

RESEARCH ARTICLE

Transformational Leadership and Organizational Citizenship Behavior of Virtual Teaching During the COVID-19 Pandemic in Indonesia: The Mediating Role of Job Satisfaction

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ABSTRACT

Background/purpose – The rapid transition to virtual teaching (VT) due to COVID-19-related school closures posed challenges to teachers in regard to upholding the standards of their profession. Perceived transformational leadership of virtual teaching (perceived TL-VT) may have had a protective role in difficult circumstances. Hence, this research study aimed to examine the relationship between perceived TL-VT and organizational citizenship behavior of virtual teaching (OCB-VT) in Indonesia, with job satisfaction of virtual teaching (JS-VT) as a mediator.

Materials/methods – A cross-sectional survey design was used in this study, in which data were collected from a sample of teachers at 40 elementary schools in Blitar District, Indonesia. A total of 418 teachers with VT experience completed survey with items adapted from related scales. The collected data were analyzed using descriptive statistics and correlation analysis. Moreover, the mediation effect was evaluated using Hayes Process of Model 4. Finally, Hayes (2013) bootstrap technique was used to investigate the significance of the mediation effect.

Results – Perceived TL-VT and JS-VT were found to be positively associated with OCB-VT. Mediation tests confirmed the relationship between perceived TL-VT and OCB-VT was mediated by JS-VT. Moreover, bootstrap analysis showed that coworkers had the most significant mediating effect on the relationship between perceived TL-VT and OCB-VT, followed by promotion, supervision, and work, while the effect of pay was shown to be insignificant.

Conclusion – It was found that JS-VT had a mediating role in the relationship between perceived TL-VT and OCB-VT. Therefore, a good principal leadership could be critical to maintaining both teacher satisfaction and behavior during the COVID-19 crisis, regardless of teachers' actual readiness to overcome barriers associated with virtual teaching.

Keywords – perceived transformational leadership, organizational citizenship behavior, job satisfaction, virtual teaching, Indonesian teachers.

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1. INTRODUCTION

The COVID-19 pandemic affected all sectors of society, and education in particular. In order to help prevent the spread of the disease, teachers and students were forced to carry out virtual teaching (VT) literally overnight which placed the professional performance of many teachers in jeopardy (Burić et al., 2021; Gunawan, Sultoni, et al., 2022; Karakose, 2021). Following an increase in school-borne viral infection cases, all educational institutions across Indonesia at various levels were forced to close (Alam, 2021). As a consequence, face-to-face classes were suspended, and both teaching and learning continued through online platforms (Prayoga et al., 2023; Qurbani et al., 2022). However, most teachers had no prior experience in any kind of VT (Nurabadi et al., 2020; Nurabadi, Suhariadi, et al., 2021; Wiyono, Kusumaningrum, Triwiyanto, et al., 2019). Such a major and sudden change posed significant challenges to the professional performance of teachers.

In this context, the leadership qualities of school principals and the behavioral development of those reporting to them is crucial (Wiyono, 2018; Wiyono, Kusumaningrum, Gunawan, & Ardiansyah, 2019). Transformational leadership (TL), within the contemporary school setting, is considered the most appropriate leadership style for principals since it promotes teachers' professional performance holistically (Anderson, 2017; Nurabadi, Irianto, et al., 2021). Studies have indicated that TL can be linked to teacher functioning and informal performance, often referred to as organizational citizenship behavior (OCB) (Nasra & Heilbrunn, 2016; Suriansyah et al., 2019). For example, the studies of Nguni et al. (2006) and Sheraz et al. (2012) reported higher levels of OCB among employees reporting to principals with TL behavior rather than transactional leadership.

However, to the best of our knowledge, few studies have examined the constructs that mediate the relationship between principals' TL and teachers' OCB (Nohe & Hertel, 2017; Podsakoff et al., 1990), and such studies have not been concerned with VT environments, and especially not in times of global crisis such as the COVID-19 pandemic. Hence, the purpose of the current study is to examine the effect of principals' TL on teachers' OCB, and to focus on the mediating role of teachers' job satisfaction (JS), within a VT environment during the COVID-19 pandemic.

2. LITERATURE REVIEW

Perceived transformational leadership

The emergence of TL theory can be traced to Burns (1978) pioneering work entitled "Leadership," which attempted to link leader and follower motivation to a process where both are affected by a change in moral values and a higher commitment to organizational goals (Althnayan et al., 2022; Mary, 2005; Nurabadi et al., 2022). In other words, transformational leaders help their followers to go beyond self-interest and initial performance expectations based on a strong emotional attachment to the organization's goals (Karakitapoğlu-Aygün & Gumusluoglu, 2013; Moin et al., 2020). Transformational leaders are those who exhibit behaviors in the following five dimensions (Rafferty & Griffin, 2004).

The first dimension, vision, refers to a transcendent ideal that is ideological, represents shared values, and is an ideal picture of the future of the organization. The second dimension, inspirational communication, refers to the expression of positive messages that are able to build confidence, motivation, and enthusiasm of followers to perform tasks well with the aim of achieving organizational goals. The third dimension, supportive leadership, refers to the

leader's concern for the needs and welfare of followers, and psychologically supports followers by creating a friendly work environment. The fourth dimension, intellectual stimulation, refers to the leader's efforts to increase followers' interest, awareness, and ability to solve organizational problems in new ways. The fifth dimension, personal recognition, refers to the leader's behavior of rewarding followers for their individual efforts and achievements for organizational goals, such as praise and appreciation.

Organizational citizenship behavior

OCB has been defined by Organ (1997) as behavioral conduct that promotes a sense of community and contributes to the relaxed atmosphere (i.e., social and psychological environment) necessary for successful task performance. Referring to this definition in the context of education, OCB is defined as teacher behavior that enhances instructional performance in the social and psychological environment of schools where students are taught by teachers (Ghasemy & Elwood, 2022; Terzi, 2015). To further define OCB, Organ (1988) highlighted five specific dimensions of OCB and explained how each dimension helps improve organizational effectiveness and efficiency.

