Investigation of the Effect of Transformational Leadership, Organization: Commitment, Culture, and Environment on Sustainability Performance Using Knowledge Management (Empirical Study on Marine Transportation and Logistics Companies)

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doi.org/10.51505/IJEBMR.2023.71014 URL: https://doi.org/10.51505/IJEBMR.2023.71014

Received: Oct 06, 2023 Accepted: Oct 10, 2023 Online Published: Oct 23, 2023

Abstract

This study aims to investigate the influence of transformational leadership, organizational commitment, organizational culture, and work environment on sustainability performance with the mediation of knowledge management. The investigation was carried out by applying quantitative research methods through conducting a survey in the form of a questionnaire to ship officers who carry out duties at marine transportation and logistics companies that specialize in transporting coal and other mineral resources. There were 500 respondents who were eligible for further processing from 66 companies. Analysis was carried out using SmartPLS software. The analysis consists of descriptive statistics, measurement model evaluation, structural model evaluation, and hypothesis testing. The findings from this investigation show that: Transformational Leadership and Working Environment have a positive effect on Sustainability performance; Organization Culture and Working Environment have a positive effect on Knowledge management; and Knowledge management is proven to mediate Organization Culture and Working Environment on Sustainability performance. Organization Commitment and Organization Culture do not have a positive effect on Sustainability performance. Transformational Leadership and Organization Commitment do not have a positive influence on Knowledge Management. Knowledge management is not proven to mediate Transformational Leadership and Organizational Commitment of maritime transportation and logistics companies on Sustainability performance. Working Environment has a positive effect on Sustainability performance and Knowledge management, likewise Knowledge management mediates Working Environment on Sustainability Performance. The research results contribute to theory by:
strengthening the view of leadership theory which confirms that Transformational Leadership contributes positively to Sustainability performance; Organizational Commitment does not have a significant effect on Sustainability Performance, indicating that there needs to be further evaluation on how Organizational Commitment can be improved; expanding understanding of how Organization Culture can support sustainability; the positive influence of the Working Environment on Sustainability Performance emphasizes the importance of creating a Working Environment that supports collaboration, access to knowledge, and innovation in the context of sustainability; confirmation that Knowledge Management plays an important role in achieving Sustainability Performance. And managerial: understand that Transformational Leadership can make a significant contribution to Sustainability Performance; and evaluate how to build a stronger Organizational Commitment to sustainability; strive to develop a culture that supports sustainability goals; creating a Working Environment that supports collaboration, provides access to knowledge, and encourages innovation; recognizes the important role of Knowledge Management in achieving Sustainability Performance.

Keywords: Transformational Leadership; Organization: Commitment, Culture, Environment; Sustainability performance; Knowledge management; Sea Logistics Transportation

1. Introduction
Changes that occur unexpectedly and are increasingly strong in global market economic activity are becoming increasingly dynamic during and after entering the post-COVID-19 pandemic era. This encourages company management to move to create different performance so that it can be successful and survive in the long term. Corporate organizations are motivated to seek, explore and obtain sustainable performance and sustainable competitive advantages in winning the market. Literature shows that organizational success is driven by sustainability performance (Schaltegger, 2011).

Sustainability performance relates to the management carried out to obtain products/services, business processes and company performance (Tasleem et al., 2019). The development of the concept of Sustainability performance has changed and expanded the business perspective from managing economic-financial strategies to social and ecological performance as well as environmental responsibility (Hubbard, 2009). The Triple Bottom Line (TBL) approach to sustainability indicates that the targets for implementing an organization's operational activities must be achieved by considering a balance between objectives that focus on profit, social aspects and concern for the environment. The point is that an organization is not just an economic-financial unit; but at the same time responsible for generating social and ecological environmental benefits.

The Indonesian Coal Market Trend is expected to grow with a CAGR (Compound Annual Growth Rate) of more than 6% in 2023-2028. Factors causing increased demand in the long term are increasing demand for electricity and supporting government policies are expected to encourage the market. On the other hand, increasing awareness of environmental concerns regarding the use of coal is a significant obstacle hindering market growth.
The leader is the central figure of any organization because the leader is the person who clearly sets the organization's vision and encourages followers to realize that vision (Birasnav et al., 2011). The success or failure of an organization is significantly influenced by the role of the leader. Successful leaders can create prosperity for all interest groups in the organization, especially for organization owners (Li et al., 2018). Leadership is a goal-oriented social process of influencing other people to achieve expected results (Fischer, et al., 2017) through the process of communication, providing direction and motivation (Von Krogh et al., 2012). According to Robbins & Judge (2013), there are three main aspects in the leadership dimension: first, the leader's relationship with his members, including confidence, trust, and respect for superiors. Second, setting tasks according to structured procedures and task delegation. Third, managing positions of power such as recruiting, firing, enforcing discipline, promotions and increasing employee compensation.

Understanding individual behavior is a challenge in itself; however, understanding a group consisting of diverse individuals with many connections becomes even more complex (Nadler & Tushman, 1980). Ultimately, an organization's work gets done through people, individually or
collectively, alone or in collaboration with technology. Therefore, managing organizational behavior is the core of management tasks. Tasks that involve the ability to “understand” individual, group and organizational behavioral patterns, to “predict” what behavioral responses will be elicited by various managerial actions ultimately using this understanding and prediction to achieve “control”.

Knowledge management (KM) can be defined as a process of applying a systematic approach to capturing, organizing, managing and disseminating knowledge throughout an organization with the aim of accelerating performance, reusing the discipline of best work practices, in the hope of reducing high costs. after gaining learning experience from project to project that has been implemented previously (Ruggles & Holtshouse, 1999).

Knowledge management involves the process of creating, collecting, and transforming individual knowledge into organizational knowledge. In organizations, knowledge management plays an important role in efficiency, competitiveness and productivity (Kogut & Zander, 2009). Knowledge is an important asset that gives organizations the ability to embrace, learn and utilize organizational resources (Argote & Miron-Spektor, 2011). In the study of Nonaka et al. (2000), knowledge is described as dynamic, because it originates from the process of social interaction between individuals and organizations. Knowledge has specific properties according to a particular context, depending on when and where it is applied.

