Research Article

Social Intelligence Model For Teachers

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ABSTRACT

Social Intelligence (SI) has been under lot of focus in recent years. New research studies have generated interest in knowing about the influence of social intelligence in teaching and learning transactions. With advent of ABL and ALM methodologies, greater research awareness to study social intelligence of upper primary teachers have spiralled up over time in India. This study explores the attributes of social intelligence by means of exploratory factor analyse. A sample of 700 upper primary school teachers of Kanchipuram were administered a self-constructed and validated scale on SI with 30 statements has been used for this purpose. The data were analysed using AMOS 18 to verify the reliability and also to validate the measurement fit model for Social Intelligence. SEM used in the study shows that the developed model is of good fit consisting of two attributes viz., patience and cooperation which significantly influence Social Intelligence of the upper primary school teachers in Kanchipuram district of Tamil Nadu, India.

KEYWORDS

Attributes of social intelligence, Social intelligence model, and teachers' social intelligence.

INTRODUCTION

Socialization is a much-needed ability for making life better (Maccoby, 1992,p.1006), and no doubt it starts developing and maturing at this stage in a comprehensive manner (Maccoby, 1992 and Irimia & Gottschling, 2016). This is a stage where children can understand and accept others' view point (Piaget, 1936, p.417) which shapes the social characteristic of the child. Classroom set up is designed keeping in mind socialization factors (Alaswad, 2013). To strengthen this further and make learning joyful and fun, new innovative methodologies like Active Learning Methodology (ALM), Activity Based Learning (ABL), have been introduced at the Elementary level. These methodologies strengthen autonomy by placing students in the path of discovery (Jerome Bruner et al., 1936, p.234). It is child-centric and gives the ample opportunities for the students to grow to maturity (Samuel Lakew, 2018, p.264). To realize its true objective in the classroom, teachers need to possess reasonable amount of social skills and abilities so as to navigate, facilitate effectively classroom interventions. With the limited access to facilities and time, social intelligence of teachers will bring out positive classroom climate for the learning in children (Kizlik, 2008; Morton, 2014 and Gkonou & Mercer, 2017). Upper primary school teachers handle students who enter adolescent stage and teacher who can instil confidence, keep channel of communication open, show patience to understand, easily approachable, culturally sensitive to students needs, tactfully handle issues of concern to the students, and above all aware about the social situation and respond affirmatively can have lasting

positive impact on students. This will directly aid to effectiveness in classroom transactions. In keeping tune with this principle, many researchers are trying to find the importance of SI for teachers. So, this article focuses on developing a model of SI in the context of upper primary school teachers. By using exploratory factor analysis, the researcher identifies the significant constructs of SI of upper primary school teachers of Kanchipuram district.

TEACHERS' SOCIAL INTELLIGENCE

Though social intelligence has gained lot of spot light recently, many have worked on it over the years E L Thorndike (1920), identified three constructs (i) ability to deal with things (ii) ability to understand and deal with verbal and symbolic representations and (iii) ability to deal with persons. Dave reported significant positive correlation between intelligence and teaching success (Joseph, 2013). There is a chance of teachers with high intelligence score of being more effective and competent in the teaching-learning process (Blazar& Kraft, 2017). The social intelligence of teachers indicates their mental ability (Prathima & Kulsum, 2013) to understand the intentions, emotions, actions and motives of their students, and colleagues, to influence and motivate their behaviour (Ghahfarokhi et al., 2017 and Knez & Nordhall, 2017). Teachers with high social intelligence would be good in recognizing delicate verbal, facial, and behavioral clues in students (Brackett & Katulak, 2006), and use them to construct meaningful classroom transactions. As teachers need to recognize students' needs and find a balance between needs of students and objectives of curriculum, social intelligence come handy for teachers. SI has become an important parameter in every human life. In India the average size of class strength is above 40, and in the informative age, guiding every students' to realise their true potential is a challenging task. One critical factor the teacher requires in handling students effectively both inside and outside the classroom is the level of social intelligence possessed by the teacher. This makes a world of difference in the classroom transactions. With ABL & ALM methodologies classroom teaching requires higher levels of socialization and a socially intelligent teacher can have a huge impact in terms of teaching, and executing things in a group setting.

OBJECTIVES

> The main objective of this study is to explore the factors of social intelligence (SI) and to develop measurement model for social intelligence based on the constructs derived, for upper primary school teachers.

RESEARCH METHOD

In this exploratory research, data were used to develop and validate measurement model for social intelligence and survey method had been adopted to collect the data.

SAMPLE OF THE STUDY

A total of 700 upper primary school teachers from Kanchipuram district, Tamil Nadu, India were part of the study. The sample constitutes teachers from government, government-aided and private schools teaching students at the upper primary level. Simple random sampling technique has been adopted for the study.

