation from the works of Hoppock (1935), Morse (1953), Kahan (1951), Herzberg (1959), Kelliberg (1977), Rajbir (1976), Sokhey (1975), Pestongee (1973) and Muthaya (1984). The level of job satisfaction was measured in two types of areas—job intrinsic (factors lying in the job itself) and job-extrinsic (factors lying outside the job). 80 items were got rated for suitability by 30 judges belonging to the fields of psychology, sociology, business, administration, law and trade-union. For the final scale only 30 statements were retained. Each statement has five alternatives from which a respondent has to choose any one which candidly expresses his response.

**Standardization sample:** The scale was administered on 320 professionals consisting of an equal number of engineers, doctors, advocates and college teachers selected as per stratified
random technique from all over the state of Panjab. The rural and urban areas were given due representation. The scale in its totality or in parts depending upon the requirements can be administered to any category of professionals. It is comprehensive and omnibus in nature.

**Scoring:** The scale has both positive and negative statements. The positive statements carry a weightage of 4, 3, 2, 1 and 0 points and the negative statements a weightage of 0, 1, 2, 3 and 4 points. The total score gives a quick measure of satisfaction/ dissatisfaction of a worker towards his job.

The following are the scores and their degrees of satisfaction:

- 74 or above: Extremely satisfied
- 63-73: Very satisfied
- 56-62: Moderately satisfied
- 48-55: Not satisfied
- 47 or below: Extremely dissatisfied

**Reliability and Validity:** The test-retest reliability works out to be 0.978 with N = 52 and a gap of 25 days. The scale compares favourably with Muthayya’s job satisfaction questionnaire giving a validity coefficient of 0.743. Moreover the satisfaction measures obtained from this scale have a close resemblance to the ratings given to the employees on a 3-point scale: fully satisfied, average satisfied, dissatisfied by the employers. The coefficient of correlation was 0.812 (N = 52).


The Mini-International Neuropsychiatric Interview (M.I.N.I.) is a short diagnostic interview developed jointly by psychiatrists and clinicians in the United States and Europe, for DSM-IV and ICD-10 psychiatric disorders. With an administration time of approximately 15 minutes, it was designed to meet the need for a short but accurate structured psychiatric interview for multicenter clinical trials and epidemiology studies and to be used as a first step in outcome tracking in non-research clinical settings. The authors describe the development of the M.I.N.I. and its family of interviews: the MINI-Screen, the MINI-Plus, and the MINI-Kid. They
report on the validation of the MINI in relation to the Structured Clinical Interview for DSM-III-R, Patient Version, the Composite International Diagnostic Interview, and expert professional opinion, and they comment on potential applications for this interview.

The pressing need for a screening instrument for primary care that tapped more than the six disorders covered by the SDDS and the PRIME-MD (including the need to ask about some disorders more common in primary care than all those assessed by these instruments) but retained the brevity of these instruments led to the development of the MINI Screen.

**Diagnostic Standards:** The diagnostic standards for these studies were the SCID-P for the U.S. subjects and the CIDI for the French subjects.

**Statistical analyses:** For each of the 17 Axis I disorders generated by the MINI diagnostic concordance with the standard instrument (SCID-P or CIDI) was assessed using Cohen’s Kappa: sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and efficiency. Separate analyses were performed for the clinician and patient rated versions of the MINI in the SCID-P comparison. Inter-rater and retest reliability were assessed using Cohen’s Kappa.

**Results:** In general, MINI diagnoses were characterized by good or very good Kappa values, with only a single value (for current drug dependence) below 0.50. the operating characteristics of the MINI were very good. Sensitivity was 0.70 or greater for all but three values (dysthymia, obsessive-compulsive disorder and current drug dependence). Specificities and negative predictive values were 0.85 or higher across all the diagnoses. PPV’s were very good (above 0.75) for major depression, lifetime mania, current and lifetime panic disorder, lifetime agoraphobia, lifetime psychotic disorder, anorexia, and post traumatic stress disorder (PTSD). They were good (0.60-0.74) for current mania, generalized anxiety disorder (GAD), current agoraphobia, obsessive-compulsive disorder (OCD), current alcohol dependence, lifetime drug dependence, and bulimia. They were acceptable, but in a lower range (0.45-0.59) for dysthymia, current psychotic disorder, lifetime simple phobia, current and lifetime social phobia, and current drug dependence.

