Gender difference in affect of job applicants on completion of projective test battery for personality assessment in armed forces

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ABSTRACT

Background: Every test, whether academic or non-academic, induces an ‘affect’ in subjects and completion of it also produces an affect, may it be positive or negative. The projective tests are peculiar in their nature for the purpose of personality assessment and may also have a temporary or everlasting impact on the respondent’s affect at the conscious level. This paper tries to investigate the affect of job applicants in armed forces on completion of projective tests. Studies have shown that women are perceived to express emotions more than men but that there were little differences in the perception of men and women’s emotional experience. Aim: The aim of the study was to examine gender difference in the affect of 275 job applicants (110 male and 65 female) after completing the battery of projective tests for personality assessment in armed forces. Materials and Methods: PANAS has been used for determining the positive affect (PA), which reflects the pleasurable engagement and subjective experience of happiness whereas the negative affect (NA) subscale measures the level of subjective distress and displeased engagement. Results: Female’s average score (4.66) was greater than male (4.45) score on the ‘attentive’ dimension of positive affect. This difference was significant t (273) = -2.08, P < 0.05. Male’s average score (4.47) was greater than female (4.24) score on the ‘active’ dimension of positive affect. Conclusion: This difference was significant t (273) = 2.14, P < 0.05. Among the dimensions of the negative affect, none of them have significant difference between male and female.

Keywords: Affect, armed forces, job applicants, personality assessment, projective test

While undergoing any test whether academic or nonacademic, it induces an “affect” in subjects and completion of it also produces an affect, may it be positive or negative. It is felt that projective tests may also have a temporary or everlasting impact on the respondent’s affect at the conscious level having been expressed unconsciously through a tide of emotions and conflicts in a stipulated span of time. Individual affect varies according to the emotional state and the extent to which a person is stirred by the projective tests as his or her unconscious mind is being forced to reveal his inner needs, desires, inner conflicts, defense mechanisms, hidden emotions, and thoughts which he might never have exposed to others or even himself. When job applicants undergo through battery of projective tests for personality assessment, they are not sure of what is required or expected in their answers or how answers will be interpreted even though they have some vague idea of what tests are going to be conducted, they cannot guard against revealing the truth about themselves by giving self-censored answers or answers that show them in a socially desirable way. In the process, applicants’ defenses get bypassed, and they reveal fundamental information about their personalities, which put them through a whirlwind of emotions some which they may
remember at the conscious level and some which they may have forgotten at the end of the testing.

Psychological testing has been the part of selection and classification of personnel for the armed forces ever since World War I wherein psychological tests were first employed by the US Army to assess individual differences using group intelligence testing instruments. Psychological testing utilized in armed forces today includes psychological testing techniques of interviews, rating scales, self-reports, personality inventories, projective techniques, group discussion, and behavioral observation. The Indian Army has a unique multi-trait, multimethod and multi-day psychological testing procedure over a period of five days wherein an applicant not only undergoes intelligence tests, interviews, and group behavior observation but also a battery of psychological tests which include thematic apperception test, word association test, situation reaction test, and self-description test.

The projective techniques aim at revealing the subconscious and unconscious dimensions of the subject’s mind including hidden emotions, needs, internal conflicts, latent impulses, defense mechanisms, and anxieties of the individual. Such stimuli allow relative freedom in projecting one’s own interests and feelings into them, reacting in any way that seems appropriate. As per the projective hypothesis when people try to understand vague or ambiguous unstructured stimuli, the interpretation they produce reflects their needs, feelings, experience, prior conditioning, and thought processes. It is based on a defense mechanism “projection” in which the ego protects itself from anxiety by externalizing unpleasant feelings or experiential element. Projective techniques use vague, ambiguous, unstructured stimuli, objects or situations in which the subject “projects” his or her personality, attitude, opinions and self-concept to give the situation some structure.

The word “affect” means “to produce a change.” To be affected by something is to be influenced by it. Historically, “affect” referred to a simple feeling – to be affected is to feel something. In modern psychological usage, “affect” refers to the mental counterpart of internal bodily representations associated with emotions, actions that involve some degree of motivation, intensity, and force, or even personality dispositions. In the science of emotion, “affect” is a general term that has come to mean anything emotional. A cautious term, it allows reference to something’s effect or someone’s internal state without specifying exactly what kind of an effect or state it is. Affect is defined by APA as “the psychological term for an observable expression of emotion, the experience of feeling or emotion which is a key part of the process of an organism’s interaction with stimuli and includes both negative and positive emotions which may have been stirred in the subject by a stimulus.” A person’s affect is the expression of emotion or feelings displayed to others through facial expressions, hand gestures, voice tone, and other emotional signs such as laughter or tears. There are certain widely recognized affects placed under two broad categories of positive affects (PAs) and negative affects (NAs). NA include affects such as angry, disgusted, distressed, upset, guilty, ashamed, hostile, irritable, nervous, jittery, scared, and afraid while PA include affects of interested, alert, attentive, excited, enthusiastic, inspired, proud, determined, and strong, active.

