Analysis of improving innovative work behaviour of vocational high school teachers in terms of servant leadership with knowledge sharing as an intervening variable

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ABSTRACT

The purpose of this research is to describe the innovative work behavior of vocational high school teachers in terms of servant leadership which is intervened by knowledge sharing. This research uses a quantitative approach with a survey method. The sampling technique was simple random sampling which came from vocational high school teachers from the provinces of East Java, Central Java, West Java, DKI Jakarta, Banten, Riau Islands, and South Sumatra with a total of 165 teachers. Data analysis techniques using descriptive analysis and path analysis. Results: The dimension of the teacher's innovative work behavior, namely with the intent of benefit to the organization has the highest score and the idea promotion dimension has the lowest score. Servant leadership has a positive and significant influence on knowledge sharing with a contribution of 42.3%. knowledge sharing has a positive and significant influence on innovative work behavior with a contribution of 58.4%. Knowledge sharing cannot be an intervening variable of servant leadership on innovative work behavior because the path analysis results show that servant leadership does not directly affect innovative work behavior through knowledge sharing. The implication is that city or district education offices must further enhance the idea promotion exploration of teachers through training or workshops and maintain that with the intent of benefit to the organization of teachers through servant leadership style and knowledge sharing of teachers and school principals.

INTRODUCTION

Teachers greatly determine the success of a country's education with the strategic role that teachers have as learning leaders, facilitators, and at the same time centers of learning initiatives (Blašková et al., 2014). The strategic role of the teacher at school is influenced by the creativity and innovation carried out by the teacher (Pastore & Andrade, 2019). A creative education system is born from a culture that enlivens creativity, innovation, and productivity and requires fundamental changes. Teachers need to continue to innovate and realize their continued existence through the creation of new ideas and continuous innovation through good instructional design, strong motivation, and smart use of technology (Kırkgöz, 2008).

Teacher competence which includes pedagogic, personality, professional, and social is reflected in the teacher's performance displayed during daily work behavior in teaching (Prasetyono, Abdillah, & Fitria, 2018). One indicator of optimal teacher performance is having innovative work behavior (Mphahlele & Rampa, 2014). The behavior that is expected to be able to generate creativity and innovation to answer the challenges of an increasingly complex world, is expected to come through work behavior. In the context of school organizations, innovative work behavior requires

teachers to create innovative ideas by motivating students and colleagues to get involved (Spanuth & Wald, 2017).

The diversity of teaching methods is influenced by the teacher's innovative behavior in teaching (Akram et al., 2020). Advances in information and communication technology have made the theory of innovative work behavior develop very rapidly at this time. Innovative Work Behavior (IWB) can be defined as an employee's action directed at the products, processes, and methods of his or her job position, departmental unit, or organization (Colakoglu et al., 2022). Examples of such behavior include seeking out new technologies, recommending new strategies to achieve goals, applying new work methods, and procuring support and resources to implement novelty ideas. Another opinion states that IWB is defined as the sum of physical and cognitive work activities carried out by employees in their work context, either solitarily or in a social setting, to accomplish a set of tasks required for achieving the goal of innovation development (Ramdayana & Prasetyono, 2022).

Innovative work behavior is composed of the intentional introduction and application within a role, group, or organization of ideas, processes, products, or procedures that are new to the relevant unit of adoption and designed to significantly benefit the individual, the team member, or the organization (Taştan & Davoudi, 2015). We conceptualize IWB as behavior consisting of complex integrated activities about opportunity exploration, idea generation, idea promotion, and idea implementation with the intent of benefiting the organization, work role units, and individuals (Kwon & Kim, 2020). IWB is very important for every organization to keep growing and developing and competing with other competing organizations.

Innovative work behavior is behavior directed at generating ideas, applying and implementing superior ideas, products, processes, and methods for work positions, departmental units, or organizations (Korzilius et al., 2017). Through innovative behavior that is owned by individuals in the organization, it is expected to be able to build the organization into an innovative organization. Individual innovation behavior is grouped into two dimensions, namely the creativity-oriented work behavior dimension which includes problem recognition and generating ideas. In contrast, the promotion of ideas and the realization of ideas are included in the work behavior dimension which is oriented towards implementing ideas (De Jong & Den Hartog, 2010). Meanwhile, Scott and Bruce in Nguyen et al. (2021) say that IWB can be divided into three stages, namely idea generation, coalition building, and implementation.

