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Organizational Performance in Higher Education: How Transformational Leadership and Innovation Policy Influence

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ABSTRACT: The purpose of this research is to see the effect of transformational leadership and innovation policy on organizational performance. This research is a combine between quantitative method and an associative approach. The research instrument is a questionnaire given to 40 samples. Data analysis techniques using multiple linear analysis with the help of SPSS applications. The normality test used is the Kolmogorov-Smirnov test with a significance value of 0.20. The results of the linearity test between Transformational Leadership (X1) on Organizational Performance (Y) with an F-count value of 18.83, in other words it can be concluded that there is a linear relationship between Transformational Leadership (X1) on Organizational Performance (Y). Furthermore, it is concluded that there is a linear relationship between Innovation Policy (X2) on Organizational Performance (Y) with an F-count value of 11.20. Then the multicollinearity value is obtained from the count of 4.630 and 3.443, in other words it can be concluded that there is no between the independent variables, namely Transformational Leadership (X1) with Innovation Policy (X2) in relation to the dependent variable Organizational Performance (Y). The results showed that there is a positive influence of transformational leadership and innovation policy on organizational performance. This research suggests developing programs that support innovation policies and improving transformational leadership in organizations to strengthen overall performance. In addition, other recommendations include the implementation of training programs for leaders to hone their transformational leadership skills, as well as the development of more effective innovation policies to create a work environment that encourages creativity and adaptability.

Keywords: Organizational Performance, Higher Education, Transformational Leadership, Innovation Policy.

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INTRODUCTION

Organizational performance must always be maintained and improved properly to obtain quality work results or effectiveness and efficiency of a program to make best practices important for organizational success.(Mantik et al., 2023; Mebrate & Shumet, 2024a). One way to improve or

success is to implement knowledge management. Performance in an organization is defined as the level of achievement of results "the degree of accomplishment" or performance is the level of achievement of organizational goals continuously (Sudarta, 2022). This study explores the impact of transformational leadership and innovation policies on organizational performance in higher education, focusing on the West Sumatra Shipping Polytechnic. It highlights key aspects such as compliance with STCW regulations (Phanphichit & Bartusevičienė, 2024) and maritime competency development must be adjusted to the standards set by the international regulations of the IMO (International Maritime Organization) (Putra et al., 2024), assessed through KPIs like accreditation, research publications, international collaboration, and technology-based learning innovations. Using a mixed-methods approach, the research examines how these policies drive technology adoption, such as AI and e-learning, to address global challenges like COVID-19. The findings aim to enrich leadership and innovation theories while offering strategic recommendations to enhance the Polytechnic's competitiveness and sustainability in a dynamic educational landscape.

This research is also based on several relevant previous studies, which strengthen the urgency and significance of this study. A study revealed that the significant and positive influence of Transformational leadership on organizational change capability and organizational performance (Le & Le, 2021), significant impact in performance management procedures (Chau et al., 2022), the impact of transformational leadership on performance (Pham et al., 2024),. It is further stated that transformational leadership and green innovation policy have a positive effect on sustainable performance (Ngoc Huynh et al., 2024a), effectively promote innovation and improve performance (Huynh et al., 2024a). In the education sector, it was revealed that importance of authentic leadership practices optimizing school effectiveness and enhancing overall performance within the school environment (Hsu et al., 2024). Particularly in relation to the impact of transformational leadership on organizational performance, innovation, and change, this study can be compared to a number of earlier pertinent studies. In keeping with earlier research showing that transformational leadership can enhance performance by boosting the organization's capacity to manage change, Le TT & Le BP's (2021) study demonstrated that change capability functions as a mediator in the relationship between transformational leadership and organizational performance. NPM-oriented culture acts as a mediator between transformative leadership and organizational performance, according to other research like Chau THP et al. (2022), which concentrated on the public sector.

By examining how leadership impacts performance at maritime education institutions or the education sector overall, as well as how organizational culture or frameworks like MBKM in higher education can mediate the link, your research can expand on these findings. Furthermore, research by Huynh TN et al, and Ngoc Huynh HT et al. (2024) emphasizes the significance of transformational leadership that promotes sustainability and green innovation. This fact is pertinent if your study incorporates sustainability components, particularly when it comes to maritime education, where green practices and environmental regulations are becoming more and more significant. Comparable to the impact of transformational leadership in the context of maritime education, where creativity and effective teaching practices have a significant impact on learning outcomes and institutional performance, Hsu WL et al.'s (2024) study on authentic leadership in educational institutions demonstrated that authentic leadership styles can enhance

creativity and performance. Understanding the role of leadership in improving innovation, performance, and sustainability in maritime educational institutions can be further enhanced by comparing the findings of this study with those of other studies.

The ability of an organization to accomplish its goals is called organizational performance (Bayle & Clausen, 2024). Knowledge resources help organizations to compete in the business environment in a certain way by gaining knowledge from employees in the form of experience, insight, creative thinking, and innovation to implement and transform it effectively and efficiently to create new ways to compete, improve organizational performance.(Terra et al., 2023), gain competitive advantage (Darmawan et al., 2023). An important factor that determines employee performance and the ability of an organization to adapt to environmental changes is leadership. Organizational performance is related to how the performance process can be implemented. Therefore organizational performance cannot be separated from factors that can affect the performance, including leadership, to adopt advanced technologies to improve business capabilities (Rana et al., 2024), management guidelines (Bopp et al., 2024), leader cultural intelligence (Nosratabadi et al., 2020), procurement planning and staff competency practices (Mebrate & Shumet, 2024b), management environment quality, quality assurance, quality assurance and human resource management, which includes aspects of training, commitment, promotion and others.(Rohman et al., 2023).