The first dimension, conscientiousness, refers to efforts to improve individual efficiency to contribute to the functioning of the organization, e.g., efficient use of time and exceeding minimum expectations. The second dimension, altruism, leads other individuals to contribute to organizational efficiency by improving individual performance, e.g., providing assistance to those who have recently joined the organization and devote their time to others. The third dimension, civic virtue, is promoting the organization's interests, e.g., showing active contribution to organizational life. The fourth dimension, courtesy, refers to helping prevent problems and facilitating constructive use of time, e.g., making propositions for solutions. The fifth dimension, sportsmanship, means being tolerant in the face of annoyances and problems caused by work; for example, avoiding complaining and whining.

Job satisfaction

Teachers' JS is a complex phenomenon which is reflected through a combination of attitude, feelings, and emotion that are derived from the experience of working (Lin & Chang, 2015; Toropova et al., 2021). A strong sense of teachers' JS can create in them a loyalty and dedication to their work, thus elevating the instructional quality given and their school's performance (Chang et al., 2011; Harrison et al., 2023; Suriansyah et al., 2019). Disregarding the importance of job satisfaction, which is a fundamental human requirement, can result in teachers becoming listless and uninterested in their work. JS, defined as a critical work attitude that can help predict behavior, manifests as five different dimensions: work, pay, promotion, supervision, and coworkers (Stanton et al., 2002).

Work refers to a group of positions that have the same duties and obligations. Pay refers to financial and non-financial rewards from the organization to employees according to their managerial level within the organization. Promotion refers to a change in position or title or job of an employee from a lower level to a higher level in conjunction with increased responsibilities, rights, social status, and salary. Supervision refers to the process of regular interaction between employees and leaders to review work as required by regulations, job standards, inspection requirements, and job guidelines within the organization. Coworkers refer to those who work with other employees and who share knowledge and expertise in order to solve problems or approach new situations.

Connections among the variables

Perceived TL-VT and OCB-VT. We expect perceived TL-VT to have a positive relationship with OCB-VT. The literature has shown that a positive relationship exists between TL and OCB (Khalili, 2017; Zhang et al., 2020). Nguni et al. (2006) revealed from a study of 70 public primary schools in Tanzania that the positive effect of TL on OCB was as a result of teachers' participation in decision making, and that empowerment increased their self-efficacy. In a more recent study, Cho and Kao (2022) reported finding a positive relationship between TL and OCB in the case of Taiwan. Yukl (2012) asserted that leaders have a strong effect on their followers' organizational behavior and that OCB is no exception.

Perceived TL-VT and JS-VT. Leadership has a strong influence on job satisfaction when followers take part in the decision-making process of the organization (Rossmiller, 1992). We expect, therefore, that perceived TL-VT is positively related to teachers' JS-VT. A number of empirical studies have reported that followers who work under TL are more satisfied at work and committed to the organization (Barling et al., 1996; Top et al., 2013; Walumbwa et al., 2004). Results obtained by Nasra and Heilbrunn (2016) from a study in Israel highlighted the important role of TL in influencing teachers' JS. Using partial least squares structural equation modeling, Choi et al. (2016) established that TL significantly affected JS.

OCB-VT and JS-VT. The way personnel perceive their work environment can be ascertained from their satisfaction and trust levels, which impacts upon the activities of organizational members (Netemeyer et al., 1997). Organ and Moorman (1993) found that JS provides a better explanation of OCB. Robinson and Morrison (2000) conducted a longitudinal study with 47 managers, and found that when employees feel that their employer has successfully met their work obligations, they are more likely to engage in citizenship behaviors. Their findings were consistent with those also reported by Nadiri and Tanova (2010), in that more satisfied employees are more likely to speak positively, engage in citizenship behaviors, help their colleagues to perform better, and go beyond their official job requirements in order to complete their assigned tasks or jobs.

Mediator role of JS-VT. Teachers' JS refers to their subjective evaluation of the extent to which they are satisfied and happy with their current job position when various job-related factors are considered, including salary, school facilities, and school administration (Msuya, 2016). Previous studies have established teachers' JS as a mediator in the relationship between principal's leadership and teacher work outcomes (Bakkal, 2019; Ladebo, 2008; Nasra & Heilbrunn, 2016). Using a series of regression models, Nguni et al. (2006) found that teachers' JS mediates in the relationship between TL and teachers' OCB. Results obtained by Ye et al. (2019) found that task conflict plays a very important role in JS, which serves as a mediator in the relationship between task conflict and perceived job performance. Moreover, Sung and Hu (2021) identified the mediation effect of JS on the relationship between internal branding and work outcomes.

The current study aimed to investigate whether or not these findings remain applicable within a VT environment. It also aims to identify any discrepancies that may exist between the physical classroom and VT classrooms. By doing so, this study hopes to provide a better understanding of the differences between the two teaching settings. In the current study, perceived TL-VT may be a predictor of JS-VT, and JS-VT may further promote OCB-VT. In addition, JS-VT may play a mediating role in the relationship between perceived TL-VT and OCB-VT. The hypothesized relationships among perceived TL-VT, JS-VT, and OCB-VT are illustrated in Figure 1, followed by four hypotheses.

