MAGISTER MANAJEMEN-UNISSULA
SAMaJ
SULTAN AGUNG MANAGEMENT JOURNAL

A Model for Improving Employee Innovative Behavior Through Transformational Leadership, Work Engagement, and Knowledge Sharing Behavior

Eko Ahadyat[1)] & Olivia Fachrunnisa[2)]
[1)]Faculty of Economic, Universitas Islam Sultan Agung (UNISSULA) Semarang, Indonesia, E-mail: ekoahadyat.std@unissula.ac.id
[2)]Faculty of Economic, Universitas Islam Sultan Agung (UNISSULA) Semarang, Indonesia, E-mail: olivia@unissula.ac.id

Abstract. *The right type of leadership is needed for an organization to achieve the desired results. In relation to the rapid changes that occur, the leadership in question needs to be able to influence human resources in practicing innovative behaviors. The development of this innovative behavior is one of the effective ways for organizations to be able to get out of problems caused by existing changes and this behavior will be strongly supported by the capacity of human resources and the culture of innovation and knowledge sharing that exists in the organization. This research is an explanatory research. Explanatory research aims to analyze the influence between determining variables and test the formulated hypothesis. Although it contains descriptive elements, the main focus lies in exploring the relationship between variables. In this study, the variables studied include Transformational Leadership, Work Engagement, Knowledge Sharing Behavior, and Innovation Behavior. Transformational Leadership has a positive effect on Work Engagement. Transformational leaders are able to help create a positive work climate by motivating workers to be more committed and enthusiastic in their tasks. Transformational Leadership has a positive effect on Knowledge Sharing Behavior.*

Keywords: *Knowledge; Leadership; Positive; Transformational.*

1. Introduction

The challenge facing organizations today is the ability to respond to rapid changes driven by the rapid development of science and technology (Nusair et al., 2012) to ensure the organization's continued existence and success (Cho & Pucik, 2005). Many organizations are unable to survive the rapid changes that are occurring. Kodak is one company often cited as an example of the importance of innovation and change. Kodak's delay in adapting to market trends toward the digital photography era prevented it from catching up with the digital innovations its competitors had introduced.

Human Resources (HR) resistance to change is one of the causes of slow organizational response. Resistance to change in HR has been a long-standing research topic, as humans

fundamentally need a process of change (Oreg, 2003). HR discomfort in undergoing the change process can be mitigated by providing role models as a reference for attitudes and motivation for change. Based on organizational hierarchy, leaders are the appropriate figures to serve as role models because they have the ultimate control over resistance to change.

Leaders grow from the values they hold and the experiences they have experienced throughout their lives. These values and experiences shape a pattern of relationships where the person referred to as the leader influences others in the structure below them (Moorcroft, 2005), also known as leadership. The diverse experiences and values held by each leader lead to the emergence of diverse leadership styles. These leadership styles have strengths and weaknesses that will impact the organization's performance differently.

The right type of leadership is needed for an organization to achieve desired results (Avolio et al., 2009). In relation to the rapid changes that occur, the leadership in question needs to be able to influence human resources to practice innovative behaviors. Developing this innovative behavior is one effective way for organizations to overcome the problems caused by existing changes (Elkins & Keller, 2003). This behavior will be strongly supported by the capacity of human resources and the culture of innovation and knowledge sharing that exists within the organization.

Leaders with the ability to build vision, model challenging problems, and analyze the need for change are essential for organizations that want to survive change. (Loon et al., 2012) further stated that these characteristics are possessed by leaders with a transformational leadership style. (Bass, 1990) explained that transformational leadership can influence the desire of human resources to improve their capabilities in addressing problems within their organization. This leadership style is particularly well-suited to hierarchical organizations (Chung & Li, 2021).

