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## Model for Strengthening Teachers' Innovative Work Behavior in Facing the Challenges of the Society 5.0 Era in Indonesia

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This research aimed to analyze model for strengthening innovative work behavior of North Sumatra teachers in facing the challenges of Society 5.0 era. Quantitative and SEM methods were adopted with Partial Least Squares Modeling (PLS-SEM) through transformational leadership, creative self-efficacy, proactive personality, and organizational support. In this context, new opportunities were obtained for a deeper understanding of the complex relationships between key variables influencing innovative work behavior model of teachers. Additionally, the research sample comprised 200 teachers in North Sumatra Province, Indonesia. The data analysis used the SEM method with PLS-SEM. The results showed that transformational leadership, creative self-efficacy, proactive personality, and organizational support had a positive and significant effect on innovative work behavior. Concerning the implications, innovative work behavior of teachers served as a critical factor in ensuring the quality of education was adaptive and relevant to the demands of Society 5.0 era. Policymakers could use the result to design more effective training and development programs, focusing on transformational leadership, strengthening creative self-efficacy, and providing better organizational support.

**Keywords:** transformational leadership, creative self-efficacy, proactive personality, organizational support, innovative work behavior.

**Relationships and Activities:** none.

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## Модель укрепления инновационной деятельности педагогов в условиях преодоления трудностей эпохи Общества 5.0 в Индонезии

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Целью данного исследования был анализ модели укрепления инновационной деятельности педагогов Северной Суматры в условиях преодоления трудностей эпохи "Общества 5.0". Количественные методы и моделирование структурными уравнениями (Structural Equation Modeling, SEM) были приняты с использованием моделирования частично наименьших квадратов (Partial Least Squares SEM, PLS-SEM) посредством трансформационного лидерства, творческой самозффективности, проактивной личности и организационной поддержки. В этом контексте были получены новые возможности для более глубокого понимания сложных взаимосвязей между ключевыми переменными, влияющими на модель инновационного поведения педагогов. Кроме того, в выборку исследования вошли 200 учителей в провинции Северная Суматра, Индонезия. При анализе данных использовался метод PLS-SEM. Результаты показали, что трансформационное лидерство, творческая самозффектив-

ность, проактивная личность и организационная поддержка оказали положительное и значительное влияние на инновационную деятельность. Что касается последствий, инновационная рабочая деятельность педагогов послужила критическим фактором в обеспечении качества образования, адаптивного и соответствующего требованиям концепции Общества 5.0. Политические системы могли бы использовать эти данные для разработки более эффективных программ обучения и развития, сосредоточившись на трансформационном лидерстве, укреплении творческой самозффективности и предоставлении лучшей организационной поддержки.

**Ключевые слова:** трансформационное лидерство, творческая самозффективность, проактивная личность, организационная поддержка, инновационная трудовая деятельность.

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## Introduction

In facing the Society 5.0 era marked by digital transformation and major paradigm changes in various sectors of life including education, the role of teachers is becoming increasingly crucial [1, 2]. This era is characterized by deep integration between digital technology and human life, demanding more adaptive, creative and technology-based education. In North Sumatra, where the education system is undergoing significant changes, expanding teachers' horizons, creativity and adaptability is very important [3]. However, improving teacher quality in innovation and adaptation to technology has yet to be fully realized. Innovative work behavior encourages performance and develops organizational competence to achieve set targets. As an aspect of organizational behavior, innovative work behavior results from interactions between individuals as workers, groups as a work process, and organizational processes as management practices commonly carried out in organizations [4, 5]. Teachers' innovative work behavior in facing the challenges of the Society 5.0 era needs to be understood in more depth through the lens of several key factors, including transformational leadership, creative self-efficacy, proactive personality, and organizational support [6, 7].

Transformational leadership, including education, has been widely recognized as an effective approach to improving organizational performance [8, 9]. The problem with this research is that educational institutions' leadership practices need to be revised to encourage teacher innovation and creativity. This can hinder teachers' ability to provide relevant and meaningful learning for students. However, research exploring how transformational leadership influences teachers' innovative work behavior in Indonesia still needs to be completed [10, 11]. This gap is especially visible in the educational context in the Society 5.0 era, where technology and digitalization have become very important. While many studies focus on the general impact of transformational leadership on performance and innovation, research directly linking this leadership style to teachers' innovative behavior is rare [12, 13]. This raises the need for more in-depth and contextual research that examines how transformational leadership can be implemented effectively to foster innovation in teaching.