The basics of sustainability follow stakeholder management theory (Foley, 2005); (Zink, 2007). By focusing on the basic mechanics of stakeholder theory, it can be understood that a business is a set of relationships between groups (e.g. customers, suppliers, employees, communities and investors) who have a stake in the business (Freeman et al., 2011). Stakeholders create a new philosophical approach to managing business in the twenty-first century by bringing together aspects of ethics, social responsibility and sustainability with views of economic capitalism. According to Freeman et al. (2011), the stakeholder approach clearly contributes to the development of corporate accountability based on sustainability.

Sustainability is an evolutionary concept that emerged as a consequence of adaptation to changing conditions on earth (Muhamad et al., 2014). The concept of sustainable development was introduced and defined by (WCED, 1987), as "development" to meet the needs of the current generation, without ignoring the ability of future generations to meet their own needs. Business unit income must be obtained without harming the environment and nature.
2. Method
The following is the conceptual framework of this research:

![Conceptual Framework](image)

This research uses hypothesis testing. The unit of analysis in this research is a ship officer in a marine logistics transportation company, positions: Chief Officer, Chief Engineering, and Master. The data source in this research is primary data. Data collection was carried out cross-sectionally. The sampling method used is Non Probability Sampling. The sampling technique used in this research is the accidental sampling method. Responses that meet the requirements are 500 respondents. The statistical data analysis method used in this research is Structural Equation Model-Partial Least Square (SEM-PLS). Validity and reliability tests, coefficient of determination tests, and multicollinearity tests are carried out first before hypothesis testing.

**Validity and Reliability Test**
The measurement model test was carried out using validity and reliability testing using convergent validity and discriminant validity testing on the SEM-PLS model and reliability testing using construct reliability with Cronbach Alpha. All indicators in this research are valid and reliable.

**Multicollinearity Test**
Multicollinearity is a problem in regression analysis when two or more independent variables in the model are closely related or correlated with each other. The impact of multicollinearity is that the regression coefficients can become unstable, the standard error in the estimation of the regression coefficients increases, and the regression results are difficult to interpret correctly. After processing, it was proven that there was no multicollinearity between the variables in this study.

**Coefficient of Determination Test**
The coefficient of determination is used to explain how much variation in the independent variable can be explained by the dependent variable.
3. Results

Descriptive units of analysis relating to the profile of respondents, officers working on ships of maritime logistics transportation companies who filled out the questionnaire in this study can be seen in the following table:

<table>
<thead>
<tr>
<th>Profile</th>
<th>Information</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Men</td>
<td>494</td>
<td>98.2</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>6</td>
<td>1.2</td>
</tr>
<tr>
<td>Range Age</td>
<td>17 – 27 years old</td>
<td>49</td>
<td>9.8</td>
</tr>
<tr>
<td></td>
<td>28 – 41 years old</td>
<td>270</td>
<td>54.0</td>
</tr>
<tr>
<td></td>
<td>42 – 57 years old</td>
<td>175</td>
<td>35.0</td>
</tr>
<tr>
<td></td>
<td>&gt;58 years old</td>
<td>6</td>
<td>1.2</td>
</tr>
<tr>
<td>Position</td>
<td>Chief Officer</td>
<td>126</td>
<td>25.2</td>
</tr>
<tr>
<td></td>
<td>Chief Engineering</td>
<td>197</td>
<td>39.4</td>
</tr>
<tr>
<td></td>
<td>Master</td>
<td>177</td>
<td>35.4</td>
</tr>
<tr>
<td>Years of Service</td>
<td>1 – 5 years</td>
<td>63</td>
<td>12.6</td>
</tr>
<tr>
<td></td>
<td>6 – 10 years</td>
<td>103</td>
<td>20.6</td>
</tr>
<tr>
<td></td>
<td>11 – 15 years</td>
<td>129</td>
<td>25.8</td>
</tr>
<tr>
<td></td>
<td>16 – 20 years</td>
<td>102</td>
<td>20.4</td>
</tr>
<tr>
<td></td>
<td>&gt;20 years</td>
<td>103</td>
<td>20.6</td>
</tr>
<tr>
<td>Certificate</td>
<td>ANT I</td>
<td>12</td>
<td>2.4</td>
</tr>
<tr>
<td></td>
<td>ANT II</td>
<td>21</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>ANT III</td>
<td>75</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>ANT IV</td>
<td>186</td>
<td>37.2</td>
</tr>
<tr>
<td></td>
<td>ANT V</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>ATT I</td>
<td>11</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>ATT II</td>
<td>29</td>
<td>5.8</td>
</tr>
<tr>
<td></td>
<td>ATT III</td>
<td>109</td>
<td>21.8</td>
</tr>
<tr>
<td></td>
<td>ATT IV</td>
<td>49</td>
<td>9.8</td>
</tr>
<tr>
<td></td>
<td>ATT V</td>
<td>3</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Respondents according to gender showed that more working officers who filled out the questionnaire were male than female. This illustrates that work on ships of maritime logistics transportation companies is dominated by male workers, which in accordance with the nature and natural challenges of working at sea is more suitable for men. However, there are also many women who take the educational route with competencies appropriate to the type of work on ships and are ready to accept the consequences of working at sea, so that many companies open up opportunities for the empowerment of women working on ships.

Based on the age of respondents, it is dominated by the productive age group aged 17 - 41 years (63.8%) and the age group 42 - 57 years (35%). In relation to the productive age group of respondents, there is a possibility that the data obtained from the survey could influence learning abilities and adaptation to changes related to survey variables and the use of Google form technology used in the survey.

The respondent's position is dominated by the Chief Engineering position group which is the second leading position on the ship. This is followed by the Master group which is the highest
group of leaders and the Chief Officer as the 3rd leader position. The respondent's position can have an influence on understanding the company's vision and mission and decision-making ability in solving problems.

