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SELF-AWARENESS AMONG UNIVERSITY STUDENTS: A RESEARCH OF SCALE DEVELOPMENT

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ABSTRACT

This research aims to construct and standardize a scale to measure the university students' self-awareness. Researchers conducted two studies in the process of tool design. Study-1was focused on the refinement of items and factor extraction. Study-2 was conducted to confirm the factors and validate the scale by applying confirmatory factor analysis (CFA). Focus group discussions with experts were used for content validity of the initial draft, and survey methods were used to collect the quantitative data for both studies. DeVellis (2017) guidelines were followed in the process of tool designing. The final results show a three-factor model for the self-awareness scale, including the dimensions of emotional, meta and body, consisting of 12 items with satisfactory psychometric indices. The scale shows good reliability, construct validity and significant relationships among the factors. The study addresses the gaps in current scales on self-awareness, and it is best suited for Indian cultural settings. The scale is useful for teachers, researchers, and policy-makers in higher education to study and foster self-awareness among students.

KEYWORDS: Self-Awareness, Emotional, Meta and Body.

1. INTRODUCTION

Self-awareness is the consideration of individuals' thoughts, abilities and relationships (Duvall & Wicklund, 1972; Church, 1997). Self-awareness is diversified into two forms: subjective self-awareness, which involves self-reflection and objective self-awareness, which views an individual from an external perspective (Duval & Wicklund, 1972). Self-awareness focuses inward to one's own emotional state (Morin, 2011). It is a multi-layered construct that strengthens personal development, emotional intelligence, and interpersonal effectiveness (Williams & Allinson, 2015). Self-awareness is a multidimensional existence of an individual that includes consciousness, introspection, self-reflection and self-recognition (Sutton et al., 2015). It also includes emotions, strengths, weaknesses, beliefs and values of an individual (Alicke, 2020).

Self-awareness focuses on self-regulation and assessing individuals' knowledge to approach meta-self-awareness (Elhabbash, 2021), and meta-self-awareness integrates higher-order cognitive processes (MacIntyre, 2010). Meta-self-awareness allows individuals to anticipate their thinking and modify their cognitive processes (Frith, 2012). Emotional self-awareness is kind of one's individual feelings and being attentive to how the feelings impact the thinking process and relationships (Goleman et al., 2017). It is a cognitive skill to identify one's emotional experiences (Lane & Smith, 2021), whereas bodily self-awareness is considered a part of the physical nature. Persons are frequently overcome with motivations from internal receptors (Schwitzgebel, 2007).

Researchers have reviewed many self-awareness measurement scales including (1) Duval and Wicklund's 'Self-Awareness Scale' (1972) (2) Fenigstein, Scheier, and Busss' 'Self-Consciousness Scale' (1975), (3) Self-Reflection and Insight Scale (SRIS) by Grant, Franklin, and Langford (2002), (4) Kraus and Sears's scale of Self-Other Four Immeasurable (SOFI) (2008), (5) Rosenberg's Self-Esteem Scale (1965), and (6) Self-Awareness and Mindfulness Scale (SAM) by Garland, Gaylord, and Park (2009) etc. to understand the contextual gaps and to know the sound constructs of the proposed tool and noticed the lack of a multi-dimensional approach, limited cultural specificity, and insufficient empirical validation in the existing tools. To address these gaps, considering the diverse cultural, linguistic, and socio-economic backgrounds of the students in India, a self-awareness measurement scale is constructed and validated through this research study.

2. METHODS AND PROCEDURES

This research adapted the survey method and discussion method to meet the objectives of scale development. Throughout the scale development process, DeVellis (2017) guiding principles were followed. A vast literature review contributed to the generation of a pool of 60 items related to the self-awareness scale. The first draft of the scale was evaluated by ten professionals. Based on the experts' opinions, it was decided to remove 13 items that were redundant and ambiguous. As a result, a scale with 47 items was confirmed, and decided using a Likert-type scale with the options on the level of agreement. The first try-out was performed on fifty students to check the feasibility of the administration of the scale. Permission was obtained from the selected Heads of the institutions from different universities in India for final try out.

The researchers carried out two different studies in the process of scale development. The first study concentrated on refining the items for the scale and the second study validated the scale and confirmed the factors. In the study 1, data were collected from a sample of 370 students through Google Forms. The sample consisted of 198 (53.5%) male, 172(46.5%) female; rural 115 (31%), urban 255 (69%); age below 26 years 126 (34.1%), age 26-36 years 154 (41.6%), and above age 36 years 90 (24.3%). These data were subjected to the statistical methods of reliability analysis and exploratory factor analysis (EFA) to deduce the items in the scale. In the study 2, data were collected from the sample of 300 university students consisted of 124 (41.3%) male, 176 (58.7%) female; rural 86 (28.7%), urban 214 (71.3%); age below 26 years 85 (28.3%), age 26-36 years 102 (34%), and above age 36 years 113 (37.7%). By applying confirmatory factor analysis (CFA), the factors were confirmed, and the scale was standardized.

