

Cultural Adaptation and Validation of the Self-Efficacy Scale for Higher Secondary School Students of Odisha

OPEN ACCESS

Manuscript ID:
EDU-2020-08043360

Volume: 8

Issue: 4

Month: September

Year: 2020

P-ISSN: 2320-2653

E-ISSN: 2582-1334

Received: 07.07.2020

Accepted: 09.08.2020

Published: 01.09.2020

Citation:

Meher, Venkateswar,
and Rajashree Baral.
“Cultural Adaptation and
Validation of the Self-
Efficacy Scale for Higher
Secondary School Students
of Odisha.” *Shanlax
International Journal of
Education*, vol. 8, no. 4,
2020, pp. 90–100.


DOI:

[https://doi.org/10.34293/
education.v8i4.3360](https://doi.org/10.34293/education.v8i4.3360)




This work is licensed
under a Creative Commons
Attribution-ShareAlike 4.0
International License

Venkateswar Meher

*Junior Research Fellow, School of Education
Gangadhar Meher University, Sambalpur, Odisha, India*
 <https://orcid.org/0000-0003-2741-410X>

Rajashree Baral

*Associate Professor of Education, School of Education
Gangadhar Meher University, Sambalpur, Odisha, India*
 <https://orcid.org/0000-0002-2342-6106>

Abstract

Self-efficacy is a potential measure to develop the capacities of higher secondary school students for producing desired results. Hence, the study of self-efficacy at this level is of utmost importance. In this present study, an attempt is made to culturally adapt the standardized self-efficacy scale of Sherer and Maddux (1982) for the higher secondary school students of Odisha. For this purpose, a sample of 135 higher secondary school students was taken randomly, and ten teachers were taken purposively. Both preliminary and final pilot study was conducted by collecting primary data. Both forward and backward translation was done in consultation with experts. The testing for ‘comparability of language,’ the ‘similarity of interpretation,’ and the ‘degree of understanding’ of the translated scale were measured and found higher scores in all these domains. The psychometric properties of the scale were estimated, i.e., Cronbach alpha reliability of the whole scale 0.85 and split-half reliability of 0.79, which revealed high internal consistency of the scale. The factor analysis was made by following principal component analysis of varimax rotation and Kiser normalization, which extracted four principal components, and the implications of the study were discussed.

Keywords: Self-efficacy scale, Translation of tool, Cultural adaptation, Validation of tool and Item analysis

Introduction

Secondary education plays a vital role for the students in fostering their developmental characteristics, i.e., physical, mental, social, and emotional dimensions. In the secondary level of education, the students experience drastic changes in their structural and functional perspectives and also face various challenges relating to their developmental characteristics. Generally, the students at the secondary level and higher secondary level are considered as adolescents, where they experience anxiety, frustration, worries relating to social context, and peer group relationship. In this stage, adolescents learn to cope with situational and environmental problems. To cope with these difficulties, all-round balanced development among adolescents is highly needed, which helps them to accomplish their goals in an appropriate manner. In this context, the self-efficacy of the adolescents also plays a vital role, which helps them to accomplish their expected outcomes effectively by facilitating decision making among them. It is a fact that in the adolescent stage, the developmental characteristics among students become very high. Still, due to certain difficulties and problems, all the adolescence become unable to apply

their knowledge and ideas properly, in this context self-efficacy help the adolescents to make a plan, fix goals, and accomplish desired outcomes effectively. So, it can be said that an individual's self-efficacy strongly determines his/her strategies to improve performance (Heslin & Klehe, 2006). In this regard, self-efficacy is the faith of a person in his/her abilities and capacities to produce expected learning outcomes (Hill, 2002). Self-efficacy is closely related to the self-regulation capacity of the students, which develops their motivation level and willingness to learn in all circumstances (Murphy & Alexander, 2000). Self-efficacy is also primarily concerned with metacognition, which is 'thinking about own thinking and regulating the cognitive process' (Metcalfe & Shimamura, 1994). Self-efficacy helps the students to handle their difficulties by effectively utilizing their available resources and foster their academic performances (Dweck, 1999). The social cognitive theory of Bandura is the theoretical framework for self-efficacy (Bandura, 2001). Self-efficacy has proposed all the dimensions of behavioral changes through a universal mechanism, i.e., 'modification of individuals' expectation of personal mastery and success' (Bandura, 1977, 1982). Empirical researches on self-efficacy have revealed a positive relationship between self-efficacy and psychological therapeutic changes in an individual's behavior (Bandura, 1977; Bandura, Adams, & Beyer, 1977; Bandura, Adams, Hardy & Howells, 1980). However, it can be said that self-efficacy is a potential measure to develop the capacities of higher secondary school students for producing desired results. Hence, the study of self-efficacy at this level is of utmost importance. The assessment of self-efficacy needs some sorts of scales based on the dimensions of self-efficacy beliefs.

