

## Variants of the Indian Gender Role Identity Scale (IGRIS) for Different Age Groups in Bengali Population

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The article is an extension of the Indian Gender Role Identity Scale (IGRIS) developed by Basu. It was observed that the items of the gender role identity scales are subject to variation according to age groups, as the gender role values change across generation. Three variants of the IGRIS were constructed for the teenagers (17-19 years), young adults (19-30 years) and married adult couples (30–50 years). The psychometric properties of the three variants entitled IGRIS A, IGRIS B and IGRIS C respectively have been detailed in the article.

**Keywords:** Masculinity, Femininity, Identity, IGRIS

Bem (1981, 1984) proposed that there exists a generalised readiness to process information on the basis of sex-linked attributes. From this bias in cognition, arises gender schema, which is constituted of cultural definitions of maleness and femaleness. This schema functions as an anticipatory structure, a readiness to search for and assimilate incoming information in relevant terms. This schema is readily available for classifying objects and experiences, and through social learning and introjection, incorporated in the individual's identity.

Bem further suggested that the schematic processing is prescriptive as well as selective. During the developmental phases, children learn to link certain attributes with a certain sex and consequently to her / his own self-concept, since she / he belongs to that sex. The child also learns to regulate and evaluate its own behaviours in terms of the gender guidelines. The finally processed information is a product of the interaction between incoming information and the perceiver's pre-existing schema. Gender schematic processing in a culture, therefore,

involves spontaneously sorting persons, attributes, and behaviours into categories, or 'equivalent classes' disregarding their differences in numerous areas. For example, Bem (1981) stated that people would tend to place 'tender and nightingale' in a feminine category and 'assertive and eagle' in a masculine category.

Although the concepts of masculinity and femininity have been used as variables in Indian research, most of them have used Bem's BSRI directly. However, considering the cultural variation embedded in the very notion of gender role, the traits designating masculinity or femininity in the West are likely to have different implications in the East (Sethi & Allen, 1984; Basu et al., 1995; Sugihara and Katsurada (1999). The IGRIS or the Indian Gender Role Identity Scale (Basu, 2010), constructed after Sandra Bem's (1981) scale, is a tool for assessment of masculinity and femininity aspiring to cater to this research gap. Although the development of IGRIS roughly followed BSRI, a number of methodological and psychometric variations were adopted considering the criticisms of BSRI. The details of the

development of IGRIS have been provided by Basu (2010). This scale has 30 items, 10 of which are Masculine, 10 Feminine and 10 neutral. The respondent has to rate oneself on a 7 point scale on each item. The total of the ratings of the masculine items constitutes the M scale score, while F scale score is the sum total of feminine items. The buffer items are not scored. The split half, alpha and test retest reliabilities are satisfactory as is its construct validity.

The gender role items are, as stated, strongly influenced by cultural and developmental factors. One may reasonably argue that items applicable in one age group may not be equally applicable for all age group, particularly because the gender values change across generations. The IGRIS was developed on the basis of responses obtained from a large sample ranging from 17 to 55 years of age. The 30 item scale of IGRIS was found to be applicable to the entire range, but it was also felt that the scale missed a number of items that were pertinent for a certain age group, but less pertinent for others. Thus the condensed IGRIS was missing some important information, if one wanted to scrutinize one particular age group.

In the present research an attempt has been made to develop three variants of the IGRIS, designated for the present purpose as IGRIS A for 17- 19 years, IGRIS B for 19 – 30 years, and IGRIS C for 30 to 50 years. These three variants have been developed using part of the data used for developing IGRIS itself and adding some new data specific to each age group.

