

Psychological Empowerment of Teachers: Development and Validation of Multi- Dimensional Scale

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Abstract: The main aim of current paper was to construct and standardize psychological empowerment measure for secondary school teachers in the Indian context. Initially, 50-items were constructed and expert's views were collected. After that face and content validity was estimated of the scale. To develop the psychometric properties of the scale two independent samples were used. The outcomes of exploratory factor analysis showed that psychological empowerment scale is multidimensional having meaningfulness, self-determination, competence, and impact facets. Findings obtained from confirmatory factor analysis (CFA) confirmed that psychological empowerment scale consists of 25-items had adequate internal consistency indices. In India context, this is an important study which has developed and validates psychological empowerment scale for teachers.

Index Terms: psychological empowerment, scale development, secondary school teachers, factor analysis.

I. INTRODUCTION

The construct teacher empowerment is continuously a substantial research topic from past twenty five years in the area of organizational psychology. It is a construct related to motivational aspects as stated by Thomas & Velthouse, 1990, it is intrinsic motivation of the employees which consists job related cognitions. The term psychological empowerment improved attractiveness in administration arena and has been empirically examined over the past two decades, Oladipo (2009) noted that psychological empowerment is positively relevant with different fact of human life i.e. national development and improved psychological well-being. Psychological empowerment is also positively related with work motivation, employees work performance in different sector of enterprises, job devotion of the employee, and organizational commitment. To measure psychological empowerment, number of scales have been developed which was related with workplace environment [70]-[75].

Empowerment is a process to increase the feeling of autonomy among the people. It enable the people to show their interest with responsibility and do their work with own authority. It make the person more confident, stronger and able to take right decisions for own life. People enable them to overcome sense of powerlessness and recognize own abilities and use the resources in an effective manner. Psychological empowerment experiences often involve one's cognitive state of awareness, such as awareness of personal strengths and weaknesses, Psychological empowerment is a psychological states of the individual in

Revised Manuscript Received on December 22, 2018.

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which they are aware about their responsibilities, capabilities, strengths, skills that help their personal as well as professional growth. Highly psychological empowered individual perceived that their work is very beneficial or meaningful and also believe that they have competence to perform their duties which impact on their work performance and organizational outcomes, which leads active behavior of the individual in their work situations. Individuals have more autonomy or self-determination about how to do their job and complete their assigned duties. They have intrinsically motivated for work and finish assigned duties more effectively [1]-[8].

After examine psychological empowerment, there is a need to developed reliable and valid scale and the construct of psychological empowerment should be reexamined in every context. In educational setting, highly psychological empowered teachers are more confident about their abilities to perform their assigned duties effectively, more confident their teaching skills, feel more autonomy or determination to do their work, capable to think and can produce new valuable ideas and believe that their work have more impact on their organizational performance. So, it is essential for the investigators in educational settings to understand that how psychological empowerment may affect on outcomes of human resources development. There is need to develop and validate psychological empowerment scale to measure psychological empowerment of secondary school teachers. Basically, to fill the gap and validate psychological empowerment scale regarding its psychometric properties by specifying its accuracy and consistency of measurement was the main aim of this study [9]-[13], [31].

II. CONTEXT & REVIEW OF LITERATURE

In previous studies of organizational and academic context, it is pertinent that numerous scales have been developed to examine psychological empowerment of teachers. Empowerment term is basically used in various disciplines i.e., educational setting, community psychology, administration system, sociological studies, social work, and studies related with woman. Lee (2005) defined that empowerment is ability of the people to think and understand themselves and control their actions, also understand and control their environment like economic, political and social; increasing their abilities to perform the tasks, enhance their achievement level and achieve more satisfaction. Employees perceive greater level of empowerment perceives greater self-esteem and self-efficacy beliefs which controls their lives, increased their civic participation and critical awareness (Zimmerman, 1995, 2000).