Leadership is a difficult job that influences a group of a person or organization (Irwan et al., 2024), and the environment to achieve common goals (Hundie & Habtewold, 2024). To maintain competitiveness, existence and relevance in an educational institution that is increasingly developing is one form of application and task of transformational leadership. A positive vision that can mobilize individual, organizational, or societal transformation can be produced by an ideal design (Nalebuff & Brandenburger, 1997). The interests of the organization and its members need to be aligned. This is the task of transformational leaders. Unlike transactional leaders who practice contingent reinforcement of followers, transformational leaders inspire, influence their followers (Mayastinasari & Suseno, 2023), important to support performance and satisfaction (do Adro & Leitão, 2020), intellectually stimulating, and caring for them individually. Transformational leadership can be directive or participative, transforming the value systems, inspirations, aspirations, and expectations of employees, an important concept that can significantly affect the success of an organization (Mandagi et al., 2023), as well as strengthening understanding and fairness for employees, and improving the quality of work life in the organization.(Bass, 1999; Moradi & H, 2016). The role of leaders who move organizations into the future, recognizing environmental needs and facilitating appropriate change, becomes clearer.

It is also important to consider that the focus of policies, the terms used, and the theories underlying their design and implementation have changed over time, the focus being on science (and hence the term science policy becoming popular), then shifting to technology and technology policy and more recently to innovation with the term innovation policy. Thus, the fact that the idea of innovation policy is relatively new, does not mean that policies affecting innovation did not exist before.(Fagerberg, 2018). Innovation is an old phenomenon, and over the years innovation activities have likely been influenced by a number of policies carried out under various labels. In making and implementing policies, innovation is one of the main factors that affect the

overall performance of the organization. Leadership that is able to inspire (Awais-E-Yazdan et al., 2023), encourage change, and create innovation is the key to maintaining sustainability and increasing productivity. Transformational leadership style increases the desire of followers, for the behaviour of employees (Klijn et al., 2022) to achieve and develop themselves, and encourages group and organizational development. Ultimately, employees can work well and comfortably, so that work productivity can be increased and reflected through the performance results achieved by employees.

West Sumatra Maritime Polytechnic, implements policies that not only focus on routines, but also encourage innovation, creativity, and the ability to adapt to the latest technological developments, such as the Internet of Things (IoT) and artificial intelligence (AI) technology-based learning, which are relevant to the maritime industry. The innovation policy in educational institutions at the West Sumatra Maritime Polytechnic is expected to inspire lecturers and staff to continue to innovate in the learning process, as well as increase student motivation to be able to adapt to the demands of the very dynamic shipping industry. This is needed to create a progressive educational environment, where innovation and academic achievement go hand in hand. The need for innovation in education is justified by many factors. Human society evolves over time, so education cannot be trapped in traditional ways of teaching. Education needs to respond to the challenges of new societies in the best way and promote higher quality standards.(Rubalcaba, 2022).

Based on initial findings at the West Sumatra Maritime Polytechnic, there was a tendency for organizational performance to decline, this can be seen from the still low achievement of the Key Performance Indicators (IKU) that have been set. The problem related to transformational leadership is that there are still leaders who do not fully listen to input from subordinates and do not pay attention to the specific needs needed to support the achievement of organizational targets.

On the other hand, innovation policy in higher education, especially in the West Sumatra Maritime Polytechnic, is very important to ensure that graduates have competencies that are in accordance with the needs of the labor market. Innovation development produces complex phenomena involving the production, diffusion, and translation of technological knowledge into new products or processes.(Samara et al., 2012). The innovation process involves interactive relationships between various actors. Innovation policies at the West Sumatra Maritime Polytechnic include various strategies, such as the application of the latest technology in the teaching and learning process, curriculum updates that focus on practical and technical skills, and strengthening relations with the shipping industry through internship programs and industry-based training. For the problem of innovation policies at the West Sumatra Maritime Polytechnic, a phenomenon was found that the application of values in the implementation of the Tri Dharma of Higher Education was gradually fading. For example, the lack of collaboration between lecturers and students, and the low enthusiasm for sharing knowledge between more experienced and new teaching staff. This causes some lecturers and educators to carry out their duties only based on administrative obligations, not because of full awareness of the importance of the Tri Dharma. In addition, there are problems with work ethics, such as there are still teaching staff who tend to postpone the implementation of research and community service activities, even though the implementation

schedule has been set. This condition forces the institution to give warnings, both verbally and in writing, to the person concerned.

The importance of these two factors, transformational leadership and innovation policy, can be measured through Key Performance Indicators (KPIs) that are in accordance with the strategic objectives of the Polytechnic of Shipping. The Key Performance Indicators (KPIs) include graduation rates, teaching quality, cooperation with industry, and student and stakeholder satisfaction. By using Key Performance Indicators (KPIs), the Polytechnic of Shipping can assess the extent to which the leadership and innovation applied are able to contribute to improving performance and achieving its vision and mission.

METHOD

In this study is to use an associative and quantitative approach, in this regard an approach to find out that there is a relationship or influence between the two variables (independent variables and dependent variables). Objective measurement, analysis of cause and effect relationships, and testing the strength and direction of influence between transformational leadership, innovation policy, and organizational performance are all possible with the quantitative approach with an associative approach. This method is also suitable for explaining relationships between variables that are based on strong theories, and it also supports hypothesis testing with generalizable data. The selection of quantitative methods (Wang et al., 2024) and associative approaches (Peez, 2024) is essential. The factors studied transformational leadership, innovation policy, and organizational performance are objectively (Krimsky et al., 2025), measurably (Kremer et al., 2025) and systematically impact (Liu et al., 2024) related to each other and can be measured using quantitative methods.

This method allows researchers to systematically test hypotheses and produce results that can be generalized in a specific context through the use of statistical analysis. The associative approach, on the other hand, is used to study how to identify significant correlations between these variables and more complex relationships between variables (Yusupbekov et al., 2017). This can provide a better understanding of how transformational leadership and innovation policy affect organizational performance. This method is relevant because the purpose of the study is to find patterns of relationships and influences rather than simply providing a description or exploration of the phenomenon. Because the goal of the research is to find patterns of linkages and influences rather than only describe or explore things, this technique is pertinent. It is anticipated that this combination will enable the research to produce findings that are both academically valuable and practical for higher education institutions.

