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## **Supportive Leadership Model in Vocational High School: A Structural Equation Modelling Approach**

### **Abstract**

This study aims to explore the leadership effectiveness that promotes Vocational High School (VHS) revival. The Kerlinger survey method was used to test the notion of emotional maturity, position power, helpful behaviour, and leadership effectiveness. The sample of 252 responders included 84 VHS principals and 168 VHS teachers. According to the confirmatory factor analysis, emotional affirmation established the construct of emotional maturity, position power was best developed coercive power, and readiness to explain the program. Personal traits are the most powerful predictor of leadership effectiveness and the contribution of position power that directly influences helpful behaviour is 4.92%. The contribution of position power to direct leadership effectiveness is 5.19%, and the contribution of supportive conduct to direct leadership effectiveness is 6.05%. The leadership model discovered in this study is innovative that it can empirically explain the dominating elements that compose the latent variables: emotional maturity, position power, supportive leadership style, and leadership effectiveness. These findings greatly impact how leadership science is developed in education, especially vocational.

**Keywords:** *emotional maturity, position power, supportive behaviour, leadership effectiveness, vocational high school*

## **Introduction**

Vocational education institutions now focus on creating a workforce with a mid-level of skill and lowering unemployment (Rauner & Maclean, 2009; Barber & Netherton, 2018). By transitioning from the competency to the capability development model, vocational education has undergone a fundamental shift in orientation and concentration. Since there are more graduates than jobs available, there is increasing rivalry for vocational high school (VHS) graduates in the labour market. According to data from the Indonesian Central Department of Statistics (Central Bureau of Statistics, 2016), workers with a junior high school diploma or below continue to make up the majority of the workforce in Indonesia (60.24%), followed by those with a secondary education (27.12%) and those with a higher education (12.24%). The employment structure is not the only factor contributing to the mismatch between the supply and demand for industrial and service workers; the competency gap also exists. There were 1,296,246 students who graduated from VHS in 2016, while 5,759,787 people were needed to fill open positions. Since the needs of industry and business did not match some VHS graduates' competencies, they remained unemployed.

The revitalisation program of VHS focuses on raising the standard and competitiveness of Indonesian human resources. In order to launch this program, a curriculum involving business and industry was developed. Furthermore, there are ten ways to achieve those VHS revitalisation goals, which are (1) revitalising human resources, (2) constructing a school administration system based on management information systems, (3) matching the labour market, (4) industry-based curriculum, (5) teaching factory, (6) the use of video tutorial media and video-based e-report skill portfolios, (7) professional certification, (8) fulfilment of facilities and infrastructure, (9) developing local wisdom, and (10) the role of VHS as regional economic drivers. The model of VHS revitalisation is illustrated in Figure 1.

Improving human resources, school administration, and learning management are crucial for the success of VHS revitalisation and combating unemployment, as shown in Figure 1. The headmaster is essential in achieving these goals and must foster collaboration with current enterprises and sectors. Future VHS leaders must balance their roles as managers and leaders to strengthen leadership. Behaviour, nature, and skills influence leadership effectiveness and situational characteristics (Hsiao et al., 2013), as depicted in Figure 2, and can be enhanced through modelling behaviour, coaching, knowledge sharing, and demonstrating concern. School principal leadership is emphasised in VHS revitalisation (Jung et al., 2020; Sherly