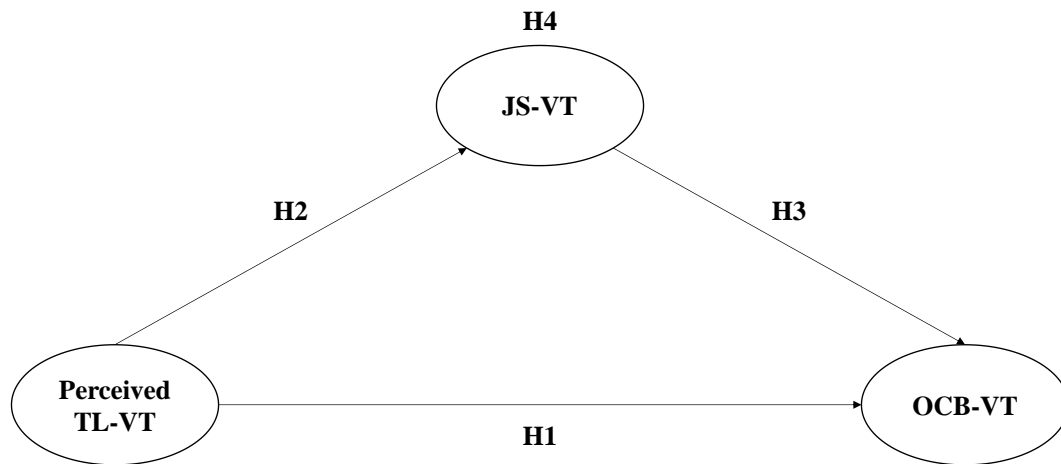


Figure 1. Conceptual (Hypothetical) Model

- Hypothesis 1 (H1): Perceived TL-VT has a positive relationship with OCB-VT
- Hypothesis 2 (H2): Perceived TL-VT has a positive relationship with JS-VT
- Hypothesis 3 (H3): JS-VT has a positive relationship with OCB-VT
- Hypothesis 4 (H4): JS-VT mediates the relationship between perceived TL-VT and OCB-VT

3. METHODOLOGY

Participants

The participants of the study were elementary school teachers. The questionnaire was designed for and targeted teachers with VT experience. Of the 500 questionnaires issued, a total of 456 were returned, giving a return rate of 91.2%. After eliminating partial, incomplete, and straight-line responses, 418 replies were found to be valid for analysis, giving an acceptance rate of 91.7%. The sample consisted of more female ($n = 305$; 72.97%) than male teacher participants ($n = 113$; 27.03%), which was consistent with the population distribution of elementary school teachers in Indonesia (Indonesian Ministry of Education, Culture, Research and Technology, 2022).

Among them, 25.65% had been teaching experience for more than 21 years, 29.78% for 11-20 years, and 44.57% for than 10 years or less. In terms of their age, 1.78% were over 60 years old, 27.31% were 50-59 years old, 23.79% were 40-49 years old, 29.29% were 30-39 years old, and 17.83% were aged 29 years old or less. For the respondents' education level, 85.53% held a bachelor's degree whilst 14.47% held a master's degree. Moreover, the apps that the teachers had used for VT were: Google Classroom ($n = 365$), Google Meet ($n = 278$), WhatsApp ($n = 256$), YouTube Kids ($n = 245$), Microsoft Team ($n = 252$), Zoom Meeting ($n = 173$), and Messenger ($n = 153$).

Instruments

The original questionnaire was written in English and then translated into the Indonesian language using the "back-translation technique" (Brislin, 1970). The measurement tool was based on a 4-point, Likert-type scale ranging from 1 = *strongly disagree* to 4 = *strongly agree*. The questionnaire used in the survey was comprised of a total of 77 items adopted and modified for VT from three well-developed scales.

The measure for perceived TL-VT, which contains 40 items, was adopted from Rafferty and Griffin (2004). The scale had five dimensions. There were eight items on vision (Vs), such

as “The principal has a strong belief and stance to achieve the school’s virtual teaching vision”; six items on inspirational communication (IC), such as “The principal establishes good virtual communication with teachers”; eight items on supportive leadership (SL), such as “The principal encourages teachers to do a good job of virtual teaching”; 11 items on intellectual stimulation (IS), such as “The principal looks in a new way at the process of solving the virtual teaching problem at school”; and seven items on personal recognition (PR), such as “The school rewards teachers who perform well in implementing virtual teaching.” The reliability coefficient for the whole scale was .937, whilst for the dimensions it was .816, .807, .764, .841, and .790, respectively.

The 23-item version scale developed by Stanton et al. (2002) to measure JS-VT was adopted. This scale had five dimensions. There were four items on work (Wk), such as “I enjoy working virtually at school”; five items on pay (Py), such as “The salary from the virtual teaching incentive that I receive is in the high category”; five items on promotion (Pr), such as “The school’s virtual promotion policy is implemented fairly”; four items on supervision (Spv), such as “The school conducts virtual coaching to teachers well”; and five items on coworkers (CW), such as “I am happy to share my virtual teaching experience with other teachers.” The reliability coefficient was found to be .923 for the whole scale, and for the five dimensions it was .791, .644, .845, .803, and .813, respectively.

OCB-VT was measured by a five-dimensional scale developed by Organ (1988), which consisted of 14 items. There were three items on conscientiousness (Cs), such as “I follow the virtual teaching procedures and rules that apply at school”; three items on altruism (At), such as “I am ready to help other teachers who need it in implementing virtual teaching”; two items on civic virtue (CV), such as “I keep up to date with the progress of the school’s virtual work”; two items on courtesy (Cr), such as “I strive to help improve the good name of the school as a virtual teaching community”; and three items on sportsmanship (Sm), such as “I respond well to virtual teaching problems at school.” The reliability coefficient for the whole scale was .898, and .695, .796, .499, .612, and .711, respectively, for the five dimensions.

Procedures

A cross-sectional survey design was used in the study in which data were collected from a sample of teachers employed by 40 elementary schools located in the Blitar District of Indonesia. The participants were teachers who had participated in a Teacher Professional Development Program during August 2022 that had been offered by the Office of Education (and implemented in compliance with the COVID-19 protocol of the Ministry of Health). A cover letter addressed from the university indicated that although they informally supported the study, along with the Office of Education, the teachers’ participation in the study was entirely voluntary. In order to initiate the data collection process, the researchers informed the prospective participants of the research study’s purpose and assured them that all their personal information would remain confidential throughout and following the research. Subsequently, following agreement from the teachers to take part in the study, measures were taken in order to allow them to complete the questionnaire.