Research Instruments in India to Measure Self-Efficacy

The self-efficacy of students and teachers can be measured with the help of a scale; in this regard from the Indian context, some kinds of self-efficacy scale have been developed. The catalog of the National Psychological Corporation of Agra, India, reveals that self-efficacy scales have been developed both in English and Hindi language. The self-efficacy

scale of A. K. Singh and Shruti Narain consisted of 20 items with 'self-confidence, efficacy, expectation, positive attitude outcome expectation' dimensions of self-efficacy meant for the students with the age group of 12 or 12+. Another self-efficacy scale was developed by G. P. Mathur and R. K. Bhatnagar consisting of 22 items with eight dimensions viz. 'self-regulatory skills, self-influence, self-confidence, social achievement, self, self-evaluation, self-esteem, and self-cognition,' this scale was meant for the students with the age group of 14+. The students' self-efficacy scale was developed by S. Dahiya and N. Kumari, consisting of 35 items with five dimensions, i.e., 'physical, social, emotional, academic, and spiritual.' Another self-efficacy scale was developed by S. Dhar and U. Dhar, having 35 items divided into six dimensions viz. 'credible, assertion, enduring, progression, self-confidence, and commitment.' The research study of Janghel and Srivastava (2018) on the psychometric properties of the self-efficacy scale in the Hindi language revealed that ten items of the scale were significantly loaded in two factors and the Cronbach alpha reliability was 0.80. The scale was meant for the students with the age range of 14-18 (Janghel & Srivastava, 2018). Like these self-efficacy scales for students, for teachers also such scales were developed and validated in the Indian context both in Hindi and English language. But unfortunately, the researchers did not find any self-efficacy scale available in Odia language. Therefore an attempt was made for cultural adaptation and validation of the self-efficacy scale of Sherer and Maddux (1985) in Odia language in the context of Odisha state. Outside Indian context also various self-efficacy tools were found with cultural adaptation in their regional language.

The Rationale of the Study

Self-efficacy is considered as the beliefs of the students about their capabilities for producing desired results. In the educational context, it is the beliefs of the students about the capacities and abilities of the students to produce the results that they want to produce (Bandura, 1977). It also reflects the students' confidence in knowing their potentialities to monitor and control their motivation, behavior, and social environment in a socially desirable way.

The study of students' self-efficacy is of utmost importance because this develops beliefs among the students about their academic practices and enable them to know about their strength and weakness, and also helps to minimize their weakness by developing strength to a great extent. Moreover, self-efficacy capacity among secondary school students strengthens their academic achievements and desires to achieve higher-order goals. In the present study, the effort is taken by the investigators to translate the self-efficacy scale of Sherer & Maddux (1982) to Odia language for cultural adaptation in the state of Odisha. Considering the educational implications of the self-efficacy, an attempt was taken for cultural adaptation and validation of the self-efficacy scale in Odia language for higher secondary school students of Odisha. So far as related literature available in Odisha in terms of self-efficacy scale is concerned, the researchers did not find any tool on self-efficacy in Odia language. Still, there may be such a tool in unpublished form, so that researchers may not have found. In the study, every item of the self-efficacy scale has been translated with a consultation to language expert and subject expert from Odisha, and standard procedures have been followed for its validation and standardization in Odisha.