Many studies have been conducted, examining emotional expressivity in males and females and there is a fairly substantial body of research demonstrating that women are the more emotionally expressive gender. Emotions of happiness, sadness, and fear are believed to be more characteristic of women whereas men are believed to be more characteristically angry. Researchers have found in their studies that these gender-specific stereotypes are observed in children as early as preschool age. This instilment of socially acceptable displayable emotions from early childhood will become more sophisticated as children mature. In addition to this, there are certain emotions that have been stereotypically linked to each gender. Ideally, they will continue to express their emotions “correctly” to illustrate their social competence. This is done because subconsciously we are aware that the way we express or manage our emotions has a significant influence on the initiation, facilitation, and maintenance of social relationships. This early shaping of our views on emotional expressivity results in women being more emotionally expressive than men. It is important to note that we are talking about the expression of experiences and not the actual experience itself; the external rather than the internal. Studies showed that women are perceived to express emotions more than men but that there was little difference in the perception of men and women’s emotional experience. “Therefore, it appears that the consistent gender differences in the emotion stereotype literature are based on beliefs about the expression of emotion more than they are on beliefs about the emotional experience.”

METHODS

Rationale

The study has been undertaken to investigate the affect after revealing oneself, i.e., job applicants on a battery of projective test. Since not many institutions in the world adopt multi-trait multi-method multi-day rigorous testing procedure including projective tests for personality
assessment as carried out in Indian Armed Forces; therefore, it becomes the unique setting in an organizational behavior to explore and investigate gender difference in affect vis-a-vis nature of test. The participants were put through the PA and NA schedule (PANAS) test after the completion of projective test battery in the form of a paper and pencil test. The participants were briefed that the test will not be a part of their selection process and in no way impact their selection. The applicants were then asked to rate the extent to which they experienced each of the 20 emotions on a 5-point Likert scale ranging from “Very Slightly” to “Extremely.”

**Objective**
The research was carried with an aim of studying the gender difference in affect of the job applicants who have undergone a projective test battery by the use of the PANAS.

**Sample**
The sample was collected from 275 job applicants (110 males and 65 females) reporting across all walks of the country to Selection Centre Central, Bhopal, for different types of entries to join Indian Armed Forces in the officer rank with age range of between 20 and 25 years and education qualification ranging from graduation to postgraduation.

**Measure**
PANAS was a 20-item self-report measure of PA and NA.[8] The PANAS has been widely used for diverse purpose in both clinical and nonclinical settings. The PA reflects the pleasurable engagement and subjective experience of happiness whereas the NA measures the level of subjective distress and unpleased engagement. Emotions such as enthusiasm and alertness are indicative of high PA, while lethargy and sadness characterize low PA.[9] The reliability (internal consistency) of PA subscale ranged from 0.86 to 0.90 whereas that of the NA scale from 0.84 to 0.87, the test retest reliability (1 week) was 0.79 for PA and 0.81 for NA.[9] The validity of the PANAS was found with respect to Hopkins Symptoms Checklist (HSCL) and Beck Depression Inventory (BDI). The correlation of the PANAS to HSCL was found 0.74 for NA and −0.19 for PA whereas correlation of the PANAS to BDI was found 0.65 for NA and −0.29 for PA.

The PANAS has been translated into many languages and administered internationally in several countries including India. A Hindi version of the PANAS (PANAS-H) was developed using the contemporary psychometric standards for developing transliteral equivalents and cross-cultural adaptation of psychological test. The reliability for PANAS-H in Indian context was found satisfactory (0.80 for PA, 0.77 for NA and 0.66 for full scale). Overall, the findings suggested that the PANAS-H can reliably and validly measure the PA and NA of Hindi speaking individuals, and the PANAS-H measures two distinct (PA and NA) but negatively related dimensions of affect.[10]

**Null hypothesis**
There will be no significant difference between PA and NA of male and female job applicants after the completion of projective test battery.