Innovative work behavior is an individual behavior to generate excellence beyond the required standards (Örnek & Ayas, 2015). The Innovative work behavior foundation begins with individual contributions to the development of organizational innovation (Shanker et al., 2017). The stages of IWB are as follows: first, the process stage includes the creative stage which refers to recognizing problems and generating ideas at the individual level, and secondly, the implementation stage refers to achieving and applying innovative ideas in organizational practice (Dincer et al., 2011). Employees who are innovative at work will emphasize individual willingness to uphold innovation in their work by improving the way they work, communicate, use computers, or develop new services or products, for the effectiveness and success of the organization (PytlikZillig et al., 2011).

The very rapid development of IWB theory has not studied many aspects of education, especially teachers. The majority of research on IWB using research samples are employees in companies or organizations or the government. Like the research conducted by De Jong and Den Hartog (2010) whose research results formulate dimensions in the measurement of IWB. Even though the teacher as one of the spearheads of educational success is required to innovate in teaching. This is necessary because in the Industrial Revolution Era 4.0, teachers must become transformers of changes in students to improve their competencies (Wijayanto et al., 2018).

However, there are not many empirical research results that try to explore what variables or dimensions can increase teacher IWB in schools. So far research on IWB from Asurakkody and Kim (2020) states that self-leadership can motivate students at nursing academies to increase innovation at work. The limitations of this research are the object of research on nursing academy students. It is very possible to get different results if the object of research is high school or vocational students.

Other research results from Sudibjo and Prameswari (2021) a sample of 260 elementary school teachers stated that transformational leadership does not have a direct influence on innovative work behavior but has an indirect influence through the knowledge-sharing variable. This means that transformational leadership is not suitable as an independent variable for innovative work behavior. However, knowledge sharing can be an intervening variable for transformational leadership. Further research from Kuril et al. (2023) who examined public school teachers in India, one of the results of their research, stated that the dimensions of innovative behavior inventory, innovation support inventory, and innovation output could be used to measure teachers' innovative behavior as an additional dimension.

Teachers' IWB which still needs to be improved can be seen from the teacher's ability to explore ideas indicators, namely identifying problems and looking for opportunities to solve them (Suleimanova, 2013). Exploring ideas is interpreted as a search for self-ability to develop appropriate teaching strategies in the learning process for students. These findings are reinforced by the finding that high school teachers in DKI Jakarta have not strengthened positive character in students during the learning process (Prasetyono, Abdillah, Widiarto, et al., 2018). Almost the same condition occurs for teachers of Vocational High Schools (VHS). Vocational school teachers are required to be more creative and carry out the teaching process.

One of the factors thought to influence IWB is knowledge sharing and servant leadership (Eva et al., 2019; Rachmawati & Lantu, 2014). Servant leadership (SL) is leadership that starts from a sincere feeling that arises from within the heart to serve, put the needs of followers as a priority, get things done with others, and help others in achieving a common goal (Eva et al., 2019). Leaders who apply servants in work are serving, caring, and close to subordinates so that employees who work feel comfortable at work. This feeling of comfort can unconsciously stimulate the emergence of creativity in work (Liden et al., 2008).

The Servant Leadership (SL) concept was first introduced by Robert K. Greenleaf in 1970 (Eva et al., 2019). According to Greenleaf, SL is someone who becomes a servant first. Starting from the natural feeling that someone who wants to serve, must first serve. Then a conscious choice brings someone to lead (Liden et al., 2008). There are 10 characteristics of SL, namely listening attentively to others, trying to understand colleagues and being able to empathize with others, being able to create emotional healing, awareness to understand developing issues, Seeing situations from a balanced position, convincing others rather than compelling compliance, visionary conscientious in understanding lessons from the past, current realities, and possible consequences of decisions for the future, openness, commitment to growth and community building (Greasley & Bocârnea, 2014). The SL dimensions are altruistic calling, emotional healing, wisdom, persuasive mapping, organizational stewardship, humility, vision, and service (Rachmawati & Lantu, 2014).

Knowledge Sharing (KS) is a willingness to share information, knowledge, data, and authority that is carried out by a teacher towards his co-workers (Mâță & Suciu, 2011). A teacher will be able to be more innovative in teaching if he gets or has a variety of knowledge and information (Burden et al., 2019). This is because teachers in teaching must at least master the scientific knowledge and information being taught (Burden et al., 2019). Mastery of this knowledge is usually obtained from self-study and sharing knowledge with fellow teachers (Subramaniam, 2020). The information and knowledge obtained from colleagues are usually related to technical explanations in dealing with the obstacles faced by teachers while teaching (Howell & Saye, 2016). Of course, this is very suitable to complement the theoretical knowledge possessed by a teacher sourced from books or formal education. So teachers who gain knowledge or share knowledge have innovative work behavior (Nasongkhla & Sujiva, 2015).

