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Research Article

AFFECT SCALE (HINDI): ESTABLISHING PSYCHOMETRIC PROPERTIES FOR INDIAN CULTURAL

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ABSTRACT

To establish the psychometric properties of the affect scale (Hindi Version in Indian Context). The affect scale was administered to the adult population (N=200, Age group 30-60 years) of Raipur and Rajnandgaon districts in Chhattisgarh, India. The psychometric property of the scale was established by computing Exploratory Factors analysis, Item analysis (t-ratio), reliability (Cronbach's Alpha) and validity. The result of the exploratory factor analysis in Varimax rotation model reveals that 46 items were significantly loaded in three factors, finally 43 items were included in three factors their nature of items out of the 46 extracted items. Each item of the scale was highly discriminant. There is a significant negative correlation between positive and negative affect and the significant Positive correlation between Negative and Neutral affect and negative relationship between Positive affect and Neutral affect. The reliability of the affect scale (Hindi) Cronbach's Alpha is 0.73. The psychometric properties of the Affect scale (Hindi version) confirm that it is a reliable and valid measure of the mood status among adult person with age range of 30-60 years.

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INTRODUCTION

The present research paper documented that establishment of the psychometric properties of the affect scale (Hindi version on Indian context). In modern psychology, the cognitive, the affective and conative domain are three divisions, the affective domain is an important aspect in explaining the behavior (APA, 2006). The word Affect was used in Tomkins "biological portion of the emotion" (Nathanson, 1992). The affective experience is a result of the innate mechanism and a complex matrix of nested and interacting ideo-affective formation in adult people (Nathanson, 1998). Mood, affect and emotion has been used interchangeably in the early 1990s (Batson, Shaw and Oleson, 1992).

Nathanson (1992) noted 9 types of affects viz. Positive Affect (enjoyment/joy), Neutral or Other Affect (surprise/startle) and Negative Affect (anger/rage, disgust, dissmell, distress/anguish, fear/terror, and shame/humiliation). Watson, Wiese, Vaidya and Tellegen (1999) point out that the Positive Affect and Negative Affect are predominantly defined by the activation of positively and negatively valences respectively (i.e. the lower ends of each dimension are typified by its absence). Thus to emphasize the activated nature of each of these constructs, it has been argued

that positive affect and negative affect should be renamed positive activation and negative activation, these labels are to be regarded as interchangeable.

The mood is basically in the emotional status of the persons, the moods (affect) such as happiness, anger, fear, sadness, depression, and surprise (Ekman, Levenson & Friesen, 1983, Izard, 1977, Plutchik, 1980, Tomkins, 1984). Affect is a broad class of mental process, including feelings, emotion, moods and temperament. According to Watson (1999), the negative affect dimension helps to promote the vigilant apprehensiveness. The positive affect indicates emotional states as motivating and goal-directed behavior. The emotional state /emotional experience affect the behavior of the individual. The evaluations of experiences in positive and negative ways are valence and emotional valence is referred as emotion consequences or subjective feel or attitude by a person. There are many measures to assess affect some of them popularly used are PANAS, Single item dimensional measure of affect, Self-assessment Manikin (Bradly & Lang, 1994, Lang, 1980), Affect Grid (Russell, Weise & Mendelsohn, 1989), Feeling Scale and Felt Arousal scale (Hardy & Rajeski, 1989), Multiple Affect Adjective Checklist (Zukerman & Lubin, 1965), Profile of Mood states (McNair *et al*, 1971). Emotional experiences

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effect psycho-physiological conditions of the individual (Harmon-Jones *et al*, 2013). It's important to assess affect state of people. In India no suitable measure to assess affect state on the individual is available. In the present research, work attempt is made to validate the Affect scale in research purpose (Hindi version in the Indian context).

Objective: the main objective of the present work is to establish the psychometric properties of affect scale Hindi Version in Indian Context.

Participants: The affect scale Hindi version was administered to the adult population (N=200, people, Agegroup of 30-60 years) of Raipur and Rajnandgaon Districts of Chhattisgarh state in central India.

About the Scale

The affect scale Hindi version (Janghel and Shrivastava, 2012), consists of 43 items with 3-sub-scales e.g. Positive affect, Negative affect, and Neutral Affect. On each item the participant has to respond on 5 points Likert type rating scale (Very slightly or not at all 1, A little 2, Moderately 3, Quite a bit 4, and Extremely 5).

