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Role of Objective Analytic Tests Battery in Personality Assessment

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Abstract

Across the globe, questionnaires have gained huge popularity in the area of personality assessment because of its ease of construction and administration, despite its serious limitations such as social desirable responses, judgmental errors and faking etc. The present study is focused on importance of Objective Analytic Test battery (T-Data measures) in personality assessment. T-Data measures are objective in real sense and can be a good alternative in personality assessment as T-Data measures are not dependent on subject's self evaluation but measures direct reactions and without subject's knowledge about what interpretation is put on it. One of the prime characteristics of these tests is that they do not have any face validity and therefore reduces the possibility of faking to a great extent which questionnaire measurement cannot rule out completely. The present study is an attempt to emphasize on the importance of Objective Analytic Test as a valid and error free tool in the personality assessment.

1. Introduction

Assessment of Personality has always been an area of interest for psychologists as well as for layman. Among many eminent personality psychologists, R.B. Cattell has been among foremost who has worked extensively in the area of personality. The scientific investigation of personality started in 1930's when Allport (1937, Murray, 1938 and Levin 1935) realized the need of developing personality as a potent field of investigation. By emphasizing the study of

1. Whole Person,
2. Motivation and Dynamics,
3. Individual Differences.

In real sense, experimental investigation of personality gained the momentum around 1960's with the foundation of Society of Multivariate Experimental Psychology. R. B. Cattell has been amongst the foremost stressing the experimental study of personality by using multivariate methodology. A general strategy for experimental investigation of Personality according to multivariate researchers is the cross sectional investigation of structures by factor analytic and allied methods. In the pursuit of this ideal

researcher such as Burt, Cattell, Eysenck, Guilford, Hundelby, Warburton and others have worked over the last five decades to establish the principal normal and abnormal personality structures in terms of factor analytic concepts in three media of observations (e.g. Life Record or L-Data, questionnaire or Q –Data or Objective Tests or T-Data. Cattell started his research in this regard with L-Data to determine the initial domain of behaviors called "Personality Sphere". He began with the assumption that the behavior that covers the total personality sphere have their verbal symptoms in language (Lexical hypothesis).To define Personality Sphere Cattell searched various adjectives of personality describing behavior from various English dictionaries. After removing all the synonyms subjects were rated on remaining traits. Obtained data from ratings were subjected to correlational analysis. Then, highly correlated traits were removed and the remaining correlations were subjected to a simple form of factor analysis (Cluster Analysis) which yielded 12-15 L-Data factors of personality which are labeled as A, B, C, D, etc. in decreasing order of various magnitude. These L-Data factors were used to hypothesize for the systematic extension of personality research in to Q – and T-Data. Obtained factors were used to determine whether comparable factors could be found in Q – and

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T-Data which led to the development of 16PF and Objective Analytic Tests. In this system primary factor obtained in L-, Q - and T-Data were indexed with prefixing UI (L), UI (Q), and UI (T) respectively. Cattell has used this indexing system throughout his researches. The list of L-Data justifying universal indexing are UI(L) 1 to UI (L) 14 with the laboratory letter indices of A, B, C, D etc. Cattell also assigned to these L-Data factors the descriptive names. Since Cattell mainly used the behavior ratings in identification of L-Data factors which suffered from number of weaknesses such as hallo effect, Localism of observation etc.

There after Cattell concentrated to develop questionnaire measures based on obtained L-Data factors. Cattell has developed a number of Q –Data instruments such as Pre-school personality quiz. (PSPQ) for ages 4-6 years. Child Personality questionnaire (CPQ) for age 6- 8 years, HSPQ for high school students and 16 PF for adults. He also developed tests for abnormal personality sphere, i.e. (CAQ). In the development of 16 PF Cattell used the personality dimensions found in L-Data as a source of hypothesis for test items. Thousands of questionnaire items were prepared and administered to large groups of normal subjects. Factor Analysis was used in the development of 16 PF. Of the 16 factors indexed by 16 PF, 12 show considerable similarity with factors from L-Data and 4 appear to be unique to Q–Data .(Q_1, Q_2, Q_3, Q_4) . Q -data factors obtained amongst normal adults are A, B, C, E, F, G, H, I, L, M, N, O, Q_1, Q_2, Q_3, Q_4, with the universal index number as UI (Q_1) to UI (Q_{16}) respectively. Originally 23 primary factors were obtained from Q–Data of which only 16 were incorporated in 16 PF. In addition to the 16 primary factors, Cattell (1973) has summarized, based on various studies on adults with 16 PF, 8 second – order factors emerged which he labeled as

1. Exvia
2. Anxiety
3. Corteria
4. Independence
5. Discreetness
6. Subjectivity
7. Intelligence
8. Good upbringing

On the basis of variance magnitude four of these have been incorporated in 16 PF.