Objectives of the Study

1. To translate the English version of the self-efficacy scale to Odia language
2. To study comparability of language, the similarity of interpretation and degree of understandability of the Odia version of the self-efficacy scale
3. To study the validity and reliability of the Odia version of the self-efficacy scale
4. To conduct a factor analysis of the scale through the principal component method

Self-Efficacy Scale of Sherer and Maddux (1982)

The study of Sherer and Maddux (1982) on the self-efficacy scale revealed that the scale had two sub-scales that resulted through factor analysis viz. 'general self-efficacy' and 'social-efficacy.' The general self-efficacy subscale consisted of 17 items, and the social self-efficacy subscale consisted of 6 items. They confirmed the conceptual relationship between the two subscales and personality measures

like 'locus of control, personal control, social desirability, ego, strength, interpersonal competence, and self-esteem,' which provided construct validity of the scale. The original version of the scale had 36 items in total, after factor analysis and item analysis, the final version of the scale had 23 items in total. The Cronbach alpha reliability of the General Self-efficacy subscale was 0.86, and the Social self-efficacy scale was 0.71, which revealed that the scale had high internal consistency. In the scale, both positive and negative items were also there, and for the negative items, the scoring was reversed (Sherer & Maddux, 1982).

Translation of SES to Odia Language

The investigator took permission by mail from the developer of the self-efficacy scale before translation and validation. After getting permission, standard procedures were followed for cultural adaptation and validation, which are mentioned below.

Forward Translation

The forward translation refers to the translation of each item from its original language (English) to the target language (Odia) by minimum two independent translators, where usually bilingual translators are preferred (Hendricson et al., 1989; Guillemin, Bombardier, & Beaton, 1993; Tsang, Royse, & Terkawi, 2017; Beaton et al. 2007). In this study, similarly, two independent translators were involved, where one translator was aware and knowledgeable about the concepts of the scale, and the other provided translation resembling the original items. The translation of the two translators was compared, and essential modifications were made where discrepancies were found.

Backward Translation

The backward translation refers to the independent back translation, i.e., from the target language (Odia) to the original language (English) for ensuring the accuracy and consistency of each item, this was also done by taking two independent translators having literature background and linguistic experience, where the unclear and ambiguous words were modified (Guillemin, Bombardier, & Beaton, 1993; Beaton et al. 2007).

Preliminary Pilot Study and Revision of the Scale

The preliminary pilot study was conducted by taking purposively selected a small group of higher secondary school students, i.e., 10-20 students of Lakhanpur block in the district of Jharsuguda, Odisha. In this pre-pilot study, each of the respondents was asked to elaborate their thoughts verbally regarding each item of the scale, from which the investigators came to know about their understanding of the items and the accuracy of the translation.

Final Pilot Study and Validation

The final pilot study was consisted of randomly selected 135 higher secondary school students of Lakhanpur block in the district of Jharsuguda, Odisha. The demographic characteristics of the respondents were noted down for further study. In this study, ten teachers were also selected from that area to rate the translated items in terms of comparability, similarity, and understandability.

Validation of Translated Version of SES

Test of Comparability of Language, Similarity of Interpretation & Degree of Understandability

The test of comparability of language (CoL), the similarity of interpretation (SoI), and degree of understandability (DoU) was studied by following the procedures prescribed by Sperber et al. (1994) and Sperber (2004), where all the items of the translated version of the scale were listed down and on the right-hand side, options were given following Likert type with four-point scale, although Sperber (2004) used seven-point of scaling procedure (Sperber et al., 1994; Sperber, 2004). The scoring pattern was 1=extreme, 2=moderate, 3=low, 4=not at all, where the items having more one value represented having high CoL, SoI, and SoU, and items having two values represented low. Finally, the items having four values represented not all comparable, interpretable, and understandable. The following table makes it clear.