INSTRUMENT

Social intelligence scale developed by the investigator consists of 30 items. The five point rating scale was designed consisting factors viz., patience, co-operation, sensitivity, tactfulness and recognition of social environment.

DATA ANALYSIS

After structural validation of the measurement instrument was satisfied, the results of the Confirmatory Factor Analysis (CFA) using AMOS 18 was used to evaluate the model fit of the measurement model to confirm the hypothesized structure.

EXPLORATORY FACTOR ANALYSIS (EFA) FOR SOCIAL INTELLIGENCE

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity

Table 1

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.874
Bartlett's Test of Sphericity	Approx. Chi-Square	10208.208
	df	231
	Sig.	.000

Source: Computed Primary Data

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy is a statistic that indicates the proportion of variance in your variables that might be caused by underlying factors. High values (close to 1.0) generally indicate that a factor analysis may be useful with your data. From the Table - 1, the result of Kaiser- Meyer-Olkin (KMO) measure of sample adequacy shows that the sample for the factor analysis is adequate. According to Kaiser (1974) accepting values should be more than 0.5 as tolerable value. To make specific findings, the items represented the construct in the original factor, a factor loading of 0.40 was used as the minimum cut-off (Youndt et al., 1996). The KMO index is acceptable when it ranges between the values of 0.5 to 1.0. The present study has got KMO index score as 0.874 and hence recommended for further analysis in data reduction. The Bartlett's test of sphericity is significant for factor analysis as it was achieved in the study 0.000 i.e. P< 0.05 at the 5 percent level.

PRINCIPAL COMPONENT ANALYSIS (PCA)

This technique for *feature extraction* combines our input variables in a specific way, and then we can drop the "least important" variables while still retaining the most valuable parts of all of the variables. Through this the number of SI variables has been reduced to 22 which exclude least important variables as shown in Communalities table 2.

Table 2

Communalities

Items	Initial	Extraction
PAT1	1.000	.549

PAT2	1.000	.714
PAT3	1.000	.738
PAT4	1.000	.752
PAT5	1.000	.699
COP1	1.000	.751
COP2	1.000	.771
COP3	1.000	.739
SEN1	1.000	.681
SEN2	1.000	.678
SEN3	1.000	.649
SEN4	1.000	.742
SEN5	1.000	.681
SOI1	1.000	.634
SOI2	1.000	.697
SOI3	1.000	.679
CFL1	1.000	.795
CFL2	1.000	.761
CFL3	1.000	.851
CFL4	1.000	.868
CFL5	1.000	.858
CLF6	1.000	.866

Source: Computed Primary Data; Extraction Method: Principal Component Analysis
(PAT – Patience; COP – Cooperation; SEN – Sensitivity; SOI – Social Intelligence;
CFL – Confidence Level)

The table - 2 shows the detailed information about Initial assumed communalities and the extracted value from the assumption and the entire variable are having above 0.50 proportion value of variance that explains each variable. Hence all the variables in factors are acceptable for further analysis. With these overall indicators, factor analysis has been conducted with all 22 items. Communalities indicate how much one variable is accounted for by the underlying factors taken together.

EXTRACTION OF FACTORS

Through the principal component analysis, there are five factors in total extracted and their factor rotation sum of square loadings along with extraction sum of squared loadings are shown in Table 3.

Table 3

Factor-wise Loading for Social Intelligence

Total Variance Explained

Componen t	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1.	5.991	27.231	27.231	5.991	27.231	27.231	5.065	23.022	23.022
2.	3.877	17.624	44.855	3.877	17.624	44.855	3.416	15.528	38.550
3.	2.930	13.316	58.171	2.930	13.316	58.171	3.403	15.469	54.019
4.	1.927	8.759	66.930	1.927	8.759	66.930	2.270	10.320	64.338
5.	1.430	6.498	73.427	1.430	6.498	73.427	2.000	9.089	73.427
6.	.613	2.786	76.213						
7.	.585	2.660	78.873						
8.	.519	2.361	81.234						
9.	.485	2.205	83.439						
10.	.452	2.056	85.496						
11.	.419	1.906	87.401						
12.	.383	1.742	89.143						
13.	.363	1.649	90.793						
14.	.349	1.588	92.380						
15.	.286	1.299	93.679						
16.	.281	1.277	94.957						
17.	.250	1.138	96.095						
18.	.229	1.040	97.135						
19.	.219	.995	98.130						
20.	.175	.797	98.927						
21.	.126	.572	99.499						
22.	.110	.501	100.000						

Source: Computed Primary Data; Extraction Method: Principal Component Analysis.