Moghadam (2005) stated that teacher's psychological empowerment is fundamental to the millennium development objectives. However, empowerment is classified in five different phases: (i) Diagnosis the reasons which are accountable for powerlessness feeling. (ii) Use empowerment tactics for removing external conditions which are responsible for powerlessness feeling. (iii) Provided information about self-efficacy to the person. (iv) On the bases of received information person feel empowered. (v) Behavioral effect are represented or noticed. This idea was extended by Thomas & Velthouse (1990) recommended four cognitions i.e. meaning (individual opinions and values . capability (i.e. person capable to perform the assigned tasks with require skill) Thomas & Tyman, 1994), choice (self-determination i.e. person's sense of freedom while taking advantage and regulate over work) Bell & Staw (1989), and impact (able to influence administrative, strategic and organizational outcomes) . Competence has constructive influence on employee's performance . Impact completely associates with high performance in tough circumstances , and increases work or task motivation. The components of psychological empowerment are goal internalization, perception of control, competence , and also coping is a major indicator of psychological empowerment[43]-[54] .

Leader empowering behavior scale has been validated by Konczak, Stelly and Trusty (2000). The scale comprises 6 dimensions which measure the leader empowering behavior i.e., development of skills, ability to emphasize accountability delegation of authority, share the information, encouragement of self-directed decision-making and promote innovation. Batool, S. A. & Batool, S. S. (2017) has been developed global psychological empowerment scale for women with 29 items based on four components that is, (self-efficacy; competence), meaningfulness, (self-determination; choice), and impact were taken from model of (Thomas and Velthouse, 1990). Kirkman & Rosen (1999) was developed team psychological empowerment scale. The scale consists 4 dimensions: team potency (it is team's collective belief), team meaningfulness (beneficial, worthwhile and valuable experience of team), team autonomy (freedom and independent experience of team members in their work), and team impact (production or outcomes of team work for an organization).

Wang and Zhang (2012) developed a psychological empowerment scale for school teachers on the basis of Zimmerman's theory of psychological empowerment. The scale has 3 subscales, which are: 1) first factor consists with feeling i.e., status, impact, self-determination, and self-efficacy, 2) second factors consists with skill viz., communication and decision-making skills and third factors consists with behavior i.e., influencing teaching and decision-making participation. It is a 5-point Likert scale based on i.e., strongly agree to strongly disagree. On the bases of above stated measurements of psychological empowerment at workplace settings, no one among them assesses the global psychological empowerment of secondary school teachers in Indian scenario. Empowerment is more need for teachers because teaching is most important profession. Psychological empowerment of teachers is important concept for researchers and school managers. Jin-Liang Wang & Da-Jun Zhang (2012) suggested that individual having high level of

empowerment increased the organizational performance and school based management. Nonetheless, Thomas and Velthouse (1990) stated that it is intrinsic assignment enthusiasm of the employees which consists four job related cognitions i. e. meaningfulness, competence, impact, and choice. Psychological empowerment predicted work performance, including employees' work satisfaction, job involvement, commitment for organization/organizational commitment, occupational turnover intention, work strains, innovativeness, leadership behaviors, and job performance .The Psychology of empowerment is an intrinsic motivation may be somewhat questionable because intrinsic task motivation may be argued as an outcome of empowerment too .For instance, it can be argued that those who are empowered are consequently more motivated because they feel more psychologically resourceful than those who are not empowered (Blau & Alba, 1982). Mainiero, (1986) said that it refers to the granting of greater autonomy and decision authority to employees through management policies and practices. Review of literature suggests that psychological empowerment is a multidimensional or multifaceted variable (Spreitzer, 1995). One often most frequently used instrument is psychological empowerment scale with twelve statements, which was developed by Spreitzer, (1995). It is a five point scale ranging from 5 to 1. Five for strongly agree to one for strongly disagree. This measure has been used in number of research studies as .After literature review of psychological empowerment it is analyzed that psychometric properties of psychological of psychological empowerment have not been critically examined. Development and validation procedure was not explained effectively apart from reliability coefficient. In Indian context, there is dearth of researches in psychological empowerment. In present condition, there has been number of measures developed to measure psychological empowerment. This study would bridge the gap and re-examine multidimensional concept school teachers' population[54]-[67].

III. METHOD

Keeping in mind the objectives, scale development research investigation was used to construct and validate a tool that sufficiently measures the psychological empowerment of secondary school teachers. The procedures were as follows (i) construct definition intended to be measured (ii) item pool generation (iii) view point of experts on initial item pool (iv) scale refinement and validation (v) evaluation of the scale (DeVellis, 2016; Wymer & Alves, 2013). In addition, details related to different parameters can be seen in below like participants/respondents, research instrument & procedures and analysis of data.