Table 1: Scoring Pattern for Testing CoL, SoI, and DoU

Item No.	Extreme CoL (1)	Moderate CoL (2)	Low CoL (3)	Not at all CoL (4)
1				
Item No.	Extreme SoI (1)	Moderate SoI (2)	Low SoI (3)	Not at all SoI (4)
1				
Item No.	Extreme DoU (1)	Moderate DoU (2)	Low DoU (3)	Not at all DoU (4)
1				
@Same pattern was followed for all the 23 items of the translated self-efficacy scale				

The items for which more 2- or 3-point scores were received were modified for the final version, and the items in which more 1-point scores were received

were kept as usual without modification. Finally, the mean scores for each item were calculated based on the responses of the experts.

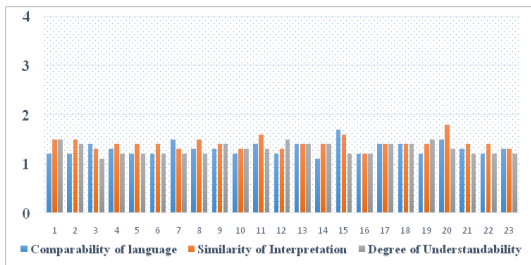
Table 2: Mean scores and SD of testing the CoL, the SoI & the DoU

Item No	Comparability of Language		Similarity of Interpretation		Degree of Understandability		N
	Mean	SD	Mean	SD	Mean	SD	
01	1.2000	.42164	1.5000	.52705	1.5000	.70711	10
02	1.2000	.42164	1.5000	.52705	1.4000	.51640	10
03	1.4000	.51640	1.3000	.48305	1.1000	.31623	10
04	1.3000	.48305	1.4000	.51640	1.2000	.42164	10
05	1.2000	.42164	1.4000	.51640	1.2000	.42164	10
06	1.2000	.63246	1.4000	.69921	1.2000	.42164	10
07	1.5000	.70711	1.3000	.48305	1.2000	.42164	10
08	1.3000	.48305	1.5000	.52705	1.2000	.42164	10
09	1.3000	.48305	1.4000	.51640	1.4000	.69921	10
10	1.2000	.63246	1.3000	.48305	1.3000	.48305	10

11	1.4000	.69921	1.6000	.69921	1.3000	.48305	10
12	1.2000	.42164	1.3000	.48305	1.5000	.70711	10
13	1.4000	.69921	1.4000	.51640	1.4000	.69921	10
14	1.1000	.31623	1.4000	.51640	1.4000	.69921	10
15	1.7000	.82327	1.6000	.69921	1.2000	.42164	10
16	1.2000	.44721	1.2000	.44721	1.2000	.44721	10
17	1.4000	.54772	1.4000	.54772	1.4000	.54772	10
18	1.4000	.89443	1.4000	.89443	1.4000	.89443	10
19	1.2000	.42164	1.4000	.51640	1.5000	.70711	10
20	1.5000	.70711	1.8000	.63246	1.3000	.67495	10
21	1.3000	.48305	1.4000	.51640	1.2000	.42164	10
22	1.2000	.42164	1.4000	.51640	1.2000	.42164	10
23	1.3000	.48305	1.3000	.48305	1.2000	.42164	10

The table-2 represents the mean and standard deviation of each item of the translated version of the self-efficacy scale concerning the CoL, the SoI, and the DoU. The range of mean scores reveals between 1 to 2, which makes it clear that the items of the tools were having adequate CoL, the SoL, and the DoU. The following figure also depicts the information on the table more clearly.

Figure 1: Mean score representing the test of CoL, SoI and DoU



The figure-1 depicts the items of the scale in the X-axis and the scoring of the scale at the Y-axis in terms of CoL, the SoI, and the DoU. As per the scoring procedure, the 1-point scoring referred to as the extreme level of CoL, SoI, and DoU, the point2 referred to a moderate level, and point-3 low level of point-4 referred no CoL, SoI, and DoU. So, the data of the figure reveals that the obtained mean scores are confined to point-1 and 2, which makes it clear that all the items of the translated version of the self-efficacy scale were having high CoL, the SoI, and DoU.

Face Validity

‘The face validity refers to the degree to which a test appears to measure what it purports to measure’ (Gay, 1990, p.130). in this study, the face validity of the translated self-efficacy scale in Odia language was estimated by taking the views of the experts taken for validation purpose.