The rapid changes in the world today have encouraged leaders with Transformational Leadership (TL) to manage organizations agilely to respond to these changes. This responsiveness is coupled with the leader's ability to form teams that demonstrate Innovation Behavior (IB), enabling them to adapt to change. TL positively influences the development of IB within an organization (Afsar et al., 2019; Bai et al., 2015; Michaelis et al., 2010; Prasad & Junni, 2016), but to a certain extent, TL can have the opposite effect on IB because this leadership style can increase stress levels and psychological exhaustion in subordinates (Chung & Li, 2021) due to the high pressure exerted (Porter & Bigley, 2012). Other studies have concluded that the relationship between TL and IB is inverse (Basu & Green, 1997), and even (Moss & Ritossa, 2007) found no relationship at all between the two variables.

Meanwhile, a culture of knowledge sharing ensures that each crew member has an adequate understanding of procedures, technologies, and best practices, thereby enhancing collective competence and response to emergency situations. By integrating these four aspects, PT Pelayaran Bahtera Adhiguna can build a resilient, adaptive crew that is ready to face the dynamics of the shipping industry, while also supporting the company's growth and

reputation. Through this research, a model for improving innovative behavior will be tested by focusing on the roles of transformational leadership style, work engagement, and knowledge sharing behavior.

2. Research Methods

This research is explanatory research. Explanatory research aims to analyze the influence between determining variables and test the formulated hypotheses.(Masri & Effendi, 1995). Although it contains descriptive elements, its primary focus is on exploring the relationships between variables. In this study, the variables examined include Transformational Leadership, Work Engagement, Knowledge Sharing Behavior, and Innovation Behavior.

3. Results and Discussion

The target of this study was the crew of a ship owned by PT BAg, with a target respondent count of 125 people. Questionnaires were distributed over a period of one month, with a total of 143 people completing the questionnaires. Of those who completed the questionnaires correctly, the respondent response rate was 114%. Details can be seen in the following table:

Table Questionnaire Responses

Keterangan	Jumlah
Target Responden	133
Jumlah Kuesioner Terisi	143
Respon Rate	108%

The table explains that from 133 target respondents whose data will be processed, the results obtained were 143 respondents, this indicates that the data has met the minimum number of respondents with a response rate of 108%.

Length of service is measured by the number of times a seafarer served on a PT BAg vessel's crew (onboard). Because the employment system at PT BAg, and shipping companies in general, operates on a broken contract basis, this data collection is used to describe length of service. One crew member is equivalent to 7-12 months of service. The use of this year range relates to PT BAg's remuneration system.

The Engine Department generally ensures the proper operation of the main and auxiliary equipment, as well as the electrical system, so the ship can sail and its loading and unloading equipment can function fully. Work in this department is highly technical, relying not only on mechanical skills but also on extensive experience, especially for personnel who are officers.

Descriptive analysis methods were used to gain a comprehensive understanding of the respondents' responses to the research instrument. This analysis was conducted to statistically describe the subjects' responses to the questionnaire questions. The measurement scale used ranged from 1 for the lowest score to 5 for the highest score, calculated as follows:

Interval = (maximum value– minimum value) / number of classes

= (5 – 1) / 3

= 1.33

Based on the equation above, the distribution of data criteria is categorized as follows: scores below 2.33 are in the low category, values between 2.33 and 3.67 are in the medium category, and values above 3.67 are in the high category.

Transformational Leadership has 4 indicators used, namely Idealized Influence (TL_1), Inspirational Motivation (TL_2), Intellectual Stimulation (TL_3), and Individualized Consideration (TL_4).

Transformational leadership is something that appears in the work process of leaders on ships owned by PT BAg (Ship Captain). From the obtained values, it is known that Intellectual Stimulation (TL_3) is the aspect most perceived by the crew as a ship leader's characteristics. Conversely, the Individual Consideration (TL_4) value indicates that this aspect is the aspect least found in transformational leadership on ships owned by PT BAg.

In this study, data analysis and model testing were carried out comprehensively by utilizing the SPSS version 30 application as the main tool, where the first stage involved a validity test to ensure the accuracy and precision of the research instrument in measuring what should be measured, followed by a reliability test to test the internal consistency and stability of the measuring instrument so that a reliable and trustworthy instrument was obtained, then the measurement results were used as a basis for evaluating the quality of research data as well as a basis for conducting hypothesis testing through various relevant statistical analysis techniques, including regression and correlation tests to identify relationships between variables and significance tests to determine the level of confidence in the research findings, where the entire analysis process was designed in such a way as to ensure the scientific validity of the conclusions to be drawn, while providing a comprehensive picture of the phenomena studied based on empirical data that had gone through a series of rigorous and systematic statistical tests.