Data analysis

First, descriptive and correlation statistical analysis were performed using IBM’s SPSS statistical software, version 24. Second, for confirmatory factor analysis (CFA) and SEM analysis, the robustness of the data’s fit was evaluated using chi-square/degree of freedom (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), the Goodness Fit Index (GFI), the Comparative Fit Index (CFI), the Normed

Fit Index (NFI), the Tucker-Lewis Index (TLI), and the Parsimony-Adjusted Measures Index (PNFI). The fit and threshold levels of several models were used as recommended by McDonald and Ho (2002) (see Table 2). Third, the SPSS PROCESS Macro v4.1 was used to test mediation hypotheses (Hayes Process of Model 4). Finally, the theoretical model was tested by estimating the 95% confidence interval (CI) for mediation effects with a 5,000 sample formed through repetition (Hayes et al., 2017).

4. RESULTS

Descriptive statistics and correlation analysis

Table 1 presents the descriptive statistics and the correlation analysis of the study's three variables. As can be seen, perceived TL-VT had the highest mean ($M = 3.46$, $SD = .28$), followed by OCB-VT ($M = 3.43$, $SD = .34$) and JS-VT ($M = 3.39$, $SD = .32$). Moreover, the correlation analysis indicated a significantly positive correlation of perceived TL-VT with JS-VT ($R = .734$, $p < .01$) and OCB-VT ($R = .746$, $p < .01$), and that JS-VT was significantly and positively correlated with OCB-VT ($R = .800$, $p < .01$).

Table 1. Means, standards deviations, and correlation

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 |
|-----------|----------|-----------|--------|--------|------|
| 1. TL-VT | 3.46 | 0.28 | .856 | | |
| 2. JS-VT | 3.39 | 0.32 | .734** | .862 | |
| 3. OCB-VT | 3.43 | 0.34 | .746** | .800** | .875 |

Note: $N = 418$; ** $p < .01$; numbers in the diagonal rows are the square roots of the AVE

CFA results, convergent, and discriminant validity

The results of CFA for the model fit indices are presented in Table 2, indicating a favorable fit of the models for the scale (McDonald & Ho, 2002). We also confirmed the convergent validity of the scales used. First, the results of the standardized factor loadings ranged from .811 to .997 (see Appendix 1), with all items greater than .5 (Hair et al., 1995). Second, the composite reliability (CR) of each latent variable was shown to be greater than .6 (Brunner & Süß, 2005): Perceived TL-VT = .607; JS-VT = .618; and OCB-VT = .639 (see Appendix 1). Third, in accordance with Fornell and Larcker (1981), the average variance extracted (AVE) from each construct exceeded .50: Perceived TL-VT = .732; JS-VT = .743; and OCB-VT = .765 (see Appendix 1). Thus, these results indicated good convergent validity. Moreover, discriminant validity was confirmed by analyzing the square root of the AVE for each construct. As shown in Table 1, the square roots of the AVEs all exceeded the latent variable correlations (Fornell & Larcker, 1981), indicating good discriminant validity.

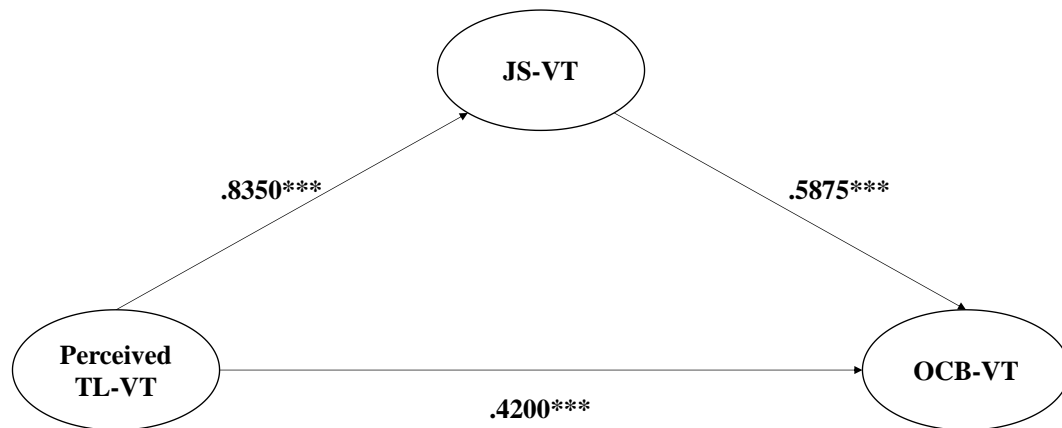
Table 2. Model fit index of the scales

| Standard | $\chi^2/df < 3$ | RMSEA < .08 | SRMR < .08 | GFI > .9 | CFI > .9 | NFI > .9 | TLI > .9 | PNFI > .5 |
|-----------------|-----------------|-------------|------------|----------|----------|----------|----------|-----------|
| Perceived TL-VT | 2.649 | .063 | .018 | .988 | .903 | .919 | .989 | .673 |
| JS-VT | 2.383 | .076 | .017 | .954 | .967 | .922 | .948 | .721 |
| OCB-VT | 2.889 | .079 | .013 | .918 | .921 | .998 | .993 | .661 |

Test of mediation

The mediation model was formed from three linear regression equations: perceived TL-VT and OCB-VT; perceived TL-VT and JS-VT; and perceived TL-VT, JS-VT, and OCB-VT. We applied Hayes et al. (2017) bootstrapping technique which was also used to derive the Confidence Interval (CI) using IBM's SPSS PROCESS software v.4.1 by employing Model 4. As Table 3 shows, perceived TL-VT was positively related with OCB-VT ($\beta = .4200$, $SE = .0489$, $t = 8.5954$, $p < .001$) and JS-VT ($\beta = .8350$, $SE = .0379$, $t = 22.0584$, $p < .001$), and JS-VT was positively related with OCB-VT ($\beta = .5875$, $SE = .0430$, $t = 13.6716$, $p < .001$), which supports hypotheses H1, H2, and H3.