3. RESULTS AND DISCUSSION

In Study 1, the 47 items were analysed applying the reliability analysis with SPSS. 10 items were eliminated under the criteria of a mean value of less than 3 and a standard deviation greater than 2. Item total statistics and Cronbach's alpha criteria (greater than 0.3) for corrected item correlation were applied to enhance the alpha value. The item-to-item correlations were examined 7 additional items that fell below the threshold were deleted. This process was repeated, resulting in the removal of 5 more items. Finally, 25 items were retained, achieving a reliability value of 0.867 (Table 1).

Table 1: Item-Total Statistics (Alpha Model).

S. no	Item	Scale Mean (if Item Deleted)	Scale Variance (if Item Deleted)	Corrected Item (Total Correlation)	Cronbach's Alpha (if Item Deleted)
1	item1	85.727	161.245	.320	.865
2	item11	85.735	156.829	.433	.862
3	item12	85.978	156.623	.424	.862
4	item14	85.462	162.645	.330	.865
5	item15	85.359	160.345	.488	.861
6	item17	85.832	154.194	.537	.858
7	item20	86.192	158.513	.391	.863
8	item21	86.073	156.583	.451	.861
9	item22	85.349	160.683	.430	.862
10	item23	85.659	160.816	.380	.863
11	item24	85.351	159.616	.499	.860
12	item26	85.311	158.567	.526	.860
13	item27	86.068	158.226	.393	.863
14	item28	85.719	159.059	.398	.863
15	item30	85.373	160.787	.440	.862
16	item31	85.378	159.255	.504	.860
17	item32	86.086	156.583	.488	.860
18	item33	86.224	160.494	.338	.865
19	item34	85.354	160.197	.436	.862
20	item35	85.316	160.965	.480	.861
21	item36	85.592	160.952	.385	.863
22	item39	86.076	156.070	.472	.861
23	item42	86.219	159.255	.366	.864
24	item45	86.141	158.961	.390	.863
25	item46	85.624	160.837	.408	.863

EFAwas performed on the 25 items of the scale. The KMO value 0.888>0.60 indicates the adequacy of the data. The measures of Bartlett's test indicate factorability. (Table 2)

Table 2: Summary Of Kaiser-Meyer-Olkin (KMO) & Bartlett's Test.

KMO Measure		0.888
Bartlett's Test	Approx. Chi-Square	3093.45
	Df	300
	Sig.	0.000

The principal method, with the varimax-rotation, determined the factors. On the basis of the criteria, Eigen values higher than one, four factors were extracted, but a clear discontinuity appeared in the fourth factor, as several items in this fourth factor displayed low variances. The researchers conducted an EFA for the second time. It resulted in the removal of items with community scores below 0.40. The third round of EFA eliminated items with factor loadings below 0.60, resulting in a final 3 groups of 4 items each.

Factor 1, named as Emotional Self-Awareness (ESA), covering items EM1 through EM4, established strong factor loadings extending from 0.626 to 0.782. This factor indicates 32.465% variance, eigen value 3.896 and Cronbach's value 0.764, showing a satisfactory reliability. Factor 2, named as Meta Self-Awareness (MSA), embodied by items M1 to M4 with loadings ranging from 0.729 to 0.758. Factor 3, Bodily Self-Awareness (BSA), was recognised by items B1 to B4, with factor loadings from 0.626 to 0.789. This factor presents 8.429% of the variance, with an eigen value of 1.012, and establishes a Cronbach's value of 0.706, showing satisfactory consistency. The distinct factor loadings and suitable reliability across all three dimensions confirm the vigour of the structure of factors and the constructs of validity. (Table-3)

Table 3: Results Of EFA On 12 Items - Self Awareness Measurement Scale.

S. no	Factor	Item codes	Factor Loadings	Eigen value	Variance Explained	Cronbach's Alpha
1	ESA	EM1	0.782	3.896	32.465	0.764
		EM2	0.746			
		EM3	0.673			

		EM4	0.626			
2	MSA	M1	0.758	2.008	16.737	0.746
		M2	0.749			
		M3	0.748			
		M4	0.729			
3	BSA	B1	0.789	1.012	8.429	0.706
		B2	0.646			
		B3	0.638			
		B4	0.626			

Note: ESA-Emotional Self-Awareness, MSA-Meta Self-Awareness, BSA-Bodily Self-Awareness.