Statistical analysis

The psychometric properties of the affect scale were analyzed by exploratory factor analysis, item analysis (t-ratio), reliability (Cronbach's alpha) and validity with the help of SPSS 16 version.

The scale consisted of items representing the state of the mood, viz. the pleasing state of mood, displeasing state of mood and the mood which revealed less active expression, positive and negative state of mood revealed active way expressing emotion in either way. Neutral emotion is mood state that refers to the inactive expression of emotions.

RESULT AND DISCUSSION

The Positive Affect, Negative Affect Scale (PANAS) has been considered as the basis of adaptation of Affect scale (Hindi version in the Indian context). The PANAS scale was basically developed by Watson and Tellegen (1988). The PANAS scale consists of 60 items self-reported measure of positive affect and negative affect. Crawford and Henry (2004) demonstrate the reliability internal consistencies of positive affect (PA) and negative affect (NA) Cronbach's alpha is 0.89 for the Positive Affect sub-scales and 0.85 for Negative Affect sub-scale.

The items of the scale were considered in Hindi, the scale was administered on the focused group of respondents and data were organized and put to statistical analysis. Results of the exploratory factor analysis, item analysis (t-ratio), reliability (Cronbach's alpha) and validity are reported in the respective tables.

Observation of the result, obtained through employing the Principal Component method of exploratory factor analysis, with Varimax rotation (table), reveal, high factor loading on 3 categories of items (named as Positive Affect, Negative Affect, and Neutral Affect). The values less than .30 were omitted.

It was observed that Eigenvalue of the three factors emerged in the factor analysis is more than three; it shows that the factors obtained are significantly assessing the respective Affect

considered in the study. There were 46 items which had significant loadings on the three factors while the rest of the sixteen items had not-significant loading on any of the three factors. Thus 46 items have been retained in the scale below the table 1.

Table 1 rotated factor matrix

Items Affect	Positive Affect	Negative Affect	Neutral
34	.611		
14	.541		
24	.526		
12	.525		
18	.510		
19	.500		
33	.494		
43	.491		
15	.472		
8	.467		
36	.450		
6	.416		
48	.413		
46	.411		
59	.394		
28	.382		
2	.377		
35	.333		
60	.302		
32		.665	
29		.558	
3		-.516	
31		.419	
45		-.486	
51		.450	
7		.415	
58		-.387	
5		-.363	
25		-.328	
42		-.318	
27			.572
22			-.530
37			.458
30			.452
1			.448
50			.444
41			-.406
55			-.399
56			-.381
13			.353
16			-.352
20			-.347
44			.340

*values less than .30 are omitted (DiStefano, Zhu & Mindrila, 2009)

A close perusal of the above factor matrix revealed that 31 items had significant high loading on factor one. Item no. 43, 58, 7, 31 and 51 also had significant loading on factor one and factor two. Item no. 43 and 58 had high loading on factor one in comparison to the factor two. Item no. 31, 51 and 7 had high loading on factor two than the factor one. Item no. 5, 16 and 20 have significant loading on factor one and factor three. Item no. 5 and 16 have high loading on factor one than the factor three. Item no. 20 has high loading on factor three than the factor one. Item no. 30, 56, and 13 had significant loading on the factor two and factor three. Item no. 13 had high loading on factor three than factor two. Item no. 30 and 56 had high loading on factor two than the factor three. Considering the nature of item 43, it is included as an item in the factor one, named as positive affect, the nature of items 31, 51, 7 and 35 is related to the factor two, named as negative affect, and the nature of items 20 and 13 related to the factor three has been named as

neutral affect. On the basis of factor loading of the items and their nature, it is logical to include 15 items in factor one i.e., positive affect, 15 items in factor two i.e., negative affect, and the 13 items in the factor three i.e., neutral affect.

Item analysis of affect scale

Scoring of the affect scale for all 200 subjects was done, on the basis of total scores, two Extreme groups (27% upper group and 27% lower group) were identified, for obtaining the discrimination power, the extreme groups were compared on each item of the scale, for this purpose item wise t-ratio was calculated between two groups. Item analyses were shown the below table 2.