88.4% of the respondents' work period was in the group with a work period of between 6-10 years - > 20 years. It can be said that the respondents’ competence and work experience in maritime transportation and logistics companies are already at senior level positions.

From the aspect of educational certificates and competencies, 88.6% of respondents (consisting of 58.8% ANT IV – I, and 28.8% ATT III – I) occupied the required positions and were in accordance with the competency standards set by the Indonesian Department of Transportation. Meanwhile, 11.4% of respondents (1% ANT V, and 10.4% ATT IV – V) did not comply with competency standards.

Testing the Direct Effect Hypothesis

Table 2. Results of Direct Influence Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>p-Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Transformational Leadership has a Positive Influence on Sustainability Performance</td>
<td>0.123</td>
<td>3.225</td>
<td>**0.001</td>
</tr>
<tr>
<td>H2</td>
<td>Commitment organization has a Positive Influence on Sustainability Performance</td>
<td>-0.076</td>
<td>2.147</td>
<td>**0.016</td>
</tr>
<tr>
<td>H3</td>
<td>Culture organization has a Positive Influence on Sustainability Performance</td>
<td>-0.054</td>
<td>0.844</td>
<td>0.200</td>
</tr>
<tr>
<td>H4</td>
<td>Working Environment has a Positive Influence on Sustainability Performance</td>
<td>0.406</td>
<td>5.118</td>
<td>**0.000</td>
</tr>
<tr>
<td>H5</td>
<td>Transformational Leadership has a Positive Influence on Knowledge Management</td>
<td>0.071</td>
<td>1.542</td>
<td>**0.062</td>
</tr>
<tr>
<td>H6</td>
<td>Commitment Organization has a Positive Influence on Knowledge Management</td>
<td>0.024</td>
<td>0.531</td>
<td>0.298</td>
</tr>
<tr>
<td>H7</td>
<td>Culture Organization has a Positive Influence on Knowledge Management</td>
<td>0.257</td>
<td>3.390</td>
<td>**0.000</td>
</tr>
<tr>
<td>H8</td>
<td>Working Environment has a Positive Influence on Knowledge Management</td>
<td>0.568</td>
<td>8.879</td>
<td>**0.000</td>
</tr>
<tr>
<td>H9</td>
<td>Knowledge Management has a Positive Influence on Sustainability Performance</td>
<td>0.561</td>
<td>10.492</td>
<td>**0.000</td>
</tr>
</tbody>
</table>
Hypothesis 1
Based on the results of inferential statistical testing, a path coefficient of 0.123 was obtained with a p-value of 0.001 < 0.05, which means that Ho was rejected and Ha was accepted. Based on the results of inferential statistical testing, a path coefficient of 0.123 was obtained with a p-value of 0.001 < 0.05, which means that Ho was rejected and Ha was accepted, in other words, Transformational Leadership had a positive effect on Sustainability Performance. This is in line with the findings of a study conducted by Burawat (2019) which noted a partial mediation effect in the relationship between Transformational Leadership and Sustainability Performance, as well as the findings of Ting et al., (2021) which indicated the significant influence of Transformational Leadership on company performance. These results are also consistent with previous studies by Berraies and Abidine, (2019) and Donate & Pablo, (2015).

Hypothesis 2
Based on the results of inferential statistical testing, a path coefficient of -0.076 was obtained with a p-value of 0.016 < 0.05, which means that significant Ho was accepted, which means Organizational Commitment has no effect on Sustainability Performance. In this case, Organizational Commitment in marine transportation and logistics companies prioritizes meeting the needs of ship crews so that Sustainability Performance has not been fully integrated into all operational aspects and decision making. In contrast to the results of the study by Haque et al. (2020) where responsible behavior (RL = Responsible Leadership) has a significant effect on the three components of Organizational Commitment (Meyer & Allen, 1997). Pradhan & Pradhan (2015), as well as systematic literature reviews and meta-analyses such as those conducted by Jaramillo et al. (2005), Mathieu & Zajac (1990), and Meyer et al. (2002). These studies found a positive relationship between Organizational Commitment and employee performance.

Hypothesis 3
Based on the results of inferential statistical testing, a path coefficient of -0.054 was obtained with a p-value of 0.200 > 0.05, which means that significant Ho was accepted, meaning that Organization Culture has no effect on Sustainability Performance. Analysis of research results shows that Organization Culture in management in maritime transportation and logistics companies generally focuses on sustainability in the economic sector. This finding is different from previous studies which found the influence of Organization Culture on Sustainability Performance, such as the results of Raharjo's (2019) study which said: stakeholder demand, resources, knowledge and product uniqueness have a significant effect on green management, and green management simultaneously has a significant effect on Sustainability performance.

Hypothesis 4
Based on the results of inferential statistical testing, a path coefficient of 0.406 was obtained with a p-value of 0.000 < 0.05, which means that significantly Ho was rejected, Ha was accepted, in other words, Working Environment has a positive effect on Sustainability Performance. The results of this study confirm that strategic leadership, corporate culture, corporate governance, business infrastructure, and corporate strategy alignment influence Corporate Sustainability Performance. Leaders act as agents of behavioral change in the workplace, and an inclusive approach to talent development contributes to creating a pro-environmental culture that supports
the long-term sustainability of the Organization Environment. This is in line with the view that effective leadership has a positive impact on the work environment and organizational performance (Utami et al., 2020; Bratton, 2018; Paliszkiewicz et al., 2015).

**Hypothesis 5**
Based on the results of inferential statistical testing, a path coefficient of 0.071 was obtained with a p-value of 0.062 > 0.05, which means that significantly Ho was accepted and Ha was rejected, in other words, Transformational Leadership has no effect on Knowledge Management. The results of this study are different from the study of Latif et al., 2020: entrepreneurial leadership influences the Knowledge Management process; Raudeliūnienė & Kordab (2019): Transformational Leadership has a positive impact on the process of knowledge acquisition, storage and knowledge sharing processes; Nabi et al. (2022): Transformational Leadership has a positive impact on knowledge based view theory and radical innovation; Transformational Leadership influences Knowledge Management culture (Le & Lei, 2018).