In Study-2, CFA was run using AMOS software on 12-items to check the model. The results of the tests displayed a strong fitting for the model, as specified by a $\chi 2/df$ (CMIN/DF) of 1.046, a Root Mean Square Residual (RMR) of 0.033, a Goodness of Fit Index (GFI) of 0.972, an Adjusted GFI (AGFI) of 0.957, a Comparative Fit Index (CFI) of 0.998, and a Root Mean Square Error of Approximation (RMSEA) of 0.012. The Standardised RMR (SRMR) was 0.023, and $\chi 2$was not significant at 0.703. These results meet the criteria established by Hu and Bentler (1999), which supports the model's validity. A path diagram illustrates the CFA model (Figure 1).

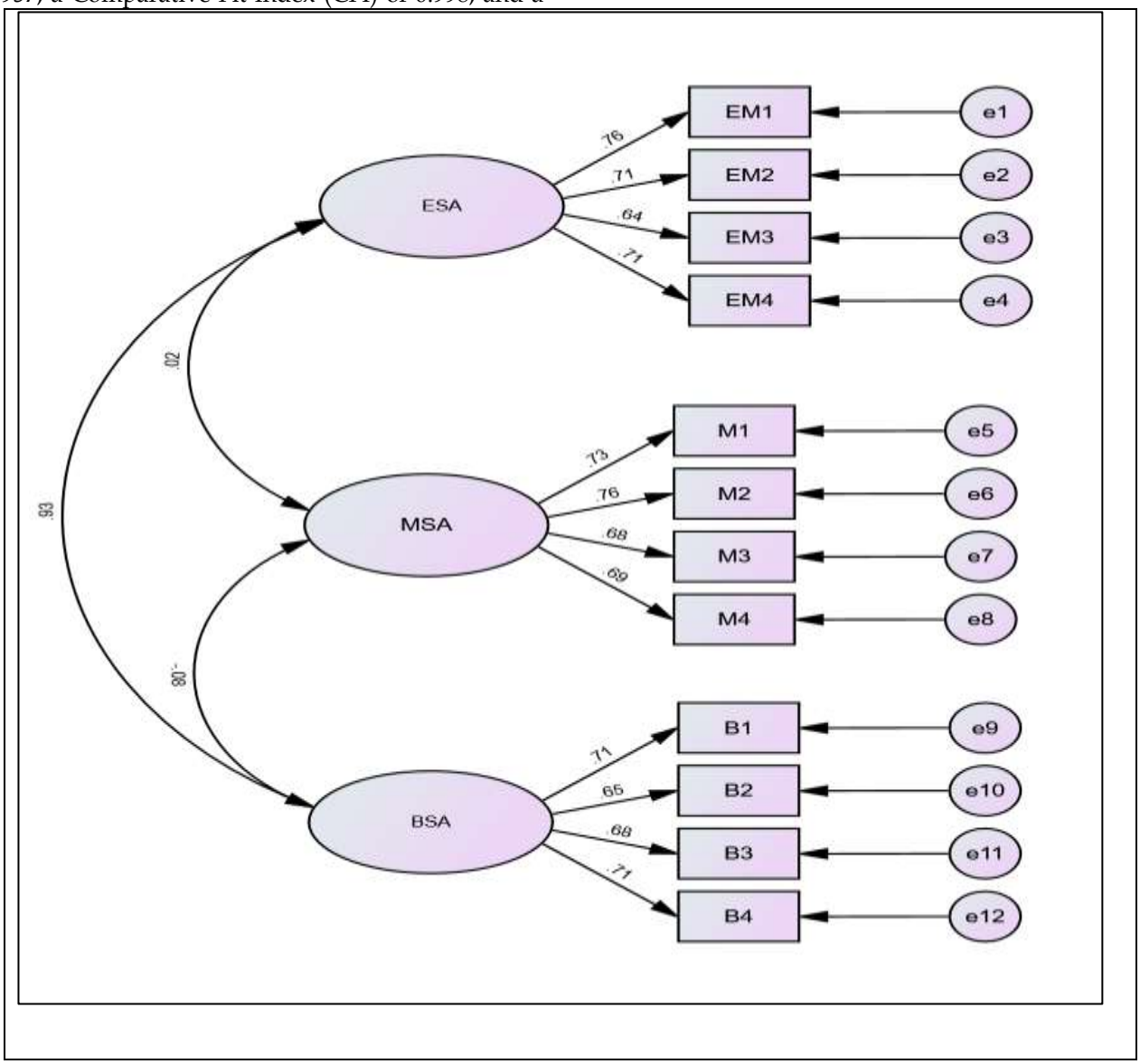

Fig-1: Path Diagram (Standardised Estimates).