According to Table 4, the upper and lower bounds of the Bootstrap 95% CI for the effects of perceived TL-VT on OCB-VT and JS-VT did not contain zero ($\beta = .9106$, $SE = .0399$, $t = 22.8175$, 95% CI = [.8321, .9890], excluding 0, $p < .001$), indicating that perceived TL-VT indirectly predicted OCB-VT through JS-VT (see Figure 2). The direct effect and the mediation effect accounted for 46.12% and 53.88% of the total effect, respectively. According to these analyses, H4 could also be supported.



Note: *** $p < .001$

Figure 2. Relationship between perceived TL-VT and OCB-VT through JS-VT

Table 3. Mediation model test for JS-VT

| Outcome Variables | Independent Variables | β | SE | t | Bootstrap LLCI | Bootstrap ULCI |
|-------------------|-----------------------|----------|-------|---------|----------------|----------------|
| OCB-VT | Perceived TL-VT | .4200*** | .0489 | 8.5954 | .3240 | .5161 |
| JS-VT | Perceived TL-VT | .8350*** | .0379 | 22.0584 | .7606 | .9094 |
| OCB-VT | Perceived TL-VT | .9106*** | .0399 | 22.8175 | .8321 | .9890 |
| | JS-VT | .5875*** | .0430 | 13.6716 | .5030 | .6720 |

Note: *** $p < .001$

Table 4. Total, direct, and mediation effects of JS-VT

| | Effect | SE | Bootstrap LLCI | Bootstrap ULCI | Relative Effect Size |
|----------------------------|--------|-------|----------------|----------------|----------------------|
| Total effects | .9105 | .0399 | .8321 | .9890 | |
| Direct effects | .4200 | .0489 | .3240 | .5161 | 46.12% |
| Mediation effects of JS-VT | .4905 | .0484 | .3952 | .5856 | 53.88% |

Note: Bootstrapping was set at 5,000 samples

To further explore the mediating effects of each JS-VT dimension, a parallel mediation analysis was calculated. As Table 5 shows, the upper and lower bounds of the Bootstrap 95% *CI* for work ($\beta = .0805$, $SE = .0398$, 95% *CI* = [.0208, .1463], excluding 0, $p < .001$), promotion ($\beta = .1292$, $SE = .0319$, 95% *CI* = [.0518, .2075], excluding 0, $p < .001$), supervision ($\beta = .1214$, $SE = .0412$, 95% *CI* = [.0393, .2000], excluding 0, $p < .001$), and coworkers ($\beta = .2002$, $SE = .0446$, 95% *CI* = [.1161, .2910], excluding 0, $p < .001$) did not contain zero, and the mediating effects of these four dimensions were shown to be significant, indicating that perceived TL-VT could indirectly predict OCB-VT via work, promotion, supervision, and coworkers. However, the upper and lower bounds of the bootstrap 95% *CI* for pay ($\beta = .0093$, $SE = .0200$, 95% *CI* = [-.0287, .0499], including 0, $p < .001$) did contain zero (see Table 5), implying that the mediating effect of the pay dimension was not significant.

Table 5. Parallel mediation breakdown of dimensions of JS-VT

| | Effect | SE | Bootstrap LLCI | Bootstrap ULCI | Effect Ratio |
|-------------------------|--------|-------|-------------------|-------------------|--------------|
| Total mediation effects | .5406 | .0506 | .4441 | .6406 | 59.37% |
| Wk | .0805 | .0319 | .0208 | .1463 | 8.84% |
| Py | .0093 | .0200 | -.0287 | .0499 | 1.02% |
| Pr | .1292 | .0398 | .0518 | .2075 | 14.19% |
| Spv | .1214 | .0412 | .0393 | .2000 | 13.33% |
| CW | .2002 | .0446 | .1161 | .2910 | 21.99% |

Note: Bootstrapping was set at 5,000 samples

5. DISCUSSION AND CONCLUSION

This study was undertaken in order to gain a more refined insight into the means by which perceived TL influences OCB with JS as a mediating role in the context of VT. The significant direct relationship of perceived TL-VT with OCB-VT (H1) echoed previous results (Althnayan et al., 2022; Kim & Park, 2019; Qalati et al., 2022), highlighting the strong influence of TL on OCB. Krisnafitriana et al. (2023) reported that the most effective leaders were those who increased their TL in virtual teams. Tian et al. (2020) noted that employees are likely to dedicate additional effort and time to their tasks, beyond what is required, in response to the support and encouragement they receive from their leaders, thus contributing to the attainment of organizational goals.

The findings also revealed that perceived TL-VT has a positive relationship with JS-VT (H2) which is consistent with the previous findings (Khan et al., 2020; McCallaghan et al., 2019; Song et al., 2020). That is, principals as transformational leaders can encourage teachers' JS (Moin et al., 2020). Hence, the findings of the current study are truly meaningful as they offer empirical support for adapting TL-VT in the educational setting. The study of JS among teachers and their principal's leadership style indicates that teachers prefer the TL approach (Zhang et al., 2022). This implies that principals should recognize that it is important to provide teachers with a supportive work environment that results in higher levels of JS and effectiveness (Boamah, 2022) with the aim that they voluntarily improve instructional quality (Andriningrum et al., 2022; Gunawan et al., 2020; Kusumaningrum et al., 2019).