The data collection technique used is using a list of statements (questionnaires). The population of this study were all employees at the West Sumatra Shipping Polytechnic totaling 154 people. In this study, a sample was taken using a purposive sampling technique totaling 40 people effectively narrow down the pool of potential participants which given the nature of the study, were judged appropriate and beneficial (Akinwale et al., 2024) by choosing people or groups who have which is considered most relevant to answer the research objectives (Smith et al., 2013), experience working in leadership positions or who have in-depth knowledge of organizational policies with

particular traits that are pertinent to the study's goals (Suryananda & Yudhawati, 2021). In order to make sure that the respondents such as structural officers, senior lecturers, or employees involved in strategic decision-making had a thorough understanding and firsthand experience of transformational leadership, innovation policy, and organizational performance, the purposive sampling technique was selected. Since the target audience is narrow and precise and the research focuses on the quality and usefulness of the data rather than making generalizations, 40 respondents were deemed sufficient. This figure also makes data collecting and statistical analysis more efficient, is applicable to exploratory research that serves as the foundation for larger-scale follow-up studies, and is still valid for basic regression or correlation techniques. The data sources in this study are primary data with instrument testing, classical assumption testing, and multiple linear regression analysis, with data processing using SPSS software version 26. The following are the indicators and items of the questionnaire statement in this study :

Table 1. Questionnaire Blueprint Transformational Leadership

No.	Indicator	Statement Item
1	Vision	The leader has a clear vision to guide the institution towards better outcomes.
2	Inspiration	The leader provides inspiration to subordinates to achieve organizational goals.
3	Intellectual stimulation	The leader encourages creativity and innovation in solving problems.
4	Ideal influence	The leader serves as a role model respected by subordinates.
5	Individualized consideration	The leader pays attention to the needs and development of each individual in the team.
6	Effective communication	The leader effectively conveys ideas and motivates subordinates through communication.
7	Encouragement of collaboration	The leader promotes teamwork to achieve better results.
8	Trust	The leader builds strong trust with subordinates.
9	Commitment to the organization	The leader demonstrates a high level of commitment to the organization's progress.
10	Motivational ability	The leader boosts team morale through positive encouragement and motivation.

Table 2. Questionnaire Blueprint Innovation Policy

No.	Indicator	Statement Item
1	Resource provision	The institution provides adequate resources to support innovation activities.
2	Management support	The institution's policies support the development of new ideas.
3	Facilities for innovation	The institution offers facilities for experimentation and innovation development.
4	Training and development	The institution prioritizes training to enhance staff innovation capabilities.

No.	Indicator	Statement Item
5	External collaboration	The institution encourages collaboration with external parties to generate new innovations.
6	Innovation incentives	The institution rewards individuals or teams for producing innovations.
7	Focus on problem-solving	Innovation policies are directed at solving issues relevant to organizational goals.
8	Decision-making acceleration	The institution's policies enable quick decision-making for innovation ideas.
9	Innovation evaluation	The institution has mechanisms to evaluate innovations to ensure alignment with plans.
10	Commitment to change	The institution's policies support changes needed for innovation development.

Table 3. Questionnaire Blueprint Organizational Performance

No.	Indicator	Statement Item
1	Effectiveness	The institution successfully achieves its goals as outlined in its vision and mission.
2	Efficiency	The institution optimally utilizes resources to produce the best performance.
3	Innovation	The institution consistently produces innovations beneficial for organizational development.
4	Reputation	The institution has a good reputation among the public and stakeholders.
5	Stakeholder satisfaction	Stakeholders are satisfied with the services provided by the institution.
6	Productivity	The institution's productivity improves significantly over time.
7	Quality of outcomes	The institution's outcomes meet predetermined quality standards.
8	Sustainability	The institution has the capability to sustain its programs and activities.
9	Staff commitment	The institution's staff demonstrate high commitment to achieving organizational goals.
10	Compliance with regulations	The institution consistently adheres to applicable regulations and policies.

The findings of the validity and reliability test data for the study's instruments are displayed in tabel 4, 5, and 6 :

Table 4. Validity And Reliability Results (Transformational Leadership)

No	r-Table	Instrument Validity Results	Comparison Criteria	Instrument Reliability Results
1	0.312	0.597	0.6	0.727
2	0.312	0.476	0.6	0.727
3	0.312	0.385	0.6	0.727

4	0.312	0.324	0.6	0.727
5	0.312	0.617	0.6	0.727
6	0.312	0.557	0.6	0.727
7	0.312	0.460	0.6	0.727
8	0.312	0.753	0.6	0.727
9	0.312	0.457	0.6	0.727
10	0.312	0.753	0.6	0.727

From this table it can be stated that the results of the transformational leadership validity test, all questionnaire items are declared valid, meaning that the ten statement items can be used as research instruments. Then, the reliability test results state that all statement items in this questionnaire are reliable to be used as research instruments.

Table 5. Validity And Reliability Results (Innovation Policy)

No	r-Table	Instrument Validity Results	Comparison Criteria	Instrument Reliability Results
1	0.312	0.413	0.6	0.641
2	0.312	0.607	0.6	0.641
3	0.312	0.516	0.6	0.641
4	0.312	0.628	0.6	0.641
5	0.312	0.374	0.6	0.641
6	0.312	0.420	0.6	0.641
7	0.312	0.393	0.6	0.641
8	0.312	0.478	0.6	0.641
9	0.312	0.714	0.6	0.641
10	0.312	0.371	0.6	0.641

Furthermore, it is stated that the results of the innovation policy validity test, all questionnaire items are declared valid, meaning that the ten statement items can be used as research instruments. Then, the reliability test results state that all statement items in this questionnaire are reliable to be used as research instruments.

Table 6. Validity And Reliability Results (Organizational Performance)

No	r-Table	Instrument Validity Results	Comparison Criteria	Instrument Reliability Results
1	0.312	0.413	0.6	0.641
2	0.312	0.607	0.6	0.641
3	0.312	0.516	0.6	0.641
4	0.312	0.628	0.6	0.641

5	0.312	0.374	0.6	0.641
6	0.312	0.420	0.6	0.641
7	0.312	0.393	0.6	0.641
8	0.312	0.478	0.6	0.641
9	0.312	0.714	0.6	0.641
10	0.312	0.371	0.6	0.641

In line with the above, the results of the organizational performance validity test obtained, all questionnaire items were declared valid, meaning that the ten statement items could be used as research instruments. Then, the reliability test results state that all statement items in this questionnaire are reliable to be used as research instruments.