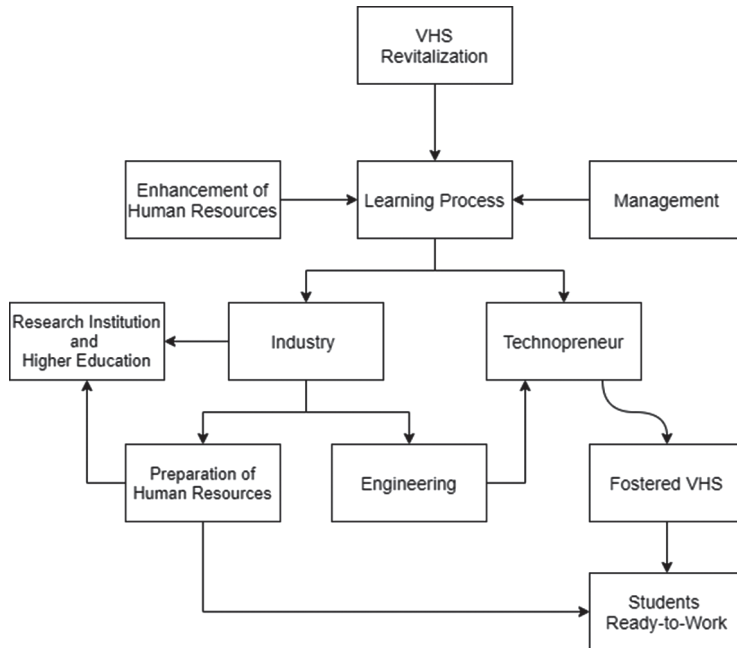


Figure 1. VHS revitalisation model

et al., 2022), and this research investigates good leadership using the modified Hoy and Miskel models.

Figure 2 shows that a leader’s behaviour is influenced by their nature, leadership skills, and situation characteristics. The leader’s characteristics include self-confidence, stress tolerance, emotional maturity, integrity, and extraversion. The situation characteristics include leader-member relation, task structure, and position power, which can be strong or weak depending on the leader’s level of influence in hiring, firing, disciplining, promoting, and increasing salaries. Accord-

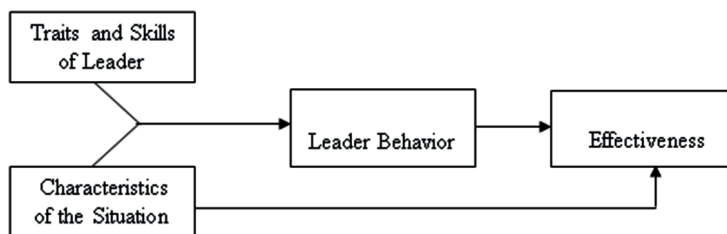


Figure 2. Contingency model of leadership in schools

ing to previous studies, position power is derived from legitimate, coercive, reward, expert, and referent power (Robbins & Coulter, 2007; Lunenburg, 2012).

This study examines emotional maturity and position power as leadership and situation characteristics factors, respectively (Blanchard, 2006; Martin, 2008; Robbins & Coulter, 2007; Yukl, 2012; Hoy & Miskel, 2013). Emotional maturity comprises four steps: emotional awareness, acceptance, affection, and affirmation. The research focuses on supportive leader behaviour, which aims to support subordinates highly and improve employee satisfaction and performance. Previous studies have shown that supportive leadership positively affects job performance, employee commitment, and job satisfaction (Newton & Maierhofer, 2005; Mahdi et al., 2014). This study aims to explore leadership effectiveness in supporting the revitalisation of Vocational High Schools (VHS) in North Sumatra, Indonesia.

## **Research Methodology**

### **Research Background**

Since this study's objective is to discover the effectiveness of leadership that supports VHS revitalisation's success, the method uses the Kerlinger survey (Kerlinger & Lee, 2008). Four variables were used in this study: emotional maturity (X1), position power (X2), supportive behaviour (X3), and leadership effectiveness (X4). Moreover, the research model is presented in Figure 3. Based on Figure 3, the problems examined in this study include each indicator's relationship of each variable, such as the influence of emotional maturity (X1) on supportive behaviour (X3), position power (X2) on supportive behaviour (X3), and so on.