Validity testing is necessary to measure the validity of a questionnaire. An instrument is declared valid if the collected data demonstrates consistency with the actual conditions of the research object. In this process, the analysis value generated by the SPSS software is compared with the critical value in the R Product Moment table. If the correlation value (r-calculated) is higher than the r-table, then the questionnaire item meets the validity criteria. Conversely, if the value is lower, the item is declared invalid and needs to be revised or eliminated from the research instrument.

Reliability testing evaluates the measurement consistency of an instrument through an analysis of inter-item stability. Reliability validity also considers McDonald's Omega for non-parametric data and item-total correlation to identify items that interfere with measurement accuracy, beyond the conventional alpha value benchmark. A questionnaire instrument is considered reliable if the Cornbach alpha value is >0.6.

The multicollinearity test aims to detect perfect or high correlation between independent variables in a regression model. This analysis uses two main indicators: tolerance and Variance Inflation Factor (VIF). A model is considered multicollinearity-free if the VIF value is below 5, while a VIF value above 10 indicates a serious multicollinearity problem that can impair the accuracy of regression parameter estimates.

Hypothesis testing is conducted by comparing the calculated t-value with the t-table. Based on the number of respondents and an a value of 5%, the t-table value is obtained through calculations;

T table = (a/2 ; 143-variable-1

= (0.025 ; 138)

= 1.977

a. Hypothesis testing 1. There is a positive relationship between Transformational Leadership and Work Engagement

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	19.661	1.643		11.969	<,001
	Transformational Leadership	.581	.034	.818	16.874	<,001

a. Dependent Variable: Work Engagement

From these values, a significance of <0.001 was obtained and the t-count was 16.874, which was greater than the t-table. These results indicate a significant influence of Transformational Leadership on Work Engagement, so it can be concluded that Hypothesis 1, namely There is a positive relationship between Transformational Leadership and Work Engagement, is accepted.

b. Hypothesis testing 2. Transformational leadership has a significant positive influence on knowledge sharing behavior.

c. Hypothesis testing 3. There is a positive relationship between work engagement and innovation behavior

From these values, a significance of <0.001 was obtained, and the calculated t-value was 12.358, which was greater than the t-table. These results indicate a significant influence of

work engagement and innovation behavior, so it can be concluded that Hypothesis 3, namely There is a positive relationship between work engagement and innovation behavior, is accepted.

d. Hypothesis testing 4. There is a significant positive relationship between knowledge sharing and innovation behavior.

From these values, a significance of <0.001 was obtained, and the calculated t-value was 8.568, which was greater than the t-table. These results indicate a significant influence of work engagement and innovation behavior, so it can be concluded that Hypothesis 4, namely There is a significant positive relationship between knowledge sharing and innovation behavior, is accepted.

e. Hypothesis testing 5. Transformational Leadership has a positive influence on Innovative Behavior, mediated by Work Engagement.

Using a table, a mediation relationship analysis can be performed using Sobel, a procedure for verifying the significance of the mediation effect by calculating the ratio between the indirect effect (the product of coefficients a and b) and its standard error. This test assumes a normal distribution of the coefficient product, where the results are declared significant if the z-score exceeds 1.96 or the p-value <0.05, indicating a significant mediator role in the relationship between the independent and dependent variables. The data obtained in the table are:

A = 0.581

StdE A = 0.034

B = 0.477

StdE B = 0.095

By using the Sobel calculator application, a two-tailed probability value of 0.00000145 was obtained. With a two-tailed probability value <0.05, Hypothesis 5, namely Transformational Leadership has a positive effect on Innovative Behavior mediated by Work Engagement, is accepted.

f. Hypothesis testing 6. Transformational Leadership has a positive influence on Innovative Behavior, mediated by Knowledge Sharing Behavior.

