



Examining the Influence of Perceived Organizational Support, Personality, and Creativity on Innovation: An Empirical Study at Indonesian Public Elementary Schools.

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ABSTRACT

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Purpose. Teacher innovation plays an important role in improving student learning processes and outcomes. This research aimed to examine a few factors like perceived organizational support (POS), personality and creativity, that influenced teacher innovation. **Methodology.** This research applied a survey method and used questionnaires to collect data. The data was collected from a sample of 155 teachers from 32 public elementary schools in South Tangerang City. The PLS-SEM was used to analyze the direct and indirect influences of POS, personality and creativity on innovation.

Findings. This research findings showed that POS, personality and creativity had significant direct influences on innovation. Personality had a significant indirect influence on innovation through creativity. POS had a non-significant indirect influence on innovation through creativity. **Implications to Research and Practice.** This research recommends that it is necessary to strengthen POS, personality and creativity, to increase teacher innovation.

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Introduction

Indonesia has not accomplished well in PISA (Programme for International Student Assessment), an international examination that evaluates 15-year-old school pupils' scholastic performance in mathematics, science, and reading. The Indonesian students are still below the average score of students in OECD countries. Likewise, in another international exam TIMSS (Trends in International Mathematics and Science Study) Indonesia is categorized in the Low International Benchmark. This indicates the learning outcomes of Indonesian students at the global levels. Owing to these failures to accomplish globally in the fields of mathematics and sciences, Indonesia has never been able to compete with other countries around the world nor has been able to convince her global partners regarding her educational policies related to mathematics and science teaching and learning. However, it is true that countries that participate in tests like PISA and TIMSS can monitor trends in the achievements of their students while also planning changes in curriculum, teaching methodology, and other aspects of education policies that affect learning outcomes.

Teacher innovation is one such factor that can make the learning processes more effective, drive students' learning motivation and improve students' learning outcomes. Since teachers play an important role in the learning process, studies have found that teacher innovation can potentially influence student learning outcomes. For instance, [Kilimo and Cheboi \(2021\)](#) found that teacher creativity and innovation influenced the academic performance of students. [Al Mardhiyyah, Latief, and Masduqi \(2021\)](#) found that the use of innovative instructional media could enhance students' learning motivation. [Omeh and Olelewe \(2021\)](#) found that innovative pedagogy and learning method had influenced on student academic achievement and retention. [Nurhayat et al. \(2023\)](#) found that there was a significant increase in students' achievement when teachers used the innovative learning method. These findings show that teacher innovation can make a great influence on students' learning outcomes in term of their academic performance or achievement.

The current study attempted to carry forward the findings of the previous research by identifying factors that influenced teacher innovation. The study also aimed to strengthen these factors to enhance teacher innovation and find alternative solutions to increase students' learning outcomes. There are many factors that are known to have influenced teacher innovation. (1) [Nakano and Wechsler \(2018\)](#) had found that innovation needed *creativity* in order to bring effective results, for which it is required to design a creative process. [Tri, Nga, and Sipko \(2019\)](#) also [Ijaz and Nawaz \(2022\)](#) also reiterated that employee creativity had a significant influence on their innovative work behavior, which implies on teachers as well. If the element of creativity in teachers is high, it can directly influence teacher innovation. (2) Innovation needs organizational support in order to occur and prove effective in any organization. Studies have found that employees perceived organizational support made a significant influence on their innovative work behavior ([Cardina, Negara, & Irawan, 2022](#); [Masyhuri, Pardiman, & Siswanto, 2021](#); [Sulaiman, Ragheb, & Wahba, 2019](#)). This implies that *perceived organizational support* (POS) can potentially influence teacher innovation. (3) People with strong *personality* tend to have stable, creative and innovative ways in doing their jobs. [Ali \(2019\)](#) found that individual personality had a significant influence on individual innovativeness. [Qaiser Danish et al. \(2019\)](#) and [Li et al. \(2022\)](#) also found that personality factor had a significant influence on innovative work behavior. This implies that teacher personality influenced on teacher innovation.