According to the findings, JS-VT has a positive relationship with OCB-VT (H3), which is in line with previous reports on the strong influence of JS on teachers' OCB (Cek & Eyupoglu, 2020; Ghasemy & Elwood, 2022). This finding provides strong support for reciprocity theory

(Gouldner, 1960), which states that if JS is associated with an organization that provides satisfactory working conditions and good treatment, their satisfied employees can perform OCB as a form of reciprocity to the organization for treating them well (Alkhadher et al., 2020). Teachers who view their profession as important to them will feel greater JS (Alanoglu & Karabatak, 2020), which in turn can affect their OCB (Hurst et al., 2016) and their desire to remain working as teachers (Bafadal et al., 2019).

Finally, the current study's findings confirm that JS-VT mediates the relationship between perceived TL-VT and OCB-VT (H4), which aligns with the conclusions of several researchers regarding the mediating effect of JS on the relationship between leadership style and OCB (Alanoglu & Karabatak, 2020; Alwali & Alwali, 2022; Khaskheli et al., 2020). In a school organization setting, teachers' OCB towards the school is very important, since it affects their relationship interaction with the school principal. Principals' TL increases teachers' JS, promotes teachers' commitment to the goals of the school organization, and increases teachers' willingness to perform OCB. The connection between school principals and teachers can stimulate educators to give beyond what is traditionally expected of them, thus demonstrating high degrees of OCB, for example proffering practical advice, helping colleagues, and voluntarily taking part in meetings.

Moreover, among the JS-VT dimensions, coworkers showed the most significant mediating effect on the relationship between perceived TL-VT and OCB-VT, followed by promotion, supervision, and work. Coworkers have been found to be strong predictors of OCB (Boekhorst & Halinski, 2022). When teachers feel the help and support of their colleagues, they show great citizenship behavior and commitment to the job and provide high instructional services to their students (Gunawan et al., 2021; Sumarsono et al., 2019). There is a strong tendency to focus on growth, advancement, and achievement (i.e., promotion) in motivating employees to gain recognition and rewards through contributions to the organization, such as by demonstrating OCBs (Zeng et al., 2018). Teachers who have the potential to be promoted endeavor to bring their actual selves into agreement with their ideal selves (which are ideals based on wishes and objectives). Supervision that is properly implemented can foster an environment in which teachers adhere to expected performance and behavioral standards in order to maintain or advance their current career situation (i.e., work) (Burhanuddin, 2019). Work, which is seen as a value in itself for an employee, can promote citizenship behavior, provided that leaders establish and foster a perception in their employees that they have a moral obligation to work hard, avoid laziness, and consider "fair effort" as reward in itself (Busque-Carrier et al., 2022).

Unexpectedly, the findings of the current study showed that pay has an insignificant mediating effect on the relationship between TL-VT and OCB-VT. Regarding VT during the COVID-19 pandemic, teachers felt that their income had decreased due to salary reductions (Leonita et al., 2021). Such conditions made it difficult for teachers to demonstrate OCB during the pandemic (Zeng et al., 2023). Although income shocks were seen across all sections of the teaching profession during the COVID-19 pandemic, honorary teachers were hit the hardest (Suwandi, 2021). Therefore, policies should be developed to protect honorary teachers from the consequences of income and employment impacting crises of the future. It would be fairer for schools to compensate for salary cuts during events such as a pandemic by paying proportionally higher salaries for the months where there is a relief package on offer from the government, with the aim of maintaining teachers' instructional quality.

The current study has a number of implications which should be considered. In practice, as school leaders, principals should build an organizational school culture that encourages teachers to reflect upon VT practices in schools. Principals are responsible for promoting OCB and JS among teachers, motivating them to work together to improve instructional quality. As a teachers' working group, OCB can bring positive individual and organizational outcomes to the school, and is useful for both teachers' performance and school improvement (Budak et al., 2020). However, it should be noted that different school organizational cultures may have different effects, depending on the cultural, community, and institutional context of a school's organization. The principal should create a school environment that supports teachers to experiment in their VT, which in turn can change teachers' instructional practices (Andriningrum et al., 2020; Gunawan, Nurabadi, et al., 2022). To ensure teachers OCB, principals should minimize their distance from the teachers, be committed to holding meaningful and in-depth discussions with their teachers, and to promote harmony with and amongst their teachers, with the aim of maintaining their JS.

6. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This study has several limitations. First, the research was conducted with a sample of teachers from Indonesia's Office of Education's professional development program, who may have been more highly self-motivated than other teachers in the study population. The study participants were selected from those officially recognized by the Office of Education, meaning that the outcomes might not represent the larger population of teachers in Indonesia. As such, future studies should employ a random sampling strategy in order to ascertain whether or not the results of the current study can be generalized to the entire population. Second, the study was formed with a cross-sectional design, meaning that the causal relationships between perceived TL-VT, JS-VT, and OCB-VT may not be well established. It is suggested that longitudinal research should be undertaken by scholars to focus on this issue.

Third, as the current study was only directed on the Indonesian context, which may have cultural differences associated with perceived TL-VT, JS-VT, and OCB-VT, the findings cannot be generalized to other cultural contexts. Future research that takes into account different national contexts would be valuable in establishing a broader generalizability of the current study's results. Fourth, specifically, the focus of this study was elementary schools, which are, in general, much smaller than junior and/or senior high schools. As such, further studies of junior and/or senior high school samples may offer additional insight into this area of study. Further analysis could assess how school size plays a role in promoting principal transformational leadership, teacher job satisfaction, and teacher citizenship behaviors within a VT environment.