### **Method**

#### ***Participants***

The sample was used at three different levels for three different purposes. In Stage I, the participants were used as judges for rating of the items. In Stage II the responses from the participants were used for item analyses. At Stage III, the scales were finalized

by administering them on another sample and calculating reliability, construct validity and norm. For IGRIS A, 60 female and 60 male Bengali Hindu students of Class XI and XII of various schools of Kolkata served as judges in Stage I. They were middle class Hindu students with age ranging between 16 and 18. After preparing the working format, in Stage II, the scale was presented to 200 female and male students for item analysis. Finally in Stage III another 200 participants were utilized for determining reliability and validity. For IGRIS B, similarly 60 female and 60 male college and University students of Kolkata were used to corroborate the initial judgment. They were middle class Hindu unmarried students with age ranging between 20 and 30 years. At Stages II and III, this scale was presented to 200 participants each. For IGRIS C, the corroborative judgment was done by 60 female and 60 male subjects with age ranging between 30 and 50 years. They were all married, middle class Hindu individuals. The working format was again presented to 400 subjects at the latter stages as in other versions of the scale. Before inclusion, each participant was administered a detailed information schedule and a General Health Questionnaire – 28 (Goldberg & Williams, 1988) adapted in West Bengal by Basu and Dasgupta (1996). Only those who had a score below the cut off point of 4 were included as participants.

#### ***Item selection***

The same 200 items as reported during the development of IGRIS (Basu, 2010) were used. These items had been obtained from an extensive literature survey as well as from experts' opinions. Five linguists and 5 psychologists had judged those initial items for relevance, understandability, duplication and overlap in connotation, resulting in 135 items to be judged. These were given to the participants for Stage I. These participants judged the items on a 7 point scale as to its desirability in a man or woman of one's own

age group. Half of the judges rated the traits for desirability in women, and half for men. A personality characteristic was designated as feminine or masculine if it was judged to be significantly more desirable for one sex or the other in the context of contemporary Indian society and with reference to the judge's own age group.

### ***Construction of the working format of the IGRIS A, IGRIS B and IGRIS C***

From independent samples *t* tests, those items that were judged to be significant for female or male stereotype by both female and male respondents were selected. Those items that had an associated probability of at least .05 in *t* test were selected as sex typed items. Those items that had an associated probability of more than .20 in *t* test were selected as neutral items. Thus items for three different scales for the three age groups were selected. These scales showed some differences in item content. The IGRIS A had 42 items, 14 in each category, IGRIS B had 48 items, 16 in each category, and IGRIS C had 54 items, 18 in each category. Thus the 30 items obtained in IGRIS were the only common ones in all three variants, although IGRIS B and IGRIS C shared more items. These three separate scales were subsequently administered to the respective participants of Stage II. Item analyses were done for each item. The Pearson's *r* was calculated between each item and total F and total M scores.

### ***The final scale***

Depending upon the results of Stage II, the same scales were again administered to the participants of Stage III and reliability values were calculated. The respondents rated themselves on a 7 point scale extending from possessing very low to possessing very high degree of each trait. Construct validity was calculated by determining the correlation coefficients between total M and F scores, as Bem's construct required that M and F be

orthogonal. Working norms were calculated separately for women and men. Hand-scoring of IGRIS A, B or C is a relatively simple task. Each respondent's femininity and masculinity scores are the total of the one's ratings of the feminine and masculine adjectives on the scale. The buffer items are usually not scored.

## **Results**

The items of these three variants of IGRIS are presented in Table 1. The items without any superscripted note are common for all three scales. Those which have not been endorsed for a particular age group have been marked by the name of the scale(s) that include(s) that particular item. For example, the item 'Active' is not obtained with teenagers of 17–19 years as a masculine item. But the young adult and the middle aged groups endorsed this item as a masculine one. This item is marked by B and C to indicate that it is included in IGRIS B and IGRIS C.

The mean desirability ratings for femininity and masculinity scales and subsequent independent samples 'z' tests were calculated for each variant. The results are presented in Tables 2. The mean desirability ratings of masculinity and femininity items and z values for the total sample of judges is presented in Table 3.