Teachers will have IWB if they receive more knowledge or share knowledge (Asurakkody & Kim, 2020). Sharing knowledge is part of transforming tacit into explicit knowledge (Fraser et al., 2019). Knowledge sharing further emphasizes the sharing of both tacit and explicit knowledge at individual, group, and enterprise levels. Knowledge sharing refers to individuals who share relevant information, ideas, and suggestions as well as expertise with others in an organization (van Bommel et al., 2020). Sharing knowledge is the providing of task information and know-how to help others and to collaborate with others to solve problems, develop new ideas, or implement policies or

procedures (Sriratanaviriyakul & El-Den, 2017). Individuals who want to share knowledge with others by eliminating fears that may arise or there is an appreciation for the act of sharing.

KS is described as disclosing information, and collaborating with colleagues or colleagues to solve a given problem (Craig et al., 2018). Knowledge sharing can be done through face-to-face communication or written correspondence or contact with other experts, or organizing, documenting, or capturing knowledge for others (Lin et al., 2008). A basic model of KS consists of the following elements: source, recipient, object to share, process of sharing, and the sharing context (Sriratanaviriyakul & El-Den, 2019). The process of measuring knowledge sharing consists of 5 types, namely general overviews, (2) specific requirements, (3) analytical techniques, (4) progress reports, and (5) project results (Cummings, 2004).

However, not all teachers have the ability or desire to share knowledge (Yassin et al., 2013). Teachers who feel bound by their profession as teachers in schools are teachers who are believed to be able to share knowledge. Teachers who have a professional attachment to school will try their best to work and empower all their potential so that students will feel the impact of the teacher's enthusiasm (Harris, 2011). Teachers will try to display positive behavior, have a proactive perspective in understanding work problems through a series of activities that go beyond existing rules, and aim to give a positive voice to their organization (Hakanen et al., 2006).

Sharing knowledge carried out by employees is influenced by a strengthened leadership style (Kakhki et al., 2020). The leadership style that suits the type of organization being led will encourage employees to collaborate and share knowledge. Until now, the transformational leadership style still dominates in influencing the sharing of knowledge carried out by teachers (Coun et al., 2019; Sudibjo & Prameswari, 2021). Even though many other types of leadership are suspected of influencing KS. One type of leadership currently being widely adopted by world leaders is the servant leadership style. Therefore this research focuses on analyzing the indirect effect of SL on IWB through KS with the object of research being VHS teachers.

METHOD

This research uses a quantitative approach with a survey method. The objects of this research are vocational teachers in Java and Sumatra and Java. Retrieval of data using a questionnaire prepared by developing indicators of each variable. The IWB variable has indicators pertaining to opportunity exploration, idea generation, idea implementation, and idea promotion, intending to benefit the organization and work role units and individuals (Shanker et al., 2017). The SL variable has indicators of altruistic calling, wisdom, persuasive mapping, organizational stewardship and emotional healing, humility, and vision and service (Eva et al., 2019). The KS variable has indicators of source knowledge, recipient knowledge, object to share, the process of sharing, and the sharing context (Sudibjo & Prameswari, 2021). To avoid bias in the research, the researchers ensured that the teachers who filled out the questionnaire were teachers who were teaching in VHS. Then look at the collected data to make sure that the respondents who filled out the Google form did indeed come from the schools that were the population of this research.

The research begins with making research instruments and then testing the validity and reliability of 30 respondents. Then distribute the questionnaires to several respondents. The IWB variable questionnaire consists of 16 statement items which are then tested for validity using the person correlation formula. The result turned out that there were 4 items whose personal correlation coefficient value was less than 0.363, then it was declared invalid. Then the 12 valid questions were calculated by the reliability test and obtained a reliability coefficient of 0.803 which means very reliable. The SL variable questionnaire consists of 18 statement items which are then tested for validity using the personal correlation formula. The result turned out that there were 7 items whose personal correlation coefficient value was less than 0.363, then it was declared invalid. Then the 11 valid questions were calculated by the reliability test and obtained a reliability coefficient of 0.821 which means very reliable. The KS variable questionnaire consists of 16 statement items which are then tested for validity using the personal correlation formula. The result turned out that there were 5 items whose personal correlation coefficient value was less than 0.363, then it was declared invalid.