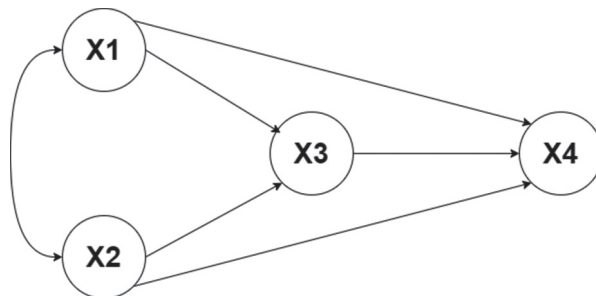


Figure 3. Research Model

## Research Sample

There are 16 indicators from four variables in this study. Thus, the minimum sample is around 80-160 from 252 respondents. The unit of analysis was 84 VHS principals in charge of filling out the emotional maturity questionnaire. Then, 168 teachers completed the questionnaire about position power, supportive behaviour, and leadership effectiveness.

## Instrument and Procedures

Data were collected using a Likert five-scale questionnaire from 84 VHS in Medan, Indonesia. According to the Structural Equation Modelling (SEM), the sample used is about 5-10 times the parameters (Hair et al., 2010).

## Data Analysis

After testing the instrument, the questionnaire items' validity was analysed using product-moment correlation, and the reliability coefficient was calculated by the Alpha coefficient formula. Based on the trial data analysis, it turns out that (1) from 32 items of emotional maturity questionnaires, 28 valid items with a reliability coefficient of 0.899; (2) from 32 items of position power questionnaire, 29 valid items with the reliability coefficient of 0.913; (3) from 32 items of supporting behaviour questionnaire, 31 valid items with the reliability coefficient of 0.931; and (4) from 32 items of leadership effectiveness questionnaire, 30 valid items with the reliability coefficient of 0.834. The result indicates that the four instruments' reliability coefficients are high and significant. Furthermore, the SEM technique analyses the confirmatory factor analysis and hypothesis testing.

## Results

### Confirmatory Factor Analysis (CFA)

CFA is carried out to identify the ideal model that explains the relationship between each indicator forming latent construct variables. In this study, four latent variables consist of 16 indicators. Figure 4 presents the construct model of the research variable. While Table 1 describes the variable and indicator in the model.

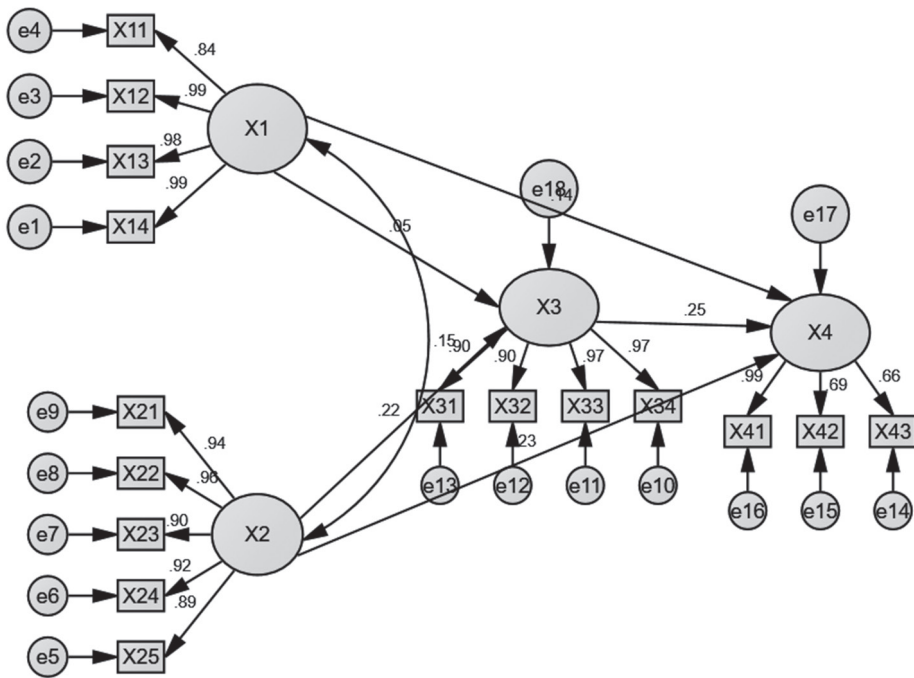


Figure 4. Construct model of research variables

Table 1. Model's variables and indicator

Variable/Indicator	Description
X1	Emotional maturity
X11	Emotional awareness
X12	Self-accepting
X13	Emotional interaction
X14	Emotional reinforcement
X2	Position power
X21	Reward power
X22	Coercive power
X23	Legitimate power
X24	Expert power
X25	Referent power
X3	Supportive leader