RESULT AND DISCUSSION

Through multiple linear regression with several classical assumptions of multiple regression or better known as BLUE (Best Linear Unbias Estimation). Testing classical assumptions simply aims to identify whether regression is a good model or not. Here are some of the classical assumption tests, namely: data normality test is carried out to see whether in the regression model. This empirical necessity is met by the given normalcy test (Berenguer-Rico & Nielsen, 2023), has long been a significant issue (Makigusa & Naito, 2020). This test is conducted to prove whether the dependent and independent variables have a normal distribution or not. The normality assumption is obtained if the data is spread around the diagonal line and follows the direction of the diagonal line, then the regression model meets the normal criteria. The validity of study findings is significantly impacted by the testing of traditional assumptions in multiple linear regression, especially when it comes to education. The regression model can be trusted to examine the connections between variables and offer a strong basis for decision-making if certain presumptions are met.

Accurate forecasts of the variables affecting student academic performance, the efficacy of instructional strategies, and other educational outcomes are made possible by a reliable model. Based on the findings of traditional assumption tests, educational institutions can implement a number of useful measures. These include improving the caliber of instruction by modifying strategies in accordance with the factors that have been shown to have a major impact on student achievement. It is also possible to use data-driven technologies to enhance academic procedures. Additionally, dependable regression analysis can be used to design academic policies, maximizing resource allocation to areas that have the biggest impact on student progress. These results can also be used to evaluate and enhance academic programs, with evidence-based practices for long-term educational planning and faculty development being used. Furthermore, in order to improve the validity of the research, institutions can adopt remedial measures like data transformation, alternative estimating techniques, or model refinement if any violations of classical assumptions are found. Using sophisticated data analysis software or working with statistical specialists can assist guarantee the correctness of the study results. Educational institutions can improve their decision-making procedures and create more efficient rules and procedures by tackling these

problems. In the end, this meticulous method of data analysis will serve to improve educational quality over time, creating a more productive and encouraging learning environment for students and assisting them in achieving greater academic achievement.

In addition, to ensure the validity of the regression model, other classical assumption tests include heteroscedasticity, multicollinearity, and autocorrelation tests. In cases where a good regression model should not show multicollinearity, a multicollinearity test is performed to determine whether the independent variables in the model have a strong relationship with each other (Omer et al., 2021). The heteroscedasticity test is used to determine whether the residual variance is constant; if not, the regression model is considered not to meet this assumption (Bergqvist, 2024). If this occurs, the autocorrelation test indicates that there is a relationship between the residuals on one observation and the residuals on the other observations. If this occurs, it can indicate that the regression assumptions are not met. The regression model can be considered good and worthy of use for valid analysis and prediction if it meets all of these classical assumptions.

Normality Test

The normality test used is the Kolmogorov-Smirnov test is designed to identify disparities between distributions (Cherkaoui et al., 2024), is a widely used compatibility test (Usmadi, 2020). based on residual value. A good regression model has residual values that are normally distributed. The basis for decision making is:

If the Sig. value > 0.05, then the residual value is normally distributed.
If the Sig. value < 0.05, then the residual value is not normally distributed.

Table 6. Summary of Data Normality Test Results

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		40
Normal Parameters a, b	Mean	.0000000
	Std. Deviation	1.51238345
Most Extreme Differences	Absolute	.097
	Positive	.065
	Negative	-.097
Test Statistics		.097
Asymp. Sig. (2-tailed)		**.200 c,d**

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

With N = 40, Mean = 0, and Standard Deviation = 1.512, the One-Sample Kolmogorov-Smirnov Test findings demonstrate that the regression model's residuals are normally distributed. The normality assumption is satisfied since the test statistic value of 0.097 and Asymp. Sig. (2-tailed) = 0.200 (> 0.05) show that the residual distribution and the normal

distribution do not differ significantly. Because it satisfies one of the fundamental regression assumptions necessary for reliable statistical inference, the regression model used to examine the impact of innovation policies and transformational leadership on organizational performance in higher education can therefore be regarded as legitimate.

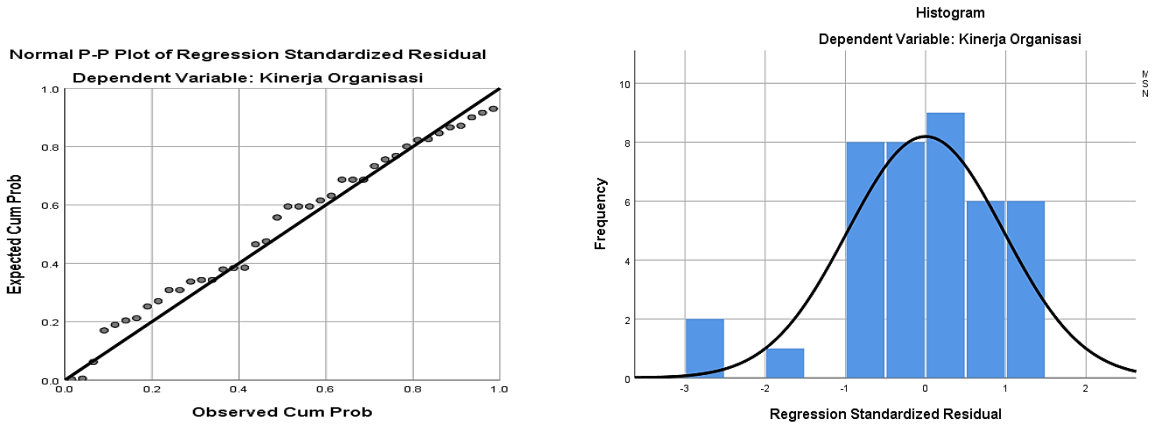


Figure 1. The normality result

Figure 1 above identifies that the regression model has met the assumptions previously stated, so that the data in the regression model of this study tends to be normal.