Thus, the factors that could influence teacher innovation identified from previous studies include *creativity*, *perceived organizational support*, and *personality*. The current research was designed keeping in view these factors, to understand in a more comprehensive manner how these factors *creativity*, *perceived organizational support*, and *personality* directly influenced teacher innovation and subsequently, to study the indirect influences of *perceived organizational support* and *personality* on teacher innovation through *creativity*. The rationale behind this study was to formulate recommendations to increase teacher innovation as an alternative to increase student learning outcomes.

Literature Review and Hypothesis Formulation

This study adopted the theoretical model recommended by Colquitt, Lepine, and Wesson (2019). The model outlined that individual outcomes factors should be categorized as dependent variables, organizational mechanism factors, group mechanism factors and individual characteristics factors as independent variables, and individual mechanism factors as intervening or mediating variables. Complying with these recommendations, the current study designed a framework. Innovation as an individual outcome factor was identified as the dependent variable; POS as the organizational mechanism factor and Personality as the individual characteristics factor were identified as independent variables; while creativity as individual mechanism factor was designed as the intervening variable. Based on the relationships between these variables, the research hypotheses were formulated and presented below.

- *Teacher Innovation*

The term 'innovation' has been ideally defined encompassing any new idea applied to initiate or improve a product, process, or service. Bratton (2021) explained that there are two types of innovation namely product innovation and process innovation. *Product innovation* relates to the introduction of a good product that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics. *Process innovation* refers to the implementation of a new or significantly improved production or delivery process. This includes significant changes in management practices, techniques, equipment and/or software. The concept of *service innovation* is seen as a new process or offering that is put into practice and is adopted and value created for one or more stakeholders (Gustafsson, Snyder, & Witell, 2020). Service innovation creates new form of services to meet customer need and satisfaction as well as to gain value added of the existing products or services.

Vincent-Lancrin et al. (2019) conducted a study at 44 countries (including Indonesia) under the Organization for Economic Cooperation and Development (OECD). They found that most countries that measured innovation in education were concerned to measure the *method* innovation in teaching and learning process tasks such as knowledge acquisition and homework practices, and rote learning practices. Likewise, other studied have also used the term innovative work behavior to describe a behavior that creates innovation (Li

et al., 2022; Masyhuri et al., 2021; Sulaiman et al., 2019). This means that innovative work behavior is an intentional creation, introduction and application of new ideas in order to benefit role performance of individual, group, or organization.

Based on these theoretical propositions, teacher innovation can be synthesized as activities to create new products, processes, services and methods in learning and teaching. There could be four types of innovation, each dealing with a product, process, service and method. *Product Innovation*, therefore, would refer to the introduction of goods or services that is new or significantly improved with respect to its characteristics or intended uses. *Process Innovation* would refer to the implementation of a new or significantly improved production or delivery process. *Service Innovation* would create new form of services to meet customer needs and satisfaction as well as to gain value added to the existing products or services. Finally, *method innovation* would deal with improving or creating a new system and procedure.

- *POS and Innovation*

Previous studies have recognized the significance of POS as the degree to which employees believe that the organization values their contributions and cares about their well-being (Colquitt et al., 2019; Robbins & Judge, 2018). Likewise, Masyhuri et al. (2021) defined POS as the organization's willingness to reward employees for increasing performance, to care about their psychological well-being (socio-emotional needs) and to support employees. Additionally, Cardina et al. (2022) stated that POS has four dimensions: fairness, supervisor support, reward, and working conditions. Fairness refers to how well organization treat their employees. Supervisor support refers to the supervisor's assistance when members of the organization need help in carrying out their work and dealing with stressful situations. Reward refers to the benefits received by employees. Working condition refers to the cooperative and healthy work environment.

These theoretical descriptions can be applied to educational organizations, and POS can refer to the degree to which teachers believe that the institution values their contributions, cares about their well-being (socio-emotional needs), and rewards teachers for increasing performance. The dimensions of POS stated above are applicable in the teachers' context too: fairness shows how well the institution treats teachers; supervisor support shows the teaching supervisor's (e.g. Principal or Dean) assistance when teachers need assistance; reward refers to benefits received by teachers; wellbeing refers to taking care of teachers' psychological wellbeing; and working conditions refer to a school's cooperative and healthy work environment. These dimensions were used to build the study's framework and are presented in Figure 1.