Variable/Indicator	Description
X31	Friendly attitude
X32	Attention to the needs of the subordinates
X33	Willingness to explain the VHS revitalisation program
X34	Fully supports efforts to improve the VHS quality
X4	Leadership effectiveness
X41	Personal aspect
X42	Organisational aspect
X43	Job satisfaction aspect

Moreover, confirmatory factor analysis is to study the relationship between exogenous variables. It is based on standardised regression weights on AMOS summary analysis presented in Figure 5.

Based on the analysis, all the indicators forming each latent construct variable have a critical ratio (CR) value with a probability value of  $p < \alpha = 0.05$  and fulfilled the goodness of fit criteria. It means that the items can indicate the construct variable and the model has confirmed fit with existing data. Based on Figure 5, the indicators that form latent construct variables of emotional maturity are emotional awareness at 70.73%, emotional interactions at 95.84%, self-acceptance at 97.22%, and emotional reinforcement at 97.61%. The indicators that form latent construct variables of position power are referent power at 79.21%, legitimate power at 81.72%, expert power at 85.38%, reward power at 88.92%, and coercive power at 92.93%. These results indicate that the indicators of reward and coercive power are the strongest in forming the latent construct variables of position power.

Besides, the indicators that form latent construct variable of supportive behaviour are friendly attitudes with 80.64%, attention to the subordinates' needs with 81.72%, fully support efforts to improve the VHS quality with 93.12%, and indicators of willingness to explain VHS revitalisation programs with 94.28%. The result shows that the greatest indicators are support and willingness to improve VHS through a revitalisation program. Lastly, the indicators that form latent construct variables of leadership effectiveness are job satisfaction at 43.82%, organisational aspects at 47.33%, and personal aspects at 98.01%. The result indicates that the personal aspect is the strongest indicator of establishing latent construct variables of leadership effectiveness.