**Hypothesis 6**
Based on the results of inferential statistical testing, a path coefficient of 0.024 was obtained with a p-value of 0.298 > 0.05, which means that significant Ho is accepted, in other words, Organization Commitment has no effect on Knowledge Management. The results of the research analysis show that the role of the company's Organizational Commitment focuses on fulfilling the needs of the ship's crew for responsibility for achieving company goals, and the work relationship between the ship's crew and the company with contract status does not strengthen emotional ties, so that the role of Knowledge Management is less felt by the ship's officers. In contrast to the findings of Marques et al. (2019) which shows a significant relationship between an organization's affective commitment to knowledge transfer and increased commitment that influences knowledge maturity; Lombardi et al. (2019) describe affective commitment as having a positive and significant effect on employee customer orientation through knowledge sharing behavior; Shujahat et al. (2017) found partial mediation of Organizational Commitment between Knowledge Management practices and Knowledge Performance.

**Hypothesis 7**
Based on the results of inferential statistical testing, a path coefficient of 0.257 was obtained with a p-value of 0.000 < 0.05, which means that significantly Ho was rejected, Ha was accepted, in other words, Organization Culture has a positive effect on Knowledge Management. This is in accordance with the following findings: Chióng et al. (2020) Usoro & Abiagam (2018), and Al Dari et al. (2021) show that clan culture tends to have a negative impact on organizational learning, while hierarchical culture has a positive impact in predicting organizational learning behavior; Al Dari et al. (2021) also confirmed the positive impact of hierarchical culture on Organizational learning behavior; Adeinat & Abdulfatah (2019) highlight the role of adhocracy culture in Knowledge Management; Allassaf et al. (2020) found that openness in Organizational Culture has a positive influence on adoption; Rohim & Budhiasa (2019) show that rewards, such as employee performance allowances, have a significant impact on individuals' attitudes towards sharing knowledge.
Hypothesis 8
Based on the results of inferential statistical testing, a path coefficient of 0.568 was obtained with a p-value of 0.000 < 0.05, which means that significantly Ho was rejected, Ha was accepted, in other words, Working Environment has a positive effect on Knowledge Management. The results of this study are in line with the following findings: Halisah et al. (2020) shows that performance climate moderates the influence of knowledge sharing culture on employees' intention to share knowledge; Koohang et al. (2017) highlighted that employee involvement in knowledge sharing and manager leadership support influence the success of Knowledge Management; Koohang et al. (2017) stated that there is a positive and significant relationship between leadership (leading an organization, leading people, and leading oneself), trust, and Knowledge Management.

Hypothesis 9
Based on the results of inferential statistical testing, a path coefficient of 0.561 was obtained with a p-value of 0.000 < 0.05, which means that significantly Ho was rejected, Ha was accepted, in other words, Knowledge Management has a positive effect on Sustainability Performance. The results of this study are supported by the findings of Ting et al. (2021): Knowledge Management infrastructure and processes have a positive and significant impact on a company's innovative performance; Abbas et al., (2021): There is a positive correlation between Total Quality Management, Knowledge Management, and Organizational Performance; Rehman & Iqbal (2020): Knowledge-oriented leadership has a direct positive effect on Organizational Performance, with the Knowledge Management process and innovation as mediators; Najmi et al. (2018): Dynamic capabilities can act as a mediating variable in the relationship between Knowledge Management and Organizational Performance; Torres et al. (2018): Knowledge Management dimensions (human capital and processes) have a direct and significant impact on the organization's competitive advantage, while information systems have an indirect and significant impact on the organization's competitive advantage; Shahzad et al. (2020): The Knowledge Management process and all its components contribute to green innovation, which in turn influences Sustainability Performance in environmental, economic and social aspects.

Testing the Indirect Effect Hypothesis
### Table 3. Results of Indirect Influence Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Coefficient</th>
<th>t-statistic</th>
<th>p-Value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H10</td>
<td>Knowledge Management Mediates the Effect of Transformational Leadership on Sustainability Performance</td>
<td>0.043</td>
<td>1.558</td>
<td>0.060</td>
</tr>
<tr>
<td>H11</td>
<td>Knowledge Management Mediates the Influence of Organizational Commitment on Sustainability Performance</td>
<td>0.013</td>
<td>0.533</td>
<td>0.297</td>
</tr>
<tr>
<td>H12</td>
<td>Knowledge Management Mediates the Influence of Organizational Culture on Sustainability Performance</td>
<td>0.138</td>
<td>3.085</td>
<td>0.001</td>
</tr>
<tr>
<td>H13</td>
<td>Knowledge Management Mediates the Influence of Organizational Environment on Sustainability Performance</td>
<td>0.325</td>
<td>7.163</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Hypothesis 10**

Based on the results of inferential statistical testing, a path coefficient of 0.043 was obtained with a p-value of 0.060 > 0.05, which means that Ho was accepted and Ha was rejected, in other words, Transformational Leadership had no positive effect on Sustainability Performance with the mediation of Knowledge Management. This indicates that: leadership in marine transportation and logistics companies has not utilized the Knowledge Management process as part of a strategy to empower ship crews to achieve organizational goals. The results of this study differ from the findings of Baloch et al. (2022): effective leadership and Organizational Culture influence the achievement of good Organizational Performance; Pramandita et al. (2021): authentic leadership and strategic management skills have a positive and significant impact on Organizational Performance, apart from that, Knowledge Management directly or indirectly has a positive and significant impact on Organizational Performance; Ting et al. (2021): Knowledge Management infrastructure and Knowledge Management processes have a positive and significant impact on a company's innovative performance.