Discussion of research results as follows:

1) The Influence of Transformational Leadership on Work Engagement

The results of the test conducted for Hypothesis 1 indicate that there is a significant relationship between transformational leadership and Work Engagement, with a significance value of <0.01 and a t-test value of 16,874. This is in accordance with research by Banks et al.

(2016).

Transformational Leadership (TL) has a significant positive influence on Work Engagement (WE) in PT BAg, where challenging working conditions and an isolated environment require inspirational leadership. Transformational leaders enhance WE through four key dimensions: idealized influence (being a role model), inspirational motivation (providing a clear vision), intellectual stimulation (encouraging innovation), and individualized consideration (paying attention to individual needs). On ships, where crews often face high stress and fatigue, TL helps create a positive work climate by motivating crews to be more committed and passionate about their duties. Leaders who provide emotional support and recognition for crew contributions can increase work engagement, ultimately reducing turnover and improving operational safety.

Leaders who are able to serve as role models and demonstrate high integrity (idealized influence) will foster respect and trust from employees, ultimately forming vigor or high work enthusiasm. Meanwhile, inspirational motivation, namely the leader's ability to convey a clear and inspiring vision, also helps increase dedication, namely emotional commitment to the work. Leaders who encourage creative and innovative thinking through intellectual stimulation will strengthen absorption, namely the state when employees are completely immersed and focused on their work. Finally, individualized consideration, namely the leader's personal attention to the needs and development of employees, is a crucial factor supporting the formation of all three dimensions of Work Engagement as a whole.

Previous research in the maritime sector has shown that crews led by transformational leaders tend to be more resilient, productive, and loyal. Therefore, the application of TL in shipping management not only improves WE but also contributes to better operational performance and business sustainability.

2) The Influence of Transformational Leadership on Knowledge Sharing Behavior

The results of the second hypothesis test indicate a significant relationship between transformational leadership and knowledge sharing behavior, with a significance value of <0.01 and a t-test of 8.946. This finding aligns with those of Afsar et al., 2019, and Pham et al., 2023.

Transformational Leadership (TL) plays a critical role in improving the Knowledge Sharing Behavior (KSB) of shipping companies, which face complex technical and operational challenges. In a hierarchical and isolated shipboard environment, this leadership approach creates a culture of mutual trust that is essential for sharing tacit knowledge about safety, machinery maintenance, and emergency procedures.

Transformational leaders enhance KSB by actively encouraging open discussions about best practices and learning from mistakes. For example, a chief engineer who implements TL will regularly hold debriefing sessions after engine repairs, where the entire crew can share experiences. This approach not only enriches collective knowledge but also strengthens team

cohesion.

Support, inspiration, and individual attention can create an environment that encourages open sharing of knowledge, both tacit and explicit. Leaders who inspire subordinates to grow and develop will facilitate the sharing of work experiences (sharing tacit knowledge), documenting important information (sharing explicit knowledge), and explaining information in depth (depth of knowledge shared). Thus, a transformational leadership style is key to building a culture of knowledge sharing within an organization.

Research shows that in a TL environment, crew members are 37% more likely to participate in knowledge-sharing activities. The impact is seen in improved operational safety, ship maintenance efficiency, and adaptability to changing maritime technology.

3) The Influence of Work Engagement on Innovation Behavior

The results of the third hypothesis test concluded that there is a significant relationship between transformational leadership and knowledge sharing behavior, with a significance value of <0.01 and a t-test of 12.358. This finding aligns with research by Koroglu & Ozmen (2022), Ali et al. (2022), Mansoor et al. (2021), and Inam et al. (2021).

Work engagement has been shown to have a significant positive influence on innovation behavior in the shipping industry. High work engagement, characterized by vigor (mental energy), dedication (commitment), and absorption (deep involvement), will encourage crew members to be more proactive in developing innovative solutions. In challenging shipping environments such as extreme weather conditions, time pressure, and operational complexity, crew members who are emotionally and cognitively engaged with their work tend to be more creative in solving technical problems, improving safety procedures, and optimizing operational efficiency.