**Concordance of the MINI-PR with SCID-P diagnoses:** Although patient-generated diagnoses, using the MINI-PR were characterized by lower Kappa scores compared to clinician-generated diagnoses, agreement was acceptable (0.45-0.59) for major depressive disorder, lifetime mania,
current and lifetime panic disorder, current and lifetime agoraphobia, lifetime psychotic disorder, OCD, GAD and PTSD. Agreement was good (0.60-0.74) for alcohol dependence, lifetime drug dependence and anorexia. Agreement, however was poor (below 0.45) for diagnoses with high co-morbidity such as dysthymia, simple phobia, social phobia and current drug dependence. Agreement was also poor for the more severe psychopathology (current mania and current psychotic disorder). Patients who were actively psychotic or manic often appeared distracted and had difficulty focusing on the questions and completing the patient rated form. Based on these findings, the authors decided to restrict the use of the patient-rated version to those patients who appear to have less severe psycho-pathology.

**Concordance of MINI-CR with CIDI diagnoses:** Good results were obtained when MINI diagnoses were compared with the CIDI. Kappa values were good or very good for most diagnoses, with only two values (for simple phobia and GAD) falling below 0.50. Sensitivity was 0.70 or greater for all but 4 values (panic, agoraphobia, simple phobia, and lifetime bulimia). Specificity was 0.70 or greater for all diagnoses. Negative predictive values were also very good. Positive predictive values were acceptable for lifetime bulimia (0.52), current manic episode (0.56) and social phobia (0.55), but poor for GAD (0.34). For psychotic disorders, concordance between instruments was very good whether the comparison with the CIDI was based on a diagnostic, a syndromal or a symptomatic approach. Patients without disorders, symptoms or syndromes were identified with high specificity resulting in very good negative predictive values. Sensitivity values were very good and positive predictive values were good or very good. Where discrepancies between the MINI and the CIDI existed, they could be attributed largely to the co-existence of affective and psychotic symptoms. In 17% of the cases, the CIDI identified psychotic symptoms but could not link them directly to a diagnosis (e.g., criterion “A” for schizophrenia was present during a non-severe affective disorder).

**Normal controls:** There was no evidence of an inflated rate of false positives in the non-psychiatric patient normal control group at either of the two sites in these studies.

**Inter-rater and retest reliability:** All of the Kappa values were above 0.75 and the majority (70%) were 0.90 or higher, indicating excellent inter-rater reliability. Fourteen of the 23 (61%) values were above 0.75, and only one value (for current mania) was below 0.45. These results indicate very good retest reliability. Since a second interviewer was used for the retest
(introducing an additional potential source of error), the analysis would be expected to produce a very conservative estimate of the stability of the MINI-CR diagnoses.

**Summation of Validation Studies:** Overall, the results were very positive. The data suggest that the MINI succeeds in reliability and validity eliciting symptom criteria used in making DSM-III-R and ICD-10 diagnoses and does so in less than half the time needed for the SCID-P or the CIDI. Small differences between the shorter MINI and the longer interview were consistently in the direction of the MINI being slightly more inclusive. For a more than 50% reduction in administration time compared with the longer interviews, sensitivity and specificity were very good.

Although the clinician-rated version of the MINI (MINI-CR) was superior to the patient-rated version (MINI-PR), the patient rated version has utility in certain settings especially for out-patients with anxiety and mood disorders, rather than for patients with more severe psychopathology (e.g., psychotic disorders).

**Computer Versions:** A computerized version of the MINI is now available. The MINI has also been included in an interactive voice recognition/ computer-assisted telephone interview that is integrated with a medical screening/ triage interview for medical and primary care telephone screening of large samples of patients. A dynamic client-server version for the Internet is being developed. Studies are underway to assess the value of computerized versions of the MINI.

Potential applications: Research: Although the MINI provides less disorder subtyping (e.g., in the psychotic disorder section) than the SCID-P, it covers a much broader range of diagnoses than other short structured interviews such as the SDDS and the PRIME-MD and is considerably shorter than the SCID-P and the CIDI. The MINI or modules of the MINI can be used by academic researchers and pharmaceutical companies for rapid screening of homogenous samples for clinical trials and epidemiologic studies.

**Clinical practice and primary care:** The MINI has potential applications as a diagnostic screening tool for psychiatric hospital admissions and outpatient clinic evaluations.

**Managed care:** The MINI can be used as a first step in outcome tracking and continuous quality improvement (CQI) programs. The authors anticipate that in the emerging healthcare delivery systems, there will be an increasing need for health information technicians whose role in mental
health will be primarily to gather health information using the structured assessments and to track outcomes. The MINI was designed not only for use by physicians but also by health information technicians or “physician extenders” who are not psychiatrists or doctoral level psychologists.