IV. PARTICIPANTS

The population of the study is secondary school teachers of Punjab state (India). The participants in this research were 600 secondary school teachers in Punjab state, who were selected via simple random sampling technique. Convenience sampling technique has been selected for few benefits; including ease of use, accuracy of representation and exhibit low sampling error (Singh, 2008).



There are 34.47% male and 65.52% female secondary school teachers (Statistic of school education 2010-2011). Initially, out of twenty two districts of Punjab state, six districts were selected randomly i.e., Ludhiana, Jalandhar, Kapurthala, Hoshiarpur, Gurdaspur and Amritsar. In these districts, twenty four schools were selected via using random technique. Number of teachers was selected conveniently from these schools which was participant of the study. The researcher collects information from all the participants that are conveniently available, and willing to co-operate for providing information (Kaul, 2009). The sample size was satisfactory for acceptable threshold of exploratory factor analysis and confirmatory factor analysis separately as suggested by (Hair et al. 2010).

V. INSTRUMENT AND PROCEDURES

To develop a reliable and standardize scale, investigator was studied the vast studies related to measuring construct. In preliminary stage, 72 statements were generated by the investigators. Therefore, summated evaluation method has been used for develop present scale as given by Likert (1932). Likert scaling is commonly used tool measuring beliefs, options and attitudes. DeVellis, (2016) suggests that when used in a Likert format it is frequently useful for represent the exactly strong items. Therefore the present scale comprised 5-point Likert format, five sequential points are rated on each item, (strongly disagree=1 to strongly agree=5).

After preparing the item pool, the face and content validity was done qualitatively at preliminary draft of the instrument. Eight experts review has been taken on the research instrument. Experts give the suggestion about items of the scale on the bases of these parameters like any vagueness, dual meaning and ambiguity of the items. On the bases of experts suggestion modifications and revisions were performed. According to expert's opinion on the scale, the statements are completely satisfactory and relevant which measure the psychological empowerment of secondary school teachers in Indian context. In primary draft, only relevant statements were retained which had completed acceptable by experts opinion.

In order to investigate the expert standpoints, an evaluation tool containing of 3-statements were used. Then, researcher was asked the expert to select any one of the options "Suitable", "Must be corrected" & "Not suitable". In this viewpoints, the content soundness of the items was decided with applying the formula for each statement i.e. "(The number of the experts who answered positively/The number of total experts)-1". Then, the statements having below 0.80 content validity ratios (CVR) were excluded from the scale. After that, 22 statements were removed and additional fifty statements were retained to apply the exploratory factor analysis. The total score of all the statements obtained by examinee is considered as total psychological empowerment. High score means a high level of empowerment of secondary school teachers in psychological empowerment and vice versa.

VI. DATA ANALYSIS

For measuring reliability and validity of psychological empowerment scale, it was pre-applied to 313 secondary school teachers. The factorial structure was determined of the scale with the help of applying (EFA) Explanatory Factor Analyses & (CFA) Confirmatory Factor Analyses. Explanatory Factor Analyses is used to decide the connection between the unidentified constructs of latent and observed. The basic rule of load value of each construct must be estimated at or over 0.32. CFA is the most significant analysis method used to measure whether a pre-defined factor model fits the data. stated that to find out the adequacy of the model tested in CFA many fit indices are used. In these fit indices, AGFI, GFI, and CFI, being >.90, Root Mean Square of Approximation (RMSEA) being <.08 are considered as criteria, which is commonly the situation (Kline, 2005; Tabachnick&Fidell, 2001). The coefficient alpha was examined for the internal consistency reliability of the psychological empowerment scale.

VII. FINDINGS

To develop the psychological empowerment scale, findings are conducted on reliability and validity of the test.

A. Exploratory factor analysis

For the development and validation of psychological constructs, factor analysis procedure is most commonly used. The tests of Kaiser-Meyer-Olkin (KMO) and BarlettSphericity were used to determine the 50-item scale fit the factor analysis or not. Several iterative cycles were used for factor analysis on data set. After applying each iteration, total variance was explained. Numbers of elements were extracted and low communalities factors were deleted which didn't correlate. The aim was improve the factor structure with clear loadings. Kaiser-Meyer-Olkin (KMO) value is applied to conclude whether the set of data & the size of sampling are appropriate & suitable for the selected analysis, was found to be .848. Furthermore, the BarlettSphericity test, which was found to be significant (Chi-square=2688.725, p<.01). Factor analysis could be conducted with the help of above mentioned results (Kothari &Garg, 2014).