Previous studies vouch for this framework. Wijaya (2018), for instance, found that POS had a direct influence ($\beta = 0.575$ $p < 0.05$) on innovative work behavior; Aslan (2019) found that POS had a direct influence ($\beta = 0.399$ $p < 0.001$) on innovative work behavior; Sulaiman et al. (2019) found that POS had a direct influence ($\beta = 570$ $p < 0.000$) on innovative work behavior. This implies that POS provided by institutions undoubtedly influenced teachers' innovation. Based on the theoretical descriptions and research findings, the first hypothesis of the study runs thus:

1. *There is a direct positive influence of POS on innovation.*

• *Personality and Innovation*

Studies have agreed to the definition of personality as a pattern of relatively permanent traits and unique characteristics that give both consistency and individuality to a person's behavior (Feist, Feist, & Roberts, 2018). Robbins and Judge (2018) describe five personality dimensions based on the Big Five Model of Personality Traits. First, openness at work that refers to how individuals are able to cope with the organizational changes. Second, conscientiousness at work that refers to how individuals drive to learn more in order to develop higher level job knowledge. Third, extraversion at work that refers to how individual perform the job with significant interpersonal interaction. Fourth, agreeableness at work that refers to individual concern to be liked by other people and tend to do better in interpersonally oriented jobs. Fifth, emotional stability at work that refers to how individual adapt to unexpected or changing demands in the workplace.

These theoretical personality dimensions can be applied to educational institutions by accepting that a teacher's personality also comprises such permanent traits and unique characteristics that give both consistency and individuality to his/her behavior. Moreover, the five dimensions of personality namely, openness, conscientiousness, extraversion, agreeableness and emotional stability are also applicable to teachers' work. These dimensions were used to build the study's framework and are presented in Figure 1.

Previous researches are consistent with these dimensions and their application in a teacher's work behavior. Ali (2019), for instance, found that personality dimensions had significant influences on individual innovativeness (the path coefficients of extraversion was $\beta = 0.47$, agreeableness was $\beta = 0.18$, conscientiousness was $\beta = 0.32$, openness was $\beta = 0.65$ - all coefficients were significant at $p < 0.05$). Sari (2020), in another study, found that personality dimension had significant influences on innovation (path coefficients of openness dimension was $\beta = 0.319$, extraversion dimension was $\beta = 0.372$, and conscientiousness dimension was $\beta = 0.197$). This implies that a teachers' personality influenced his/ her innovation in their work performance. Hence, the second hypothesis of the study was formulated:

2. *There is a direct positive influence of personality on innovation.*

• *Creativity and Innovation*

Plucker, Makel, and Qian (2019) identified four dimensions of creativity. First, fluency that refers to the number of responses (in term new ideas) to a given stimulus or problem. Second, flexibility that refers to the number categories of responses to stimuli or problem. Third, originality that refers to the uniqueness of responses to stimuli or problem. Fourth, elaboration that refers to the extension of ideas within a specific category of responses to stimuli or problem. Glaveanu and Kaufman (2019), however, argued that creativity emerged when individuals or group faced problems and they needed to solve them. The problems enforced individuals or group to create ideas or set of actions that expected to

become a solution which matched with the given problem. This means that creativity is linked to problem solving. Nakano and Wechsler (2018) explain the relationship between creativity and innovation. Creativity requires something appropriate, an idea, insight or solution that can solve a problem, while innovations require that this idea be implemented in the sense of making some progress to solve the problem. Creativity and innovation have different constructs. Moreover, creativity refers to create a new idea as the first stage of a problem-solving process, and innovation refers to the implementation of the idea and its acceptance by the organization or customer. Innovation requires creativity to occur, as it is impossible to generate something new and valuable (innovation) for the organization and customer without prior creative process.

