MEASURING THE AUTHENTIC LEADERSHIP CONSTRUCTS AMONG THE KERALA CBSE SCHOOL PRINCIPALS IN A FACE-TO-FACE INTERVENTION

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Abstract

Today, principal's role in a school has multifaceted responsibilities that they need different leadership skills to hover around the difficult challenges of dealing with teachers, students and parents. What is needed of a 21st Century Principals has various constructs to measure for knowing the effective leadership qualities of a Principal. Authentic leadership is one leadership quality that researchers identify it as a positive form of leadership to enhance employee's psychological capital. In this study, an attempt to measure the Authentic Leadership qualities among the Principals were measured though a survey instrument, which had responses gathered form the 63 Principals of CBSE schools in the state of Kerala, India. Four variables for assessing the Authentic Leadership, namely, Self-Awareness, Internalized Moral Perspective, Balanced Processing and Relational Transparency were measured using a Survey Instrument. The result showed that the standard deviation as a dispersion index to indicate the degree to which individuals within each variable differ from the variable mean. Among the studied variables, the individual value of self- awareness deviated the most from its mean (SD = 1.092). This standard deviation suggested reasonably high variability in respondents' perception toward self-awareness. At the other side, the lowest deviation from mean belonged to Relational Transparency with the standard deviation of 0.972.

Keywords: Authentic Leadership, Self-Awareness, Internalized moral perspective, Balanced processing, Relational transparency

INTRODUCTION

The Teaching and Learning International Survey (TALIS) published by the OECD (2018) provided details about the increasingly significant roles of school principals and their responsibilities in 38 countries. Results of the study indicated that about 60% of principals spent 30–54% of their time on administrative work. In working with teachers on instructional improvement, 70% of the principals reported that this took 17–30% of their time. Most of the principals indicated that they used student performance evaluation results to develop school goals and academic programs. However, there was no indication from the principals about their roles and responsibilities for having influenced the goals and academic programs. Therefore, this study attempted to examine based on the Authentic Leadership qualities of the Principals of the Kerala State in the Central Board of Secondary Education (CBSE) schools in India to understand the significance of the four constructs, namely, Self-Awareness (SAW), Internalized Moral Perspective (IMP), Balanced Processing (BPS) and the Relational Transparency (RTP).

Participants

The participates were from the group of Principals who attended the 11th Principal conference meet, held in Cochin on the October 4th 2019, 63 of the hundred randomly sampled school Principal from the different Kerala Sahodayas were asked to respond to the invitation sent to them via online questionnaire in a live interaction during the conference. Since the online questionnaire was shared to the Principals who attended the conference through their personal portal, the authors had no control over the number of principals who were willing to respond. This was because the conference was held only for three days and their willingness to participate could only be obtained during that short period.

Construct measures

The principal construct measures were based on existing instruments. Table 1 summarizes the measurement items of the research variables together with the latent constructs.

Table 1: *List of Constructs and Measurement Items*

1st Order Construct	Number of Items (16)
Self- Awareness (SAW)	4
Internalized Moral Perspective (IMP)	4
Balanced Processing (BPS)	4
Relational Transparency (RTP)	4

Data Screening
Data screening is necessary in ensuring that data are correctly entered, free from missing values, outliers and to confirm that the distribution of variables are normal.

Replacing Missing Values

Missing data occurs when respondents failed to answer one or more items in the survey. Missing data is an almost ubiquitous problem for surveys, and participants may fail to complete whole surveys or partially complete surveys (Barnett, McElwee, Nathan, Burton & Turrell, 2017). The screening of the data indicates that there was no missing data.

Removing Outliers

The treatment of outliers is an imperative step in the data screening method. Outliers refer to observations with a unique combination of characteristics identifiable as distinctly different from the other observations. Checking for outliers is important as outliers could affect the normality of the data which could then distort the statistical results For univariate detection, besides examining histograms and box-plots, each variable was examined for the standardised (z) score. According to Hair et.al. (2010), for small sample size below 200, Absolute (z) > 3 is evidenced of an extreme observation. The standardised (z) scores of the cases are summarized in Table 2 for the items in each constructs.