Creative self-efficacy, or self-confidence in generating creative ideas, has contributed to innovative behavior in various work contexts [14, 15]. However, research examining the influence of creative self-efficacy on teachers' innovative behavior, especially in Indonesia, still needs to be completed. Most existing studies focus on the indus-

trial or business sector [5, 16]. The next problem is that most teachers need more creative self-confidence in facing the demands of change and innovation in education. There is a gap between teachers' creative abilities and the need to develop innovative and relevant learning strategies for students in the Society 5.0 era. At the same time, research that explores how creative self-efficacy influences innovation in an educational context, especially in the digital era is still rare [17, 18]. In addition, the lack of research discussing interventions or strategies to increase creative self-efficacy among teachers further widens this gap. Therefore, a more comprehensive study is needed to understand the role of creative self-efficacy in facilitating teaching innovation in the Society 5.0 era.

Proactive personality is a psychological factor that can influence a person's innovative behavior in the workplace [19, 20]. The next research problem is that the low level of proactive personality possessed by most teachers can hinder their ability to take the initiative in creating positive changes in their learning practices. This lack of encouragement and support can also reduce teacher motivation and commitment to improving the quality of education in North Sumatra Province. However, research on the relationship between proactive personality and innovative work behavior of teachers in Indonesia still needs to be completed. Many studies in other sectors show that individuals with proactive personalities tend to be more innovative [19, 21]. However, how does this apply in the educational context, especially in the Society 5.0 era? Existing research often needs to consider the unique characteristics of the teaching profession and educational environment, which may influence how a proactive personality translates into innovative behavior [22, 23]. Thus, there is a need for more focused research that can fill this gap and provide new insights into how to develop and support proactive personalities among teachers.

In addition, organizational support is important in encouraging innovative behavior in the workplace [24, 25], but its specific role in supporting innovative work behavior for teachers in Indonesia has yet to be widely researched. Organization support is an important aspect that an organization must have because with this aspect an organization can run productively. Perceived organizational support is also directly related to innovative work behavior [26, 27]. This shows that when employees feel that the organization shows care, offers non-judgmental and honest feedback about employee work results and supports employee actions, the tendency to provide creative ideas, provide opportunities,

solve current and future problems and incorporate ideas employee creativity into action and innovation for the company will increase [7, 28]. The current problem is the need for more organizational support in providing the resources, training and guidance needed to improve teacher performance. Most existing research focuses on organizational support in general performance without paying attention to how this support may influence teachers' propensity to innovate, especially in facing the challenges presented by the Society 5.0 era.

In facing rapid digital transformation and paradigm changes in education, the role of teachers becomes increasingly crucial. Teachers, as the main agents in the education system, need to have a high level of proficiency in innovation and application of technology to provide relevant learning experiences for students. However, improving teacher quality in terms of innovation and adaptation to technology has yet to be fully realized in North Sumatra Province. Therefore, an in-depth understanding of the key factors influencing teachers' innovative work behavior is very important. This research aims to analyze a model for strengthening the innovative work behavior of teachers in North Sumatra in facing the challenges of the society 5.0 era with a quantitative approach through the variables transformational leadership, creative self-efficacy, proactive personality, and organizational support. By developing a comprehensive model, it is hoped that this research can make a significant contribution to improving the quality of education in Indonesia, especially in facing the challenges and opportunities that arise in the Society 5.0 era, as well as guiding policy makers and educational institutions in creating an environment that supports teacher innovation.

## Hypothesis Development

### Transformational Leadership dan Innovative Work Behaviour

The results of previous research show that transformational leadership has a positive and significant influence on innovative work behavior in various organizational contexts [8, 10, 11]. In the context of innovative work behavior, the presence of transformational leaders can increase teachers' levels of motivation, self-confidence, and creativity [4, 29]. Empirical studies conducted in various service industry fields confirm that leaders who apply a transformational approach tend to encourage higher levels of innovation among team members or subordinates [12, 13]. Transformational leadership, with a focus on inspirational and motivating influences, is believed to have a significant impact in stimulating innovative work behavior [30-32]. Therefore, based on several previous research results, we can develop a hypothesis:

H1. Transformational leadership influences innovative work behavior.