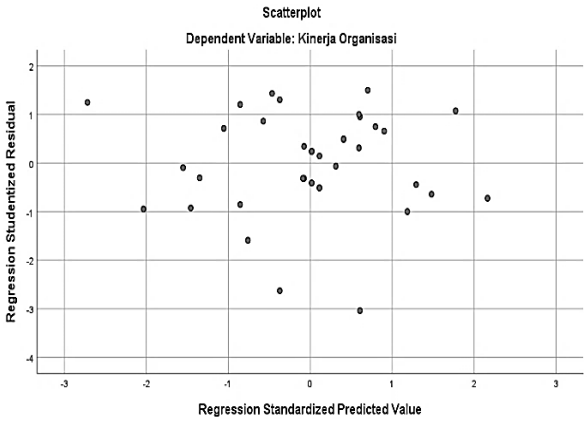


Figure 2. Scatterplot

Transformational Leadership (X1) on Organizational Performance (Y)

The linearity test aims to determine whether there is a linear relationship between the independent variable and the dependent variable. Linearity can also be considered as a form of internal or relative accuracy where the most correlated characteristics were subjected to a linear regression (Blais et al., 2025). The basis for decision making is:
If the Sig. value > 0.05, then there is a linear relationship between the independent variable and the dependent variable.
If the Sig. value < 0.05, then there is no linear relationship between the independent variable and the dependent variable.

Table 7. Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Organizational Performance*Transformational Leadership	40	100.0%	0	0.0%	40	100.0%

Table 8. Summary of Results Testing

ANOVA Table

			Sum of Squares	Df	Mean Square	F	Sig.
Organizational Performance * Transformational Leadership	Between Groups	(Combined)	72,681	8	9,085	2,451	.035
		Linearity	69,820	1	69,820	18,834	.000
		Deviation from Linearity	2,861	7	.409	.110	**.997**
	Within Groups		114,919	31	3,707		
	Total		187,600	39			

Tabel 9. Measures of Association

	R	R Squared	This	Eta Squared
Organizational Performance * Transformational Leadership	.610	.372	.622	.387

From Table 8, it shows that the Sig. value > 0.05 or F count 18.834 in other words it can be concluded that there is a linear relationship between Transformational Leadership (X1) and Organizational Performance (Y).

The analysis results in Table 3 show that the calculated F value is 18.834, with a significant value (Sig.) greater than 0.05. Statistically, this indicates that the regression model used to test the relationship between the independent variable Transformational Leadership (X1) and the dependent variable Organizational Performance (Y) meets the assumption of linearity. In other words, there is a significant linear relationship between the two variables. The high F value indicates that changes in the Transformational Leadership variable (X1) have a strong contribution in influencing Organizational Performance (Y). However, the value of Sig. > 0.05 requires attention because generally the significant value that indicates a linear relationship is Sig. < 0,05. Therefore, it is important to consider other factors, such as sample size, error margin, or the influence of other variables that may not have been included in the model.

In the context of the study, Transformational Leadership is a leadership style that drives change through inspiration, motivation, and innovation. Organizational performance, as the dependent variable, can reflect vision achievement, operational efficiency, and team success in achieving strategic goals. This result is in line with a study that shows that transformational leadership style

contributes to improving organizational performance (Nguyen et al., 2023; Samad, 2012). However, the linear relationship may have varying degrees of strength, depending on organizational conditions, work culture, and the application of transformational principles themselves. If the Sig. > 0.05, this may indicate a less strong relationship or the influence of other significant factors. Therefore, further analysis, such as controlling for moderator variables such as organizational culture or work climate, is needed to better understand the factors that influence this relationship. The regression test results show that there is a linear relationship between Transformational Leadership (X1) and Organizational Performance (Y), as indicated by the calculated F value of 18.834. The significant value (Sig. > 0.05) indicates that the linear relationship may be less strong or insignificant at certain confidence levels. Substantively, transformational leadership style has the potential to improve organizational performance through empowerment, motivation, and positive change at the individual and team levels. However, the strength of this relationship requires additional study, such as including moderator or control variables to obtain more accurate results. Further research is needed to better understand how elements in transformational leadership, such as idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration, influence various aspects of organizational performance. This conclusion provides a foundation for conducting leadership development strategies in organizations, especially focusing on transformational style as a strategic approach to drive better performance achievement.

Innovation Policy (X2) on Organizational Performance (Y)

Table 10. Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Organizational Performance * Innovation Policy	40	100.0%	0	0.0%	40	100.0%

Table 11. Summary of Results Testing

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Organizational Performance * Innovation Policy	Between Groups	(Combined)	58,398	8	7,300	1,751	.126
		Linearity	46,708	1	46,708	11.207	.002
		Deviation from Linearity	11,690	7	1,670	.401	**.895**
	Within Groups		129.202	31	4.168		
	Total		187,600	39			

Measures of Association				
	R	R Squared	This	Eta Squared

Organizational Performance * Innovation Policy	.499	.249	.558	.311

From Table 6, it shows that the Sig. value > 0.05 or F count 11.207 in other words it can be concluded that there is a linear relationship between Innovation Policy (X2) and Organizational Performance (Y), wich relevant to one of the studies that examines the key factors that innovation positively influence (Huynh et al., 2024b), and improve (Singh et al., 2024), and impacts (Sciarelli et al., 2020) organizational performance.

From Table 11, the calculated F value is 11.207 with a significant value (Sig.) > 0.05. This result indicates a linear relationship between Innovation Policy (X2) and Organizational Performance (Y). However, the Sig. value > 0.05 indicates that the relationship may not be significant enough at a certain probability level (usually $\alpha = 0.05$). Although the relatively high calculated F value indicates a contribution from the Innovation Policy variable to Organizational Performance, the Sig. value greater than 0.05 may be caused by model limitations or the influence of other variables that have not been included in the analysis. This requires a deeper interpretation to understand the strength of the relationship.

In the context of the study, Innovation Policy reflects the organization's strategic steps to encourage creativity, the application of new technologies, and the development of innovative solutions to increase competitiveness. Meanwhile, Organizational Performance includes the results achieved in various aspects, such as efficiency, effectiveness, and stakeholder satisfaction. The results of this analysis indicate that innovation policy has a linear relationship with organizational performance. Possible causes include suboptimal policy implementation, organizational culture that does not support innovation, or external obstacles such as regulations or limited resources. To clarify this relationship, further research is needed by considering the role of mediator or moderator variables, such as innovation culture or leadership support.