High energy (vigor) enables individuals to develop ideas sustainably, while dedication fosters enthusiasm and motivation to create meaningful innovations. Absorption also plays a crucial role in maintaining focus when implementing ideas. These three dimensions of Work Engagement support all stages of innovation, from idea exploration to implementation.

The relationship between WE and IB can be explained through psychological and social mechanisms. Crew members with high levels of WE typically possess strong intrinsic motivation, which drives them to continually seek new ways to complete routine tasks. For example, a highly engaged chief engineer might develop minor modifications to an engine system to improve fuel efficiency, or a deck officer might design a more practical safety checklist. Furthermore, high work engagement also creates a collaborative environment where innovative ideas can be easily shared and developed by the entire crew.

The impact of WE on IB is crucial for shipping companies, which are constantly faced with efficiency demands, environmental regulations, and maritime technology developments. Shipping companies that successfully improve their crew's WE will gain a competitive

advantage through bottom-up operational innovations. Therefore, investing in improving work engagement benefits not only crew well-being but also business innovation and sustainability.

4) The Influence of Knowledge Sharing Behavior on Innovation Behavior

The results of the fourth hypothesis test indicate a significant relationship between Knowledge Sharing Behavior and Innovation Behavior, with a significance value of <0.01 and a t-test of 8.568. This finding aligns with research by Islam et al. (2024) and Rafique et al. (2022).

Knowledge Sharing Behavior (KSB) plays a fundamental role in driving Innovation Behavior (IB) in the complex and challenging shipping industry. In the isolated and risk-ridden operational work environment of ships, the exchange of technical knowledge, field experience, and practical solutions serves as a crucial catalyst for innovation. Crew members who actively share knowledge about engine maintenance, safety procedures, or navigation techniques create a collective knowledge base that serves as the foundation for improvements and breakthroughs. For example, a chief engineer's experience in addressing a specific engine issue, shared with his juniors, can inspire tool modifications or new, more efficient approaches. KSB not only enriches individual technical competencies but also creates a culture of continuous learning that is essential for innovation in the maritime environment.

Crew members who actively share knowledge tend to have more resources and inspiration for developing new ideas. Sharing tacit knowledge facilitates the dissemination of experiences and intuitions, which are useful in idea generation, while sharing explicit knowledge provides concrete data and information to support idea implementation. The depth of shared knowledge also determines the quality of the resulting ideas.

The mechanism of influence of KSB on AI in the shipping industry can be observed through three main aspects. First, the exchange of explicit knowledge (such as procedural documents or technical manuals) and tacit knowledge (personal experience and practical expertise) enables the synthesis of new, more creative ideas. Second, regular discussions among crew members about operational challenges and previously implemented solutions stimulate critical thinking and innovative approaches. Third, effective KSB reduces duplication of errors and shortens the learning curve, allowing teams more time and resources to experiment with new solutions. A concrete example can be seen in the case where ship engineers shared tips for extending the lifespan of certain engine components, which then inspired the team to develop a predictive maintenance system based on the actual engine condition.

From an organizational perspective, shipping companies that systematically promote KSB will reap the benefits of sustainable improvement in IB. Practices such as post-voyage debriefing sessions, online crew discussion forums, or structured knowledge documentation systems have proven effective in transforming individual knowledge into organizational assets. The long-term impact is the creation of safer vessels, more efficient operations, and stronger

company competitiveness in the global market. Furthermore, a culture of knowledge sharing also strengthens social cohesion among crew members, which in turn creates a more collaborative work environment conducive to innovation. Thus, KSB is not simply an information exchange activity, but a strategic investment that drives innovative transformation in the shipping industry.

5) Transformational Leadership has a positive influence on Innovative Behavior mediated by Work Engagement

The results of the tests conducted on the fifth hypothesis show that Transformational Leadership has a positive influence on Innovative Behavior mediated by Work Engagement with a significance value of <0.01 and a two-tailed probability of 0.00000145. This is in line with research by Zuraik & Kelly, 2019.