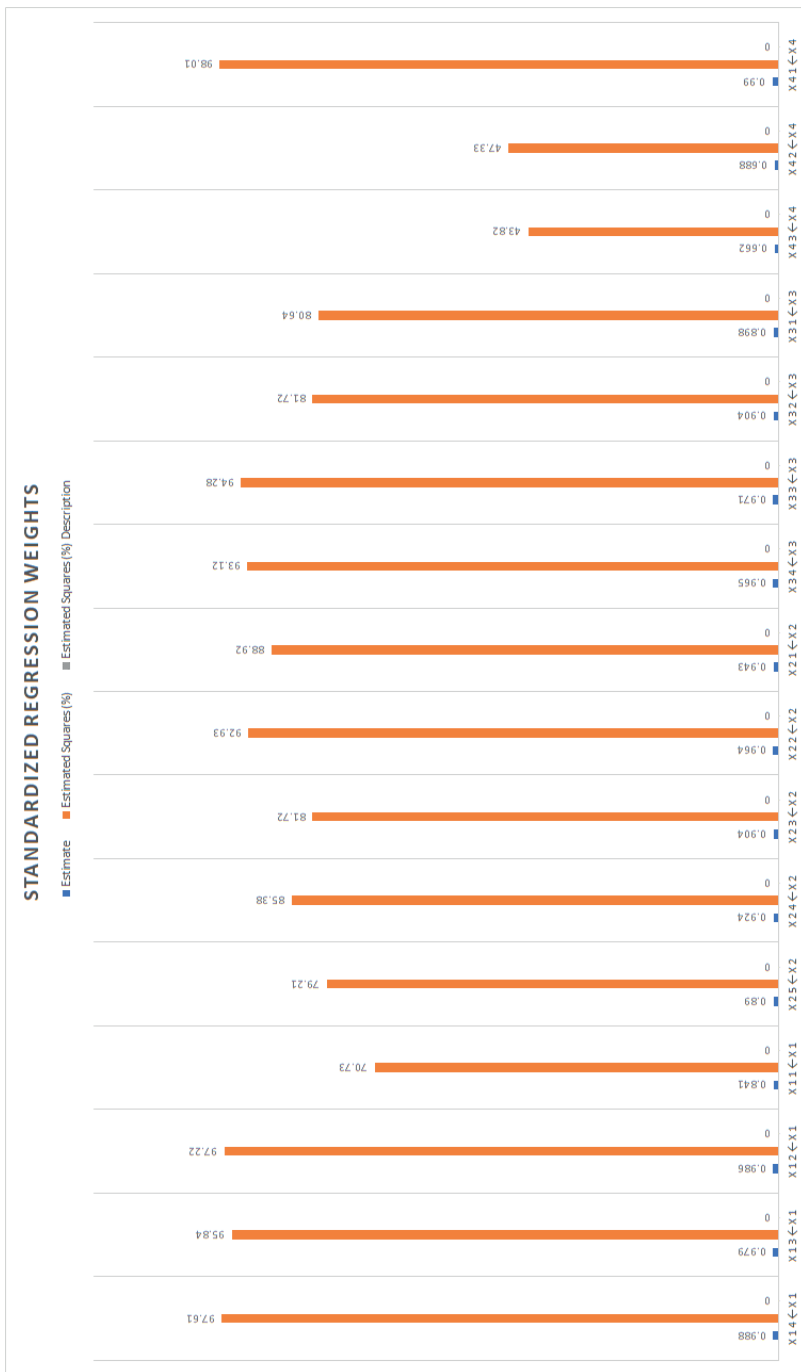


Figure 5. Standardised regression weight



## Model Evaluation

The construct variable model of the research has been presented as a structural output model in Figure 3. Before evaluating the model, assumptions must be fulfilled as SEM analysis techniques requirement (Kline, 2015),”title”:”Principles and practice of structural equation modeling”,”type”:”book”},”uris”:[”http://www.mendeley.com/documents/?uuid=363db92f-aad3-4838-a800-27bd2c3b-59d6”]”},”mendeley”:{”formattedCitation”:”(Kline, 2015 including three steps and these steps must meet several aspects of the considerations described in Table 2.

**Table 2.** Model fit and statistical test requirements

Item	Requirement description
Chi-square statistic	The research model is good if the probability with a cut-off value of $p > \alpha = 0.05$
Comparative Fit Index (CFI)	If $CFI > 0.90$ , the model is a good fit, while the value is $0.80 < CFI < 0.90$ , the model is marginal fit
Tucker-Lewis Index (TLI)	If $TLI > 0.90$ , the model is a good fit, while the value is $0.80 < TLI < 0.90$ , the model is marginal fit
Goodness of Fit Index (GFI)	is a non-statistical measure with a range of values from 0 (poor fit) to 1.0 (perfect fit)
Adjusted Goodness of Fit Index (AGFI)	If $AGFI > 0.90$ , the model is a good fit, while the value is $0.80 < AGFI < 0.90$ , the model is marginal fit
Root Mean Square Error of Approximation (RMSEA)	The expected goodness of fit, if the value of $RMSEA < 0.08$ , then the model is a good fit

Furthermore, the analysis requirements test result shows that the number of research samples exceeds the minimum sample (160), 252. A normality test is carried out using the skewness criterion ratio value of  $\pm 3.00$  at 10% significance. The normality test results show that the value of c.r. skew and c.r. kurtosis is in the range of -3 to +3. It means that the research data has met the assumption of normality. The outliers are then tested by acquiring the recommended Chi-square coefficient value in a low value. Outliers testing results showed that the Chi-square value of 150.852 was obtained with a value of  $p = 0,000 < \alpha = 0.05$ , and the evaluation model is presented in Table 3.