Based on the results of the analysis, there is a linear relationship between Innovation Policy (X2) and Organizational Performance (Y), as indicated by the calculated F value of 11.207. However, the significant value (Sig. > 0.05) indicates that the relationship is not strong enough or statistically significant. Substantively, innovation policy still has an important role in supporting organizational performance, but its effectiveness may be influenced by various internal and external factors that need to be further identified. In-depth research involving additional variables such as organizational culture or management support can provide a more comprehensive understanding of this relationship. These results emphasize the importance of organizations not only formulating innovation policies, but also ensuring that their implementation is supported by adequate resources, flexible organizational structures, and innovative work cultures. By ensuring that innovation policies are implemented optimally, organizations can significantly improve their performance and contribute to the achievement of strategic goals more effectively.

Multicollinearity Test

Transformational Leadership (X1) and Innovation Policy (X2) on Organizational Performance (Y)

High correlation between columns of X is considered as multicollinearity (Mohammadi, 2022). The multicollinearity test aims to see whether there is a high correlation between independent variables in a regression model. In a good regression model, there should not be a high correlation between independent variables. The basis for decision making is:

If the Tolerance value > 0.10, then there is no multicollinearity.

If the VIF value < 10.00, then there is no multicollinearity.

Table 12. Summary of Multicollinearity Testing Result

Coefficientsa								
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Model	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-4.619	8.403		-.550	.586		
	Transformational Leadership	.618	.133	.535	4,630	.000	**.964**	**1,037**
	Innovation Policy	.469	.136	.398	3.443	.001	**.964**	**1,037**

a. Dependent Variable: Organizational Performance

From calculations using a computer program using SPSS (Statistical Program For Social Schedule) Version 26.0, we get:

a = -4.619

b1 = 0.618

b2 = 0.469

So the linear multiple regression equation for the two variables transformational leadership and innovation policy is: Y = -4.619 + 0.618 X1 + 0.469 X2

The equation above shows that all independent variables (Transformational Leadership and Innovation Policy) have positive values so that it can be interpreted that if transformational leadership and innovation policy are improved, it will improve organizational performance, or all independent variables have a directional influence on variable Y (performance). This is in line with relevant research on transformational leadership and an intensity of innovation policy, which have beneficial effects on organizational performance (Hoai et al., 2022), to achieve sustainable performance (Ngoc Huynh et al., 2024b). The Transformational Leadership variable (X1) has the largest relative contribution among the two independent variables to performance.

Collinearity Diagnostics						
				Variance Proportions		
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Transformational Leadership	Innovation policy
1	1	2.998	1,000	.00	.00	.00

2	.001	50,791	.00	.61	.58
3	.001	72,593	1.00	.39	.42

a. Dependent Variable: Organizational Performance

Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	44.28	52.04	48.60	1,588	40
Std. Predicted Value	-2,719	2.164	.000	1,000	40
Standard Error of Predicted Value	.248	.721	.405	.131	40
Adjusted Predicted Value	43.81	52.22	48.60	1,611	40
Residual	-4.565	2.285	.000	1,512	40
Std. Residual	-2,940	1,472	.000	.974	40
Stud. Residual	-3,039	1,501	.000	1,012	40
Deleted Residual	-4.877	2.378	.001	1,635	40
Stud. Deleted Residual	-3.461	1,528	-.015	1,065	40
Expensive. Distance	.023	7,438	1,950	1.905	40
Cook's Distance	.000	.210	.027	.042	40
Centered Leverage Value	.001	.191	.050	.049	40

a. Dependent Variable: Organizational Performance

From Table 12, it shows that the Tolerance value > 0.10 and Variance Inflation Factor (VIF) < 10.00 or t count 4.630 and 3.443, in other words it can be concluded that there is no multicollinearity between the independent variables, namely Transformational Leadership (X1) with Innovation Policy (X2) in relation to the dependent variable Organizational Performance (Y). From Table 4, the Tolerance value> 0.10 and Variance Inflation Factor (VIF) <10.00 indicate that there is no multicollinearity between the independent variables, namely Transformational Leadership (X1) and Innovation Policy (X2), on the dependent variable Organizational Performance (Y). In addition, the calculated t values of 4.630 and 3.443, respectively, indicate that both independent variables have a significant contribution to the dependent variable. The absence of multicollinearity is important in regression analysis, because it ensures that the relationship between the independent variables does not overlap excessively, so that the regression coefficient estimate is more reliable.

These results indicate that Transformational Leadership and Innovation Policy can contribute independently to improving Organizational Performance. Transformational Leadership encourages organizational members to achieve common goals through inspiration, motivation, and individual development. Meanwhile, Innovation Policy includes strategic steps to encourage creativity, adoption of new technologies, and development of innovative solutions. The absence of multicollinearity ensures that the contribution of both variables can be measured separately without any significant mutual influence between the independent variables. This means that organizations can manage and develop both aspects simultaneously to improve their performance.

The multicollinearity test produces a Tolerance value> 0.10 and VIF <10.00, which indicates that there is no multicollinearity between Transformational Leadership (X1) and Innovation Policy (X2) on Organizational Performance (Y). This shows that both independent variables have an independent relationship in influencing the dependent variable. The t-values of 4.630 and 3.443 respectively indicate that both contribute significantly to improving organizational performance. Overall, these results confirm that both Transformational Leadership and Innovation Policy can function as major factors in supporting improved organizational performance.

For organizations, these results emphasize the importance of managing both aspects in parallel. Effective transformational leadership will create an inspiring work environment and support individual development, while a good innovation policy will encourage creativity and efficiency. In the absence of multicollinearity, organizational strategies can be focused on optimizing each of these aspects without the risk of overlapping or undermining each other. This provides a great opportunity for organizations to achieve superior performance on a sustainable basis.