The above theoretical descriptions can be applied to educational institutions where a teacher with his/her creativity can create new ideas or sets of actions as the first stage of finding solutions in the problem-solving process. The five dimensions of creativity: fluency, flexibility, originality, elaboration, and problem solving are equally applicable in the context of a teacher's innovation. These dimensions were used to build the study's framework and are presented in Figure 1.

This relationship between creativity and innovation is evident in previous research studies. For instance, Tri et al. (2019) found that employees' creativity had a direct significant influence ($\beta = 0.52, p = 0.000$) on their innovative work behavior. Ijaz and Nawaz (2022) found a similar finding that employees' creativity had a direct significant influence ($\beta = 0.576, p < 0.01$) on their innovative work behavior. This implies that teacher creativity as the first stage of finding solutions in the problem-solving process have influenced on teacher innovation in implementing the ideas to solve problem.

Based on these research findings the third hypothesis of the study was formulated"

3. *There is a direct positive influence of creativity on innovation.*

- *POS and Creativity*

In educational institutions, POS refers to the degree to which teachers believe that the school values their contributions, cares about their well-being (socio-emotional needs), and rewards teachers for increasing performance. A teacher's creativity refers to create new ideas or set of actions as the first stage of finding solutions in the problem-solving process. This means that a strong degree of POS felt by teachers will encourage them to exert creativity in the problem-solving process. Ijaz and Nawaz (2022) found that POS had a direct and significant influence ($\beta = 0.474, p < 0.01$) on creativity. Yang and Zhou (2022) found that there was a significant relationship ($r = 0.684, p < 0.01$) between POS and Creativity. This implies that POS felt by teachers have influenced their creativity. Based on these findings, the fourth hypothesis of the study was formulated:

4. *There is a direct positive influence of pos on creativity.*

- *Personality and Creativity*

In the context of educational institutions, a teacher's personality refers to a pattern of relatively permanent traits and unique characteristics that is seen in consistency and

individuality in a teacher's behavior. Teachers with strong personality have characteristics that lead and drive them to be fluent and flexible in elaborating and creating their own ideas to solve problem. This means that teacher personality traits (openness, conscientiousness, extraversion, agreeableness and emotional stability of teachers at work) can encourage them to exert their creativity in finding solutions to a given problem. These dimensions were used to build the study's framework and are presented in Figure 1.

Research by Tsai (2016) found that personality had a direct significant influence ($\beta = 0.85$, $p < 0.05$) on work creativity. Jirásek and Sudzina (2020) found that there was a relationship between certain personality traits with creativity. The extraversion and openness traits had significant relationship with creativity (correlation coefficients were $r = 0.270$ and $r = 0.597$ at $p < 0.01$ respectively). Shaw and Yu (2023) found that extraversion, conscientiousness and openness traits had significant influences on creativity (path coefficients were $\beta = 0.25$, $\beta = 0.23$ and $\beta = 0.21$ at $p < 0.01$ respectively). This implies that teachers' personality traits make an influence on teachers, who exert their creativity in finding solutions to a given problem.

Based on these research findings mentioned, the fifth hypothesis of the study was formulated:

5. *There is a direct positive influence of personality on creativity.*

- *POS, Creativity and Innovation*

Ijaz and Nawaz (2022) have found POS making a direct influence on creativity ($\beta = 0.474$, $p < 0.01$); Yang and Zhou (2022) found POS having a significant relationship with creativity ($r = 0.684$, $p < 0.01$); Tri et al. (2019) and Ijaz and Nawaz (2022) found that creativity had significant influences on innovation. These studies make evident that there exist some relationships between POS and creativity and between creativity and innovation. In other words, creativity can act as a link between POS and innovation. Based on this premise, the sixth hypothesis of the study was formulated:

6. *There is an indirect influence of POS on innovation through creativity.*

- *Personality, Creativity and Innovation*

Tsai (2016) found that personality had a direct significant influence on work creativity ($\beta = 0.85$, $p < 0.05$). Jirásek and Sudzina (2020) and Shaw and Yu (2023) found that certain personality traits had significant relationship with creativity. Tri et al. (2019) and Ijaz and Nawaz (2022), found that creativity had a direct and significant influence on innovative work behavior. Therefore, this can be assumed that there are links between personality and creativity and between creativity and innovation. This suggests that creativity could be a link between personality and innovation. Based on this premise, the seventh hypothesis of the study was formulated:

