ANALYSIS OF FACTORS AFFECTING INNOVATIVE WORK BEHAVIOR IN THE DIGITAL ERA: CASE STUDY OF MANUFACTURING COMPANIES IN INDONESIA

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Abstract

This research aims to analyze the influence of transformational leadership, self-efficacy, and organizational climate on innovative work behavior in manufacturing companies in Indonesia. This research uses a literature and field design with a causal associative approach. This study uses a research instrument test consisting of validity and reliability tests. The quantitative analysis consists of a normality test, regression test, hypothesis test, correlation test, and coefficient of determination. This research concludes that transformational leadership, self-efficacy, and organizational climate have a positive and significant effect on innovative work behavior. In the ever-growing digital era, transformational leadership is important for manufacturing companies to face challenges and take advantage of emerging opportunities. In the digital era, self-efficacy helps employees cope with uncertainty and change, turn challenges into opportunities, and view technological change as a foundation for personal and professional growth. Furthermore, by adopting a pro-innovation organizational climate, manufacturing companies can more easily adapt to technological changes, optimize production processes, and exploit the full potential of the industrial revolution 4.0.

Keywords: Transformational Leadership, Self-Efficacy, Organizational Climate, Innovative Work Behavior

Abstrak

Tujuan utama dari riset ini untuk menganalisis pengaruh transformational leadership, self-efficacy, dan organizational climate terhadap innovative work behavior perusahaan manufaktur di Indonesia. Penelitian ini menggunakan desain penelitian kepustakaan dan lapangan dengan pendekatan asosiatif kausal. This study uses a research instrument test consisting of validity and reliability tests. The quantitative analysis consists of a normality test, regression test, hypothesis test, correlation test, and coefficient of determination. Hasil penelitian ini menyimpulkan transformational leadership, self-efficacy, dan organizational climate berpengaruh positif dan signifikan terhadap innovative work behavior. Dalam era digital yang terus berkembang, transformational leadership menjadi kunci penting bagi perusahaan manufaktur untuk menghadapi tantangan dan memanfaatkan peluang yang muncul. Dalam era digital, self-efficacy membantu karyawan mengatasi ketidakpastian dan perubahan, mengubah tantangan menjadi peluang, dan memandang perubahan teknologi sebagai landasan untuk pertumbuhan pribadi dan profesional. Lebih lanjut, dengan mengadopsi iklim organisasi yang pro-inovasi, perusahaan manufaktur dapat lebih mudah menyesuaikan diri dengan perubahan teknologi, mengoptimalkan proses produksi, dan memanfaatkan potensi penuh dari revolusi industri 4.0.

Kata Kunci: Transformational Leadership, Self-Efficacy, Organizational Climate, Innovative Work Behavior

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INTRODUCTION

In general, the development and existence of a company that can survive depends on no other than the characteristics and competencies of its human resources (Hartini et al., 2021). Representative of valuable human resource management development seen from the organization's strategic activities in managing its human resources so that it is expected to improve company performance (Lie et al., 2022). Several decades ago, employees or employees were categorized as a factor of production, but now the perception regarding this has changed because employees or employees are empowered as an important element for the company in achieving the company's goals and objectives (Sudirman et al., 2021). In these long and complex dynamics, the central meaning of messages can change, producing different and in some cases conflicting HRM information; formulated at the top level, implemented at the operational level and felt at the individual level (Acar et al., 2015). This pitfall leads us to pay special attention to the importance of HR communication processes, where generation must be consistent in conveying messages to avoid ambiguous interpretations and transmission processes to maintain the original meaning require further attention (Efendi et al., 2021). Existing studies on work behavior that leads to innovation (including product, process and service innovation) have focused on sustainable HR development processes, especially in developed countries as the place of their investigation (Silalahi et al., 2020).

The final output if employees behave innovatively will benefit the organization, such as being fast and responsive in serving customers, making positive changes in overcoming problems, having new ideas and new methods of working, all of which lead to increased organizational/institutional performance (Mulyono et al., 2021). Unfortunately, not all employees have innovative behavior. Therefore, organizations/institutions must stimulate it through various efforts by focusing on the factors that trigger innovative behavior. Competitive advantage is related to a company's ability to win the competition through unique means, which competing companies do not possess (Inrawan et al., 2022). In the era of the industrial revolution 4.0, more and more companies are using intangible assets and human capital to gain an advantage over competitors (Basoeky et al., 2021). Failing to meet the diverse needs of potential customers can result in losses because customers switch to more innovative competitors. The most successful companies are those that create creativity and innovation. The results of several previous studies show that the factors that influence innovative work behavior are influenced by factors transformational leadership (Messmann et al., 2022), self-efficacy (Lin & Shin, 2021), and organizational climate (Kim & Chung, 2019).