DECLARATIONS

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Appendix I. Questionnaire

| Construct, dimension, and item | M | SD | FL | CR | AVE |
|--|------|-----|------|------|------|
| Perceived TL-VT | 3.46 | .28 | | .607 | .732 |
| <u>Vision</u> | 3.53 | .33 | | .811 | .919 |
| Vs1 The school's virtual teaching vision is clearly formulated | 3.74 | .45 | .949 | | |
| Vs2 The principal has a strong belief and stance to achieve the school's virtual teaching vision | 3.57 | .50 | .981 | | |
| Vs3 The school has a symbol of success (jargon) in achieving the school's virtual teaching vision | 3.37 | .52 | .995 | | |
| Vs4 The principal is focused on working to achieve the school's virtual teaching goals | 3.54 | .51 | .927 | | |
| Vs5 The school focuses on achieving the school's virtual teaching mission | 3.47 | .52 | .952 | | |
| Vs6 Optimism becomes the spirit of the school in carrying out the school's virtual teaching work | 3.51 | .51 | .914 | | |
| Vs7 In carrying out school tasks, the principal has many ideas to virtually accomplish these tasks | 3.40 | .54 | .974 | | |
| Vs8 Teachers take pride in the achievement of the school's virtual teaching vision and mission | 3.61 | .50 | .975 | | |
| <u>Inspirational communication</u> | 3.58 | .35 | | .832 | .919 |
| IC1 The principal maintains good virtual communication with teachers | 3.75 | .44 | .995 | | |

| | Construct, dimension, and item | <i>M</i> | <i>SD</i> | <i>FL</i> | <i>CR</i> | <i>AVE</i> |
|-----|--|----------|-----------|-----------|-----------|------------|
| IC2 | The principal uses simple language in virtual communication so that the intent can be understood by the other party | 3.57 | .51 | .949 | | |
| IC3 | The school encourages all teachers to achieve their own virtual teaching goals according to their subject | 3.50 | .50 | .910 | | |
| IC4 | The principal gives suggestions to teachers in implementing virtual teaching | 3.47 | .51 | .938 | | |
| IC5 | The principal provides motivation in achieving virtual teaching goals | 3.56 | .52 | .995 | | |
| IC6 | The principal provides motivation in implementing virtual teaching in order to achieve better things | 3.61 | .49 | .963 | | |
| | <u>Supportive leadership</u> | 3.39 | .34 | | .790 | .908 |
| SL1 | Teachers enjoy implementing virtual teaching | 3.53 | .51 | .960 | | |
| SL2 | The principal gives personal attention to teachers who need help or advice in implementing virtual teaching | 3.20 | .61 | .996 | | |
| SL3 | The principal's negotiation ability in virtual communication is an ability that supports the principal in leading the school | 3.40 | .53 | .934 | | |
| SL4 | The principal encourages teachers to do a good job of virtual teaching | 3.65 | .49 | .997 | | |
| SL5 | The school provides virtual teaching training to teachers to improve their performance | 3.45 | .54 | .949 | | |
| SL6 | The school is ready to help teachers who need assistance in implementing virtual teaching | 3.28 | .53 | .943 | | |
| SL7 | The principal tries to increase the motivation of all teachers in implementing virtual teaching | 3.54 | .51 | .874 | | |
| SL8 | The principal provides assistance to new teachers in implementing virtual teaching | 3.06 | .67 | .966 | | |
| | <u>Intellectual stimulation</u> | 3.41 | .33 | | .706 | .879 |
| IS1 | The principal looks in a new way at the process of solving the virtual teaching problem at school | 3.16 | .55 | .979 | | |
| IS2 | The school provides all teachers with the opportunity to participate in virtual teaching training | 3.50 | .53 | .970 | | |
| IS3 | Principals teach teachers new ways of completing virtual teaching work | 3.30 | .54 | .948 | | |
| IS4 | The school is willing to give reasons if a teacher asks for an explanation of the virtual teaching work | 3.35 | .55 | .940 | | |
| IS5 | The school encourages teachers to use their intelligence in the process of completing virtual teaching tasks | 3.40 | .54 | .929 | | |
| IS6 | When the school was asked to give an explanation, the principal was able to give good reasons through virtual communication | 3.44 | .56 | .951 | | |
| IS7 | Principals have the ability to identify complex virtual teaching problems | 3.47 | .52 | .945 | | |
| IS8 | Thinking carefully is an important virtual teaching | 3.63 | .50 | .934 | | |

| Construct, dimension, and item | | <i>M</i> | <i>SD</i> | <i>FL</i> | <i>CR</i> | <i>AVE</i> |
|--------------------------------|---|----------|-----------|-----------|-----------|------------|
| | communication skill possessed by principals | | | | | |
| IS9 | Principals are careful and meticulous in solving virtual teaching problems | 3.68 | .47 | .949 | | |
| IS10 | The school has the confidence to solve the virtual teaching problem | 3.44 | .53 | .811 | | |
| IS11 | Schools demand reasoning and evidence from teachers on virtual teaching problem solving | 3.15 | .60 | .945 | | |
| <u>Personal recognition</u> | | 3.41 | .35 | | .777 | .895 |
| PR1 | Schools are honest and open in the process of assessing teacher performance in implementing virtual teaching | 3.51 | .51 | .949 | | |
| PR2 | The school values teachers' virtual teaching work | 3.63 | .48 | .940 | | |
| PR3 | The school gives special rewards to teachers who perform well in implementing virtual teaching | 3.28 | .53 | .945 | | |
| PR4 | The principal is able to see the personalities of individual teachers in order to distribute school tasks virtually | 3.37 | .51 | .927 | | |
| PR5 | The principal openly praises teachers who work well in implementing virtual teaching | 3.27 | .59 | .980 | | |
| PR6 | The school rewards teachers who perform well in implementing virtual teaching | 3.43 | .52 | .937 | | |
| PR7 | Schools are honest and open in praising teachers who perform well in implementing virtual teaching | 3.34 | .57 | .942 | | |
| <u>JS-VT</u> | | 3.39 | .32 | | .618 | .743 |
| <u>Work</u> | | 3.44 | .40 | | .769 | .856 |
| Wk1 | I have the pride of working virtually | 3.64 | .49 | .979 | | |
| Wk2 | I enjoy working virtually at school | 3.55 | .52 | .823 | | |
| Wk3 | Every assignment from school has an interesting aspect to complete virtually | 3.31 | .52 | .934 | | |
| Wk4 | Every assignment given by the school has a challenging aspect to work on virtually | 3.27 | .51 | .956 | | |
| <u>Pay</u> | | 3.15 | .39 | | .784 | .881 |
| Py1 | Virtual teaching work in schools is shared fairly (proportionally) | 3.41 | .53 | .908 | | |
| Py2 | The salary from the virtual teaching incentive that I receive is in the high category | 2.93 | .62 | .971 | | |
| Py3 | The income from virtual teaching incentives that I receive is sufficient for digital competency development | 2.83 | .67 | .915 | | |
| Py4 | Salary from virtual teaching incentives is paid well (regularly) by the school | 3.23 | .67 | .930 | | |
| Py5 | The school environment is categorized as safe for doing schoolwork virtually | 3.34 | .50 | .966 | | |
| <u>Promotion</u> | | 3.41 | .40 | | .745 | .853 |
| Pr1 | Opportunities for promotion within the school are | 3.36 | .52 | .905 | | |