The working formats for each variant was now prepared. The item validity indices for IGRIS A, B and C were subsequently calculated. It was observed from these tables that all the items correlated significantly with its corresponding full scale score; that is masculine items correlated with total M scale score for all age groups. Also, none of the items correlated significantly with the non-corresponding full scale score; that is, masculine items did not correlate with F scale score for any age group.

**Table 1. The items for the Masculinity, Femininity and Neutral Categories of IGRIS A, B and C**

Masculine	Feminine	Neutral
Active <sup>B,C</sup>	Accommodating <sup>A,C</sup>	Adaptive
Acts as leader	Affectionate	Compassionate <sup>A,C</sup>
Adventurous	Charismatic <sup>A,B</sup>	Disciplinarian
Ambitious <sup>A,B</sup>	Compassionate <sup>B</sup>	Forgiving <sup>A,C</sup>
Assertive	Delicate <sup>C</sup>	Flexible <sup>B,C</sup>
Athletic	Docile <sup>C</sup>	Friendly
Competitive <sup>B,C</sup>	Does not use harsh language <sup>C</sup>	Generous
Courageous	Domestic	Happy
Enterprising	Eager to soothe hurt feelings <sup>C</sup>	Helpful
Hard working	Easily expresses tender emotion	Humane <sup>B,C</sup>
Independent	Feminine	Loves children
Individualistic <sup>C</sup>	Gentle <sup>C</sup>	Modest <sup>B,C</sup>
Intelligent <sup>C</sup>	Graceful	Pleasant
Masculine	Innocent <sup>C</sup>	Protective <sup>B,C</sup>
Powerful	Kind <sup>A</sup>	Reserved
Self confident	Loyal <sup>A,B</sup>	Tactful
Strong personality	Loves children	Understanding
Willing to take risk	Nice	Warm
Wise <sup>C</sup>	Quiet	
	Self sacrificing <sup>C</sup>	
	Soft spoken <sup>A,B</sup>	
	Submissive	
	Sympathetic <sup>B,C</sup>	
	Tender	

**Table 2. Mean desirability ratings and SD in parenthesis for the masculinity and femininity scales by female judges (N=120, 30 judges for F and M items each) and 'z' ratios indicating significance of mean differences between ratings for women and men for IGRIS A, IGRIS B and IGRIS C**

	Female judges			Male judges		
	Women Mean (SD)	Men Mean (SD)	Z value	Women Mean (SD)	Men Mean (SD)	Z value
<b>IGRIS A</b>						
Masculinity Scale	4.22 (0.89)	5.97 (0.90)	-7.31**	3.92 (0.79)	5.85 (0.85)	-9.11**
Femininity Scale	5.66 (-0.86)	3.05 (0.84)	11.89**	5.64 (0.82)	3.01 (-0.94)	11.55**
<b>IGRIS B</b>						
Masculinity Scale	4.38 (0.80)	5.79 (0.80)	-6.83**	4.55 (0.76)	5.49 (0.67)	-5.08**
Femininity Scale	5.47 (0.82)	3.74 (0.77)	8.42**	5.62 (0.82)	3.24 (0.73)	11.87**
<b>IGRIS C</b>						
Masculinity Scale	4.25 (0.84)	5.89 (0.89)	-7.34**	4.27 (0.78)	5.99 (0.87)	-8.06**
Femininity Scale	5.87 (0.80)	3.02 (0.76)	14.15**	5.65 (0.64)	3.15 (0.76)	13.78**

The reliability values were calculated with Split half technique (with Spearman Brown's formula), Chronbach's Alpha, and retesting after a gap of one month. The reliability values for the M Scale of IGRIS A were .77, .79 and

.88 respectively. For the F scale of IGRIS A, these were .69, .71, and .81 respectively. For the M scale of IGRIS B the respective values were .88, .83 and .78, and for the F scale of IGRIS B, .77, .75 and .79. In case of IGRIS C,

the reliability values for the M scale were .86, .84 and .89, and for the F scale, .79, .75, and .85 respectively. For construct validity, the inter-correlation coefficients between the total femininity and masculinity scales were calculated demonstrating their relative independence. It was observed that the Pearson's product moment correlation coefficients between the M and the F scale was .01 for IGRIS A, .08 for IGRIS B and .02 for IGRIS C. The working norms for the three age groups are presented in Table 4. It may be observed from Table 4 that Masculinity was higher in men and Femininity was higher in women for all age groups.