Content Validity

‘The content validity is the degree to which a test measures an intended content area with item validity, where the item validity refers is concerned with whether the test items represent measurement in the intended content area’ (Gay, 1990, p. 129). The content validity of the translated version of the self-efficacy scale was studied by following the opinion of the experts on the relevance of each item in terms of the content area of self-efficacy.

Internal Consistency Reliability of the Scale

The internal consistency of the translated version of the self-efficacy scale was calculated with the help of Statistical Package for Social Science-23 (SPSS-23). The Cronbach alpha reliability and split-half reliability both are used as important measures of the internal consistency of a research instrument.

Cronbach’s Alpha & Split Half Reliability

The Cronbach alpha reliability index and split-half reliability value of the translated version of the scale obtained from the output of SPSS analysis are presented below.

Table 3: Cronbach Alpha and the Split-half Reliability Index of Scale

S. No.	Subscale	No. of Items	N	Cronbach Alpha	Split Half Reliability
1	General self-efficacy	17	135	0.813	0.850
2	Social self-efficacy	06	135	0.670	0.746
Overall Scale		23	135	0.846	0.788

The results revealed that both the subscales of the SEF were having high internal consistency. The first subscale, i.e., General self-efficacy was having 0.85 Cronbach alpha reliability in total, and the second

sub-scale was having 0.79 reliability, which revealed that the translated version of the self-efficacy scale was highly reliable having high internal consistency.

Item Total Statistics

Table 4: Item-wise Mean, Standard Deviation and Number of Cases

Items	Mean	SD	N	Items	Mean	SD	N
Item1	4.69	.617	135	Item13	4.56	.665	135
Item2	1.69	.796	135	Item14	1.53	.656	135
Item3	4.68	.581	135	Item15	4.55	.666	135
Item4	1.69	.842	135	Item16	1.53	.656	135
Item5	1.60	.745	135	Item17	1.55	.655	135
Item6	1.63	.688	135	Item18	1.62	.668	135
Item7	1.60	.693	135	Item19	4.56	.642	135
Item8	4.56	.665	135	Item20	1.64	.652	135
Item9	4.55	.666	135	Item21	4.56	.642	135
Item10	1.59	.683	135	Item22	1.53	.667	135
Item11	1.62	.742	135	Item23	4.57	.641	135
Item12	1.64	.685	135				

The table-4 depicts information about the item total statistics of the translated version of the self-efficacy scale concerning the mean scores, standard deviation, and N. As mentioned earlier, the scale had both positive and negative items in both subscales, so

item wise mean and standard deviation is presented there separately. The data revealed that the standard deviation of each item is near to 1, and the mean is between 4 to 5 for positive items and 1 to 2 for negative items with 135 number of cases in total.

Table 5: Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	2.772	1.526	4.689	3.163	3.073	2.217	23
Item Variances	.464	.338	.708	.370	2.095	.007	23
Inter-Item Correlations	.190	-.184	.861	1.045	-4.666	.056	23

The table-5 depicts information about the summary of item statistics presented in table-4. The summary reveals the minimum mean score, i.e., 1.52 and maximum mean score, i.e., 4.69, so the range is depicted as 3.16 in terms of the item means. So far as the item variance is concerned, the minimum value is 0.338, and the maximum is 0.708, and the range

is 0.370. finally, the inter-item correlation reveals a minimum value of -0.14 and a maximum 0.190 having 1.05 range for all the 23 items.

Principal Component Analysis

The principal component analysis was done for dimension reduction and finding the pattern of the

data of high dimensions. So, to undertake factor analysis through the principal component method, first of all, the KMO and Bartlett's test was used to study sampling adequacy and sphericity after that principal component analysis was done with varimax rotation method.

Table 6: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.862
Bartlett's Test of Sphericity	Approx. Chi-Square	1548.660
df		253
Sig.		.000

The table- shows two tests that indicate the suitability of the data for structure detection. The KMO (Kaiser-Meyer-Olkin) measure of sampling adequacy indicates the proportion of variances in the variables that might be caused by underlying factors. As high value (near to 1) indicates the use of factor analysis and the KMO value is 0.862 is found here, so it can be concluded that factor analysis is very useful for this data. On the other hand, Bartlett's test of sphericity value is showing 154867, which is significant at 0.01 level of significance reveals that factor analysis is very much useful for this data.