### Creative Self-Efficacy dan Innovative Work Behaviour

Empirical studies show that individuals with high levels of creative self-efficacy tend to show more innova-

tive work behavior [14, 33]. High self-confidence in creative abilities allows individuals to overcome the fear of failure, face challenges positively, and try new problem-solving approaches [11, 15]. Longitudinal research shows that individuals with high creative self-efficacy tend to be more involved in exploratory activities and create innovative solutions to problems faced in the workplace [28, 34]. The results of research [5, 29, 35], show that creative self-efficacy has a significant influence on innovative work behavior in various organizational contexts. Therefore, the hypothesis developed in this research:

H2. Creative self-efficacy influences innovative work behavior.

### Proactive Personality dan Innovative Work Behaviour

Empirical and theoretical studies have consistently found that individuals with a proactive personality tend to show higher levels of innovation in their work behavior [1, 16]. A proactive personality, which is characterized by a proactive attitude, initiative, and a desire to take control of the work environment [6], is a strong predictor for individuals to create new ideas, take measured risks, and seek opportunities to improve organizational performance [19, 21]. Longitudinal research shows that individuals with a proactive personality tend to be more active in identifying problems, looking for alternative solutions, and implementing changes needed to increase work efficiency and effectiveness [19, 20, 22]. Therefore, this research develops a hypothesis:

H3. Proactive personality influences innovative work behavior.

### Organizational Support dan Innovative Work Behaviour

Empirical studies confirm that organizations that provide high levels of support to their employees tend to have higher levels of innovation [24, 28]. Organizational support creates an environment where employees feel supported and appreciated, so they are more motivated to contribute creatively and innovatively [25, 26]. Longitudinal research shows that organizations that strongly support new ideas and encourage interdepartmental collaboration have higher levels of innovation than less supportive organizations [27, 36]. Literature reviews regarding the influence of organizational support on innovative work behavior highlight the important role of organizational support in encouraging employees to behave innovatively in the workplace [7, 37, 38]. Therefore, based on several previous research results, we can develop a hypothesis:

H4. Organizational support influences innovative work behavior.

### Theoretical Framework

Theoretical framework examines model for strengthening innovative work behavior in facing the challenges of Society 5.0 era. In Indonesia, Society 5.0 is characterized by integrating advanced technology in various aspects of life and requires teachers who can innovate in the learning process to meet dynamic educa-

tional needs [1, 3, 36]. In this context, transformational leadership is a key factor enabling teachers to be more innovative by creating a vision that inspires, motivates, and supports personal and professional development. Transformational leadership can build a school climate that supports creativity and innovation to produce new solutions relevant to educational challenges in this digital era. The influence of creative self-efficacy, proactive personality, and organizational support is also crucial in strengthening innovative work behavior [7, 8, 28, 39]. Creative self-efficacy, or belief in creative abilities, can increase the ability to create innovative learning methods. Meanwhile, a proactive personality helps teachers to improve the quality of learning, even though different challenges or limitations are faced. Organizational support provides space and opportunities for teachers to innovate continuously in the form of resources, policies, or a conducive work environment. The combination of transformational leadership, creative self-efficacy, proactive personality, and organizational support is expected to create an ecosystem that supports innovative work behavior, as explained in Figure 1.

### Material and Methods

A quantitative research design was used with a survey method to enable systematic and quantitative data collection on innovative work behavior of teachers. The location of this research is focused on Simalungun Regency and Pematangsiantar Municipality as a representation of urban and rural areas in North Sumatra Province, Indonesia. The selection is based on the diverse characteristics of the educational environment in the region to provide broader insight into the challenges and factors influencing teachers' innovative work behavior in facing Society 5.0 era. The population comprises teachers at elementary to upper secondary schools, specifically those in Simalungun Regency and Pematangsiantar Municipality. The inclusion criteria include teachers actively teaching and with work experience relevant to the research. Meanwhile, convenience sampling method was used due to time constraints<sup>1</sup>. According to Hair JF, et al. [40], when the population is unknown, the sample size can be determined from 5-10 times the number of indicators used in a single construct. This research used 20 indicators from 5 existing variable dimensions since the number of samples obtained was  $20 \times 10 = 200$ . Data collection used the observation method by observing directly in the field. Documentation came from secondary data in the form of documents and structured interviews using questionnaire instruments. In addition, the data analysis used the SEM method with Partial Least Squares Modeling

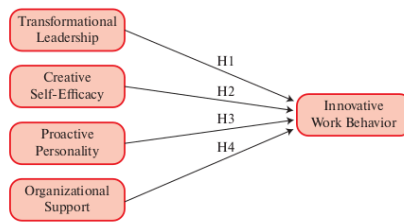


Figure 1 Conceptual framework.