(PAT – Patience; COP – Cooperation; SEN – Sensitivity; SOI – Social Intelligence; CFL – Confidence Level)

The EFA conducted with all variables in the study yielded five distinct factors with an Eigen value above 1 as shown in table -.3. A Principal Component Analysis with Varimax Rotation is conducted to investigate the distinctions among data obtained from the questionnaire. From the factor analysis, the important constructs are extracted which cumulatively explains 73.427 percent of the total variance. The rotated component matrix is the factor loading of the items on the factors.

ROTATED COMPONENT MATRIX
Table 4
Extraction and Labelling of Factors for Social Intelligence

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Items	Component			
	Item Loading (λ)	Labelling of factor	Convergent factor	Average variance extracted
CFL4	.924	Confidence Level	0.9035	0.830812
CLF6	.917			
CFL3	.916			
CFL5	.913			
CFL1	.887			
CFL2	.864			
PAT4	.862	Patience	0.8166	0.669903
PAT3	.845			
PAT2	.840			
PAT5	.828			
PAT1	.708			
SEN4	.850	Sensitivity	0.7962	0.634996
SEN5	.811			
SEN3	.785			
SEN1	.782			
SEN2	.753			
COP2	.854	Cooperativeness	0.822333	0.676874
COP3	.821			
COP1	.792			
SOI3	.823	Social Intelligence	0.807333	0.651983
SOI2	.810			
SOI1	.789			

Source: Computed Primary Data; Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization; a. Rotation converged in 5 iterations
(PAT – Patience; COP – Cooperation; SEN – Sensitivity; SOI – Social Intelligence; CFL – Confidence Level)

It is learnt from the table - 4 that the fixing of cut-off point through rotation component matrix. It was decided to take above 0.7 as the cut-off points. In this way there are 6 variables under factor 1;, 5 variables under factor 2;, 5 variables under factor 3;, 3 variables under factor 4;, and 3 variables under factor 5 with above 0.7. The obtained five factors have been labelled as confidence level, patience, sensitivity, cooperativeness, social intelligence.

STRUCTURAL EQUATION MODEL FOR SI

SEM is the graphical equivalent of its mathematical representation of a set of equations relating the dependent variables to their explanatory variables. In reviewing the model presented in figure, it can be seen that there are 6 unobserved latent factors and 30 observed variables. These 22 observed variables function as indicators of their respective underlying latent factors.

A structural model as shown in figure 1 has been developed. The figure depicts a causal relationship between the constructs of Social Intelligence namely confidence, Patience, Cooperativeness, Social Environment and Social Intelligence. Structural equation modelling (SEM) by AMOS has been used to verify multiple paths or relationships among the constructs of Social Intelligence namely confidence, Patience, Cooperativeness, Social Environment and Social Intelligence. The structural model is initially tested using all possible paths among the constructs. Following the elimination of insignificant paths, the model is then tested and analyzed in terms of the remaining paths.

Associated with each observed variable is an error term (e1 – e20) which is associated with the factor being predicted. For example, a residual term is associated with emotional intelligence. Errors associated with observed variables represent measurement error, which reflects on their adequacy in measuring the related underlying factors. Residual terms represent error in the prediction of endogenous factors from exogenous factors.

The fit indicators (NFI, RFI, TLI and CFI) were all greater than or equal to 0.90 which indicates a strong fit of the model with the data.

Table – 5

Social Intelligence based on SEM

Variable and its Constructs			Estimate	S.E.	C.R	p	Label
Social Intelligence	<---	Confidence	.033	.025	1.30	.192	>0.05; Not significant
Social Intelligence	<---	Patience	.100	.038	2.66	.008	<0.05; Significant
Social Intelligence	<---	Sensitivity	-.040	.057	-.70	.480	>0.05; Not significant
Social Intelligence	<---	Cooperativeness	.196	.056	3.50	0.00	<0.05; Significant

Inference

From the table 5 it is clear that the constructs patience and cooperation have significant influence on Social Intelligence of upper primary school teachers. Confidence, and Sensitivity are not significantly influencing construct of SI of upper primary school teachers.

The above table shows the significant influence of social intelligence constructs on social intelligence. Among the identified constructs like patience, sensitivity and cooperation are supported while remaining constructs namely confident level, and sensitivity have insignificant influence on social intelligence. The table also infers that patience and cooperation altogether have a standardized estimate of 29.6 %. It is learned that the contribution of both significant identified constructs is 29.6 %.