Table 7: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.327	27.507	27.507	6.327	27.507	27.507	5.659	24.605	24.605
2	4.469	19.430	46.937	4.469	19.430	46.937	4.232	18.400	43.005
3	1.377	5.986	52.923	1.377	5.986	52.923	2.064	8.975	51.980
4	1.162	5.051	57.973	1.162	5.051	57.973	1.379	5.994	57.973
5	.952	4.140	62.113						
6	.918	3.991	66.105						
7	.813	3.534	69.638						
8	.792	3.445	73.083						
9	.765	3.327	76.410						
10	.710	3.085	79.495						
11	.602	2.616	82.111						
12	.577	2.510	84.621						
13	.552	2.399	87.020						
14	.527	2.293	89.313						
15	.436	1.896	91.209						
16	.383	1.667	92.876						
17	.362	1.574	94.450						
18	.309	1.344	95.793						
19	.253	1.100	96.893						
20	.243	1.058	97.951						
21	.211	.919	98.870						
22	.193	.841	99.711						
23	.067	.289	100.000						

Extraction Method: Principal Component Analysis

The table 7 depicts information on the total variance explained in the data set of principal component analysis. There are three dimensions, i.e., initial eigenvalues, extraction sums of squared loadings, and rotation sum of squared loadings. The total column first dimension gives the eigenvalue in the original variables accounted for each component; the % of variance gives the ratio expressed in % accounted for by each component to the total variance in all of the variables. The cumulative % column gives the percentage of variance accounted for by the first n components. The next dimension of the table explains extracted components, which explains the % of the variability in the original variables. The last dimension, i.e., rotation, maintains the cumulative % of variation explained by the extracted components. However, the results of the total variance explained revealed that four components were extracted during factor analysis.

The figure-2 depicts the screen plot of the factor analysis with principal components, which is used to

determine the number of factors to retain in doing principal component analysis. The procedure of finding statistically significant factors of components using a screen plot is known as a screen test, as found by Cattell. (Cattell, 1966). The four factors extracted are as follows.

Figure 2: Screen Plot of Principal Component Analysis

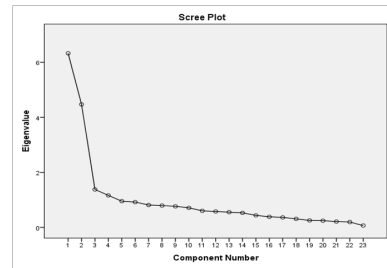


Table 8: Component Transformation Matrix

Component	1	2	3	4
1	.929	-.094	.354	-.047
2	.054	.956	.147	.249
3	-.365	-.114	.924	-.029
4	.021	-.254	.008	.967

Table 9: Component Matrix and Rotation Component Matrix

	Component Matrix					Rotated Component Matrix			
	Component					Component			
	1	2	3	4		1	2	3	4
Item1	-.106	.939	-.111	-.070	Item1	-.008	.938	-.003	.174
Item2	.652	.088	-.166	.207	Item2	.676	-.011	.092	.196
Item3	-.048	.566	.031	-.373	Item3	-.033	.637	.092	-.218
Item4	.622	-.083	-.063	-.056	Item4	.595	-.117	.150	-.102
Item5	.549	.110	.024	.224	Item5	.512	-.007	.234	.217
Item6	.824	.077	-.148	.006	Item6	.824	.012	.167	-.010
Item7	.818	.009	-.160	-.062	Item7	.818	-.035	.143	-.092
Item8	-.140	.315	.034	.589	Item8	-.113	.161	.033	.654
Item9	-.068	.436	-.094	.649	Item9	.009	.269	-.042	.742
Item10	.704	.014	-.281	-.009	Item10	.757	-.019	-.008	-.030
Item11	.793	.032	-.029	-.036	Item11	.748	-.032	.258	-.064
Item12	.718	.093	-.236	-.119	Item12	.755	.078	.049	-.119
Item13	.023	.589	.331	-.058	Item13	-.069	.538	.400	.080
Item14	.579	.075	.174	.137	Item14	.482	-.038	.377	.119
Item15	-.062	.631	-.083	.037	Item15	.007	.609	-.005	.198
Item16	.589	-.053	-.222	-.209	Item16	.621	-.028	-.006	-.237
Item17	.693	.016	-.133	.049	Item17	.695	-.048	.126	.023