**Table 1**  
Operational Definition of Research Variables

Variable	Code	Items	Reference Source
Transformational Leadership	TL1	Idealized Influence	[8, 9]
	TL2	Individual Considerations	
	TL3	Intellectual Stimulation	
	TL4	Inspirational Motivation	
Creative Self-Efficacy	CSE1	Creative Ability Beliefs	[14, 15]
	CSE2	Adaptive Beliefs	
	CSE3	Confidence Overcomes Obstacles	
	CSE4	Confidence in Accepting Criticism	
Proactive Personality	PP1	Initial Action	[6, 21]
	PP2	Initiative Leadership	
	PP3	Flexibility	
	PP4	Independence	
Organizational Support	OS1	Fairness	[7, 28]
	OS2	Supervisor support	
	OS3	Organizational rewards	
	OS4	Favorable job conditions	
Innovative Work Behavior	IWB1	Idea Generation	[12, 20]
	IWB2	Innovation Implementation	
	IWB3	Risk Taking	
	IWB4	Collaboration	

(PLS-SEM). A SEM method based on PLS was carried out for hypothesis testing. SEM is a multivariate data analysis consisting of factor and regression analyses to evaluate the relationship between variables in model. In this context, the variable is the relationship between indicators and constructs known as model assessment measurement [40]. The relationship between variables can be tested simultaneously, in line with the description of multivariate data analysis [41]. The primary function is to develop theory in exploratory research by explaining variance in dependent or endogenous variables. Furthermore, the operational definition of research variables table (Table 1) aims to provide a clear and detailed explanation of the variables used in this research. This table functions to define each variable operational, making the measurement and analysis process more

<sup>1</sup> Creswell, J. W. (2014). RESEARCH DESIGN: Qualitative, Quantitative, and mixed methods approaches. In Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH (2<sup>nd</sup> ed.).



**Table 2**

Descriptions of Research Respondents			
Categories	Details	Amount	Percentage (%)
Gender	Men	84	42
	Woman	116	58
Age (years)	20-29	35	17.5
	30-39	75	37.5
	40-49	63	31.5
	50-59	27	13.5
Level of education	Diploma	32	16
	Bachelor	128	64
	Masters	40	20
Teaching experience (years)	1-5	22	11
	6-10	40	20
	11-20	60	30
	>20	78	39

accessible. In research focusing on teachers' innovative work behavior in the Society 5.0 era, variables such as transformational leadership, creative self-efficacy, proactive personality, and organizational support will be defined concretely with specific indicators. With this table, researchers and readers can understand how each variable is applied and measured in the research context and maintain consistency in the interpretation of data and research results.

### Results

The purpose of Descriptions of Research Respondents is to describe the characteristics of research respondents comprehensively. In the context of this research, the respondents are teachers who play an essential role in facing the challenges of the Society 5.0 era, especially in the North Sumatra region. This description includes gender, age, educational background, and teaching experience while being a teacher. Through the respondents' descriptions, a more profound understanding can be obtained regarding the variations in factors such as transformational leadership, creative self-efficacy, proactive personality, and organizational support that influence teachers' innovative work behavior in facing educational transformation (Table 2).

Respondents consisted of 200 teachers, with a balanced gender composition, namely 42% men and 58% women. Most of the respondents were aged between 30-39 years (37.5%), followed by 40-49 (31.5%), 20-29 (5%) and 50-59 years (13.5%). In terms of education, the majority have a Bachelor's degree (64%), followed by those with a Master's degree (20%) and a Diploma (16%). Teaching experience varied, with 39%, 20%, and 11% having more than 20, 11-20, 6-10, and 1-5 years of experience, respectively. This demographic shows diversity covering various age groups, education levels, and teaching experience, which provides a comprehensive insight into innovative work behavior in facing the challenges of Society 5.0 era.

### Outer Model Measurement

The outer model results table aims to present the results of measuring the validity and reliability of research constructs. This table functions as a tool to evaluate the extent to which the indicators used in research can accurately reflect or measure latent variables. In the context of this research, the table will display values such as factor loading, composite reliability, and average variance extracted (AVE) for each construct, including transformational leadership, creative self-efficacy, proactive personality, and organizational support. The results of the data were processed using SmartPLS version 3.2.9 application with processing guidelines. The validity and reliability tests were conducted to measure the outer model. The loading factor determines a convergent validity test and AVE with the condition that the loading factor is above 0.7 and the AVE value is 0.5. Model reliability test is seen from the value of Cronbach's alpha