7. *There is an indirect influence of personality on innovation through creativity.*

Research Framework

The hypotheses formulation of the study are presented in the research framework presented in Figure 1:

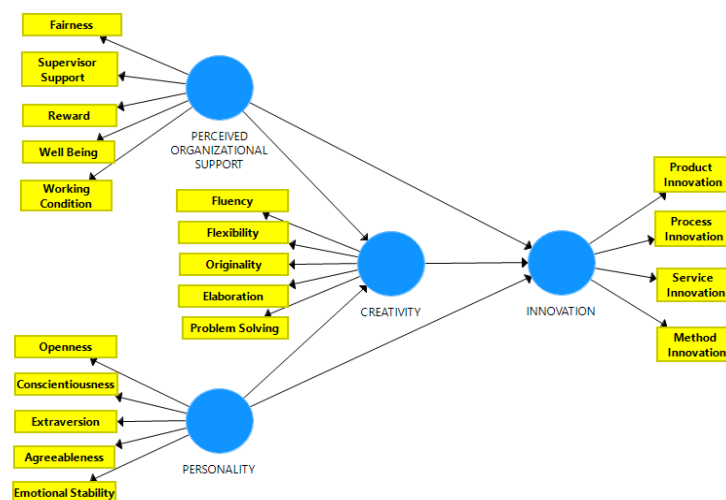


Figure 1: The Research Framework.

The Research Framework describes direct influences of POS on innovation, personality on innovation, creativity on innovation, POS on creativity, and personality on creativity. There are also indirect influences of POS on innovation through creativity; and indirect influence of personality on innovation through creativity. Based on these relationships, the following research hypotheses were formulated in the study:

1. There is a direct positive influence of POS on innovation.
2. There is a direct positive influence of personality on innovation.
3. There is a direct positive influence of creativity on innovation.
4. There is a direct positive influence of POS on creativity.
5. There is a direct positive influence of personality on creativity.
6. There is an indirect positive influence of POS on innovation through creativity.
7. There is an indirect influence of personality on innovation through creativity.

Research Methodology

• Research design

The study utilized a quantitative research design through survey method. Questionnaires were used to collect data from a sample of elementary public-school teachers of South Tangerang City, Indonesia.

• Population and Sample

The population of this research comprised 253 teachers of 32 public elementary schools of South Tangerang City, Indonesia. A sample of 155 teachers was identified through the Slovin Formula at a significance level of 0.05. The sample from each school was taken by the proportional random sampling technique.

• Research Instruments

Four questionnaires were used as instruments to collect data on POS, personality, creativity and innovation. All items of each questionnaire were checked for validity coefficient (i.e., the correlation of item scores with total scores of each variable) using Pearson's Product-Moment Correlation formula at 0.05 significant level (Nolan & Heinzen, 2012). Some items were dropped, and only the valid items were used in this research. Table 1 summarizes the method of questionnaire's item analysis.

Table 1

Questionnaire's Item Analysis Results

No Questionnaire	No. of Initial Items	No. of Valid Items (after validity test)	No. of Non-valid Items (after validity test)
1 Innovation	40	33	7
2 POS	40	30	10
3 Personality	40	31	9
4 Creativity	40	31	9

• Data Analysis

The research data was analyzed by applying using Partial Least Square – Structural Equation Modeling (PLS-SEM) procedures (Hair et al., 2017). The coefficients of direct and indirect influence among variables were analyzed by PLS-SEM to determine the direct and indirect influences of POS, personality and creativity on innovation.

Results and Findings

• Descriptive Statistics

Based on the data collected, the mean score and standard deviation (SD) of each variable were calculated. The coefficient correlations between variables are presented in Table 2.