**Table 3. Mean desirability ratings and SD for the masculinity and femininity scales by all judges (N=120) and 'z' ratios indicating the significance of mean differences for IGRIS A, IGRIS B and IGRIS C**

	Mean	SD	Z value
IGRIS A			
Masculinity Scale	4.98	1.24	2.48*
Femininity Scale	4.34	1.57	
IGRIS B			
Masculinity Scale	5.05	1.12	2.61*
Femininity Scale	4.5	1.15	
IGRIS C			
Masculinity Scale	5.13	1.19	2.97**
Femininity Scale	4.4	1.48	

**Table 4. Mean and SD of masculinity and femininity scales for the women, the men and the total sample and the 't' values showing significance of sex differences for IGRIS A, IGRIS B and IGRIS C**

	Women (N = 100)		Men (N = 100)		't' value
	Mean	SD	Mean	SD	
IGRIS A					
Masculinity Scale	64.54	11.48	75.29	11.03	-6.75**
Femininity Scale	72.29	10.39	66.65	10.65	3.79**
IGRIS B					
Masculinity Scale	80.17	15.5	90.16	11.99	-5.09**
Femininity Scale	91.24	12.07	81.88	11.87	5.53**
IGRIS C					
Masculinity Scale	77.03	12.53	85.87	11.52	-5.19**
Femininity Scale	87.03	10.55	79.87	9.6	5.26**

**Discussion**

The obtained scores may be used in different ways as suggested by Bem (1981). The F and M scores may be used as continuous variables. Secondly, the average of the rating for the femininity and masculinity scales can be transformed to a standard score. An androgyny score may be obtained from the difference of the masculinity and femininity standard scores. Also, respondents may be classified in various categories by using either a hybrid or median split method. In the hybrid method the respondents are classified in two steps. Initially they are classified as feminine, masculine or potentially androgynous on the basis of femininity minus

masculinity score. This third group is then classified into androgynous or undifferentiated on the basis of a median split. The median split technique is easier and more widely used. Here a sample of respondents is divided at the median of the femininity and the masculinity scales and a fourfold classification is derived with respondents designated as masculine, feminine, androgynous and undifferentiated.

However there is a growing body of evidence that unless one is particularly keen on designating individuals as androgynous, simply using F and M scores as continuous variables yield meaningful results (Ying, 1992). Indeed, the concept of a category

called 'androgynous' seems spurious these days.

It was notable that as the age increased, the number of valid items for M and F scales were also increasing. For the teenager group (17-19), there were 42 items, for the college students, 48 and for the married older group, 56 items were validated. The probable reason may be that with increasing age, the stereotypes are adhered to a greater extent and hence more traits are judged to belong as either to the men or to the women, rather than being a common characteristic of both sexes.

Finally, the question remains whether one should use the IGRIS or the age specific variants of the scale. It should be noted that IGRIS is smaller in size and claims greater reliability. The same was observed by Bem (1981) in her short version of BSRI, where the reliability has been enhanced by curtailing the expansiveness of the scale items. Therefore it remains for the researcher to decide on the choice of the version of the scale depending upon the significance of gender role identity in the entire design and also time constraint. The present study also implies that even smaller cultural variations are reflected in gender stereotypes. Considering the vast cultural and religious diversity of India, it is imperative that separate gender identity subscales be prepared for diverse cultural groups.

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