**Table 3**

Outer Model Results								
Construct/item	Code	Outer Loadings	Cronbach's alpha	CR	AVE			
<b>Transformational Leadership</b>			0.784	0.861	0.609			
Idealized Influence	TL1	0.755	0.784	0.861	0.609			
Individual Considerations	TL2	0.808						
Intellectual Stimulation	TL3	0.856						
Inspirational Motivation	TL4	0.705	0.859	0.905	0.705			
<b>Creative Self-Efficacy</b>								
Creative Ability Beliefs	CSE1	0.883						
Adaptive Beliefs	CSE2	0.860						
Confidence Overcomes Obstacles	CSE3	0.862	0.878	0.916	0.733			
Confidence in Accepting Criticism	CSE4	0.747						
<b>Proactive Personality</b>								
Initial Action	PP1	0.850	0.854	0.901	0.696			
Initiative Leadership	PP2	0.928						
Flexibility	PP3	0.788						
Independence	PP4	0.852						
<b>Organizational Support</b>			0.854	0.901	0.696			
Fairness	OS1	0.852	0.807	0.985	0.943			
Supervisor support	OS2	0.853						
Organizational rewards	OS3	0.824						
Favorable job conditions	OS4	0.807						
<b>Innovative Work Behavior</b>								
Idea Generation	IWB1	0.968	0.980	0.985	0.943			
Innovation Implementation	IWB2	0.964						
Risk Taking	IWB3	0.969						
Collaboration	IWB4	0.982	0.982	0.982	0.982			

Table 4

Discriminant Validity Results

	Creative Self-Efficacy	Innovative Work Behavior	Organizational Support	Proactive Personality	Transformational Leadership
Creative Self-Efficacy	0.840				
Innovative Work Behavior	0.559	0.971			
Organizational Support	0.488	0.625	0.834		
Proactive Personality	0.304	0.357	0.379	0.856	
Transformational Leadership	0.628	0.558	0.596	0.304	0.780

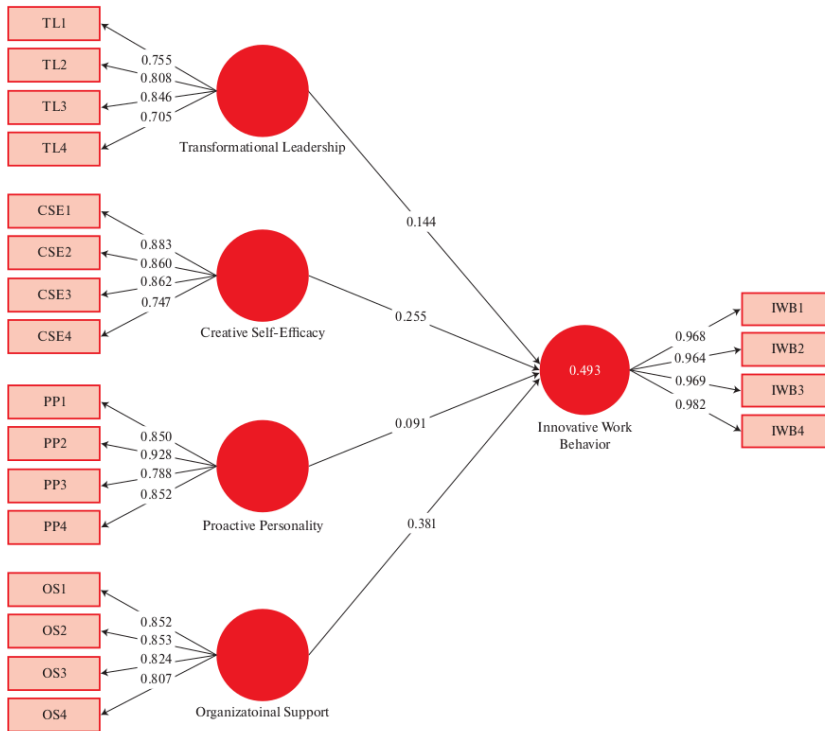


Figure 2 Outer Model Display.

and composite reliability (CR), which is higher than 0.7. Figure 2 and Table 3 show an explanation of the measurements of the outer model [41].