Transformational leadership is a leadership style that inspires, motivates, and encourages subordinates to prioritize the interests of the organization over personal interests to a certain extent. In the Indonesian shipping world, where challenges such as global competition, strict regulations, and demands for increasingly complex operational efficiency are prevalent, transformational leaders play a crucial role in driving innovation. Such leaders not only provide direction but also create a shared vision, encourage creativity, and build trust. With the characteristics outlined above, transformational leadership can trigger innovative behavior, namely the ability of employees to deliver results and implement new ideas in their work. However, this relationship is not direct; it is mediated by work engagement, namely employees' emotional and cognitive involvement in their work.

Work engagement plays a key mediating role in the relationship between transformational leadership and innovative behavior. Effective transformational leadership increases employee vigor, dedication, and absorption, which in turn encourages greater innovation. This means that transformational leadership's influence on innovative behavior is not only direct but also indirect through increased work engagement.

When transformational leaders provide support, recognition, and meaningful challenges, employees tend to feel more motivated and connected to their work. In the shipping industry, where work pressure is high and the work environment often demands rapid adaptation, work engagement is a key factor in encouraging employees to think outside the box and take initiative. Engaged employees consistently seek effective solutions beyond routine tasks. This is done to improve operational efficiency, shipping safety, or customer service. Thus, transformational leadership strengthens work engagement, which ultimately drives innovative behavior.

The Indonesian shipping industry faces various challenges, such as digitalization, demands for environmental sustainability, and competition from foreign shipping companies. In this context, innovative behavior is key to maintaining competitiveness. Transformational leadership fosters a culture of innovation by empowering employees, encouraging

collaboration, and creating an environment that supports experimentation with new ideas. For example, a transformational leader in a shipping company might encourage crew and shore staff to propose new technologies for route monitoring or fuel savings. High work engagement ensures that these ideas not only emerge but are also implemented with full commitment, as employees feel they are making a meaningful contribution to the organization.

Previous research has shown that work engagement plays a significant mediating role in the relationship between transformational leadership and innovative behavior. In the shipping sector, where teamwork and cross-departmental coordination are crucial, transformational leaders are able to create a sense of togetherness and shared purpose. This increases work engagement, which in turn facilitates the emergence of innovative behavior. For example, employees who are supported and appreciated by their leaders are more likely to suggest improvements to loading and unloading processes or ship maintenance systems. Therefore, transformational leadership not only directly influences innovative behavior but also, through increased work engagement, serves as a psychological mechanism that strengthens the relationship.

In conclusion, transformational leadership positively influences innovative behavior in the Indonesian shipping industry, with work engagement acting as a mediator that strengthens this relationship. Inspirational and visionary leaders naturally contribute to transforming the work environment into one that encourages employee engagement, which in turn fuels innovation. For shipping companies seeking to increase competitiveness, developing a transformational leadership style and focusing on enhancing work engagement can be an effective strategy. Thus, the Indonesian shipping industry can not only face current challenges but also implement effective mitigation strategies to face the future in an innovative and sustainable manner.

6) Transformational Leadership has a positive influence on Innovative Behavior mediated by Knowledge Sharing Behavior

The results of the fifth hypothesis test show that Transformational Leadership has a positive influence on Innovative Behavior mediated by Knowledge Sharing Behavior, with a significance value of <0.01 and a two-tailed probability of 0.00060979. This is in accordance with research by Sharif et al., 2024.

Transformational Leadership (TL) is a leadership style that encourages employees to transcend personal interests and innovate for the advancement of the organization. In the Indonesian shipping industry, which faces challenges such as digitalization, global competition, and demands for efficiency, TL plays a crucial role in fostering Innovative Behavior (IB). Transformational leaders create an inspiring vision, foster creativity, and build trust, thus motivating employees to develop innovative solutions. However, the relationship between TL and IB is not always direct; it is often mediated by Knowledge Sharing Behavior (KSB), which is the habit of sharing knowledge, experiences, and ideas among employees.

Thus, TL can strengthen KSB, ultimately enhancing IB in the shipping sector.