Table 2: *Result of Univariate Outlier Based on Standardized values*

Construct	Item	Standardized value (Z-Score)	
		Lower Bound	Upper Bound
Self- Awareness (SAW)	SAW1	-2.353	0.960
	SAW2	-2.439	0.865
	SAW3	-2.172	1.165
	SAW4	-2.189	1.095
Internalized Moral Perspective (IMP)	IMP1	-2.379	0.970
	IMP2	-2.045	1.484
	IMP3	-1.820	1.387
	IMP4	-2.297	0.901
Balanced Processing (BPS)	BPS1	-2.260	1.234
	BPS2	-2.318	1.265
	BPS3	-1.903	1.191
	BPS4	-2.585	1.034
Relational Transparency (RTP)	RTP1	-1.749	1.492
	RTP2	-2.060	1.401
	RTP3	-1.371	1.461
	RTP4	-2.306	1.053

As shown in Table 2, the results indicated that the standardised (z) scores of the observations for the research variables ranged from -2.585 to 1.492, indicating that none of the variable exceeded the threshold of ±3. Thus, there is no any univariate outlier among the observations.

Assessment of the Data Normality

The normality test was conducted to determine whether the data of a variable is distributed by a normal curve. Non-normal distributed data are highly skewed, either to the left or to the right. These values are called kurtotic variables (Brown, 2012) and they can distort relationships and significance tests. In this study, skewness and kurtosis were employed to assess normality of the data. In order to confirm the univariate normality, skewness and kurtosis values smaller than an absolute value of 2 and 7 respectively, was taken as demonstrating sufficient normality in this study (Ho, 2006; Olsson, Foss, Troye, & Howell, 2000). Table 3 gives a summary of the skewness and kurtosis values for all items.

Table 3: *Assessment of Normality for Measurement Model*

Construct	Item	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Self- Awareness (SAW)	SAW1	-0.99	0.302	0.257	0.595
	SAW2	-1.089	0.302	0.288	0.595
	SAW3	-0.571	0.302	-0.538	0.595
	SAW4	-0.596	0.302	-0.547	0.595
Internalized Moral Perspective (IMP)	IMP1	-0.916	0.302	0.04	0.595
	IMP2	-0.388	0.302	-0.479	0.595
	IMP3	-0.174	0.302	-0.884	0.595
	IMP4	-0.825	0.302	-0.338	0.595
Balanced Processing (BPS)	BPS1	-0.721	0.302	-0.215	0.595
	BPS2	-0.406	0.302	-0.689	0.595
	BPS3	-0.372	0.302	-1.019	0.595
	BPS4	-0.893	0.302	0.309	0.595
Relational Transparency (RTP)	RTP1	-0.259	0.302	-1.004	0.595
	RTP2	-0.541	0.302	-0.534	0.595
	RTP3	0.009	0.302	-1.271	0.595
	RTP4	-0.848	0.302	-0.127	0.595

The result indicated that the skew and kurtosis of all items and variables were laid between ±3 and ±7 respectively. Therefore, it can be concluded that the data set of all items were well-modelled by a normal distribution. As shown in Table 3, the skew ranged from -1.089 to 0.009 and the kurtosis ranged from -1.271 to 0.309.

Exploratory Factor Analysis (EFA) & Internal Reliability

Exploratory factor analysis (EFA) serves the purpose of attaining data reduction, or preserving their original state and character, as well as to remove items that had lower factor loadings and cross loadings. (Hair, et al., 2006). EFA was conducted in this study to examine the stability of the factor loadings of the various constructs and ensure the factorial validity of the instruments employed in the study.

The 63 responses were examined using a Principal-Components as the extraction technique and Varimax as the orthogonal rotation method. To determine the suitability of the data for EFA, the value of Bartlett's test of sphercity (BTS) and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were checked as the assumptions of EFA (Kaiser, 1974). The KMO tests whether the partial correlations among items are small. The KMO values must be greater than 0.50 (Blaikie, 2003). Bartlett's test of sphericity tests whether the correlation matrix is an identity matrix, which would indicate that the factor model is inappropriate. (Williams, Brown, & Onsman, 2012).