| Construct, dimension, and item | | <i>M</i> | <i>SD</i> | <i>FL</i> | <i>CR</i> | <i>AVE</i> |
|--------------------------------|--|----------|-----------|-----------|-----------|------------|
| | open and can be implemented virtually | | | | | |
| Pr2 | Division of labor in schools is done virtually and openly | 3.46 | .51 | .961 | | |
| Pr3 | Promotion in schools is carried out virtually and in accordance with the abilities of each teacher | 3.39 | .50 | .925 | | |
| Pr4 | The school provides a good opportunity for virtual promotion to every teacher | 3.40 | .50 | .932 | | |
| Pr5 | The school's virtual promotion policy is implemented fairly | 3.43 | .54 | .893 | | |
| <u>Supervision</u> | | 3.43 | .40 | | .796 | .876 |
| Spv1 | The school praises the achievements and progress of good virtual work to each teacher | 3.40 | .50 | .945 | | |
| Spv2 | The school conducts virtual coaching to teachers well | 3.40 | .51 | .914 | | |
| Spv3 | The principal has a good policy in managing virtual teaching | 3.49 | .52 | .955 | | |
| Spv4 | I do my virtual teaching work in accordance with the guidelines prepared by the school | 3.41 | .51 | .930 | | |
| <u>Coworkers</u> | | 3.51 | .37 | | .805 | .895 |
| CW1 | Good virtual cooperation and communication is a major factor at school | 3.65 | .48 | .943 | | |
| CW2 | I am happy to share my virtual teaching experience with other teachers | 3.50 | .51 | .944 | | |
| CW3 | I carry out virtual teaching work by optimizing the teachers' working group at school | 3.33 | .56 | .954 | | |
| CW4 | My co-teachers and I carry out virtual teaching assignments from school by working hard | 3.39 | .52 | .912 | | |
| CW5 | I and my fellow teachers carry out virtual teaching assignments from school with full responsibility | 3.57 | .51 | .975 | | |
| <u>OCB-VT</u> | | 3.43 | .34 | | .639 | .765 |
| <u>Conscientiousness</u> | | 3.34 | .42 | | .862 | .910 |
| Cs1 | I follow the virtual teaching procedures and rules that apply at school | 3.31 | .55 | .996 | | |
| Cs2 | Working virtually ahead of schedule has become a habit for me at work | 3.26 | .53 | .972 | | |
| Cs3 | I can spontaneously receive, answer, and provide information virtually that others need | 3.44 | .54 | .890 | | |
| <u>Altruism</u> | | 3.41 | .42 | | .740 | .808 |
| At1 | Always ready to help new teachers if needed in planning virtual teaching | 3.42 | .51 | .875 | | |
| At2 | I am ready to help other teachers who need it in implementing virtual teaching | 3.32 | .50 | .886 | | |
| At3 | I take the time to help other teachers evaluate virtual teaching | 3.50 | .50 | .934 | | |
| <u>Civic virtue</u> | | 3.58 | .42 | | .871 | .898 |
| CV1 | I keep up to date with the progress of the school's virtual work | 3.60 | .49 | .896 | | |

| Construct, dimension, and item | | <i>M</i> | <i>SD</i> | <i>FL</i> | <i>CR</i> | <i>AVE</i> |
|--------------------------------|--|----------|-----------|-----------|-----------|------------|
| CV2 | I promote the virtual progress of the school | 3.56 | .53 | .997 | | |
| <u>Courtesy</u> | | 3.41 | .45 | | .811 | .842 |
| Cr1 | I strive to help improve the good name of the school as a virtual teaching community | 3.31 | .53 | .950 | | |
| Cr2 | I am willing to take risks for the advancement of virtual teaching at school | 3.52 | .53 | .884 | | |
| <u>Sportsmanship</u> | | 3.39 | .38 | | .749 | .840 |
| Sm1 | I have a high work ethic in carrying out virtual teaching tasks at school | 3.41 | .50 | .935 | | |
| Sm2 | I respond well to virtual teaching problems at school | 3.43 | .53 | .941 | | |
| Sm3 | I focus on the virtual teaching work given to me by my school | 3.42 | .52 | .837 | | |
| Sm4 | I respond positively to any virtual teaching mistakes as part of the process of achieving school goals | 3.31 | .55 | .948 | | |

Note: *M* = mean; *SD* = standard deviation; *FL* = factor loading; *CR* = composite reliability; *AVE* = average variance extracted

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