Knowledge Sharing Behavior (KSB) is a crucial mediator in the relationship between TL and IB because innovation requires the exchange of ideas and collaboration. Transformational leaders foster an open work environment, where employees feel safe sharing knowledge without fear of judgment. In the shipping world, where operations involve many parties—from crew members and technicians to logistics staff—KSB enables the dissemination of best practices and creative solutions. For example, when a captain shares experiences on efficient routes or techniques for reducing fuel consumption, this knowledge can spark innovation at the organizational level. Thus, TL strengthens KSB, which in turn drives more effective IB.

Transformational leadership that encourages open communication and collaboration increases employees' propensity to share knowledge. This sharing behavior becomes a crucial source of ideas and information for driving innovation. Thus, transformational leadership has an indirect effect on innovation behavior through increased knowledge sharing behavior.

The Indonesian shipping industry requires continuous innovation to increase competitiveness, both in operations, technology, and service. TL contributes to this by creating an organizational culture that encourages learning and collaboration. Transformational leaders not only provide instructions but also facilitate discussions, training, and reward systems to encourage KSB. For example, shipping companies can hold regular discussion forums or digital platforms where employees share ideas for improving loading and unloading processes or ship maintenance. When KSB is high, knowledge spreads more quickly, thus triggering IB such as the adoption of new technologies or increased operational efficiency.

Previous research has shown that KSB strengthens the relationship between TL and IB because innovation often stems from collaboration and the exchange of ideas. In the shipping sector, where safety and efficiency are priorities, KSB enables collective learning. For example, an engineer's experience in handling ship engines can provide learning material for other teams, leading to innovative solutions to similar problems. TL strengthens this process by creating a climate of trust and appreciation for employee contributions. Thus, TL directly influences not only IB but also through the improvement of KSB as an intervening variable.

In conclusion, Transformational Leadership (TL) positively influences Innovative Behavior (IB) in the Indonesian shipping industry, with Knowledge Sharing Behavior (KSB) acting as a mediator that strengthens this relationship. Transformational leaders who foster a culture of knowledge sharing can create an environment where innovation thrives. For shipping companies seeking to enhance their competitiveness, developing TL and promoting KSB is an effective strategy. This way, the Indonesian shipping industry will not only be able to face current challenges but also be ready to compete in the digital and sustainable era of the future.

4. Conclusion

Based on the results of the research on the questionnaire that has been conducted, and looking at the phenomenon of the perception of the importance of Innovation Behavior in a specific industry, it can be concluded that: Transformational Leadership has a positive effect on Work Engagement. Transformational leaders are able to help create a positive work climate by motivating workers to be more committed and enthusiastic in their tasks. Transformational Leadership has a positive effect on Knowledge Sharing Behavior. In a hierarchical and isolated work world, this leadership approach creates a culture of mutual trust that is important for sharing tacit knowledge about safety, machine maintenance, and emergency procedures.

5. References

Afsar, B., Masood, M., & Umrani, W. A. (2019). The role of job crafting and knowledge sharing on the effect of transformational leadership on innovative work behavior. Personnel Review, 48(5), 1186–1208. https://doi.org/10.1108/PR-04-2018-0133

Agarwal, U. A. (2014). Linking justice, trust and innovative work behavior to work engagement. Personnel Review, 43(1), 41–73. https://doi.org/10.1108/PR-02-2012-0019

Albrecht, S. L., Furlong, S., & Leiter, M. P. (2023). The psychological conditions for employee engagement in organizational change: Test of a change engagement model. Frontiers in Psychology, 14. https://doi.org/10.3389/fpsyg.2023.1071924

ALDABBAS, H., PINNINGTON, A., & LAHRECH, A. (2020). THE MEDIATING ROLE OF PSYCHOLOGICAL EMPOWERMENT IN THE RELATIONSHIP BETWEEN KNOWLEDGE SHARING AND INNOVATIVE WORK BEHAVIOR. International Journal of Innovation Management, 25(02), 2150014. https://doi.org/10.1142/S1363919621500146

Ali, H., Li, M., & Qiu, X. (2022). Employee Engagement and Innovative Work Behavior Among Chinese Millennials: Mediating and Moderating Role of Work-Life Balance and Psychological Empowerment. Frontiers in Psychology, Volume 13-2022. https://doi.org/10.3389/fpsyg.2022.942580

Banks, G.C., McCauley, K.D., Gardner, W.L., & Guler, C.E. (2016). A meta-analytic review of authentic and transformational leadership: A test for redundancy. Leadership Quarterly, 27(4), 634–652. https://doi.org/10.1016/j.leaqua.2016.02.006

Blau, PM (nd). Justice in Social Exchange.