Moreover, Scree plots and Eigen values were examined to ensure that the factors number is mainly liable for the data variation (Tabachnick & Fidell, 2007). In the case of Eigen values, For Eigen values, the Kaiser criterion value 1.00 was the determining measure to decide on the number of factors. The Variance, as illustrated by the factor result, was taken into account with an objective level of 60 percent or more of its entire variance. It has also been proved to be adequate for a factor resolve in the field of social sciences. (Hair, et al., 2010).

Communality procedures were also applied on as a component of the factor analysis. Communalities portray the quantity of the variance in the original variables that is taken into account by the factor solution. The factor solution is expected to describe half of each of the original variable's variance, at best; hence, the communality value for each of the variables should be at 0.50 or more. Therefore, for the purpose of specification, variables with communalities of less than 0.50 were omitted from any following analysis (Hair, et al., 2010).

In assessing the Convergent validity, items were retained according to the following criteria: 1) factor loading greater than 0.5 and 2) no cross-loading of items. In other words, items were dropped where they have a loading of less than 0.5 or where their loadings are greater than 0.5 on two or more factors. The reason for choosing cut-off point of 0.5 or greater in this study was because this threshold value was considered crucial in ensuring practical significant for sample sizes of 150 and above and before the analyses proceed to the confirmatory factor analysis (Hair, et., 2010).

Discriminant validity refers to the extent to which factors are distinct and uncorrelated. A primary method exists for determining discriminant validity during an EFA is to examine the factor correlation matrix. Correlations between factors should not exceed 0.7. A correlation greater than 0.7 indicates a majority of shared variance; 0.7 * 0.7 = 49% shared variance (Maat, Zakaria, Nordin, & Meerah, 2011). Confirmatory factor analysis of the mathematics teachers' teaching practices instrument according to World Applied Sciences Journal (2092–2096)

Table 4: *Results of Exploratory Factor Analysis (EFA)*

Construct	Item	Communalities	Extracted Factor	KMO	BTS	Eigen Value	Variance (%)	Cronbach Alpha
Self- Awareness (SAW)	SAW1	0.867	0.931	0.794	0.000	3.269	81.736	0.925
	SAW2	0.866	0.930					
	SAW3	0.757	0.870					
	SAW4	0.780	0.883					
Internalized Moral Perspective (IMP)	IMP1	0.832	0.912	0.669	0.000	2.669	67.476	0.860
	~~IMP2~~	0.455[a]	---					
	IMP3	0.650	0.806					
	IMP4	0.874	0.935					
Balanced Processing (BPS)	BPS1	0.775	0.881	0.825	0.000	2.930	73.251	0.872
	BPS2	0.783	0.885					
	BPS3	0.566	0.752					
	BPS4	0.805	0.897					
Relational Transparency (RTP)	RTP1	0.760	0.872	0.699	0.000	2.245	74.826	0.831
	RTP2	0.676	0.822					
	~~RTP3~~	0.351[a]	---					
	RTP4	0.809	0.899					

[a]: Deleted due to insufficient communality value less than 0.5

As shown in Table 4, a total of 16 items of the 4 constructs were assessed through the iteration of EFA. In the iteration of running the EFA, factor communalities of IMP2 and RTP3 were 0.455 and 0.351 respectively. Both values were below the cut-off 0.5 as recommended by (Hair et al 2010). Therefore, these items were discarded from their relative constructs as recommended by (Hair et al., 2010). The EFA was then conducted again. In the iteration of running the EFA, factor communalities for all remaining 14 items were above the cut-off 0.50 as recommended by Hair et al. (2010), ranging from 0.566 to 0.874. Therefore, it was not necessary to remove any further items from communalities table.