**RESULTS**
A total of 275 job applicants, which reveals that there were more male (210) than female (65) job applicants in the sample. The mean of the total PA of male (43.28) was greater than female (43.07), dimensions within PA where mean of female was greater than male were enthusiastic, alert, determined and attentive, while mean of both male and female were equal in strong dimension. Similarly, mean of the total NA of males (14.73) was greater than females (14.63), dimensions within NA where mean of male was greater than female were upset, irritated, ashamed, and restless, while mean of both male and female were equal in guilty dimension [Table 1].

The present study showed that on average male job applicants showed greater PA (male = 43.28) than female job applicants (male = 43.07). This difference was not significant $t(273) = 0.30, P > 0.05$. Hence, the null hypothesis that there will be no significant difference between male and female job applicants on PA scores was accepted. Female’s average score (4.66) was greater than male (4.45) score on the “attentive” dimension of PA. This difference was significant $t(273) = -2.08, P < 0.05$. Male’s average score (4.47) was greater than female (4.24) score on the “active” dimension of PA. This difference was significant $t(273) = 2.14, P < 0.05$ [Table 2]. It also revealed that on average male job applicants also showed greater NA (male = 14.73) than female job applicants (male = 14.63). This difference was not significant $t(273) = 0.16, P > 0.05$. Hence the null hypothesis that there will be no significant difference between male and female job applicants on NA scores was accepted. Among the dimensions of the NA, none of them have significant difference between male and female [Table 3]. Paired sample statistic revealed that difference between PA and NA within male was significant $t(209) = 65.78, P < 0.01$ and within female was also significant $t(64) = 31.46, P < 0.01$. The correlation between PA and NA within male ($r = -0.04$) and female ($r = -0.11$) were both negative but not significant at 0.05 level [Table 4].
Table 1: Descriptive statistics

| Gender | n   | Dimensions      | PA       | NA       |
|--------|-----|----------------|----------|----------|
|        |     |                | Mean     | SD       | SEM      | Mean     | SD       | SEM      |
| Male   | 210 | Interested     | 4.50     | 0.73     | 0.05     | Distressed | 1.71     | 0.96     | 0.06     |
| Female | 65  |                | 4.36     | 0.69     | 0.08     | Upset     | 1.80     | 1.06     | 0.13     |
| Male   | 210 | Excited        | 4.12     | 0.90     | 0.06     | Guilty    | 1.39     | 0.78     | 0.05     |
| Female | 65  |                | 4.07     | 1.00     | 0.12     |          | 1.30     | 0.68     | 0.08     |
| Male   | 210 | Strong         | 4.13     | 0.77     | 0.05     | Scared    | 1.53     | 0.77     | 0.05     |
| Female | 65  |                | 4.13     | 0.88     | 0.10     | Hostile   | 1.55     | 0.91     | 0.11     |
| Male   | 210 | Enthusiastic   | 4.26     | 0.80     | 0.05     | Nervous   | 1.93     | 0.98     | 0.06     |
| Female | 65  |                | 4.27     | 0.73     | 0.09     | Restless  | 1.98     | 1.06     | 0.13     |
| Male   | 210 | Proud          | 4.21     | 0.93     | 0.06     | Afraid    | 1.90     | 0.74     | 0.05     |
| Female | 65  |                | 4.16     | 0.91     | 0.11     | Ashamed   | 1.84     | 0.85     | 0.10     |
| Male   | 210 | Alert          | 4.18     | 0.93     | 0.06     | Irritated | 1.18     | 0.54     | 0.03     |
| Female | 65  |                | 4.30     | 0.86     | 0.10     |          | 1.15     | 0.61     | 0.07     |
| Male   | 210 | Inspired       | 4.31     | 0.78     | 0.05     | Ashamed   | 1.07     | 0.32     | 0.02     |
| Female | 65  |                | 4.23     | 0.72     | 0.08     | Hostile   | 1.06     | 0.39     | 0.04     |
| Male   | 210 | Determined     | 4.59     | 0.65     | 0.04     | Nervous   | 1.93     | 0.98     | 0.06     |
| Female | 65  |                | 4.60     | 0.55     | 0.06     | Restless  | 1.98     | 1.06     | 0.13     |
| Male   | 210 | Attentive      | 4.45     | 0.71     | 0.04     | Afraid    | 1.39     | 0.74     | 0.05     |
| Female | 65  |                | 4.66     | 0.59     | 0.07     |          | 1.64     | 1.05     | 0.13     |
| Male   | 210 | Active         | 4.47     | 0.72     | 0.04     | Scared    | 1.47     | 0.74     | 0.05     |
| Female | 65  |                | 4.44     | 0.86     | 0.10     |          | 1.50     | 0.85     | 0.10     |
| Male   | 210 | Total PA       | 43.28    | 4.61     | 0.31     | Total NA | 14.73    | 4.98     | 0.28     |
| Female | 65  |                | 43.07    | 4.80     | 0.59     |          | 14.63    | 4.95     | 0.61     |