**Hypothesis 11**

Based on the results of inferential statistical testing, a path coefficient of 0.013 was obtained with a p-value of 0.297 > 0.05, which means that significant Ho is accepted, in other words, Organizational Commitment has no positive effect on Sustainability Performance with the mediation of Knowledge Management. This shows that ship crews tend not to feel that there is management support in Knowledge Management, so they are more focused on fulfilling their duties and getting rewards. On the other hand, companies are more oriented towards achieving economic performance compared to social and environmental aspects in Sustainability Performance which must be balanced. This finding is different from research by Lombardi et al. (2019): shows that affective commitment has a positive effect on customer orientation and this is...
fully mediated by knowledge sharing behavior; Stock & Hoyer (2005): stated that the relationship between employee affective commitment and customer orientation is fully mediated by knowledge sharing behavior; Razzaq et al. (2019): shows that Organizational Commitment plays a partial role in mediating the relationship between Knowledge Management practices and knowledge performance; Saputro et al. (2016) and Mustapa & Mahmood (2016): concluded that Knowledge Management encourages task performance and task improvisation more than Organization Commitment; Nisula & Kianto (2016): empirically concluded that Knowledge Management is a source that encourages task improvisation.

**Hypothesis 12**
Based on the results of inferential statistical testing, a path coefficient of 0.138 was obtained with a p-value of 0.001 < 0.05, which means that significantly Ho was rejected, Ha was accepted, in other words, Culture organization has a positive effect on Sustainability Performance with the mediation of Knowledge Management. This study is supported by the research results of Zieba et al. (2022): Innovativeness and agility have a positive impact on organizational sustainability, Agility also has a positive impact on organizational innovation; Arsawan et al. (2022); (Zieba et al., 2022): Knowledge sharing has a significant influence on innovation culture, business performance and sustainable competitive advantage; Fantazy & Tipu, (2019) Organizations tend to emphasize a culture of competition and knowledge development to achieve Organizational Performance. However, the relationship of competitive culture and knowledge development with sustainable supply chain management is positive but weak.

**Hypothesis 13**
Based on the results of inferential statistical testing, a path coefficient of 0.325 was obtained with a p-value of 0.000 < 0.05, which means that Ho was rejected and Ha was accepted, in other words Working Environment has a positive effect on Sustainability Performance through Knowledge Management. Not many studies have analyzed the influence of Organizational Environment on Sustainability Performance through Knowledge Management. The results of this study are strengthened by research by Zieba et al. (2022) which emphasizes that innovation and organizational agility contribute positively to Sustainability Performance with risk management knowledge as a supporter of innovation and agility. In addition, research by Iqbal & Piwowar-Sulej (2022) confirms that social innovation is a partial mediator in the relationship between sustainable leadership and Sustainability Performance. However, it is important to note that the results of this study do not show a higher impact of Sustainable Leadership and Social Innovation on high management freedom of action.

### 4. Discussion

**Hypothesis 1: The influence of transformational leadership on sustainability performance**
The analysis results show that Transformational Leadership has a positive influence on Sustainability Performance in the company. This finding is in line with findings from previous research by Burawat (2019), which showed a partial mediation effect in the relationship between Transformational Leadership and Sustainability Performance, as well as findings from Ting et al., (2021), which indicated the significant influence of Transformational Leadership on
company performance. These results are also consistent with previous studies by Berraies and Abidine, (2019) and Donate & Pablo, (2015).

The results of the analysis show that Transformational Leadership motivates the team to collaborate in achieving sustainable goals, and operational problems are resolved by coordination between ship officers and related sections in the shore office. In the context of sustainability, transformational leadership encourages ethical values, social responsibility, and attention to the environment in business practices, which in turn improves Sustainability Performance.

Transformational Leadership includes dimensions such as Leading the Organization, Leading Others, Leading Yourself, Setting the Organization's Vision, Mission, Values and Goals, and Building Trust. Transformational leaders have the ability to influence, motivate and move individuals to achieve desired results, develop leadership skills, build a vision and lead with inspiration, build interpersonal relationships, motivate and create job satisfaction, and have characteristics that differentiate them from other leaders. In Transformational Leadership the importance of trust in the organization is also emphasized, and transformational leaders have a key role in building trust among team members. This belief affects employee productivity, creativity and performance.

In the context of Sustainability Performance, Transformational Leadership creates a vision of sustainability that motivates employees, encourages collaboration, and meets the needs of diverse stakeholders, including employees, customers, local communities, and the environment. This contributes to increased Sustainability Performance as organizations integrate economic, social, and environmental factors in their business practices, create social benefits, and safeguard the ecological environment in their efforts to achieve true sustainability in business.

**Hypothesis 2: The influence of organizational commitment on sustainability performance**

The study results show that Organizational Commitment, especially in the dimensions of Affective Commitment, Normative Commitment, and Sustainable Commitment, has no effect on Sustainability Performance in the context of maritime transportation and logistics companies. These findings indicate that in this company, commitment to the organization prioritizes meeting the needs of the crew rather than integrating sustainability in all aspects of operations and decision making.

This finding is different from the results of research by Haque et al. (2020), who found that Responsible Leadership has a positive effect on the three components of Organizational Commitment (Meyer & Allen, 1991). Other research, such as that conducted by Pradhan & Pradhan (2015) supports a positive relationship between Organizational Commitment and employee performance; Jaramillo et al. (2005), Mathieu & Zajac (1990), and Meyer et al. (2002) found a positive relationship between Organizational Commitment and employee performance in a systematic literature review and meta-analysis.

Research also notes that the dimensions of the Organization Commitment variable, namely Affective Commitment, Normative Commitment, and Sustainable Commitment, have no effect on Sustainability Performance. This can be caused by non-permanent work bonds, especially in short work agreement periods. Employees tend to be more attached to their personal and career responsibilities than to a commitment to sustainability. Apart from that, the organization has not provided adequate support, such as incentives, to employees who support Sustainability
Performance. This results in a lack of employee motivation to implement sustainable business practices.