Table 1: KMO and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.848
Bartlett's Test of Sphericity	Approx. Chi-Square	2688.725
	Df	351
	Sig.	.000

The factor loads display the association between the statement to be assessed & the focal construct, the appropriate components that seemed as a product of the basic component analysis. After these procedures, the pre-final structure of the psychological empowerment scale was given as 27 items which is displayed in table 2. Four factor structure revealed by factor analysis which explaining 57.07% of the variance. and items loading of all the

statements is above .40 .. We named factors on the basis of items relevant to literature . Meaningfulness associated first factor (fourteen items), competence associated to second factor (six items), self-determination associated third factor (three items), and impact associated to fourth factor (four items). The Table 2 indicates items psychological empowerment scale and factor loadings of each item.

Table 2: Items of Psychological Empowerment Scale (ADS) and their Factor Loadings

Sr. No.	Items	Factor Loading
Factor One		
Meaningfulness		
Statement 1	The work I do is beneficial for me.	.638
Statement 6	My job gives me the chance to use innovative ideas.	.621
Statement 7	My job provides me the opportunities to apply higher order thinking skills.	.656
Statement 8	My job provides me the opportunities to exhibit my skills and potential.	.690
Statement 9	I am always motivated to complete the work assigned by organization.	.672
Statement 11	My job fulfills my professional needs.	.646
Statement 12	I receive professional respect and appreciation from my colleagues.	.635
Statement 13	I evaluate my work against my own standards of quality.	.650
Statement 14	My job is appropriate and within the scope of my capabilities and skills.	.514
Statement 15	I feel a sense of personal satisfaction when I do my task effectively.	.609
Statement 18	My job gives me respectful position in the society.	.568
Statement 19	My job satisfies my personal needs.	.538
Statement 20	I am proud of what I am doing in the organization.	.510
Statement 21	My job provides many chances for me to figure out how I am doing well.	.504
Factor Two		
Competence		
Statement 5	I perform the assigned tasks effectively.	.414
Statement 16	I am confident about my abilities for completing the tasks assigned to me.	.759
Statement 17	I am able to utilize available resources to accomplish tasks.	.634
Statement 22	I have abilities to solve any type of work related problems.	.808
Statement 23	I take personal initiatives in carrying out my work.	.584
Statement 24	I am well equipped with the skills to develop curricula for the students.	.814
Factor Three		
Self-Determination		
Statement 31	I have control over my work such as selection of text books, lesson planning and scheduling.	.739
Statement 33	I am free to share my own views for the work related discussion.	.790
Statement 37	I select the study material taking into consideration the performance of students.	.747
Factor Four		
Impact		
Statement 27	My work exerts positive effect on my organization.	.558
Statement 34	My work influences strategic, administrative outcomes of the organization.	.739
Statement 35	I believe that standards of quality of my organization depend upon my work.	.644
Statement 36	I play a lead role in implementation of new policies in my organization.	.562

VIII.CONFIRMATORY FACTOR ANALYSIS

Confirmatory factor analysis is altered form of Structural Equation Modeling that is called the “linear structural relationship model.”Even though idea of dimensionality gives

EFA, CFA, mainly used to validate the hypothesized factor model. So, CFA is a technique to confirm the components of hypothesized factor model . 22 version of SPSS Amos was used for apply CFA on four factors which extracted from exploratory factor analysis.The structure of psychological empowerment scale, which comprised of twenty seven statements and four facets, was confirmed by applying confirmatory factor analysis. 287secondary school teachers were chosen conveniently to make this examination. The good model fit indices were achieved only after correlating the error terms (e10 and e11, e7 and e9, e4 and e5) and after deleting of two items item19 from the dimension of ‘meaningfulness’ item5 from the dimension of ‘competence’ in CFA model due to poor factor loadings. The findings obtained result of analyzing the model with confirmatory factor analysis is given below.