Figure 1

Structural Equation Model for Social Intelligence

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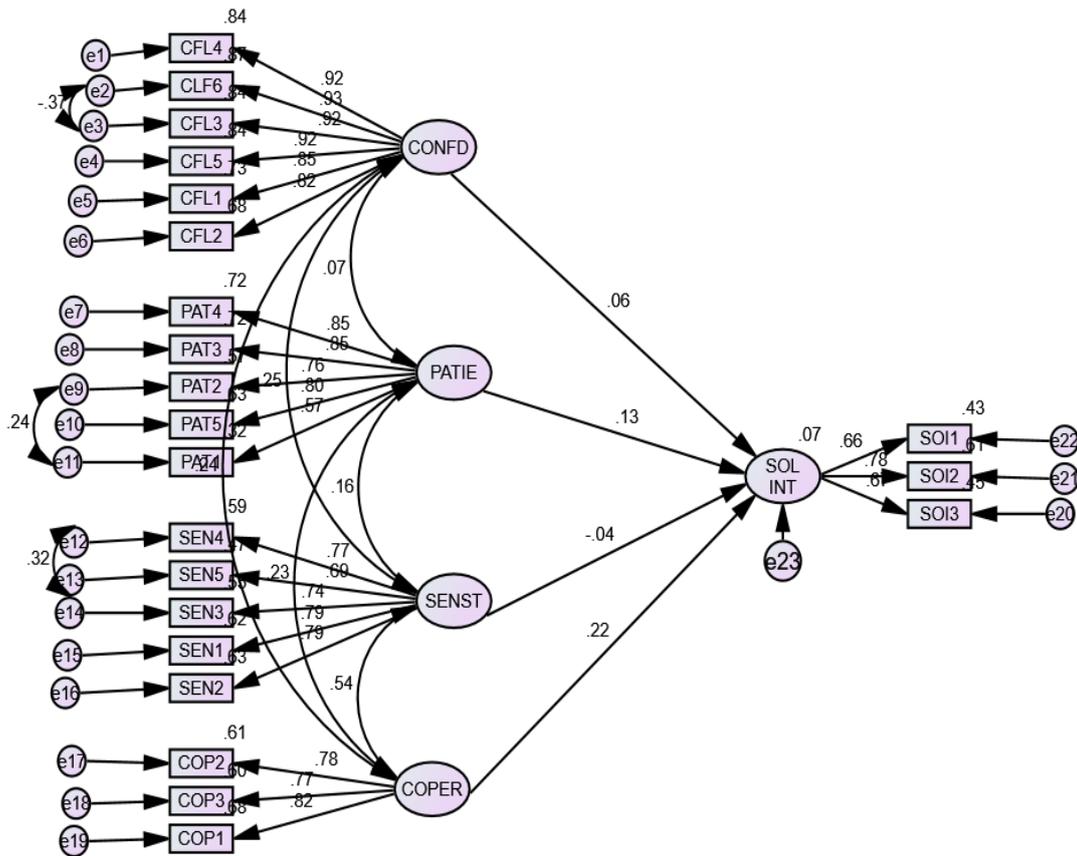
NOTE: Legend: Rectangle = Survey item or observed variable   Oval= unobserved or latent variable (CFL – Confidence Level; PAT – Patience; SEN – Sensitivity; COP- Cooperation; SOI – Social Intelligence)

DISCUSSION

As per EFA, confidence level (27.23%), Patience (17.62%) cooperation (8.75%), and sensitivity (13.31%) significantly contribute to SI of upper primary school teachers. Chadha and Ganeshan, (1986) stated SI scale consisting 8 dimensions viz., PAT, COP, CL, SEN, RSE, TAT, sense of humor, and memory with the product moment correlation value to be 0.70. In the current research based on SEM analysis, confidence level and sensitivity (Manleen Kaur & Rippen Gill Jassal, 2014), are insignificant in contributing to measuring SI. The possible reason could be confident teachers are tending to be more dominant and at times autocratic in nature while administering things. Their perception of VIII class students would also have some influence. On the contrary, sensitive level of teacher is on the higher side leads to too much conscious about self and others leading to poor social abilities and skills (remember most of the teachers in the sample are women). These factors which could have possibly reflected in the response scale leading to insignificant influence of confidence & sensitivity as a significant factor of SI. Patience (Manleen Kaur & Rippen Gill Jassal, 2014) and cooperation (Marlowe, 1986 & Daniel Goleman, 1995) was identified as significant factors in measuring SI of upper primary school teachers of Kanchipuram district. Extraction factor clearly shows 73.427% of SI attributes is explained by this model for the study.

CONCLUSION

Social Intelligence is significantly supported by two constructs viz., patience and cooperation. Arguably the validation of scales in the present study is robust and showed excellent measurement fitness with 22 items. It is found that the contribution of both patience and cooperation, are identified constructs with 29.6 % significance. This study further demonstrated the measurement model could be used to effectively assess SI of upper primary school teachers.

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