Then the 11 valid questions were calculated by the reliability test and obtained a reliability coefficient of 0.807 which means very reliable.

Determination of the sample using simple random sampling where every teacher who teaches at VHS has the same opportunity to be the sample in the research. The total sample is 165 teachers from 4 (four) teachers from East Java, 57 teachers from West Java, 56 teachers from DKI Jakarta, 14 teachers from the Riau Archipelago, 24 teachers from Central Java, 5 (five) teachers from South Sumatra, and 5 (five) teachers from Banten. The processing of data begins with descriptive analysis and then proceeds with path analysis. The research hypothesis is structured as follows:

H_1: SL has a positive and significant effect on KS

H_2: KS has a positive and significant effect on IWB

H_3: SL has a positive and significant indirect effect on IWB through KS

RESULTS AND DISCUSSION

Data analysis begins with a descriptive calculation of the IWB variable which is presented in Table 1.

Table 1. Description of IWB Variable Score

Dimensions	Score	Percentage
Relating to the exploration of opportunities	1377	83.45%
Idea generation	1328	80.48%
Idea implementation	1319	79.94%
Exploration of idea promotion	1252	75.88%
Relating to providing benefits to the organisation	1379	83.58%
Work role units and individuals	1376	83.39%
Average	1338.5	81.12%

Based on Table 1, the total score for measuring IWB for VHS teachers has an average score of 1338.5 (81.12%). The dimension with the intention of benefiting the organization has the highest score of 1379 (83.58%), and the idea promotion dimension has the lowest score of 1252 (75.88%). Idea promotion is an activity carried out by individuals to introduce or promote their ideas to others (Dahiya & Raghuvanshi, 2022). The introduction of ideas can be done directly or through social media. These results indicate that VHS teachers, who are the subjects of this research, still need to improve their ability to come up with new ideas for teaching.

This finding is similar to the results of Sudibjo and Prameswari's (2021) research, which states that the exploration dimension of idea promotion has the lowest score, which is 75%. This may be because teachers feel awkward to introduce their latest ideas to their colleagues because they are both teachers. Fellow teachers feel reluctant to introduce new ideas for fear of offending colleagues or not being judged favorably by the principal. Another possible cause is that teachers are already burdened with administrative routines, so there is no time or opportunity to innovate. However, this still needs further research, both qualitatively and quantitatively. Furthermore, the calculation of hypotheses 1, 2, and 3 using the SPSS 24 application is divided into three stages.

H1: SL has a Positive and Significant Effect on KS

Calculation of hypothesis 1 using SPSS 24 application, the results are presented in Table 2 and Table 3.

Table 2. SL Summary Model to KS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.651[a]	.423	.420	3.608

a. Predictors: (Constant), SL

Table 3. Coefficients SL to KS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.207	2.842		3.239	.001
	SL	.611	.056	.651	10.936	.000

a. Dependent Variable: KS

Based on the calculations in Table 3, it is known that the Sig value is 0.000, and the alpha value is 0.05. When compared between the sig value and alpha, the sig value is smaller than alpha (sig < alpha). This means that SL has a positive and significant influence on KS. The magnitude of the direct relationship between SL and KS is 0.651, which means it is moderate. The contribution of SL to SL, based on Table 2, is 42.3%. The moderate results and the contribution of SL to SL, which is less than 50%, indicate that there are still many other variables that have a relationship and contribute to SL that still need to be examined in this research.

The results of this research enrich the theory of the types of leadership styles that influence SL. The results of other studies show that transformational leadership style has a positive and significant effect on KS (Coun et al., 2019; Sudibjo & Prameswari, 2021). A servant leader with indicators of altruistic calling, wisdom, persuasive mapping, organizational stewardship and emotional healing, humility, and vision and service makes employees or subordinates feel encouraged to collaborate and share knowledge with colleagues (Eva et al., 2019). Leaders who implement SL in the workplace serve, care for, and are close to their subordinates so that employees feel comfortable at work. This feeling of comfort makes individuals in the organization part of the organization so that they share knowledge with fellow organizational members (Liden et al., 2008).

H2: KS has a Positive and Significant Effect on Innovative Work Behavior

Calculation of hypothesis 2 using SPSS 24 application, the results are presented in Table 4 and Table 5.