Summarizing Cattell's basic positions with regard to personality structure in L- and Q – Data, It can be said that (a.) in the normal adult personality sphere 23 factors have been found of which 16 have been confirmed in Q – data, (b.) within abnormal personality sphere 12 more primary factors in addition to 16 have been identified in Q –data and (c.) with various age groups of children similar normal factors are obtained although their numbers are fewer than in adults. It depicts the stability of primary factors of personality. Though, Cattell's questionnaire measures gained high level of popularity but Cattell himself was not fully satisfied with the assessment of personality by questionnaire measures. He put forth severe criticisms of questionnaire measurement.

1. People do not know themselves well enough to be able to give truthful answers.
2. Questionnaire techniques suffer from problems of communications.
3. Many real life situations cannot be represented in verbal questionnaire items.
4. People are capable of falsifying their responses or having the tendency to provide social desirable responses.
5. People give different answers to the same items after some time interval.
6. Questionnaire show less validity against external criteria.
7. Questionnaire responses are susceptible to response sets.

In view of the weaknesses in assessment by L- Data and Q - data measures, Cattell thought of developing Objective Analytic Tests or T- Data measures. Objective Analytic tests have mainly emerged from two laboratories one of Cattell and another of Eysenck. Objective tests are just another name for laboratory behavioral measurement. In objective tests, the subject is placed in miniature situation where he simply acts and his responses are observed and measured. The objectivity of this type of tests is defined by the criterion that the subject does not know on what aspects of his behavior, he is really evaluated. These objective tests also called T-Data measures include laboratory measures with a view to make more specific investigation and measurement of personality structures. Cattell has developed nearly 500 different types of objective tests which have been listed in Cattell and Warburton's Compendium (1967). Objective tests are more universal in applicability across the globe. The essence of objective tests is that tested individual consents to respond with actual behavior to some miniature life situations could be for him. His response is measured in ways of which he is unaware so that faking is ruled out. Some psychologists mistakenly calls questionnaires as objective tests because of different scorers apply the same key to answer sheets to get

same result. Cattell has used the term "Conspective" for such objectivity of scoring to distinguish it clearly from the ipsetive objectivity of objective analytic tests. In response to the constant and insistent demand to make these objective tests group administrable, researchers in this area such as Barton, Cattell, Hundelby, Pawlik, Sweney, Tatro and others have converted these individual tests to group administrable forms. The generally paper- pencil, group administrable sound tapes and may therefore seem like questionnaire but the contents of these tests do not make clear to the subjects what is being measured. Cattell (1957a) has remarked that "an objective test is a portable, exactly reproducible stimulus situation with an exactly prescribed mode of scoring the response of which the subject is not informed". All objective tests are also experimental measurements but not all experiments are tests. The difference between T-Data and Q – data measures resides in the fact that the response cannot be deliberately self evaluative and self revelatory if the subject is not told how his response is going to be evaluated.

The objective tests also differ from L-Data measures primarily in that the response in later takes place in a naturally occurring life situations and motivation situation in T-Data is artificial and standardized. The T-Data measures have been classified in different types. Hundelby (1963) has classified all the measures of personality in to eight separate domains which appear to be applicable to the features of objective tests. These domains are (1) Self description i.e. Q–Data), 2. Ratings and records of others (L-Data), 3. Life history, 4. Morphology, 5. Expressive moments, 6. Simulated Life situations, 7. Physiological variables and 8. Motor perceptual and performance measures. The last two domains are highly important in the development of objective tests. Cattell and his colleagues are of the view that projective tests can also be used as objective analytic tests.

Cattell has developed a comprehensive battery of objective tests consisting of 12 categories of tests such as Ability tests, Performance tests, Perceptual tests, questionnaires, Opinionanaires, Aesthetic tests, Projective tests, Situational tests, games physiological tests, physical tests and incidental observation.(Cattell and Warburton, 1967).These tests have been labeled as T_1 to T_{500} , variables represented by these tests have been labeled as Master Index (MI), ranging from MI_1 to MI_{2366}.T-Data source traits have been found to be stable across different age groups from 6 to 60 with some change of expression and across cultures. T-Data measures in all have yielded 62 primary factors including the ability, temperament

and dynamic factors. These factors have been labeled with UI (T_1) to UI (T_{62}).Out of these first 15 are ability factors, 16 to 35 are temperament factors and 36 to 62 are dynamic factors.

Comprehensive battery of these tests has been labeled as "Objective Analytic Test Battery" (OATB).The primary personality source traits located in these objective tests are as follows: -

UI (T)	16	Narcissistic Ego vs. Secure Disciplined Unassertiveness
UI(T)	17	Timid Distrust vs. Trustingness.
UI (T)	18	Manic Smartness vs. Passiveness.
UI (T)	19	Independence vs. Subduedness.
UI (T)	20	Comention (cultural confirming) vs. Objectivity.
UI (T)	21	Exuberance vs. Suppressibility.
UI (T)	22	Cortertia (Cortical Alertness) vs. Pathemia.
UI (T)	23	Mobilization of Energy vs. Regression.
UI (T)	24	Anxiety vs. Adjustment.
UI (T)	25	Realism vs. Tensinflexia (Psychotic Tendency)
UI (T)	26.	Self-realization (Narcisstic self-sentiment) vs. Homespuness.
UI (T)	27	Unmovedness (Susceptical Apathy) vs. Involvement.
UI (T)	28	Superego Asthenia vs. Rough Assurance
UI (T)	29	Determined (Whole hearted) Responsiveness vs. Lack of Will.
UI (T)	30	Mature Stolidness vs. Dissofrustance
UI (T)	31	Wariness vs. Impulsive Variability
UI (T)	32	Exvia (Extroversion) vs. Invia (Introversion)
UI (T)	33	Reactive Dismay (Pessimism) vs. Sanguine Poise
UI (T)	34	Inconautia (Impracticalness) vs. Practicalness
UI (T)	35	Stolpassomnia (Somnolence) vs. Excitation
UI (T)	36	Strong Self-sentiment vs. Weak Self- sentiment