Hypothesis Testing

Hypothesis Test 1: Transformational Leadership (X1) on Organizational Performance (Y)

Multiple regression analysis aims to determine whether or not there is an influence between two or more independent variables (X) on the dependent variable (Y). The t-test aims to determine whether or not there is a partial influence given by the independent variable (X) on the dependent variable (Y). The basis for decision making is:

If the Sig value. < 0.05, then there is an influence of variable X on Y

If the Sig value. > 0.05, then there is no influence of variable X on Y

Table 13. Summary of Termination Coefficients

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.610a	.372	.356	1,761

a. Predictors: (Constant), Transformational Leadership

Table 14. Summary of Test Results Summary of Hypothesis 1 Test Results

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	69,820	1	69,820	22,526	.000b
	Residual	117,780	38	3,099		
	Total	187,600	39			

a. Dependent Variable: Organizational Performance
b. Predictors: (Constant), Transformational Leadership

Coefficientsa						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	13,954	7.305		1,910	.064
	Transformational Leadership	.705	.149	.610	4,746	**.000**

a. Dependent Variable: Organizational Performance

From Table 14, it shows that the Sig. value < 0.05 or t count 4.746, in other words it can be concluded that there is an influence of Transformational Leadership (X1) on Organizational Performance (Y) at the West Sumatra Maritime Polytechnic.
Hypothesis Test 2: Innovation Policy (X2) on Organizational Performance (Y)

Table 15. Summary of Termination Coefficients

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.499a	**.249**	.229	1,926

a. Predictors: (Constant), Innovation Policy

Table 16. Summary of Test Results Summary of Test Results Hypothesis 2

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46,708	1	46,708	12,597	.001b
	Residual	140,892	38	3,708		
	Total	187,600	39			

a. Dependent Variable: Organizational Performance
b. Predictors: (Constant), Innovation Policy

Coefficients a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	19,908	8,090		2,461	.019
	Innovation Policy	.588	.166	.499	3,549	**.001**

a. Dependent Variable: Organizational Performance

From Table 11, it shows that the Sig. value < 0.05 or t count 3.549, in other words it can be concluded that there is an influence of Innovation Policy (X1) on Organizational Performance (Y) at the West Sumatra Maritime Polytechnic.

Hypothesis Test 3: Transformational Leadership (X1) and Innovation Policy (X2) on Organizational Performance (Y)

The F-test aims to determine whether or not there is a simultaneous influence given by the independent variable (X) to the dependent variable (Y). The basis for decision making is:
If the Sig. value < 0.05, then there is a simultaneous influence of variable X on Y.
If the Sig. value > 0.05, then there is no simultaneous influence of variable X on Y.
The determination coefficient functions to determine how much percentage of influence the independent variable (X) simultaneously has on the dependent variable (Y). Based on the model summary table, the R Square value is 0.524, which means that the influence of variables X1 and X2 together/simultaneously on variable Y is 52.40%.

Table 17. Summary of Termination Coefficients

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.724a	**.524**	.499	1,553

a. Predictors: (Constant), Innovation Policy, Transformational Leadership

Table 18. Summary of Test Results Summary of Test Results Hypothesis 3

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98,395	2	49,198	20,406	**.000b**
	Residual	89.205	37	2.411		
	Total	187,600	39			

a. Dependent Variable: Organizational Performance
b. Predictors: (Constant), Innovation policy, Transformational leadership

From Table 18, it shows that the Sig. value < 0.05 or F count 20.406, in other words it can be concluded that there is a simultaneous influence of Transformational Leadership (X1) and Innovation Policy (X2) on Organizational Performance (Y) at the Sumbar Maritime Polytechnic. Furthermore, to find out how much simultaneous influence the independent variables have on the dependent variables is presented in Table 13.
To convince the result from quantitative calculation, the researchers collect the qualitative data. This qualitative data aimed to describe why transformational leadership influence organizational performance at Poltekpel Sumbar. These data collected through interview with the 5 Top Management Poltekpel Sumbar. The answer can be seen below:

Table 19. Transformational Leadership Influence Organizational Performance at Poltekpel Sumbar

No.	Management Rank	Question	Answer
1	Vice Director 1	How do you see the influence of transformational leadership on the achievement of academic goals at the West	Transformational leadership helps establish a clear vision for academic goals. Leaders always inspire us to think creatively, provide moral support, and encourage innovation.

No.	Management Rank	Question	Answer
		Sumatra Maritime Polytechnic?	As a result, the quality of the curriculum and accreditation of study programs have increased continuously.
2	Vice Director 2	How does transformational leadership affect the effectiveness of organizational budget management?	Transformational leadership has a very good effect on budget management to be more effective and efficient. Leaders provide visionary direction and involve the team in strategic decision making. Thus, budget allocation can be maximized to support the achievement of organizational targets.
3	Vice Director 3	How do you see the influence of transformational leadership on student development at the West Sumatra Maritime Polytechnic?	Transformational leadership greatly influences student development, especially in encouraging the creation of creative and innovative programs. The leader provides clear direction and motivation to the team to involve students in activities that not only improve their technical competence but also their soft skills.
4	Head of General Affairs, Personnel & Cooperation	Does transformational leadership style have an impact on human resource management in this organization?	This leadership style creates a collaborative work culture. Leaders often provide personal motivation that increases staff confidence and commitment. This is evident from the high level of employee retention and increased work productivity.
5	Head of Academic and Cadet Affairs	How does transformational leadership influence the improvement of academic service quality at West Sumatra Maritime Polytechnic?	Transformational leadership is very helpful in creating a more effective academic service system. Leaders always provide strategic direction to improve technology-based systems, such as online academic service applications, so that students can be served more quickly and transparently.

Furthermore, why innovation policy influence organizational performance at Poltekpel Sumbar. The answer of 5 Top Management Poltekpel Sumbar can be seen below:

Table 20. Innovation Policy Influence Organizational Performance at Poltekpel Sumbar

No.	Management Rank	Question	Answer
1	Vice Director 1	How does innovation	Innovation policy allows the

No.	Management Rank	Question	Answer
		policy affect the improvement of learning quality at West Sumatra Maritime Polytechnic?	implementation of technology-based learning methods such as e-learning and virtual reality-based simulations. This improves the quality of learning that is more interactive and relevant to industry needs, and encourages lecturers to continue to improve their competence through training supported by management.
2	Vice Director 2	How does innovation policy play a role in more efficient financial management?	With innovation policy, a digital-based financial management system is implemented, allowing transparency and efficiency in budget allocation. This system simplifies the financial reporting process, minimizes administrative errors, and ensures that resource management is more focused on priority programs such as procurement of laboratory equipment and human resource development.
3	Vice Director 3	How does innovation policy support the development of student programs?	Innovation policy encourages the implementation of competency-based programs such as industrial internships through MBKM, leadership training, and inter-university competitions. These programs are designed with a collaborative approach with industry and utilize technology to expand students' access to various self-development opportunities.
4	Head of General Affairs, Personnel & Cooperation	How does innovation policy affect academic data management and alumni relations?	Innovation policy enables academic and alumni data management based on an integrated information system. With this system, student and alumni data can be easily accessed to support strategic decision making. In addition, alumni can be more actively involved in campus activities, such as providing seminars and internship opportunities for students.
5	Head of Academic and Cadet Affairs	How does innovation policy affect HR management and strengthening cooperation with external parties?	Innovation policy encourages the implementation of a technology-based HR management system that facilitates employee performance evaluation and training planning. On the other hand, this policy also encourages the development of a network of cooperation with industry partners through cooperation agreements that focus on research, internships, and employee and student competency development.