**Table 3.** Model evaluation result

	$\chi^2$	Prob.	RMSEA	GFI	AGFI	CMIN	PCMIN	TLI	CFI
Cut-off Value	Small	>0,05	<0.08	>0.9	>0.9	<2	>0.05	>0.9	>0.9
Output	93.436	0.612	0.000	0.883	0.837	0.953	0.612	1.003	1.000
Criteria	Good	Good	Model Fit	Enough	Enough	Model Fit	Model Fit	Model Fit	Model Fit

Table 3 shows that the goodness of fit model has all the criteria with ideal results. It means that the model can explain the relationships of each variable. Furthermore, the chi-square test results are 93.436, and the p-value of 0.612, which is greater than  $\alpha=0.05$ , concludes that the model fits existing data, and the construct of variables can be processed with the full model.

### Relationship between Construct Analyses

Table 4 shows the link between constructs based on regression weights. It demonstrates no substantial association between emotional maturity and supportive conduct. Position authority is associated significantly with supportive behaviour characteristics, but emotional maturity does not have a significant relationship with leadership effectiveness. The research findings revealed that the position power variable was highly associated with leadership effectiveness. It relates to a recent study that found that effective leadership can inspire people to attain goals and objectives (Hao & Yazdanifard, 2015).

**Table 4.** Regression weights

	Estimate	S.E.	C.R.	<i>p</i>	Label
X3←X1	.101	.208	.485	.628	Not Significant
X3←X2	.356	.179	1.988	.047	Significant
X4←X3	.076	.035	2.178	.029	Significant
X4←X1	.080	.061	1.299	.194	Not Significant
X4←X2	.113	.056	2.008	.045	Significant

### Direct, Indirect, and Total Effect

Figure 6 presents each variable’s direct, indirect, and total effects. It shows that the direct effect of the position power variable on the supporting behaviour variable is 0.222. The direct influence of position power variables on the leadership effective-

ness variable is 0.228, and the direct influence of supporting behavioural variables on the leadership effectiveness variable is 0.246.

According to the findings, the contribution of position power that directly influences helpful behaviour is 4.92%. The contribution of position power to direct leadership effectiveness is 5.19%, and the contribution of supportive conduct to direct leadership effectiveness is 6.05%. Table 6 presents the emotional maturity variable does not have a significant relationship with the supporting behaviour variable and the leadership effectiveness variable. However, there is an indirect effect of the emotional maturity variable on the leadership effectiveness variable through supporting behavioural variables of 0.013. The position power variable indirectly affects leadership effectiveness variables through supporting behaviour variables of 0.055. Then, emotional maturity has a 0.017% indirect impact on leadership effectiveness via supporting conduct. The indirect influence of power position on leadership effectiveness is 0.30%.