In this model the fit indices were (CMIN/DF=1.551, (RMSEA) =.044, Comparative Fit Index (CFI) =.927, Goodness Fit Index (GFI) =.905, Adjusted Goodness Fit Index (AGFI) =.871, and Chi-square=412.67 (p>0.01). The AGFI, CFI and GFI values must be between 0 and 1, it is a standard value indices. According to Schumacker& Lomax (2016) if the values are >.90, it is the proof of a good fit model. However, CFI value >.85 is acceptable but CFI >.90 is considered better fit (p. 647). In addition several studies such as Gay et al. (2010); Mahne&Huxhold (2014); Lima-Rodríguez et al. (2015), have CFI value which is lower than .90. The RMSEA values vary between 0 and 1. So, RMSEA is a good fit indicator in this model. Figure 1 Provide outlook of confirmatory factor analysis model.

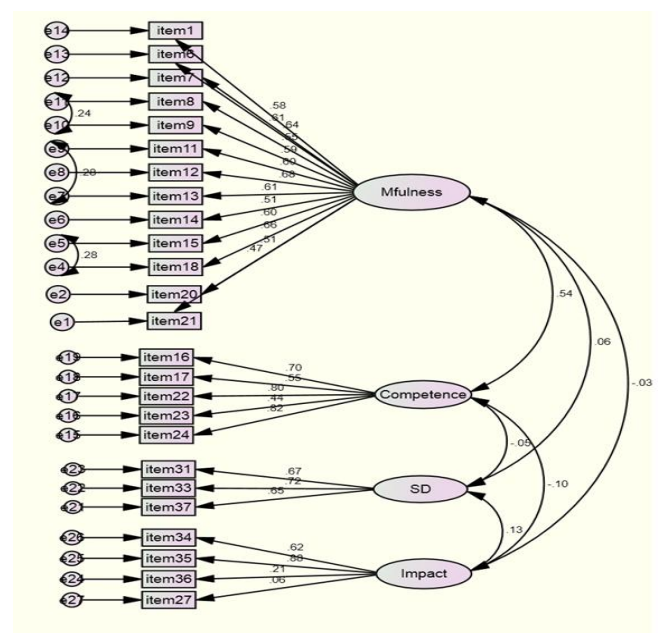


Figure 1 Confirmatory Factor Analysis Model of Psychological Empowerment Scale

A. Reliability statistics

To measure the reliability statistics of the scale, Cronbach’s Alpha was used to assess internal consistency and it should be greater than 0.6. The interpretation made by Gliem & Gilem, 2003 as cited in Bashir & Bala, 2018b) shows that the normal range of reliability coefficient Alpha is from 0

and 1. George &Mallery (2003) stated that the main rule acknowledged for the interpretation of Alpha is: “0.80 to 0.9 Good; and above 0.9 Excellent”. For this scale Cronbach’s alpha indicated good internal reliability ($\alpha=.855$). So, our reliability analysis suggests that psychological empowerment scale is internally consistent.

Table 3. Reliability Statistics of Psychological Empowerment Scale

Sr. No.	Construct	Cronbach's Alpha	Number of Items
1	Meaningfulness	.876	13
2	Competence	.795	5
3	Self-Determination	.720	3
4	Impact	.710	4
5	Total Psychological Empowerment Scale	.855	25

B. Construct Validity

Empirical estimation of reliability & validity involves for establishing construct validity (discriminant and convergent validity). The convergent credibility is assessed by average variance extracted and composite reliability measures. For all the dimensions of the construct composite reliability value are more than 0.7 and average variance extracted (AVE) value is higher than 0.5 and composite reliability (CR) is higher than AVE. Consequently, Convergent validity for this construct is proven. On the other hand, discriminant validity can be assessed with the support of

average shared variance (ASV), maximum shared variance (MSV), and average variance extracted procedures of variable in a measure. For all the dimensions above average variance extracted is higher than 0.5, average variance extracted is greater than maximum shared variance, and average variance extracted is higher than average shared variance. Hence, discriminant validity is achieved. In this way both convergent and discriminant validity of the measure is established.