The Bartlett's test of Sphericity for all constructs was 0.000, below the standard significance level of 0.05 as recommended by Williams, Brown, & Onsman, 2012. The resulting values of KMO ranged from 0.669 to 0.825, above the cut-off value of 0.5 as recommended by Blaikie, (2003). Based on the validity results, the Eigen values of all constructs were exceeded the cut-off 1 as recommended by Tabachnick & Fidell, (2001), ranged from 2.245 to 3.269. The values of variance for all constructs were all above the cut-off 50 percent from 86% to 92.5%.

**DISCUSSION AND FINDINGS**

Descriptive Analysis

In this analysis, covariance matrix method was used to calculate the descriptive function so that all of the variables could be included in the analysis. The composite scores of the variables were computed by parcelling the original measurement item scores. Parcels are sum or averages of several individual indicators or items based on their factor loadings on the construct (Coffman & Maccallum, 2005; Hair, et al., 2010). Table-5 displays the means and standard deviation of the constructs, assessed on a 5-point Likert scale:

Table 5: *Results of Mean and Standard Deviation of the Four Constructs*

Constructs	Mean	Standard Deviation	Minimum	Maximum
Self- Awareness (SAW)	3.766	1.092	1	5
Internalized Moral Perspective (IMP)	3.661	1.088	1	5
Balanced Processing (BPS)	3.623	0.992	1	5
Relational Transparency (RTP)	3.306	0.972	1	5

The mean was applied as a measure of central tendency, which indicated that the mean values of all constructs were above their midpoint level of 3. The phenomenon indicated that the consensus respondents' perception toward these constructs were above the average. The highest mean rating belonged to Self- Awareness (SAW) with the mean value of 3.766, followed by Internalized Moral Perspective (IMP) with the mean value of 3.661 and Balanced Processing (BPS) with the mean value of 3.623. The lowest mean rating belonged to Relational Transparency (RTP) with the mean value of 3.306.

The standard deviation was applied as a dispersion index to indicate the degree to which individuals within each variable differ from the variable mean. Among the studied variables, the individual value of Self- Awareness (SAW) deviated the most from its mean (SD = 1.092). This standard deviation suggested reasonably high variability in respondents' perception toward Self- Awareness (SAW). In other word, the survey participants were most varying in this variable from each other. At the other side, the lowest deviation from mean belonged to Relational Transparency (RTP) with the standard deviation of 0.972. Figure-1 gives a good illustration for the mean of all variables together with their standard deviations.
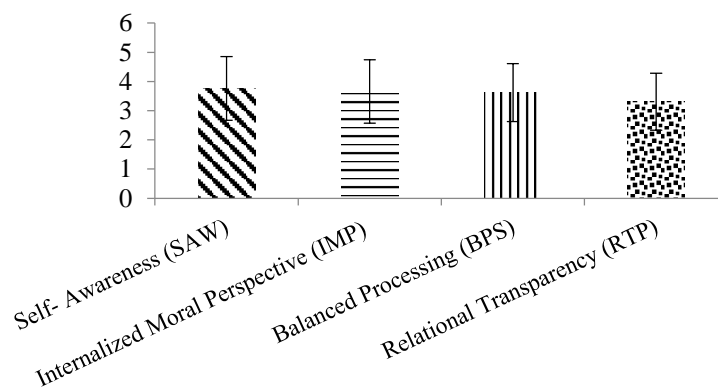
Figure 1. Means and Standard Variations of all Variables

CONCLUSION

In this research study, Authentic Leadership qualities among the Principals were measured though a survey instrument, which had responses gathered form the 63 Principals of CBSE schools in the state of Kerala, India. Four variables for assessing the Authentic Leadership, namely, Self-Awareness, Internalized Moral Perspective, Balanced Processing and Relational Transparency were measured using a Survey Instrument. The result showed that the standard deviation as a dispersion index to indicate the degree to which individuals within each variable differ from the variable mean. Among the studied variables, the individual value of Self-Awareness deviated the most from its mean (SD = 1.092). This standard deviation suggested reasonably high variability in respondents' perception toward Self-Awareness. In other words, the survey participants were most varying in this variable from each other. At the other side, the lowest deviation from mean belonged to Relational Transparency with the standard deviation of 0.972.

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