Factors that can hinder organizations in supporting Sustainability Performance have also been identified. These include an organizational culture that does not support sustainability, different priorities within the organization, high market pressure, leadership that does not support sustainability, and a mismatch between government regulations and the sustainability principles that the organization wishes to implement.

These results are in line with other findings by Islam et al. (2013), which shows a negative relationship between organizational learning culture, leadership, and Organizational Commitment with employee turnover intentions. In conclusion, in the context of the investigated maritime transportation and logistics companies, commitment to the organization has not influenced Sustainability Performance, and certain factors hinder widespread support for sustainability in business practices.

**Hypothesis 3: Influence of organizational culture on sustainability performance**

The study findings conclude that Organization Culture, especially in the dimensions of Leadership, Internal Relations, and Internal Relations Activities, does not have a significant effect on Sustainability Performance in maritime transportation and logistics companies. This finding is different from the results of previous research which indicated a positive influence between Organization Culture and Sustainability Performance.

Previous studies examining the relationship between Organization Culture and performance: Raharjo (2019) stated that stakeholder demand, resources, knowledge and product uniqueness have a significant influence on green management, which in turn has a significant influence on Sustainability Performance; Sahoo (2022) states that Organization Culture influences operational performance; Wahda (2017) stated that organizational learning culture has a major influence on the achievement of Organizational Performance; Kneipp et al., (2019) show that a competitive culture is positively related to Organizational Performance; Fantazy & Tipu (2019) stated that a culture of competitiveness and knowledge development is positively related to Sustainable Management and Organizational Performance; Dabić et al. (2019) and Kafetzopoulos et al. (2019) supports the importance of culture in achieving business performance and building a culture of sustainable innovation; Anning-Dorson (2018) states that innovation culture influences business performance; Hanifah et al. (2019 and 2020) stated that technological and market innovation have a significant effect on Organizational Performance.

Leadership, Internal Relations, and Internal Relations Activities play an important role in shaping organizational beliefs and culture, but do not significantly influence Sustainability Performance in the context of maritime transportation and logistics companies. This can be caused by differences in work culture between office management and on-board management, as well as different focuses on business growth, profitability and sustainability. In addition, the "My Ship My Home" culture on board also influences interaction patterns and priorities in achieving company goals.

**Hypothesis 4: Effect of Working Environment on Sustainability Performance**

The research results show that the Working Environment has a positive influence on Sustainability Performance. These findings confirm that several factors such as strategic
leadership, corporate culture, corporate governance, business infrastructure, and corporate strategy alignment contribute to influencing Corporate Sustainability Performance. Leaders act as agents of behavioral change in the workplace, and an inclusive approach to talent development contributes to creating a pro-environmental culture that supports sustainability in the long term.

The results of this study are supported by research (Rizvi & Garg, 2021) showing that Transformational Leadership influences Performance and has a partial mediating effect through culture on environmental performance; Brio et al. (2007) & Norton et al. (2015) found that Organizational Culture is also recognized as the main supporter of the process of environmental change and sustainability, while Park & Kim (2018) stated that Transformational Leaders act as role models in creating a work environment that motivates and inspires their followers.

This study also identified dimensions in the Working Environment Variable that have an influence, such as Work Atmosphere, Performance and Work Motivation. A positive work environment, both physical and non-physical, including co-worker interactions and a positive atmosphere, influences overall organizational performance as well as employee motivation to perform better. The Working Atmosphere Dimensions in the Working Environment Variable according to Sukriah (2009), and (Siagian (2014) influence the way the organization performs, including the physical and non-physical work environment. The non-physical work environment involves interaction with colleagues and a positive atmosphere; Performance Dimensions in Working Environment variables, as explained by Robbins & Coulter (1999) and Pearce & Robinson (1997), influence organizational performance, with work environment conditions influencing overall performance; Work Motivation Dimensions in the Working Environment, such as harmony in a work environment without conflict (Siagian, 2014) and micro and macro external factors (Raharjo, 2019), influence employee motivation to perform better. Changes in the external environment can also influence employee attitudes towards their work.

Transformational Leadership in the dimensions of Leading the Organization, Leading Others, Leading Yourself, Setting the Vision, Mission, Values and Organizational Goals plays an important role in creating a work environment that encourages innovation, creativity and employee participation. Leaders who adhere to Transformational Leadership principles provide autonomy to employees, increase engagement, and support skills development, all of which contribute to creating a work environment that supports sustainability.

**Hypothesis 5: The Influence of Transformational Leadership on Knowledge Management**

The results of the study analysis conclude that Transformational Leadership has no effect on Knowledge Management. This finding is different from several previous studies. The study of Latif et al. (2020) which states that entrepreneurial leadership influences the Knowledge Management process, the study of Raudeliūnienė & Kordab (2019) which shows that Transformational Leadership has a positive impact on the knowledge acquisition, storage and sharing process, the study of Nabi et al. (2022) which states that Transformational Leadership has an impact positive towards the Knowledge Based View theory and radical innovation, as well as the study by Le & Lei (2018), which states that Transformational Leadership influences Knowledge Management culture.

Knowledge Management, according to Ruggles & Holtshouse (1999), is the process of capturing, organizing, managing, and disseminating knowledge throughout an organization,
including efforts to reuse best practices and previous learning experiences. Kogut & Zander (2009) emphasize the important role of Knowledge Management in increasing organizational efficiency, competitiveness and productivity, including creating, collecting and transforming individual knowledge into organizational knowledge. Argote & Miron-Spektor (2011) recognize that knowledge is an important asset that provides organizations with the ability to learn, develop, and utilize their resources. According to Nonaka et al. (2000), knowledge is something dynamic and context-specific that develops through social interactions between individuals and organizations.

The Knowledge Management variable: The Knowledge Adoption and Transfer dimension shows that the Knowledge Management process includes efforts to capture, organize, manage, and disseminate knowledge throughout the organization, as well as reuse best practices and previous learning experiences, as explained by Ruggles & Holtshouse (1999). The Knowledge Access and Use dimension includes knowledge sharing among individuals in the organization (Yi, 2009), knowledge acquisition and conversion (Azari & Amuei, 2008), knowledge utilization (Berce et al., 2008), as well as knowledge creation (Nonaka, 1994) and knowledge protection (Sher & Lee, 2009).