Table 4. SL Summary Model to KS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.764[a]	.584	.579	3.603

a. Predictors: (Constant), KS, SL

Table 5. Coefficients SL to KS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.797	2.929		1.638	.103
	SL	.568	.073	.515	7.729	.000
	KS	.377	.078	.321	4.817	.000

a. Dependent Variable: IWB

Based on the calculations in Table 5, it is known that the Sig value is 0.000, and the alpha value is 0.05. When compared between the sig value and alpha, the sig value is smaller than alpha (sig < alpha). This means that there is a positive and significant influence of KS on IWB. Based on the calculation results in Table 4, it is known that the magnitude of the direct relationship between KS and IWB is 0.764, which means strong. The contribution of KS to IWB based on Table 4 is 58.4%. The contribution of KS to IWB is greater than the previous hypothesis 1 test results. This result strengthens the results of previous research, which concluded that KS has a positive and significant effect on IWB (Asurakkody & Kim, 2020) by showing that KS contributes to IWB by 34.2%. The difference in the contribution of KS to IWB in this research is very reasonable due to differences in research objects and other factors in conducting research.

Knowledge sharing by teachers is usually done through simple discussions between teachers or in scientific forums such as seminars, workshops, or training. At that time, each teacher exchanges

opinions and thoughts to improve the concept or method being developed (Hou et al., 2009). The concepts or methods that become the topic of discussion are scientific developments, teaching methods, or new technological developments. This will generate new ideas or knowledge that stimulate innovative thinking in teaching. If this is done regularly or becomes a habit, it will create a new behavior that will lead to innovation at work (Elrehail, 2018).

H3: SL Indirectly Affects Innovative Work Behaviour through KS

The magnitude of the indirect effect can be calculated by multiplying the value of the direct effect of the independent variable on the dependent variable by the value of the effect of the intervening variable on the dependent variable. In this research, the independent variable is SL, the intervening variable is KS, and the dependent variable is innovative work behavior. Based on Table 3, it is known that if the magnitude of the SL path coefficient on KS is 0.651 and the magnitude of the KS path coefficient on IWB is 0.515, then the magnitude of the indirect effect of SL on IWB through KS is 0.651 x 0.515 = 0.335.

Meanwhile, the significance of the indirect effect is determined by comparing the coefficient value of the direct effect of SL on innovative work behavior with the indirect effect of SL on innovative work behavior through KS. The test criteria are if the value of the indirect effect is greater than the direct effect, it is significant. Meanwhile, if the indirect effect value is smaller than the direct effect value, it is not significant. The direct effect value of SL on innovative work behavior is 0.615, and the indirect effect value is 0.335. When compared, the value of the direct effect of SL on IWB is greater than the value of the direct effect of SL on IWB through KS (0.515 > 0.335), so it can be interpreted that the indirect effect of SL on IWB through KS is not significant.

This result complements the results of Sudibjo and Prameswari's (2021) research, which states that KS can be an intervening variable for transformational leadership in IWB. Not all leadership styles can be strengthened through KS on IWB. The difference in the results of this research shows that KS has a direct influence on innovative work behavior but cannot be used as an intervening variable. If KS is used as an intervening variable, it must replace the leadership style with transformational leadership. Alternatively, if you still use KS, then the intervening variable can be replaced with a multiculturalism variable that can moderate IWB (Korzilius et al., 2017). The results of research by Akram et al. (2020) showed that KS could also be an intervening variable for organizational justice on IWB with significant results. This is further reinforced if KS is not appropriate if using KS as an intervening variable.

CONCLUSION

Based on the results and discussion, teachers' IWB can be improved by strengthening KS either directly or indirectly mediated by KS. The IWB of VHS teachers is in a good category because the average score is 1338.5 or 81.12%. The lowest score is the dimension of exploring the promotion of ideas, and the highest score is the dimension with the intention of benefiting the organization. This means that school principals and the City or District Education Office should further improve the exploration of promotional ideas and maintain them with the intention of benefiting the organization through training or seminars. KS has a greater contribution than SL to IWB, so to improve VHS teachers' IWB, principals can provide instructions on how to share knowledge with fellow teachers at school. These instructions can be realized in the form of policies or principal regulations. SL does not have a significant indirect effect on IWB through KS. Further research needs to be done using other variables instead of SL as an intervening variable. Principal leadership competence with the SL style also needs to be improved so that teachers have SL and teacher IWB in carrying out the learning process so that it can run more optimally. The limitation of this research is that it was only conducted on VHS teachers, so research can be conducted involving populations from elementary or junior high schools to get different results.

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