Item18	.392	.218	.645	-.164	Item18	.137	.140	.766	-.142
Item19	-.175	.824	-.010	-.084	Item19	-.116	.826	.049	.133
Item20	.572	.086	.526	.092	Item20	.346	-.055	.702	.068
Item21	-.108	.853	-.089	-.128	Item21	-.025	.868	.003	.096
Item22	.701	.178	.421	.053	Item22	.508	.043	.663	.050
Item23	-.072	.829	-.215	-.050	Item23	.056	.837	-.103	.168
Extraction Method: Principal Component Analysis. a. 4 components extracted.					Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization a. Rotation converged in 5 iterations.				

The table 9 represents the component matrix and rotation component matrix through varimax with Kaiser normalization in the extraction method of principal component analysis. The component matrix shows the correlation between the variable and the components, which ranges from -1 to +1. The rotated components matrix, or sometimes referred to loadings, was also used as the output of the principal component analysis, which contains estimates of the correlation between each of the variables and the estimated components.

Implications of the Study

The present study has implications for teachers and stakeholders of education in terms of measuring the self-efficacy of the students, which is a psychological dimension for promoting students' learning. In this present study, the self-efficacy scale developed by Sherer and Maddux (1982) was translated into Odia language, and validation, cultural adaptation, and factor analysis were made. So, the teachers and stakeholders of Odisha can now use this tool from their cultural perspective. This tool is having high internal consistency with four factors loadings, so this tool will be very beneficial on the part of the teachers to measure the self-efficacy among their students and take essential measures to bring all-round development in them. As mentioned earlier, self-efficacy is closely associated with the learning performance of students in educational theory and practices; it is very beneficial for the teachers, particularly to enable the students to gain an idea about their strengths and weakness. This study has implications for the policymakers also as the policymaker frames principles for students learning. So, from an educational point of view, this tool is

highly beneficial for the stakeholders of education of Odisha state, as such kind of tool was not available earlier.

Conclusion

The present study is empirical as primary data was collected, which is based on cultural adaptation and validation of the self-efficacy scale for the students of the higher secondary school of Odisha state. So far as the results of the rigorous analysis are concerned, the translated version of the scale had high internal consistency and content validity too. Also, the tool has four principal components, as depicted in the table of principal component analysis. The self-efficacy scale of Odia language also fulfills all the psychometric properties and equally helps to measure general self-efficacy dependent on past experiences and social self-efficacy based on the abilities to maintain social relations. So, it can be said that this self-efficacy scale is now widely applicable in all parts of Odisha for measuring the self-efficacy abilities of students in terms of both general and social self-efficacy.

Acknowledgment

We are very much thankful to Prof. Sherer, Mississippi State University, and Prof. Maddux, Texas Tech University, for permitting us to use their 'self-efficacy scale' in our research. We are also thankful to the selected subject experts and language experts for their creative suggestions for translating the tool to Odia language. We are very much thankful to the participants of the study for their cooperation during data collection. We are also thankful to our institution Gangadhar Meher University, Amruta Vihar, Sambalpur, for providing

essential opportunities and scope to undertake this research.

Funding Details

This research work is a part of the Ph.D. of the corresponding author, and it is the product of the financial grants given by University Grant Commission, Bahadur Shah Zafar Marg, New Delhi-110002, India in the form of Junior Research Fellowship. So, we are very much thankful to the University Grant Commission (UGC), New Delhi, for providing such fellowship in conducting such research-based activities.

Disclosure Statement

No potential conflict is reported in this study.