Table 2

Mean, SD and Coefficient Correlations between Variables

No	Variable	Mean	SD	1	2	3	4
1	POS	84.29	15.089	-			
2	Personality	116.43	13.006	0.368**	-		
3	Creativity	60.59	15.586	0.204*	0.846**	-	
4	Innovation	105.21	10.005	0.421**	0.471**	0.318**	-

Note: Coefficient of Correlation are significant at **p<0.01, *p<0.05

The calculation results reveal a significant coefficient of correlations between variables. This means that questionnaire of each variable had been applied to the same research sample and the research framework can be applied to examine the research hypotheses.

- *Reliability and Average Variance Extracted (AVE)*

The reliability coefficient reflects the consistency of each questionnaire for measuring each research variable. This is evident in the AVE reflecting the average loading factor of each variable in [Table 3](#).

Table 3

Reliability and AVE

No	Variable	Cronbach's Alpha	Rho Alpha	Composite Reliability	AVE
1	POS	0.841	0.873	0.884	0.606
2	Personality	0.838	0.888	0.887	0.619
3	Creativity	0.777	0.824	0.845	0.528
4	Innovation	0.752	0.844	0.841	0.578

These results of reliability coefficients and AVE calculations ([Table 3](#)) indicate that each instrument of the research variable had high reliability coefficients (more than 0.700) and each variable had high loading factor (AVE more than 0.500) ([Hair et al., 2017](#)). This means that these questionnaires had a high consistency in measuring each variable and had a high level validity in measuring the construct of each variable.

- *Path Coefficients of Direct and Indirect Influence.*

The path coefficients of the direct and indirect influences of POS, personality and creativity on innovation are shown in [Figure 2](#).

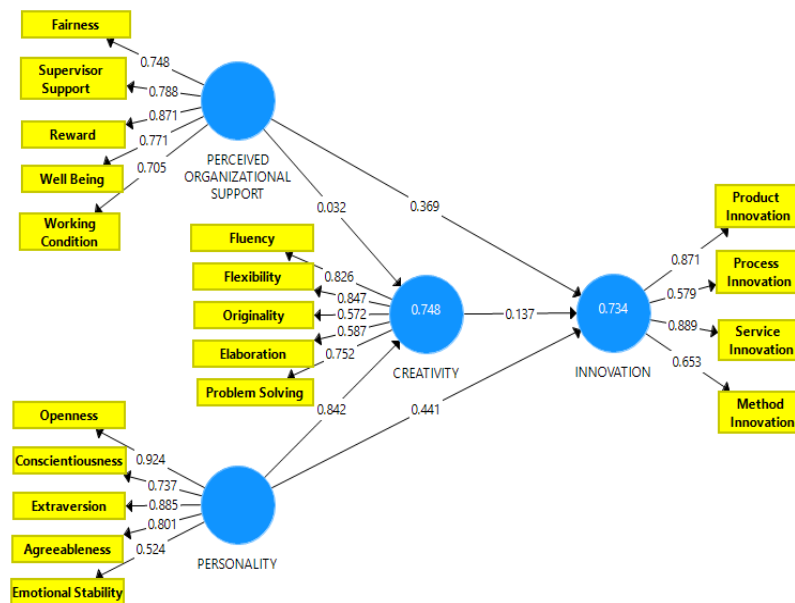


Figure 2: *The Path Coefficients of Direct and Indirect Influence.*

Figure 2 exhibits the path coefficients (β) of direct influence of: POS on innovation ($\beta = 0.369$), personality on innovation ($\beta = 0.441$), creativity on innovation ($\beta = 0.137$), POS on creativity ($\beta = 0.032$), and personality on creativity ($\beta = 0.842$). The significant level (p-value) of direct influences is presented in Table 4.

Table 4

The Path Coefficients of Direct Influence

No	Direct Influence	Original Sample	Sample Mean	Standard Deviation	t Statistics	p-value
1	POS on innovation	0.369	0.375	0.105	3.519	0.000***
2	Personality on innovation	0.441	0.434	0.119	3.694	0.000***
3	Creativity on innovation	0.137	0.139	0.102	2.351	0.037*
4	POS on creativity	0.032	0.034	0.072	0.447	0.665 ns
5	Personality on creativity	0.842	0.842	0.059	14.180	0.000***

Notes: ***significant at $p=0.000$, *significant at $p<0.05$, ns = non-significant.