In addition, Cattell has also located seven second order factors and are labeled as:

T_i: Tied Socialism Vs. Absence of Cultural Introjections.

T_{ii} - Expansive Ego vs. History of Difficulty in Problem Solving

T_{iii} - Temperamental Ardor vs. Temperamental Apathy

T_{iv} - High Self- Consciousness vs. Low Self – Consciousness

T_v- History of Inhibiting, Restraining Environment vs. Laxness

T_{vi}- Narcissistic Development vs. Responsiveness to Environment Discipline

T_{vii} -High Tension to Achieve vs. Low Tension to Achieve

Cattell has also located three third order factors out of these and labeled as:

A. Immature Self – centered Temperament.

B. Restrained Acceptance of External Norms.

C. High Self- Assertion.

Comprehensive battery of these tests is called "Objective Analytic Test Battery" (OATB), OATB is classified in various versions as per the age levels:-

(1) OATB for 21 primary source traits in adults from the age of 17 yrs. and onwards.

(2) OATB measuring 14 factors for adults.

(3) High School OATB.

(4) OATB indexing 11 factors for 10 to 12 years.

(5) OATB indexing 8 factors for 6 to 9 years.

OATB consists of both group administrable as well as individual administrable tests.

Some examples of Objective Analytic Tests are:

Test No.	Master Index	Test Name / Variable	Factor (UI)
T 42	379	Mazes (Pencil) : Faster speed & higher accuracy	UI 16
T 143	429	Picture Inspection: Emotional Disturbance effects: Greater preferences for aggressive relative to non-aggressive pictures.	UI 17
T 121	15	Cursive Miniature Situations: More use of circles	UI 18
T 33	170	Hidden Pictures: More hidden objects correctly seen.	UI 19
T 354	20a	Tapping: Interrupted vs. Uninterrupted performance: More dishonesty.	UI 20
T 44	307	Letter and Number Comparison : Faster speed (letters)	UI 21
T 122	175a	Reaction Times : Slower regularly warned reaction times	UI 22
T 217	160	Drawing in Reverse : Faster speed	UI 23
T 224	712	Psychotic Skidding: Word Association: higher proportion of rhyming words given.	UI 24
T 4	1414	Cancellation of Letters : Higher number of correct cancellations	UI 25
T 230	346	Leg persistence: Greater final relative to initial persistence overtime.	UI 26
T 127	122	Body sway suggestibility : more swaying	UI 27
T 144	339	Mirror Drawing: Slower speed	UI 28
T 128	80	Psychogalvanic Reflex : More upward drift when relaxed relative to upward drift under shock	UI 29
T 134	155	Flicker Fusion: Higher range of successive critical flicker fusion frequencies.	UI 30
T 35	203	Numerical Ability : More confidence	UI 31
T 182	422	Tower Construction With Blocks: Greater height of single tower constructed.	UI 32
T 19	159 c	Time Estimates for Everyday Tasks: Greater inaccuracy of other-referent & self-referent time estimates.	UI 33
T 109	515	Voice Amplitude : Higher amplitude under normal relative to delayed feedback conditions	UI 34
T 55	531	Decision Speed: Aesthetic vs. Emotional vs. Logical: Faster aesthetic relative to cognitive- logical decision time.	UI 35
T 32	151	Decision Making : According to principles vs. particulars : Faster speed on particulars relative to principles	UI 36

2. Conclusion

Thus, Objective Analytic test Battery, if used appropriately, can be utilized in the fields of applied psychology i.e. clinical, educational, occupational, and social psychology. The OATB measures for some

source traits effective in occupational performance and personnel selection have been mainly examined in military and Air- Force. These measures can be used to assess the general competence & specific personality make-up for army personnel. Knapp (1962) has reported that personality traits highly associated with general competence are UI 16 (Assertiveness), UI 19 (Independence), UI 21 (Exuberance), UI 22 (Corteria – Cortical alertness), UI 23 (Mobilization of Energy), UI 24 (Adjustment), and UI 25 (Realism). In social and organizational psychology, Objective analytic tests can be used to assess the leadership qualities, confirmatory behavior, organizational commitment, pro-social behavior etc. Hence, It can be concluded that Objective Analytic Test battery is real measures of personality, they are non- fakeable and economical unlike questionnaire measures and have shown higher applicability and higher usability than the questionnaire measures.

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