Convergent validity was examined by computing variance, factor loadings, composite reliability and AVE. Loadings in the three-factor model showed highsignificance, satisfying the criteria for

confirming convergent validity. (Table 4)

Table 4: Regression Weights.

			Estimate	S.E.	C.R.	P
EM1	<---	ESA	1.000			
EM2	<---	ESA	.960	.081	11.785	***
EM3	<---	ESA	.924	.087	10.685	***
EM4	<---	ESA	.991	.084	11.775	***
M1	<---	MSA	.998	.092	10.810	***
M2	<---	MSA	1.000			
M3	<---	MSA	.856	.084	10.245	***
M4	<---	MSA	.905	.087	10.367	***
B1	<---	BSA	1.080	.087	12.434	***
B2	<---	BSA	1.000			
B3	<---	BSA	.991	.083	11.884	***
B4	<---	BSA	1.000			

Average Variance Estimation (AVE), the average squared factor loading, was calculated to distinguish the portion of variance collected by the constructs. The AVE values for all factors exceeded the 50 per cent threshold (ESA=70.6%, MSA=71.2% and BSA=68.9%), representing good convergence of the model and establishing convergent validity (Fornell & Larcker, 1981) (Table 5).

Table 5: Average Variance Extracted.

Items	ESA	MSA	BSA	Item Reliability (Squared factor loading)	Communality or Delta (standardised error variance)
EM1	0.763			0.5822	0.4178
EM2	0.708			0.5013	0.4987
EM3	0.645			0.4160	0.5840
EM4	0.708			0.5013	0.4987
M1		0.726		0.5271	0.4729
M2		0.760		0.5776	0.4224
M3		0.676		0.4570	0.5430
M4		0.686		0.4706	0.5294
B1			0.710	0.5041	0.4959
B2			0.649	0.4212	0.5788
B3			0.683	0.4665	0.5335
B4			0.714	0.5098	0.4902
AVE	0.706	0.712	0.689		

Construct reliability was determined using the squared factor loadings for the constructs, along with the sum of associated error variance terms. The reliability scores for each sub-scale exceed 0.70, showing strong construct validity, adequate convergence and good internal consistency (Table 6).

Table 6: Construct Reliability Indices.

S. no	Subscale	Construct Reliability
1	Emotional Self Awareness (ESA)	0.799
2	Meta Self-awareness (MSA)	0.804
3	Bodily Self-awareness (BSA)	0.782

Discriminant validity refers to how well a construct is dissimilar from other related factors (Campbell & Fiske, 1959). It was assessed by comparison of AVE using SIC. Since the AVE values were greater than the corresponding SIC estimates, the constructs were found to be adequately distinct, indicating acceptable validity (Table 7).

Table 7: Discriminant Validity Indices.

S. no	Constructs	BSA	MSA	ESA
1	BSA	0.706 (AVE)	-	-
2	MSA	0.004624 (SIC)	0.712 (AVE)	-

3	ESA	0.5329 (SIC)	0.000256 (SIC)	0.689 (AVE)

Note: Ave= Average Variance Extracted, sic = Squared Inter-Construct Correlation.

This study observes a substantial relationship between Emotional and Bodily Self-Awareness. The reason could be high academic stress in the context of socio-cultural determinants among students, leading to both emotional and physical distress (Capobianco et al., 2020). The results indicate that these interconnected factors establish a strong association in the scale.

4. CONCLUSION

The study intends to construct and validate the Self-Awareness Measurement Scale for university students as a multidimensional tool. The instrument demonstrated satisfactory psychometric properties. The results support the model with the extracted three factors and indicate adequate reliability and validity. The distinct structure, emotional, meta, and bodily self-awareness underscores the need for multidimensional assessment rather than single-factor measures. Although the scale shows potential as a reliable and valid tool within the Indian context, its generalization to other populations remains limited. Further studies may emphasize cross-cultural validation to study the applicability and developmental relevance.

5. LIMITATIONS

This research is limited by its cultural context, as data were collected solely in India, which may restrict the generalisability of the findings in relation to other cultural settings. Self-awareness is a multidimensional construct; future research is needed to develop standardized measures capturing multiple dimensions beyond emotional, meta, and bodily self-awareness, and to validate them across cultures.

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