Table 2: Comparison of positive affect dimensions scores

| Gender | n   | Dimensions      | Mean     | t    | df  | Level of significance | Null hypothesis |
|--------|-----|----------------|----------|------|-----|-----------------------|-----------------|
| Male   | 210 | Interested     | 4.50     | 1.36 | 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.36     |      |     |                       |                 |
| Male   | 210 | Excited        | 4.12     | 0.39 | 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.07     |      |     |                       |                 |
| Male   | 210 | Strong         | 4.33     | −0.04 | 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.33     |      |     |                       |                 |
| Male   | 210 | Enthusiastic   | 4.26     | −0.09 | 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.27     |      |     |                       |                 |
| Male   | 210 | Proud          | 4.21     | 0.34 | 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.16     |      |     |                       |                 |
| Male   | 210 | Alert          | 4.18     | −0.97| 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.30     |      |     |                       |                 |
| Male   | 210 | Inspired       | 4.31     | 0.80 | 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.23     |      |     |                       |                 |
| Male   | 210 | Determined     | 4.59     | −0.05| 273 | Not significant       | Accepted        |
| Female | 65  |                | 4.60     |      |     |                       |                 |
| Male   | 210 | Attentive      | 4.45     | −2.08| 273 | Significant at 0.05 level | Rejected |
| Female | 65  |                | 4.66     |      |     |                       |                 |
| Male   | 210 | Active         | 4.47     | 2.14 | 273 | Significant at 0.05 level | Rejected |
| Female | 65  |                | 4.24     |      |     |                       |                 |
| Male   | 210 | Total PA       | 43.28    | 0.30 | 273 | Not significant       | Accepted        |
| Female | 65  |                | 43.07    |      |     |                       |                 |

Graphical representation
Figure 1 depicts multiple lines of positive and negative affect. Upper portion of graph represents total PA and lower represents total NA.
Table 3: Comparison of negative affect dimensions scores

| Gender | n  | Dimensions | Mean | t   | df | Level of significance | Null hypothesis |
|--------|----|------------|------|-----|----|------------------------|-----------------|
| Male   | 210| Distressed | 1.71 | -0.57 | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.80 |       |     |                        |                 |
| Male   | 210| Upset      | 1.39 | 0.76  | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.30 |       |     |                        |                 |
| Male   | 210| Guilty     | 1.20 | 0.00  | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.20 |       |     |                        |                 |
| Male   | 210| Scared     | 1.53 | -0.18 | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.55 |       |     |                        |                 |
| Male   | 210| Hostile    | 1.40 | -0.17 | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.43 |       |     |                        |                 |
| Male   | 210| Irritated  | 1.18 | 0.33  | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.15 |       |     |                        |                 |
| Male   | 210| Ashamed    | 1.07 | 0.19  | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.06 |       |     |                        |                 |
| Male   | 210| Nervous    | 1.93 | -0.35 | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.98 |       |     |                        |                 |
| Male   | 210| Restless   | 1.90 | 1.75  | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.64 |       |     |                        |                 |
| Male   | 210| Afraid     | 1.39 | 1.02  | 273 | Not significant        | Accepted        |
| Female | 65 |            | 1.50 |       |     |                        |                 |
| Male   | 210| Total NA   | 14.73| 0.16  | 273 | Not significant        | Accepted        |
| Female | 65 |            | 14.63|       |     |                        |                 |

NA – Negative affect

Figure 1: Multiple lines of positive and negative affect. Gender: Male – 1, female – 2. Total Positive affect: Upper portion of graph, total negative affect: Lower portion of graph

Figure 2: Normal probability curve of positive affect

Figures 2 and 3 depict normal probability curve of positive and negative affect respectively.