Leadership is a human problem because those who lead and those who are led are humans who have various limitations (Peng et al., 2021). Humans cannot overcome these limitations, which requires leadership to be implemented to grow and develop the leadership being led (Simatupang et al., 2022). The process can be manifested in cadre formation activities, which can continuously improve the quality of leadership because leadership cannot be carried out simply as a routine activity (Butarbutar et al., 2022). The transformational leadership style applied by a leader greatly influences the company's overall performance (Messmann et al., 2022). The more consistent the leadership style is, the more organizational performance will increase (Bushra et al., 2011). However, sometimes, not all organizations can follow the leadership style applied. This is because in several organizations, an organizational culture has been developed which becomes a reference for employees (Cahyono et al., 2020). An individual approach is the key for transformational leaders in directing their followers. Recent studies cite transformational leaders as encouraging intellectual capacity by inspiring their followers. Another skill that transformational leaders have is managing uncertainty in creative work (Lie et al., 2021). Several previous study results confirm that transformational leadership significantly
influences innovative work behavior (Istanti et al., 2022); (Ariyani & Hidayati, 2018). Therefore, based on several previous research results, we can develop a hypothesis:

**H1:** Transformational leadership influences innovative work behavior

Self-efficacy refers to the confidence in the extent to which a person can estimate his ability to carry out or carry out the tasks required to achieve certain results (Sembiring et al., 2022). Confidence in all these abilities includes self-confidence, adaptability, cognitive capacity, intelligence and capacity to act in stressful situations (Sofiyant et al., 2022). Self-efficacy will develop gradually continuously as abilities increase and related experiences increase. By increasing self-efficacy, it will improve employee performance and will also directly improve the company's performance (Çetin & Aşkun, 2018a). A person's belief that he or she will be able to carry out the behavior required in a task. Individual thoughts regarding self-efficacy determine how much effort will be devoted and how long the individual will persist in facing obstacles or unpleasant experiences (Chan et al., 2017). Self-efficacy in the organization will influence the mission and goals of the organization because the strength of commitment greatly influences the achievement of innovative work results (Federici & Skaalvik, 2011); (H. Santoso et al., 2019). High efficacy can cognitively motivate individuals to act better in achieving their goals. Previous research states that self-efficacy has a positive and significant influence on the realization of innovative work behavior (Teng et al., 2020); (Patras et al., 2021). Therefore, based on several previous research results, we can develop a hypothesis:

**H2:** Self-efficacy influences innovative work behavior

Organizational climate is an important factor that determines the life of an organization. Organizational climate is one of the factors that determines employee job satisfaction (Beri et al., 2020). Therefore, improving the organizational climate is one of the most effective ways to increase job satisfaction, which in turn becomes a driving factor for the success of an organization (Ancarani et al., 2019). Organizational climate is the circumstances, conditions and characteristics of the workplace environment which are the characteristics of an organization formed from all members' attitudes, behavior and personalities (Inrawan et al., 2022). Organizational climate is a concept that describes the internal atmosphere of the organizational environment that its members feel during their activities in order to achieve organizational goals (Efendi et al., 2022). Climate is the end product of the behavior of a group of people in an organization. Organizational climate can also be viewed as the organization's personality because the characteristics of the work environment are only felt and influence the behavior of the members within it (Lin & Shin, 2021). The organizational climate is formed due to activities within the organization. Organizational climate is formed as a person's experience of their work environment, in other words, the environment will provide stimuli that will be perceived by employees and influence employee behavior towards the company where they work (Knezovic & Drkic, 2021). Several previous study results prove that organizational climate significantly influences innovative work behavior (Etikariena & Kalimashada, 2021); (D. Santoso & Nugraheni, 2022). Thus, by several previous research results, it leads to the development of a hypothesis:

**H3:** Organizational climate influences innovative work behavior
RESEARCH METHODS

This research uses a literature and field research design with a causal associative approach to see the relationship between several uncertain variables. (Sugiyono, 2015), mentions that causal design is useful for analyzing how one variable influences other variables, and is also useful in experimental research where the independent variable is treated in a controlled manner by the researcher to see its impact on the dependent variable directly. The sample for this research is employees who work in manufacturing companies in Indonesia. The sampling method used in this research is the convenience sampling method, where this technique was chosen because it is the fastest method due to time constraints and anyone who accidentally meets the researcher can be used as a sample if that person is deemed suitable as a data source. According to (Hair, 2014), if the population size is unknown then the sample size can be determined from 5-10 times the number of indicators used in a single construct. This research used 17 indicators from 4 existing variable dimensions, so the number of research samples obtained was $17 \times 10 = 170$ samples. This study uses a research instrument test consisting of validity and reliability tests. The quantitative analysis consists of a normality test, regression test, hypothesis test, correlation test, and coefficient of determination. For operational definitions, transformational leadership variables consist of idealistic influence, inspirational motivation, intellectual stimulation, and individual consideration (Peng et al., 2021); (Messmann et al., 2022), self-efficacy consists of magnitude, generality, strength, self-motivation, and willingness to learn (Çetin & Aşkun, 2018b); (Chan et al., 2017), organizational climate consists of responsibilities, coordination, group spirits, work standards, and organizational clarity (Chung, 2020); (Madhura, 2020), innovative work behavior consists of generation, promotions, and realization (Lin & Shin, 2021); (Knezovic & Drkic, 2021).