In the validity test presented in Table 3, the value of each loading factor on the indicators of the variables of transformational leadership, creative self-efficacy, proactive personality, organizational support, and inno-

vative work behavior was above 0.7 and 0.5 for the average variance extracted (AVE) value. For Cronbach's alpha and composite reliability, the value for each was above 0.7 since the research variables had good reliability values [41]. Therefore, the condition of the relationship between variables was also good, and further tests can be carried out. Next, the discriminant validity re-

sults table is also presented to assess the extent to which the research's latent variables differ (Table 4). This table provides the results of discriminant validity analysis, which shows whether each construct in the research has apparent differences and does not overlap with other constructs. This study will test variables such as transformational leadership, creative self-efficacy, proactive personality, and organizational support to ensure that each construct is measured independently and is not too highly correlated with other variables. The presented results, such as Fornell-Larcker criterion values or cross-loadings, aim to ensure that the research model has good discriminant validity and can be interpreted more accurately and relevantly.

Based on the Fornell-Larcker criteria table depicted in Table 4, the discriminant validity between constructs is met. Each construct has a higher level of correlation with the variables in the construct compared to others. This shows that each construct can be sufficiently differentiated from others, and uniquely impacts the research variables. Fulfilled discriminant validity reports that the variables examined can effectively differentiate between different constructs. This ensures that the constructs measured separately can make unique and specific contributions to the understanding and analysis of the research. Therefore, the criteria for discriminant validity are met and the variables are reliable in measuring different constructs.

#### Inner Model Measurement

Inner model measurement was carried out by bootstrapping research data using SmartPLS 3.2.9. There were two results obtained from bootstrapping; the first

was the significance of the two related variables and R-square. In addition, the R-square value shows the ability of exogenous to build endogenous variables. There are three categories of values, where R-square is 0.19 when the relationship between exogenous variables forming endogenous is weak. However, values at 0.33 and 0.67 show that the relationship is moderate and strong, respectively. The relationship between endogenous and exogenous variables is very strong when the R-square value is more than 0.67 [41].

Table 5 shows that 49.8% of the variation in innovative work behavior can be explained by existing independent variables. Therefore, model can moderately explain the variability of innovative work behavior. Half of the variation in innovative work behavior is influenced by the factors included in model, while the remainder is affected by other variables excluded from the analysis. The next analysis tests the F-Square value used to measure changes in R-Square value when certain constructs are removed from model. Then, the F-Square value table is also displayed to evaluate the magnitude of the influence or effect of an independent variable on the dependent variable in the research model [42]. This table displays the f-square value, which shows how much contribution each exogenous variable (transformational leadership, creative self-efficacy, proactive

**Table 5**

Notes	R-Square Value	
	R Square	R Square Adjusted
Innovative Work Behavior	0.493	0.483

**Table 6**

F-Square Value				
	Creative Self-Efficacy	Innovative Work Behavior	Organizational Support	Proactive Personality
Creative Self-Efficacy		0.074		
Innovative Work Behavior				
Organizational Support		0.168		
Proactive Personality		0.018		
Transformational Leadership		0.022		

**Table 7**

Hypothesis Test Results					
Hypothesis	Coefficient	Standard Deviation	t-count	P-Value	Conclusion
Transformational Leadership>>Innovative Work Behavior	0.144	0.065	2.198	0.028	Accepted
Creative Self-Efficacy>>Innovative Work Behavior	0.255	0.076	3.360	0.001	Accepted
Proactive Personality>>Innovative Work Behavior	0.091	0.040	2.302	0.022	Accepted
Organizational Support>>Innovative Work Behavior	0.381	0.073	5.213	0.000	Accepted



personality, and organizational support) contributes to the endogenous variable (for example, teacher innovative work behavior). The f-square value provides an idea of the strength of influence of each variable, whether it has a small, medium, or large effect. With this table, researchers can better understand the significance and relevance of each variable in the research model and assess whether changes in the independent variables substantially affect the research results (Table 6).

The F-Square value is 0.02, 0.15, and 0.35 for small, medium and large effects, respectively [42]. Based on Table 6, organizational support (organizational support) has the most significant influence with an f-square value of 0.168, which shows that organizational support significantly contributes to innovative work behavior. Creative self-efficacy (creative self-efficacy) has a moderate influence with a value of 0.074. At the same time, proactive personality (proactive personality) and transformational leadership (transformational leadership) show a relatively small influence, with values of 0.018 and 0.022. These results indicate that organizational support significantly encourages teachers' innovative work behavior, followed by creative self-efficacy. In contrast, proactive personality and transformational leadership play a minor role in this model.