**DISCUSSION**

Individuals when exposed to unstructured, ambiguous, stimuli that lack intrinsic meaning would have a tendency to organize it to assign a meaning to that.[1] They perceive stimuli in a meaningful perspective of their own, featuring their own way of perceiving, feeling, associating and acting beyond the presented stimulus, aggregating experience and memories.[11] During this process, an individual is stirred by the projective tests as his or her unconscious mind is being forced to reveal his inner needs, desires, inner conflicts, defense mechanisms, hidden emotions and thoughts which he might never have exposed to others or even himself. The process which put them through a whirlwind of emotions of which some may remember at the conscious level and some which they may have forgotten at the end of the testing. The results of the study showed that there was no significant gender difference in PA of job applicants. They differ only on two dimensions of positive effect, namely attentive and active. Females were
found significantly more “attentive” than male, whereas male
were found more “active” than female applicants. These
findings are in line with earlier empirical findings showing that
women tend to focus more on their emotional experience,
acknowledge, and discuss more openly and ruminate more on
sadness than men do.[12,13] The results also showed that there
was no significant gender difference in NA of job applicants.
They do not differ on any dimensions of NA. That means
both job applicants displayed same kind of NA on completion
of the projective tests. The male job applicants differed
significantly on PA and NA and the correlation between PA
and NA within male was negative but not significant. Similar
was the case for female, they also differed significantly on
PA and NA and the correlation between PA and NA within
female was negative but not significant. These findings are
in line with the development of PANAS and PANAS-H scales.
The original study found that the average correlation between
PA and NA in two nonclinical samples when reporting
affect across time spans up to a year was −0.17, suggesting
that the two construct were sufficiently different from one
another.[8,14] Comparison analysis of PANAS with profile of
mood states (POMS) scales to demonstrate the convergent
and discriminate validity of a subset of the PANAS scales
also confirms the finding of the present study.[15] Many
studies have confirmed that the findings that emotional
expressiveness in male and female differ, women are more
emotionally expressive gender.[2] In addition, there are certain
emotions that have been stereotypically linked to each gender.
Emotions of happiness, sadness, and fear are believed to be
more characteristics of women whereas men are believed to
be more characteristically angry.[16] The present study on job
applicant in Armed Forces showed contrast result to the above
study, both gender are emotionally expressive equally in NA
and no display of stereotyped emotion linked to each gender.

### CONCLUSION

Facing a test for job especially projective in nature to
express emotions openly will absorb an applicant into the
process of testing with some PA and NA. The present
study tried to investigate affect in unique combination of
setting involving job applicants, both male and female for
one of the robust job of Armed Force, tested through
battery of projective tests, that how job applicants feel
after completion of the tests. PANAS has been used
for determining the PA, which reflects the pleasurable
engagement and subjective experience of happiness
whereas the NA subscale measures the level of subjective
distress and unpleased engagement. Results showed
that female’s average score (4.66) was greater than
male (4.45) score on the “attentive” dimension of PA.
This difference was significant \( t(273) = -2.08, P < 0.05. \)
Male’s average score (4.47) was greater than female (4.24)
score on the “active” dimension of PA. This difference was
significant \( t(273) = 2.14, P < 0.05. \) Among the dimensions
of the NA, none of them have a significant difference
between male and female. From a scientific standpoint,
the use of projective techniques for the assessment devices
of personality in recruitment and selection continue to be
the subject of research which always fascinates to explore
new significant aspects.

### Practical implication

The study tried to investigate the affect while shifting from
the state of unconscious to conscious level after attempting
battery of projective tests and to find out gender difference
in PA and NA of job applicants. The findings of this study
can be of useful to the job applicants to understand the
affect under which they will go through while attempting
services selection board.

### Limitations

Since the PANAS is a self-report questionnaire, it can
be difficult to assess job applicant’s mood accurately, as

### Table 4: Paired samples statistics

| Pair    | Gender | n   | SD   | SEM  | t     | df   | Level of significance | r     | Level of significance |
|---------|--------|-----|------|------|-------|------|-----------------------|-------|-----------------------|
| Total   | Male   | 210 | 6.28 | 0.43 | 65.78 | 209  | Significant at 0.01 level | −0.04 | 0.55 |
| PA-NA   | Female | 65  | 7.28 | 0.90 | 31.46 | 64   | Significant at 0.01 level | −0.11 | 0.36 |

PA – Positive affect; NA – Negative affect; SD – Standard deviation; SEM – Standard error of mean
applicants can overstate or understate their experience of their performance and moods. For a comprehensive assessment of affect, the PANAS scale can be administered to job applicants after the interview and ground tasks tests also, which this study restricted to battery of projective tests due to service constraints.

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Conflicts of interest
There are no conflicts of interest.

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