In the context of working on ships, the culture and family values of cooperation are very strong, while each crew member has competency standards in accordance with government regulations. Even though the role of the shore office in the Knowledge Management process is less felt, the knowledge transfer process still occurs between fellow crew members. Therefore, leadership needs to build the capacity of team members in managing knowledge to strengthen the organization's ability to collect, store, access and apply knowledge.

**Hypothesis 6: The influence of organizational commitment on knowledge management**

The study findings show that Organizational Commitment does not have a positive influence on Knowledge Management in maritime transportation and logistics companies. This finding is different from several previous studies, such as Marques et al. (2019) shows a positive relationship between affective commitment and knowledge transfer; Lombardi et al. (2019) stated that affective commitment has a positive effect on employee customer orientation through knowledge sharing behavior; Shujahat et al. (2017) found a partial mediating role of Organizational Commitment in the relationship between Knowledge Management practices and Knowledge Performance; Mustapa & Mahmood (2016) stated that Knowledge Management influences task performance and task improvisation more than Organizational Commitment; and Chiu & Chen (2016) show that organizations that are effective in managing knowledge have higher levels of Organizational Commitment.

In the context of maritime transportation and logistics companies, Organizational Commitment focuses more on fulfilling the needs of ship crew on responsibility for achieving company goals, and the working relationships of ship crew with contract status do not strengthen emotional ties. This results in Knowledge Management being less perceived by ship officers, especially in terms of transfer, access and use of knowledge.

The difference between the findings of this research and previous research may be due to organizational priorities that emphasize other aspects above Knowledge Management, as well as the lack of active support from company leaders in terms of Knowledge Management. There is also the possibility that the contract-based work bond between the crew and the company causes
a lack of emotional ties, so that the process of transferring, accessing and using knowledge is considered less part of the Knowledge Management efforts managed by the company.

**Hypothesis 7: The Influence of Organizational Culture on Knowledge Management**

The research results show that Organization Culture has a positive impact on Knowledge Management. These findings are in line with research from Chiń et al. (2020), Usoro & Abiagam (2018), and Al Dari et al. (2021), which shows that clan culture has a negative impact on organizational learning, while hierarchical culture has a positive impact in predicting organizational learning behavior; Al Dari et al. (2021), which confirms the positive impact of hierarchical culture on Organizational learning behavior; Adeinat & Abdulfatah (2019), which highlights the role of adhocracy culture in Knowledge Management; Alassaf et al. (2020), who found that openness in Organization Culture has a positive influence on adoption; Organizations have a positive influence on adoption; Rohim & Budhiasa (2019), who show that rewards, such as employee performance allowances, have a significant impact on individual attitudes towards sharing knowledge.

This study concludes that the maritime transportation and logistics company's Organization Culture, which emphasizes family ties, creates a high level of trust and support among the team. This culture, based on trust, mutual understanding, and support, strengthens collaboration, shares knowledge, and encourages learning and innovation. This creates a climate where people feel safe to ask questions, seek help, and learn from mistakes. In such a culture, a natural process of knowledge transfer, access, and use occurs among the ship's crew to run operations and find solutions before seeking support from shore offices.

**Hypothesis 8: The Influence of Working Environment on Knowledge Management**

The results of this research show that the Working Environment has a positive impact on Knowledge Management. This finding is in line with previous findings from Halisah et al. (2020), which shows that performance climate moderates the influence of knowledge sharing culture on employees' intention to share knowledge; Koohang et al. (2017), who highlighted that employee involvement in knowledge sharing and manager leadership support influence the success of Knowledge Management; Koohang et al. (2017), which states that there is a positive and significant relationship between leadership (leading an organization, leading people, and leading oneself), trust, and Knowledge Management.

This study concludes that the Organizational Environment has a positive impact on Knowledge Management through a culture of community on board which allows the transfer, access and use of knowledge. This environment builds trust, encourages collaboration, knowledge sharing, and the adoption of Knowledge Management practices. In addition, an Organization Environment that facilitates collaboration and knowledge sharing encourages individuals to interact, share ideas, and contribute to shared knowledge. Therefore, an Organizational Environment that focuses on trust and a culture of sharing knowledge creates conditions that support effective Knowledge Management.

**Hypothesis 9: The Influence of Knowledge Management on Sustainability Performance**

The results of this research show that Knowledge Management has a positive effect on Sustainability Performance. This finding is supported by a study conducted by Ting et al. (2021) stated that Knowledge Management infrastructure and processes have a positive and significant impact on the Company's innovative performance; Abbas et al., (2021): there is a positive
correlation between Total Quality Management, Knowledge Management, and Organizational Performance; Rehman & Iqbal (2020): Knowledge-oriented leadership has a direct positive effect on Organizational Performance, with the Knowledge Management process and innovation as mediators.

The research results of Najm et al. (2018): dynamic capabilities can act as a mediating variable in the relationship between Knowledge Management and Organizational Performance; Torres et al. (2018): Knowledge Management dimensions (human capital and processes) have a direct and significant impact on the organization's competitive advantage, while information systems have an indirect and significant impact on the organization's competitive advantage; Shahzad et al. (2020): The Knowledge Management process and all its components contribute to green innovation, which in turn influences Sustainability Performance in environmental, economic and social aspects.

This study illustrates that Knowledge Management contributes positively to Sustainability Performance by enabling organizations to manage sustainability risks, create long-term value, meet social aspects related to crew needs, and remain environmentally responsible. Knowledge Management helps in managing, sharing and applying knowledge relevant to sustainability, which in turn improves organizational performance in achieving sustainability goals and has a positive impact on the environment, society and economy.