The path coefficient of indirect influences and its significant level (p-value) are presented in Table 5.

Table 5

The Path Coefficients of Indirect Influence

No	Indirect Influence	Original Sample	Sample Mean	Standard Deviation	t Statistics	p-value
1	POS on innovation through creativity	0.004	0.003	0.012	0.384	0.701 ns
2	Personality on innovation through creativity	0.116	0.119	0.089	2.189	0.048*

Notes: *significant at $p<0.05$, ns = non-significant.

- *The Results of Hypotheses Examination.*

The results of hypothesis examination are summarized in Table 6.

Table 6

Summary of the Hypotheses Examination Results

No	Hypothesis	Path Coefficient (β)	p-value	Result
1	Direct positive influence of POS on innovation	0.369	0.000***	Accepted
2	Direct positive influence of personality on innovation	0.441	0.000***	Accepted
3	Direct positive influence of creativity on innovation	0.137	0.037*	Accepted
4	Direct positive influence of POS on creativity	0.032	0.665 ns	Rejected
5	Direct positive influence of personality on creativity	0.842	0.000***	Accepted
6	Indirect positive influence of POS on innovation through creativity	0.004	0.701 ns	Rejected
7	Indirect influence of personality on innovation through creativity	0.116	0.048*	Accepted

Notes: ***significant at $p=0.000$, *significant at $p<0.05$, ns = non-significant.

Discussion

The study made several revelations regarding the relationship between variables of the study. These revelations are the results of hypothesis testing and deriving results. The first hypothesis stated that there is a direct positive influence of POS on innovation, which was accepted. This finding is supported by [Wijaya \(2018\)](#), [Aslan \(2019\)](#), and [Sulaiman et al. \(2019\)](#). The POS is the degree to which teachers believed that the school valued their contributions, cared about their well-being, and rewarded teachers for increasing performance, encouraged their innovation in creating new products, processes, services and methods in the learning and teaching activities. For this reason, the POS was found having a direct positive influence on innovation.

The second hypothesis stated that there was a direct positive influence of personality on innovation, which was also accepted. This finding is consistent with the findings of [Ali \(2019\)](#), and [Sari \(2020\)](#). It was evident that teachers' personality traits (openness, conscientiousness, extraversion, agreeableness and emotional stability) provided consistency and individuality to their behavior at work, encouraged their innovation in creating new products, processes, services and methods in learning and teaching activities. Hence, the teachers' personality traits were found influential on their innovation.

The third hypothesis stated that there is a direct positive influence of creativity on innovation, which was accepted. This finding is in line with the findings of [Tri et al. \(2019\)](#) and [Ijaz and Nawaz \(2022\)](#). The study showed that creativity creates ideas, insights or solutions that can solve a problem, while innovations require that this idea to be implemented in the sense of making some progress to solve the problem. Innovation requires creativity to occur. This means that teachers' creativity is required to create and implement the innovation.

The fourth hypothesis stated that there is a direct positive influence of POS on creativity, which was rejected. This research finding is not in line with any similar findings ([Ijaz & Nawaz, 2022](#); [Yang & Zhou, 2022](#)). Contrary to previous researches, this study implied that the degree of POS felt by teachers had not enough to encourage their effort to create ideas, insights or solutions that can solve a given problem. This means that POS had a non-significant influence on teacher creativity.

The fifth hypothesis stated that there is a direct positive influence of personality on creativity, which was accepted. The view is supported by research findings of [Tsai \(2016\)](#), [Jirásek and Sudzina \(2020\)](#) and [Shaw and Yu \(2023\)](#). It is therefore agreed that teachers' personality traits (openness, conscientiousness, extraversion, agreeableness and emotional stability) give both consistency and individuality to their behavior at work and encouraged their creativity in terms of creating ideas, insights or solutions to solve a given problem. This means that teachers' personality traits had a significant influence on their creativity.