Table 2 Mean, Standard deviation (S.D.) t-ratio of extreme groups on different items of factors

Item	Lower group		Upper group		t-value
	Mean	S.D.	Mean	S.D.	
5	1.98	.87	3.07	.69	7.35**
7	2.17	.85	3.09	1.01	5.03*
12	2.36	.48	3.18	.93	5.64*
14	2.55	1.17	3.83	.96	6.10**
15	2.25	.51	3.38	.99	8.21**
19	2.07	.51	3.33	1.00	8.01**
26	2.61	.66	3.37	.55	6.35**
28	2.19	.59	3.07	.96	5.62*
30	2.36	.65	3.31	1.00	5.72*
31	2.42	.66	3.25	.99	5.06*
32	2.15	.69	3.35	1.19	6.25**
33	2.36	.65	3.38	1.12	6.29**
34	2.67	.64	3.24	1.12	5.69*
36	2.11	.67	3.70	1.07	9.06**
44	2.07	.51	2.85	.78	5.96*
48	2.48	.77	3.50	.96	5.93*
53	2.38	1.01	3.31	.88	5.03*

All obtained t-ratios were significant which indicates that all items of the affect scale have highly discrimination power were found.

Inter-correlation

The inter-correlation between the subscales was identified and calculated in the Pearson correlation and results are presented in table 3.-

Table 3 inter-correlation for Positive affect, Negative Affect and Neutral Affect

Correlation	Pos. A	Neg. A	Neu. A
Pos. A	1.00	-.39	-.25
Neg. A		1.00	.35
Neu. A			1.00

Reliability

The overall reliability of affect scale (Hindi Version in Indian Context), internal consistency Cronbach’s Alpha (α) is found to be 0.73.

DISCUSSION

The result of factor analysis supported our attempt to adapt scale that would assess relatively distinct and clearly focused aspect of affect. There were three factors identified as sub-scales (positive Affect, Negative Affect and Neutral Affect) with high factor loading (Positive Affect sub-scale Eigen-value 12.603, Negative Affect sub-scale Eigen-value 5.479 and Neutral Affect sub-scale Eigen-value 4.678). The three distinct items sets were identified as sub-scales item with a positive way of affect- Positive Affect, Negative Affect, and Neutral Affect. The reliability index of all scale and sub-scale also

reveal good internal consistencies. The discriminate validity also reveals significant discrimination among the items.

Affect scale is used as a measure in a different part of the world. Crawford and Henry (2004) evaluated the psychometric properties of PANAS scale by using for the confirmatory factor analysis and correlational techniques was used they found that positive affect and negative affect as independent factors is $SB\chi^2$ is (1132.1), χ^2 is (1589.9), df - value is 170, RCFI is (0.82), SRMR is (.103) and RMSEA is (.09). The dimension of PA and NA are moderately interdependent ($r = -.30, p < .001$). It should be noted that the correlation between the PA and NA factors is higher, the correlation is ($r = -.24, p < .001$). The reliabilities (internal consistencies) of the PANAS Scale, PA and NA scale were estimated in the Cronbach’s Alpha. The Cronbach’s Alpha was .89 (95% CI= .88-.90) for the PA scale and .85 (95% CI= .84 - .87) for the NA scale. Watson and Clark (1994) noted that in recent researches an affect two broad, general factors – typically labeled Positive affect (PA) and negative affect (NA) have emerged reliably as the dominant dimensions of emotional experience. These factors have been identified in both intra and inter-individual analysis, and they emerge consistently across diverse descriptor sets, time frames, response formats, language and culture (Almagor & Ben-porath, 1989, Mayer & Gaschke, 1988, Meyer & Shack, 1989, Tellegen, 1985, Watson, 1988b, Watson, Clark & Tellegen, 1988, Watson & Tellegen, 1985, Zevon & Tellegen, 1982). To measure these factors Watson, Clark and Tellegen (1988) developed the positive and negative affect schedule (PANAS), which consists of two 10-items scales for PA and NA, respectively. It has also been noted in the researcher that Positive affect is significantly associated increased in social interaction and exercise, Negative affect with stress (McIntyre, Watson, Cunningham, (1990).

CONCLUSION

The psychometric properties of the affect scale confirm that the Affect Scale in Hindi Version is a reliable and valid instrument which could be used for the Indian adult population for the age group of 30-60 years. The scale consists of the three dimension- Positive Affect, Negative Affect and Neutral Affect.

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