#### Hypothesis Testing

A significance test is carried out to determine the relationship between exogenous and endogenous variables to prove the hypothesis testing. A significance level of 5% is reported when the p-value between exogenous and endogenous variables is less than 0.05. Therefore, the exogenous variable has a significant effect on endogenous variable. There is no significant effect on building the endogenous variable when the value is greater than 0.05 [42], as explained in Table 7.

Based on the processed data, the direct influence of transformational leadership on innovative work behavior obtained positive and insignificant results with a p-value of 0.028 above 0.05. In addition, the influence of creative self-efficacy obtained positive and significant results with a p-value of 0.001, below 0.05. The positive and significant results were obtained with a p-value of 0.022 below 0.05 for the influence of proactive personality on innovative work behavior. Similarly, positive and significant results were obtained with a p-value of 0.000 below 0.05 for the direct influence of organizational support on innovative work behavior. The 4 hypotheses developed to test the direct influence between variables were declared accepted.

#### Discussion

Transformational leadership has a positive and significant effect on innovative work behavior. This leadership model can inspire and motivate teachers to go beyond existing limitations and innovate in the learning process. In Society 5.0 era, teachers are required to adapt quickly and develop relevant teaching me-

thods. Transformational leadership provides the support necessary in responding to challenges by creating new and creative solutions. Additionally, transformational leadership increases self-confidence and autonomy in taking initiative. In this context, teachers are empowered to take measured risks and experiment with new teaching methods. Teachers adopt a proactive attitude, a key element in innovative work behavior when supported and appreciated. This is specifically important in the era of Society 5.0, where complex challenges demand a more flexible and adaptive educational method. Transformational leadership also contributes to creating an organizational culture that supports innovation. Leaders focus on short-term results and long-term development, including increasing innovative capacity in work environment. Teachers learn and share knowledge continuously, strengthening innovation ability by creating a collaborative work atmosphere and being open to change. In Indonesia, innovation ability is the key to ensuring the relevance and quality of education during rapid technological developments.

Based on the data analysis, creative self-efficacy has a positive and significant effect on innovative work behavior. These results suggest that beliefs in creative abilities are important in enhancing innovation. In an era marked by rapid technological advances and shifts in learning paradigms, teachers must have high self-confidence in developing and implementing new ideas relevant to students' needs. Creative self-efficacy provides a strong foundation to face complexity and uncertainty with an effective creative method. Confidence in creative abilities enables the exploration of new methods, integration of technology into the curriculum, and development of innovative solutions to improve learning quality. In addition, creative self-efficacy allows teachers to overcome psychological barriers affecting the innovation process, such as fear of failure or uncertainty. Increased creative self-efficacy takes the risks necessary to create positive changes in the learning environment. Teachers are more proactive in exploring and adopting digital technologies that can improve teaching effectiveness and are also open to pedagogical experiments to enrich learning experiences. In the era of Society 5.0, courage and initiative enhanced by creative self-efficacy promote collaboration and knowledge sharing. Teachers who are confident in creative abilities innovate individually and actively participate in discussions and collaborations with colleagues to create better solutions. This is important in the era of Society 5.0, where collaborative and interdisciplinary methods are becoming increasingly relevant to facing complex challenges.

Based on the results, a proactive personality has a positive and significant effect on innovative work behavior. These results provide important information that individuals with the personality tend to take the initiative to create opportunities for change and improvement. In the era of Society 5.0, these develop-

ments must be accepted to use technology creatively in learning. Teachers with a proactive personality tend to adapt more quickly to changes and are more open to new ideas. Similarly, a proactive personality enables active participation to improve learning quality. Teachers with this personality have a strong internal motivation to achieve better results and improve learning experiences. Proactive personalities can present innovative solutions to address new challenges. These individuals have higher fighting power and do not give up easily when facing difficulties. Teachers can survive and thrive in a dynamic environment with a proactive personality to improve learning.

The data analysis shows that organizational support has a positive and significant effect on innovative work behavior. In the era of Society 5.0, where technological developments and digitalization demand rapid adaptation in education, support from organizations, such as access to technological resources, training, and professional development opportunities, is the key to innovation. Teachers adopt a proactive attitude, a key element in innovative work behavior when supported and appreciated. In addition, organizational support provides a sense of security and appreciation for initiatives to take innovation risks. Supportive organizations provide an environment where failure is considered part of the learning process, rather than a mistake to be avoided. This is important for Society 5.0 era, where innovation often requires repeated trials before achieving the desired results. There is increased motivation to continue developing new ideas to enrich the learning process when the efforts of teachers are appreciated. Meanwhile, organizational support helps strengthen collaboration, an important aspect of developing innovative work behavior. Teachers can learn from and inspire each other through support such as facilities for sharing knowledge, discussion forums, and teamwork. This collaboration increases the spread of innovative ideas and enables effective implementation in educational contexts.