The sixth hypothesis stated that there is an indirect positive influence of POS on innovation through creativity, which was rejected. This research found that POS had a non-significant influence on teacher creativity. This implied that creativity was not a link between POS with creativity. This means that creativity had not been effectively become an intervening variable that mediated the influence of POS on innovation.

The seventh hypothesis was however accepted which stated that there is an indirect positive influence of personality on innovation through creativity. This finding is in line with Jirásek and Sudzina (2020), and Shaw and Yu (2023), who found that personality had a significant relationship with creativity. Tri et al. (2019) and Ijaz and Nawaz (2022) also found that creativity had a direct significant influence on innovative work behavior. This means that creativity is a link between personality and innovation. Even so the direct influence of personality on innovation ($\beta = 0.441$) was stronger than the indirect positive influence of personality on innovation through creativity ($\beta = 0.116$). This means that creativity had not effectively become an intervening variable that mediated the influence of personality on innovation.

Conclusion and Recommendations

There are several conclusions of the study. Right at the outset, it was revealed that there is a direct positive influence of POS on innovation, accepting the first hypothesis. This implies that improving teachers' POS will increase their innovation. It is recommended that schools develop a regular program to improve POS by increasing values of teachers' contributions, cared about their well-being, and rewarded them for increasing performance. Improving POS will encourage teachers to create more innovations in the learning processes. Another revelation of the study showed that there is a direct positive influence of personality on innovation, as stated in second hypothesis which was also accepted. This implies that strengthening teachers' personality will increase their innovation. Teachers' personality can be developed by strengthening their personality traits (openness, conscientiousness, extraversion, agreeableness and emotional stability). It is recommended that school organizations conduct a personality development training program to strengthen teachers' personality in order to increase their innovation.

The study findings also showed that there is a direct positive influence of creativity on innovation, as was stated in third hypothesis which was accepted. This implies that increasing teachers' creativity will increase their innovation. Creativity can be increased by improving the fluency, flexibility, originality, elaboration, and problem-solving dimensions. It is recommended that schools conduct creativity training programs to increase teachers' creativity in order to increase their innovation. Next, the study also found that there is a direct positive influence of POS on creativity but the influence was proved non-significant. This means that the actual POS felt by teachers have not enough to influence on their creativity yet. This implies that the organizations need more significant efforts to improve each POS dimensions (fairness, supervisor support, reward, wellbeing and working condition) in order increase teachers' creativity. It is recommended that schools conduct an intensive program to improve teachers' POS in order to increase teachers' creativity and innovation.

The study also found that there is a direct positive influence of personality on creativity, the fifth hypothesis which was accepted. This implies that strengthening teachers' personality will increase teachers' creativity. It is recommended that school organizations conduct a personality development training program to strengthen teachers' personality in order to increase teachers' creativity. the study also revealed that there is an indirect positive influence of POS on innovation through creativity, but the indirect influence was found non-significant. This means that creativity is not strong enough as intervening

variable to mediate the influence of POS on innovation. This implies that the organizations need more significant efforts to improve each POS dimensions (fairness, supervisor support, reward, wellbeing and working condition) in order increase teachers' creativity and innovation. It is recommended that schools conduct a regular program to improve teachers' POS in order to increase teachers' creativity and innovation. Finally, the study revealed that there is an indirect positive influence of personality on innovation through creativity, the seventh hypothesis which was accepted. This means that creativity was an intervening variable to mediate the influence of personality on innovation. This implies that strengthening teachers' personality will increase teachers' creativity in order to increase teachers' innovation. It is recommended that schools conduct a personality development training program and a creativity training program to increase teachers' innovation. The objectives of all the recommendations mentioned above focus on the program to increase teacher innovation. Increasing teacher innovation becomes an alternative solution to improve student learning outcomes.

This research faced a few limitations: the first was that it focused only on studying the influence of POS, personality and creativity on teacher innovation. There could be many other factors that have influences on teacher innovation as mentioned in the integrative model of organizational behavior. Secondly, this research did not entertain the application of information and communication technology (ICT) in educational organizations, which makes significant contributions to improve the learning processes. It is necessary to conduct future researches on teacher creativity that includes ICT factor beside the organizational behavior factors.

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