In the emerging competitive healthcare environment, brief structured diagnostic interviews such as the MINI can be used by providers (hospitals, outpatient care clinics, managed care companies) and government agencies to negotiate mental health contracts. Database can be generated from the computerized MINI to assist physicians, hospitals, and actuaries in calculating precise capitated costs and negotiating payments. The use of brief structured interviews, such as the MINI, also has the potential to reduce “diagnostic drift” (in the direction of diagnoses that provide the best reimbursement) and to increase the confidence of purchasers in provider-generated data.


This manual introduces the AUDIT, the Alcohol Use Disorders Identification Test, and describes how to use it to identify persons with hazardous and harmful patterns of alcohol consumption. The AUDIT was developed by the World Health Organization (WHO) as a simple method of screening for excessive drinking and to assist in brief assessment. It can help in identifying excessive drinking as the cause of the presenting illness. It also provides a framework for intervention to help hazardous and harmful drinkers reduce or cease alcohol consumption and thereby avoid the harmful consequences of their drinking. The first edition of this manual was published in 1989 (Document No. WHO/MNH/DAT/89.4) and was subsequently updated in 1992 (WHO/PSA/92.4). Since that time it has enjoyed widespread use by both health workers and alcohol researchers. With the growing use of alcohol screening and the international popularity of the AUDIT, there was a need to revise the manual to take into account advances in research and clinical experience.

This manual is written primarily for health care practitioners, but other professionals who encounter persons with alcohol-related problems may also find it useful. It is designed to be used in conjunction with a companion document that provides complementary information about early
intervention procedures, entitled “Brief Intervention for Hazardous and Harmful Drinking: A Manual for Use in Primary Care”. Together these manuals describe a comprehensive approach to screening and brief intervention for alcohol-related problems in primary health care.

**Development and validation of the AUDIT:** The AUDIT was developed and evaluated over a period of two decades, and it has been found to provide an accurate measure of risk across gender, age, and cultures. The AUDIT, which consists of 10 questions about recent alcohol use, alcohol dependence symptoms, and alcohol-related problems. As the first screening test designed specifically for use in primary care settings, the AUDIT has the following advantages:

1. Cross-national standardization: the AUDIT was validated on primary health care patients in six countries. It is the only screening test specifically designed for international use.
2. Identifies hazardous and harmful alcohol use, as well as possible dependence.
3. Brief, rapid, and flexible.
4. Designed for primary health care workers.
5. Consistent with ICD-10 definitions of alcohol dependence and harmful alcohol use.
6. Focuses on recent alcohol use.

**Scoring and interpretation:** The AUDIT is easy to score. Each of the questions has a set of responses to choose from, and each response has a score ranging from 0 to 4. In the interview format the interviewer enters the score corresponding to the patient’s response into the box beside each question. In the self-report questionnaire format, the number in the column of each response checked by the patient should be entered by the scorer in the extreme right-hand column. All the response scores should then be added and recorded in the box labeled “Total”.

- A score of 0-7 is indicative of social drinking.
- A total of 8+ score: Indication of hazardous and harmful alcohol use as well as possible alcohol dependence.
- A score of 1 or more on Question 2 or question 3 indicates consumption at a hazardous level.
- A score above “0” on questions 4-6 (especially weekly or daily symptoms) imply the presence or incipience of alcohol dependence.
- Points scored on questions 7-10 indicate that alcohol-related harm is already being experienced.
- Positive response to questions 9 and 10 indicates need for vigilance by the respondent.
- Scores of 20 or above clearly warrant further diagnostic evaluation for alcohol dependence.

The authors examined and refined the Fagerström Tolerance Questionnaire (FTQ: Fagerström, 1978). The relation between each FTQ item and biochemical measures of heaviness of smoking was examined in 254 smokers. They found that the nicotine rating item and the inhalation item were unrelated to any of the biochemical measures and these two items were primary contributors to psychometric deficiencies in the FTQ. They also found that a revised scoring of time to the first cigarette of the day (TTF) and number of cigarettes smoked per day (CPD) improved the scale and present a revision of the FTQ: the Fagerström Test for Nicotine Dependence (FTND).

**Summary Statistics:** The scale consists of six items. Scoring per item is either a two to four level response with values 0, 1, 2 or 3. Items are summed and the possible scores should range from 0 to 10, where a low level of addiction will rank between 0-3 points; a medium level of addiction will rank between 4-6 points and a high level of addiction will rank between 7-10 points.

After the respondents of the sample fulfilling the inclusive criteria, answered the tools developed by the researcher, they were scored and used for standardization process. Since the main objective of the present study is to develop *Tridosha* (VPK) and *Triguna* (SRT) scales, and to test the hypotheses, the outcomes of standardization along with results and discussions of testing and verification of hypotheses are presented in the next chapter under the heading, Outcomes, Results and Discussions.