From the test results, it can be seen that all independent variables (transformational leadership and innovation policy) have an influence on variable Y (performance). The Influence of Transformational Leadership on Improving Organizational Performance at the West Sumatra Maritime Polytechnic, states that if a leader has good transformational leadership, organizational performance will also increase. Through the statement above, it can be stated that transformational leadership has a positive effect on organizational performance. The results of this study support research conducted by (A Muktamar, J Pinto et al., 2023); (Evy Yanthy, Agus Purwanto, et al., 2020); (Armiyanti, A., Sutrisna, T., et al., 2023) Theoretically, transformational leadership is a leadership model for a leader who tends to motivate employees or subordinates to work better by emphasizing behavior to help transformation between employees/individuals and organizations/institutions(Supardi & Aulia Anshari, 2022).

Then, innovation Policy has an effect on improving organizational performance at the West Sumatra Maritime Polytechnic, meaning that if the innovation policy is better, organizational performance will also increase. Innovation is more of an aspect of organizational culture that reflects the level of openness to new ideas.(Sudarta, 2022). It can be interpreted that innovation policy partially has a significant influence on organizational performance. From the statement above, it can be stated that work innovation policy has a role or influence on improving organizational performance, where the increasing innovation policy in the organization will increase the performance of the organization. The results of this study support the research (Haira Zulfia, Gus Endrawan, et al., 2023); (Sartika, D. 2015); (A Sururi, 2017) conducted in his research concluded that innovation policy has an effect on organizational performance. This means that the better the innovation policy, the more it improves organizational performance. Innovation policies in higher education institutions such as polytechnics are often related to the application of educational technology, improving the quality of research, and developing educational services that are adaptive to changes in technology and industry needs while maintaining sustainability.

In addition, the results of the study indicate that transformational leadership and innovation policies have an effect on improving the organizational performance of the West Sumatra Maritime Polytechnic, meaning that if transformational leadership and innovation policies are implemented properly, organizational performance will also increase. The results of this study support the research conducted by (Ari Wibowo Sembiring, Aulia Sari Damanik, et al., 2023); (Anjarwati, T. 2017) in his research concluded that transformational leadership and innovation policies will further improve organizational performance. In theory, transformational leadership is a leadership model in which a leader tends to encourage employees or subordinates to work more optimally by focusing on behavior that supports transformation between individuals and organizations. Innovation policies in higher education institutions such as polytechnics are often related to the application of educational technology, improving the quality of research, and developing educational services that are adaptive to changes in technology and industry needs while maintaining sustainability. These elements are the basis for controlling employee behavior, their way of thinking, and how they work together and interact with the environment. If transformational leadership and innovation policies are implemented properly, they will be able to increase organizational commitment and contribute to success in organizational performance.

The study's findings about the impact of innovation policies and transformational leadership on

organizational performance have numerous practical ramifications for higher education systems. In order to inspire others, empower organizational members, and advance a common vision, leaders of higher education institutions must first bolster their transformational leadership style. By fostering an atmosphere that welcomes fresh perspectives, leaders may foster a culture of cooperation and creativity. To assist leaders in putting these tactics into practice, organizations might offer leadership development courses. They can also put in place processes for performance reviews that enhance company culture. It is intended that these initiatives will boost staff and professor motivation, which directly affects educational quality.

After that, innovation policies ought to be well-thought-out and well funded. Implementing innovative technology in learning management and administration, for instance, can increase an organization's operational efficiency. Reward systems should be reinforced to promote sustainability. According to the study's findings, institutions of higher learning can also start cross-unit collaboration platforms to promote creative thinking and hasten the adoption of innovation policies. By doing this, businesses can become more competitive both domestically and globally in addition to improving their overall performance.

CONCLUSION

From the results of the analysis that have been discussed previously, the following conclusions can be drawn. The results of this study indicate that partially transformational leadership and innovation policies have a positive and significant influence on the organizational performance of the West Sumatra Maritime Polytechnic in implementing the Tridharma of Higher Education. Then transformational leadership and innovation policies simultaneously have a positive and significant influence on the organizational performance of the West Sumatra Maritime Polytechnic in implementing the Tridharma of Higher Education. While the suggestion that can be given is considering that transformational leadership has an influence on the organizational performance of the West Sumatra Maritime Polytechnic, then the transformational leadership should be implemented properly. To improve organizational performance, it is better for leaders to pay more attention to innovation policies by always motivating employees to always innovate and work must be oriented towards the planned results and goals. It is hoped that for further researchers this research can be used as further reference material. It is important to take into account the many limitations of this study. The results may not be as applicable to other institutions, such as universities with distinct cultural and policy contexts or vocational schools, due to the study's narrow focus on higher education establishments in a specific area. Subjective bias may also be introduced by survey methods based on respondents' perceptions, particularly if the responses tend to represent ideal expectations rather than actual circumstances. The intricacy of the relationship between innovation policies, transformational leadership, and organizational performance particularly when considering varied organizational cultures cannot be adequately captured by the quantitative technique that was employed. In order to obtain a more comprehensive understanding, it is advised that future study employ a mixed methods strategy that blends quantitative and qualitative data, such as in-depth interviews or case studies. A more complete picture may also be obtained by extending the sample to include universities in different areas, such as private or foreign universities. To improve understanding of the variables influencing

organizational performance in diverse situations, future research must also investigate additional moderating or mediating elements, such as the impact of digital technology, national culture, or the degree of institutional autonomy.

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