C. Validity Measures calculated by Microsoft Excel-based validity concerns toolkit

Dimensions	Composite Reliability	Average Variance Extracted	Maximum Variance	Shared Variance	Average Shared Variance
Meaningfulness	.873	.502	.289	.098	
Competence	.804	.508	.289	.100	
Self-Determination	.720	.511	.016	.008	
Impact	.701	.517	.016	.008	

IX. DISCUSSION AND CONCLUSION

The foremost goal of this investigation was to construct and standardize a psychological empowerment measure for secondary school teachers. The study has reviewed the existing literature of psychological empowerment in educational and organizational context. A thorough methodological technique was applied to develop and standardize psychological empowerment scale. The entire collection of items was submitted to experts to give the suggestion for statement of the scale on the bases of some particular parameter i.e. ambiguity, vagueness, or dual meaning. To confirm the face and content related validity of the measure, the judge’s views were received. After that, 22 statements were removed from the item pool. 50 items were consisted in final draft. EFA and CFA were used to construct the structural validity of the measure. After applying EFA, twenty seven items were retained from the scale and four components were achieved. The factor loading ranges from .414 to .814 of the items and explained 57.07% of the total variance.

The exploratory factor analysis exposed that psychological empowerment can be conceptualized or decomposed into 4 aspects containing of meaningfulness (14 statements),

competence (06 statements), self-determination (03 statements) and impact (04 statements) respectively. Similarly, factor structure of the scale was confirmed by performing CFA. The factors obtained after applying EFA were verified with CFA. In CFA, the good model fit indices were achieved only after correlating the error terms (e10 and e11, e7 and e9, e4 and e5) and after deleting of two items item19 from the dimension of ‘meaningfulness’ item5 from the dimension of ‘competence’ in CFA model due to poor factor loadings. The indices of the model were (CMIN/DF=1.551, RMSEA =.044, (GFI) =.905, (CFI) =.927, Adjusted Goodness Fit Index (AGFI) =.871, and Chi-square=412.67 (p>0.01) values have acceptable good fit values. After the end of CFA revealed that psychological empowerment can be decomposed or conceptualized into 4 factors consisting of Meaningfulness (13 statements), Competence (05 statements), Self-Determination (03 statements) and Impact (04 statements) respectively. Psychological empowerment scale consists 25 items. Furthermore, reliability coefficient was calculated of the scale i.e. ($\alpha=.855$),

which displays high degree of internal consistency that is good as acknowledged by George & Mallery (2003). Psychological empowerment measure completed all standards like structural validity and construct validity.

For example, the measure has ample theoretical buttress and also has adequate statistical support. The broad previous empirical support for the factors of the scale which are retain in the scale after applying EFA and CFA. The domain meaningfulness was used in prior studies. Similarly, Competence was used by numerous researchers like . For Self-Determination., Impact. Empowerment is important psychological factor which satisfying the needs of the teachers related with their work performance. It also improves the personal effectiveness of the teachers for achieving organizational goals which are pre-determined. Lastly, the evidence which is provided from previous studies recommends that this measure has strong data properties to assess psychological empowerment of secondary school teachers. Furthermore, psychological empowerment scale produces valid and reliable results to define the level of psychological empowerment among secondary school teachers.

In this Investigation, researcher used scale development procedures which are highly reliable and valid, but there are also few shortcomings. Scale modification techniques of EFA and CFA are basically sample-size specific, it is the first limitation of this procedure. For applying these procedure techniques in this study, literature has been given the proper and rational support. But there is prerequisite to upsurge the sample size to obtain improved results of the study, it is advisable. Further research is required to support the construct validity. The main challenge related with developing a new scale such as the psychological empowerment (PE) is the complexity linked with obtaining scores that are valid and reliable. The results provide buttress for further psychometric investigation on the psychological empowerment scale (PES). Statements should be added, revised, adapted or removed to increase consistency/reliability of the measures of subscales of psychological empowerment to make confirm that a parallel number of items are measuring each of the dimensions. Moreover, test-retest data should also be obtained to establish the stability of the psychological empowerment over time. In addition, to assess the causes and consequences of psychological empowerment a triangulation approach can be used. While as multi-campus investigation should be conducted to assess the perception of teachers as well as students towards psychological empowerment. Further research can be conducted on other samples to determine psychological empowerment scale's appropriateness for use with other population. In actual, using the scale to secondary teachers at institutions might lead program designers, educationalists, curriculum framers, policy-makers and administrators to know most epidemic issues of psychological empowerment in organizational performance. This research work proposes that follow-up examination should be conducted with this tool across various organizations to get an image of teachers in India.

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