### Conclusions

In conclusion, transformational leadership, creative self-efficacy, proactive personality, and organizational support significantly influenced innovative work behavior in facing the challenges of Society 5.0 era. Each factor was complementary in enabling teachers to innovate and adapt teaching methods relevant to technological developments and student needs. These four predictors created an environment that supported creativity and innovation, which were critical to educational success in the era of change. Transformational leadership was a key factor that could inspire teachers to innovate and continue learning. In addition, the variable created a solid foundation to take initiative by providing a clear vision and strong motivation. This showed that the role of education leaders was very important in shaping innovative work behavior. Creative self-efficacy was also an

important factor influencing the readiness and ability of teachers to innovate. In this context, teachers with high levels of creative self-efficacy were confident in facing challenges. Therefore, self-confidence was strengthened in creative abilities through adequate training and support to promote innovation. A proactive personality and organizational support acted as catalysts in developing innovative work behavior. Teachers with a proactive personality adopted the initiative and led in driving change, while organizational support offered the resources and environment essential for realizing innovations. Strengthening innovative work behavior required a holistic method, where different factors provided adaptive and innovative education in Society 5.0 era.

### Implications

Our research highlights transformational leadership is essential in encouraging innovative teacher work behavior, especially in facing the challenges of the Society 5.0 era. Transformational leaders can inspire teachers to think more creatively and innovatively by providing a clear vision, emotional support, and encouragement to develop continually. This leadership encourages active teacher involvement in decision-making and creates a work environment open to change. With strong and inspiring leadership, teachers feel more motivated to adopt new technology and teaching strategies relevant to 21st-century learning needs. Besides transformational leadership, creative self-efficacy influences teachers' innovative work behavior. Creative self-efficacy is an individual's belief that they can generate creative solutions in challenging situations. Teachers with a high level of creative self-efficacy are more confident in facing the complexity of technology and curriculum changes in Society 5.0. They actively seek out and implement innovative teaching approaches, such as technology-based learning and digital collaboration, that enable students to thrive in the digital era. Proactive personality and organizational support also play a significant role in shaping teachers' innovative work behavior. Teachers with a proactive personality tend to take the initiative in facing new challenges, adapt quickly to changes, and look for opportunities to improve the quality of teaching. Meanwhile, organizational support, whether in the form of providing technological resources, training, or a conducive work environment, greatly influences teachers' courage to innovate. Strong support from schools and educational institutions helps reduce the psychological and technical barriers that teachers may face, making them more motivated to implement innovative ideas in their daily teaching practice.

### Limitations and Future Research

Educational institutions implement an effective transformational leadership model to strengthen innovative work behavior in facing the challenges of Society 5.0 era in Indonesia. The leaders must inspire and mo-

tivate teachers to innovate by providing a clear vision and enabling creativity in the learning process. By instilling transformational leadership values, teachers will feel more empowered and supported in taking initiative and implementing new ideas to improve the quality of education amidst rapid technological developments. Educational institutions must provide training and professional development focused on improving abilities to integrate technology and innovative methods in teaching. By strengthening self-confidence in creative abilities, teachers are better prepared to face new challenges and have confidence in implementing innovative strategies. Finally, educational institutions must increase organizational support, including access to resources, facilities, and work environment that supports collaboration and creativity. This support also needs to include respecting initiatives of teachers in innovation and providing a platform for sharing knowledge and new ideas. There is also increased motivation to behave proactively and innovate in teaching with strong organizational support.

Important information is provided regarding the implications of this research. The important role of transformational leadership in supporting innovation is also reported. Leaders in educational institutions need to develop a leadership style to inspire, motivate, and provide a clear vision to teachers. Work environment should also be created to support creativity by providing opportunities to develop creative self-efficacy and empower proactive personalities. In this context, tea-

chers are prepared to develop innovative work behavior in responding to learning needs. Additionally, organizational support is also a key element in strengthening innovative work behavior. Educational institutions must provide adequate resources, training, and incentives to support teachers in exploring and implementing innovative learning methods. There is increased confidence and motivation to initiate changes that positively impact the quality of education with strong support from the organization. Institutional policies supporting continuous professional development are very helpful in ensuring teachers possess the latest skills and knowledge relevant to Society 5.0 era.

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