The results of this study show that Knowledge Management has a positive influence on Sustainability Performance. The findings support the view that Knowledge Management infrastructure and processes have a positive impact on companies' innovative performance and that Knowledge Management contributes to various aspects of organizational performance, including competitive advantage, green innovation, and economic, social and environmental performance.

**Hypothesis 10: The Influence of Transformational Leadership on Sustainability Performance Mediated by Knowledge Management**

The results of the analysis show that Transformational Leadership does not have a positive effect on Sustainability Performance with the mediation of Knowledge Management. This indicates that in the context of maritime transportation and logistics companies, leadership has not utilized the Knowledge Management process effectively as part of a crew empowerment strategy to achieve organizational goals in the context of sustainability.

This finding is different from previous findings from Baloch et al. (2022): Effective leadership and Organizational Culture influence the achievement of good Organizational Performance; Pramanda et al. (2021): Authentic leadership and strategic management skills have a positive and significant impact on Organizational Performance, apart from that, Knowledge Management directly or indirectly has a positive and significant impact on Organizational Performance; Ting et al. (2021): Knowledge Management infrastructure and Knowledge Management processes have a positive and significant impact on a company's innovative performance.

Based on previous studies, the majority of research focuses on the relationship between Leadership, Knowledge Management, and Organizational Performance. However, in this research, the author has not found any research references that investigate the relationship between leadership, Knowledge Management, and Sustainability Performance. These findings indicate that in the context of maritime transportation and logistics companies, Transformational
Leadership does not positively influence Sustainability Performance when Knowledge Management is not mediated. This highlights the importance of developing more effective leadership strategies in supporting organizational sustainability goals, especially in terms of utilizing Knowledge Management.

**Hypothesis 11: The Influence of Organizational Commitment on Sustainability Performance Mediated by Knowledge Management**

The results of this research indicate that Organizational Commitment does not have a positive influence on Sustainability Performance mediated by Knowledge Management. This shows that ship crews tend not to feel strong support from management in terms of Knowledge Management. Instead, they focus more on fulfilling tasks and striving to obtain personal rewards. This finding is different from the results of research by several other researchers, including Lombardi et al. (2019) which shows that affective commitment has a positive effect on customer orientation, which is fully mediated by knowledge sharing behavior. In addition, research by Stock & Hoyer (2005) also states that the relationship between employee affective commitment and customer orientation is fully mediated by knowledge sharing behavior.

These findings indicate that in the context of maritime transportation and logistics companies, Organizational Commitment does not play a significant role in influencing Sustainability Performance through Knowledge Management. Possible causes include a lack of focus on sustainability aspects in Organizational Commitments, a lack of efforts to integrate sustainability values in organizational practices, and a lack of support and understanding of Knowledge Management. External factors such as government regulations and market conditions can also influence the relationship between Organizational Commitment and Sustainability Performance. In this context, Knowledge Management is not yet considered a key factor in achieving Sustainability Performance, and ship leaders or officers are more focused on achieving economic performance rather than social and environmental aspects. This highlights the importance of increasing understanding and effective implementation of Knowledge Management to achieve sustainability goals.

**Hypothesis 12: The Influence of Organization Culture on Sustainability Performance Mediated by Knowledge Management**

The results of this research show that Organization Culture has a positive influence on Sustainability Performance through the mediation of Knowledge Management. This finding is supported by other research, such as Zieba et al. (2022) which shows that innovativeness, agility and agility have a positive impact on organizational sustainability. Apart from that, Arsawan et al. (2022) and Fantazy & Tipu, (2019) emphasize the relationship between knowledge sharing, innovation culture, business performance, and sustainable competitive advantage.

The study also highlights the importance of the Learning Organization, as stated by Zgrzywa-Ziemak & Walecka-Jankowska (2020), in achieving Sustainability Performance. A strong culture and commitment to sustainability can have a positive impact on an organization's Sustainability Performance. Knowledge Management acts as a link between culture and Sustainability Performance.

A work culture with the motto "My Ship is My Home" which emphasizes closeness, warmth and cooperation among the crew creates a climate where personal interactions and Knowledge Management processes occur naturally. Awareness of the importance of Sustainability...
Performance, namely achieving a balance between the company's economic goals and social and environmental aspects, can be increased through Knowledge Management and Organization Culture approaches.

Through Knowledge Management, a culture that encourages learning from experience and innovation is supported by the collection and distribution of knowledge. The integration of sustainability in Organization Culture also influences more sustainable decision making. Knowledge Management facilitates sustainable decision making by providing easy access to information about sustainable practices. Thus, through Knowledge Management, a culture that promotes sustainability can improve an organization's Sustainability Performance by increasing awareness, collaboration, learning and sustainable decision making.

**Hypothesis 13: The Effect of Working Environment on Sustainability Performance Mediated by Knowledge Management**

The results of this research show that the Working Environment has a positive impact on Sustainability Performance through Knowledge Management. These findings support the idea that work environments that support collaboration, access to knowledge, and innovation contribute to sustainable performance. This research strengthens the findings with research results from Zieba et al. (2022) which highlights the importance of innovation and organizational agility in supporting Sustainability Performance with risk management as a supporter of innovation and agility.

In addition, research by Iqbal & Piwowar-Sulej (2022) shows that social innovation partially mediates the relationship between Sustainable Leadership and Sustainability Performance. Although these findings do not show a higher impact of Sustainable Leadership and Social Innovation on high management freedom of action, they still highlight the important role of social innovation in the context of sustainability.

This research emphasizes the importance of a work environment that facilitates access and sharing of knowledge, and encourages innovation and creativity. In the context of maritime transportation and logistics companies, this environment allows team members to work together more effectively to achieve individual and organizational goals. An organizational environment that supports sustainability goals must also be integrated into the organization's strategy and operations, so that knowledge about sustainability becomes an integral part of organizational decision making and policy. Knowledge Management plays an important role in facilitating access to relevant knowledge, encouraging collaboration and learning, and ensuring the integration of sustainability goals within the organization. All these factors positively contribute to Sustainability Performance.

**References**