Che, T., Wu, Z., Wang, Y., & Yang, R. (2019). Impacts of knowledge sourcing on employee innovation: the moderating effect of information transparency. Journal of Knowledge Management, 23(2), 221–239. https://doi.org/10.1108/JKM-11-2017-0554

Coad, A. F., & Berry, A. J. (1998). Transformational leadership and learning orientation. Leadership \& Organization Development Journal.

Cummings, J. N. (2004). Work Groups, Structural Diversity, and Knowledge Sharing in a Global Organization. In Management Science (Vol. 50, Issue 3, pp. 352–364). INFORMS Inst. for Operations Res. and the Management Sciences. https://doi.org/10.1287/mnsc.1030.0134

Darvishmotevali, M., Prentice, C., & Altinay, L. (2024). Symmetrical and asymmetrical analysis of the complex relationship between perceived environmental uncertainty and creative performance: exploring a competency formula. International Journal of Contemporary Hospitality Management, 36(10), 3451–3471.

Han, S.H., Seo, G., Yoon, S.W., & Yoon, D.-Y. (2016). Transformational leadership and knowledge sharing. Journal of Workplace Learning, 28(3), 130–149. https://doi.org/10.1108/JWL-09-2015-0066

Kucharska, W., & Erickson, G.S. (2020). The influence of IT-competency dimensions on job satisfaction, knowledge sharing and performance across industries. VINE Journal of Information and Knowledge Management Systems, 50(3), 387–407. https://doi.org/10.1108/VJIKMS-06-2019-0098

Kwahk, K.-Y., & Park, D.-H. (2016). The effects of network sharing on knowledge-sharing activities and job performance in enterprise social media environments. Computers in Human Behavior, 55, 826–839. https://doi.org/https://doi.org/10.1016/j.chb.2015.09.044

Lee, J.-N. (2001). The impact of knowledge sharing, organizational capability and partnership quality on IS outsourcing success. Information & Management, 38(5), 323–335. https://doi.org/https://doi.org/10.1016/S0378-7206(00)00074-4

Lei, H., Ha, ATL, & Le, P.B. (2020). How ethical leadership cultivates radical and incremental innovation: the mediating role of tacit and explicit knowledge sharing. Journal of Business & Industrial Marketing, 35(5), 849–862. https://doi.org/10.1108/JBIM-05-2019-0180

Lewin, K., Lippitt, R., & White, R. K. (1939). Patterns of Aggressive Behavior in Experimentally Created “Social Climates.” In Journal of Social Psychology (Vol. 10, Issue 2, pp. 269–299). https://doi.org/10.1080/00224545.1939.9713366

Lin, H. (2007). Knowledge sharing and firm innovation capability: an empirical study. International Journal of Manpower, 28(3/4), 315–332. https://doi.org/10.1108/01437720710755272

Lv, M., Jiang, S., Chen, H., & Zhang, S. (2022). Authentic leadership and innovative behavior among nurses in China: A mediation model of work engagement. Journal of Nursing

Management, 30(7), 2670–2680. https://doi.org/10.1111/jonm.13669

Mansoor, A., Farrukh, M., Wu, Y., & Wahab, S.A. (2021). Does inclusive leadership inspire innovative work behavior? Human Systems Management, 40(1), 93–102. https://doi.org/10.3233/HSM-200972

Masri, S., & Effendi, S. (1995). Survey Research Methodology. LP3ES Jakarta.

Miller, L., & Miller, A. F. (2020). Innovative work behavior through high-quality leadership. International Journal of Innovation Science, 12(2), 219–236. https://doi.org/10.1108/IJIS-04-2019-0042