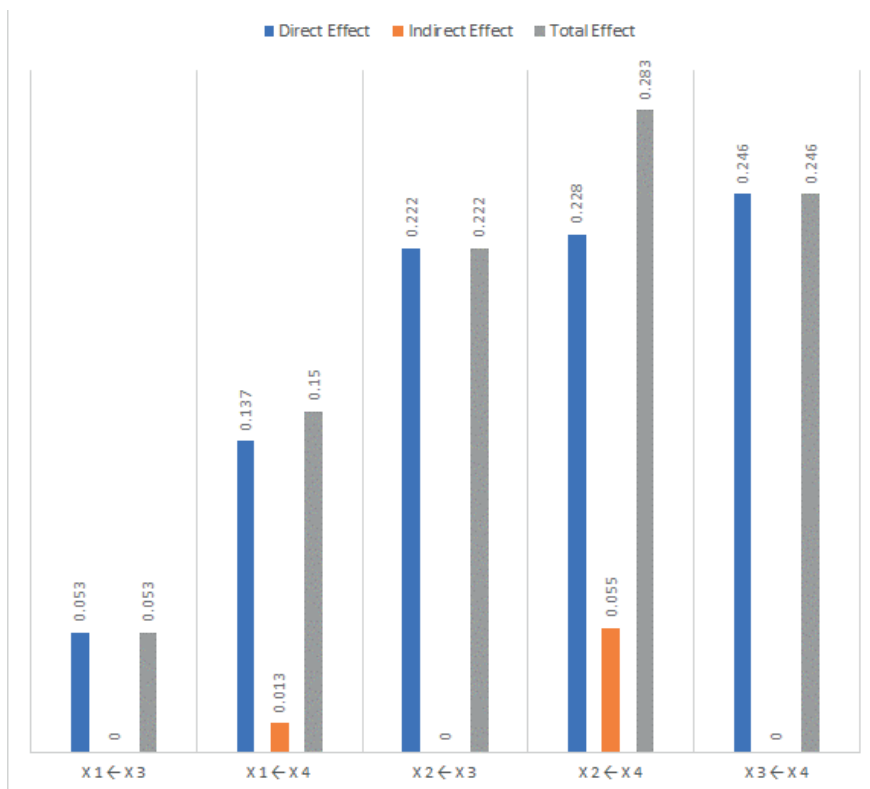


Figure 6. Direct, indirect, and total effect

## **Discussion**

The study findings identify critical aspects, including the utilisation of latent construct variables to sort indicator relationships. Emotional maturity comprises emotional reinforcement, self-acceptance, emotional exchanges, and emotional awareness (Zurita-Ortega et al., 2020; Nikolaev et al., 2022). Reward and coercive power indicators have the strongest impact on position power. Effective principals balance coercive power with reward power and consistently complement teacher performance. Support for the VHS revival initiative is crucial, and supportive leader behaviour is key to success (Amin, 2017; Daniels et al., 2019; Lunenburg, 2012).

Effective leadership in educational institutions relies on subordinates' ability to assess their reputation and self-worth (Hao & Yazdanifard, 2015). Empirical findings demonstrate a significant association between position power and leadership effectiveness and a strong correlation between supportive behaviour and leadership effectiveness. Studies have shown that supportive behaviour is significantly related to leadership effectiveness and contributes to achieving shared goals studies (Yukl, 2012; Behrendt et al., 2017).

Numerous related studies that explain how supportive behaviour improved leadership effectiveness, performance, and employee satisfaction corroborate these findings. This finding is related to several studies that found a situation characteristics (position power) directly influence leader behaviour (supportive behaviour) and leadership effectiveness (Blanchard, 2006; Robbins & Coulter, 2007; Hoy & Miskel, 2013). The current research shows that leaders' personalities indirectly influence their behaviour as leaders (Hoy & Miskel, 2013).

Regarding the studies about leadership mode, the leadership model discovered in this study is innovative in that it can empirically explain the primary aspects that comprise the latent variables: emotional maturity, position power, supportive leadership style, and leadership effectiveness. Emotional reinforcement (97.61%) and self-acceptance (97.22%) are the primary elements creating the latent variable of emotional maturity. Coercive power (92.93%) and reward power (88.92%) are the primary elements that make up the latent variable of position power. The principal's openness to explain school programs (94.28%) and support for increasing school quality are the primary factors composing the latent variable of a supportive leadership style. Lastly, the personal component of the principle (98.01%) is the major factor constituting the latent variable of leadership effectiveness.

## **Conclusions**

The effectiveness of leadership that promotes the success of VHS revitalisation is a combination of position power and supportive leader conduct. It can be inferred from the research findings. If educational institutions need to create new programs or policies to boost quality, this finding is appropriate to employ. The VHS revitalisation program was implemented to raise the standard of vocational graduates in Indonesia. The investigation results demonstrate that the model has been experimentally validated since only samples from Medan, North Sumatra, Indonesia, were used in the study. This discovery can therefore be recognised as an empirical model that enhances the model of educational leadership, particularly regarding vocational education. The results provide opportunities for additional researchers to carry out research that is more extensive than the scope of this study and outside of academic institutions.

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