References

- Bandura, Albert, et al. "Cognitive Processes Mediating Behavioural Change." *Journal of Personality and Social Psychology*, vol. 35, no. 3, 1977, pp. 125-139.
- Bandura, Albert, et al. "Tests of the Generality of Self-efficacy Theory." *Cognitive Therapy and Research*, vol. 4, 1980, pp. 39-66.
- Bandura, Albert. "Self-Efficacy: Toward a Unifying Theory of Behavioural Change." *Psychological Review*, vol. 84, no. 2, 1977, pp. 191-215.
- Bandura, Albert. "Self-Efficacy Mechanism in Human Agency." *American Psychologist*, vol. 37, no. 2, 1982, pp. 122-147.
- Bandura, Albert. "Social Cognitive Theory: An Agentive perspective." *Annual Review of Psychology*, vol. 52, 2001.
- Beaton, Dorcas, et al. *Recommendations for the Cross-cultural Adaptation of the DASH & Quick DASH Outcome Measures*, Institute for Work and Health, 2007.
- Cattell, Raymond B. "The Screen Test for the Number of Factors." *Multivariate Behavioural Research*, vol. 1, no. 2, 1966, pp. 245-276.
- Dweck, Carol S. *Self-theories: Their Role in Motivation, Personality, and Development*, Psychological Press, 1999.
- Gay, L.R. *Educational Research: Competencies for Analysis and Application*, Macmillan Publishing Company, 1990.
- Guillemin, Francis, et al. "Cross-cultural Adaptation of Health-related Quality of Life Measures: Literature Review and Proposed Guidelines." *Journal of Clinical Epidemiology*, vol. 46, no. 12, 1993, pp. 1417-1432.
- Hendricson, William D., et al. "Development and Initial Validation of a Dual-language English-Spanish Format for Arthritis Impact Measurement Scales." *Arthritis and Rheumatism*, vol. 32, no. 9, 1989, pp. 1153-1159.
- Heslin, Peter A. and Ute-Christine Klehe. "Self-Efficacy." *Encyclopedia of Industrial and Organizational Psychology*, edited by Rogelberg, S.G., Sage, 2006, pp. 706-708.
- Hill, Winfred F. *Learning: A Survey of Psychological Interpretations*, Allyn and Bacon, 2002.
- Kozhevnikov, M. "Cognitive Styles in the Context of Modern Psychology: Toward an Integrated Framework of Cognitive Styles." *Psychological Bulletin*, vol. 133, no. 3, 2007, pp. 464-481.
- Metcalfe, J. and Arthur P. Shimamura. *Metacognition: Knowledge about Knowing*, MIT Press, 1994.
- Murphy, Karen and Patricia A. Alexander. "A Motivated Exploration of Motivation Terminology." *Contemporary Educational Psychology*, vol. 25, 2000, pp. 3-53.
- Sherer, Mark, et al. "The Self-Efficacy Scale: Construction and Validation." *Psychological Reports*, vol. 51, no. 2, 1982, pp. 663-671.
- Sperber, Ami D. et al. "Cross-Cultural Translation: Methodology and Validation." *Journal of Cross-Cultural Psychology*, vol. 25, no. 4, 1994, pp. 501-524.
- Sperber, Ami D. "Translation and Validation of Study Instruments for Cross-Cultural Research." *Gastroenterology*, vol. 126, 2004, pp. 124-128.
- Srivastava, P. et al. "Development of Psychometric Properties in Self-Efficacy Scale in Hindi Language (SE Scale in Hindi Version)." *International Journal of Indian Psychology*, vol. 6, no. 2, 2018, pp. 4-10.

Tsang, Siny, et al. "Guidelines for Developing, Translating, and Validating a Questionnaire in Perioperative and Pain Medicine." *Saudi*

Journal of Anaesthesia, vol. 11, no. 5, 2017, pp. 80-89.

Author Details

Venkateswar Meher, *Junior Research Fellow, School of Education, Gangadhar Meher University, Sambalpur, Odisha, India, Email ID: venkatesmeher90@gmail.com*

Dr. Rajashree Baral, *Associate Professor of Education, School of Education, Gangadhar Meher University, Sambalpur, Odisha, India, Email ID: rajashreebaral5@gmail.com*