RESULTS AND DISCUSSION

Validity and Reliability Test

Table 1. Validity Test Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Corrected items - Total correlation</th>
<th>N of Items</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational Leadership</td>
<td>0.618</td>
<td>4</td>
<td>Valid</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>0.630</td>
<td>5</td>
<td>Valid</td>
</tr>
<tr>
<td>Organizational Climate</td>
<td>0.638</td>
<td>5</td>
<td>Valid</td>
</tr>
<tr>
<td>Innovative Work Behavior</td>
<td>0.560</td>
<td>3</td>
<td>Valid</td>
</tr>
</tbody>
</table>

Source: Processed SPSS Data (2023)

Based on the validity test of table 1 above, it is concluded that all indicators in the study have a value above 0.30, the measurement items used in this research are valid. Next, a reliability experiment is carried out to measure the measurement items on the questionnaire items that describe the indicators of the variables. A questionnaire is reliable if a person’s response to a question does not change or is normal occasionally.

Table 2. Reliability Test Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformational Leadership</td>
<td>0.851</td>
<td>4</td>
<td>Reliable</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>0.869</td>
<td>5</td>
<td>Reliable</td>
</tr>
<tr>
<td>Organizational Climate</td>
<td>0.860</td>
<td>5</td>
<td>Reliable</td>
</tr>
<tr>
<td>Innovative Work Behavior</td>
<td>0.845</td>
<td>3</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: Processed SPSS Data (2023)
Based on the results of the reliability experiment shown in Table 2 above, it proves that all indicators have a Cronbach alpha value for each instrument > 0.60, so it can be concluded that all the instruments used are reliable.

**Multiple Regression Test**

**Table 3. Multiple Regression Test Results**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>t-count</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>7,245</td>
<td>2.075</td>
<td>3,487</td>
</tr>
<tr>
<td>Transformational Leadership</td>
<td>.239</td>
<td>0.058</td>
<td>4,085</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>.155</td>
<td>0.072</td>
<td>2,135</td>
</tr>
<tr>
<td>Organizational Climate</td>
<td>.167</td>
<td>0.069</td>
<td>2,320</td>
</tr>
</tbody>
</table>

Source: Processed SPSS Data (2023)

The results of the multiple linear regression above, the equation model is obtained: = 7.245 + 0.239X1 + 0.155X2 + 0.167X3, which means that transformational leadership, self-efficacy, and organizational climate positively affect innovative work behavior. Based on these equations, it can be explained as follows:

1. The constant value of 7.245 can be interpreted if the variables of transformational leadership, self-efficacy, and organizational climate are considered zero, then the value of innovative work behavior will be in the range of values of 4.410.

2. The value of the beta coefficient on the transformational leadership variable is 0.239, which means that every change in the transformational leadership variable by one unit will result in a change in innovative work behavior of 0.239 units with the assumption that the other variables are at a constant value.

3. The beta coefficient value on the self-efficacy variable is 0.155, which means that every change in the self-efficacy variable by one unit will result in a change in innovative work behavior of 0.155 units with the assumption that the other variables are at a constant value.

4. The beta coefficient value on the organizational climate variable is 0.167, which means that every change in the organizational climate variable by one unit will result in a change in innovative work behavior of 0.167 units with the assumption that the other variables are at a constant value.

**Simultaneous and Partial Hypothesis Testing**

To examine the variable binding simultaneously, experiment F is used. Simultaneous hypothesis testing attempts to analyze whether transformational leadership, self-efficacy, and organizational climate variables can simultaneously influence innovative work behavior.

**Table 4. Simultaneous Test Results**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>82,523</td>
<td>3</td>
<td>15,261</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>191,079</td>
<td>166</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>273,600</td>
<td>169</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed SPSS Data (2023)

Based on the results of the simultaneous test analysis in Table 5, the Fcount value is 15.261 > from Ftable with (0.05; 3 vs 167) of 2.66 or with a significant 0.000 < 0.05, it can...
be interpreted as transformational leadership, self-efficacy, and organizational climate influences innovative work behavior simultaneously. Subsequently, a partial test was conducted to partially analyze the effect of transformational leadership, self-efficacy, and organizational climate on innovative work behavior. Based on the results of data analysis in table 3, the results of the t-test in this study are as follows:

1. Transformational leadership has a significant level of $0.000 < 0.05$, meaning that the transformational leadership has a significant effect on innovative work behavior.
2. Self-efficacy obtained a significant level of $0.032 < 0.05$, meaning that self-efficacy significantly affected innovative work behavior.
3. Organizational climate obtained a significant level of $0.020 < 0.05$, meaning that organizational climate significantly influences innovative work behavior.

Coefficient of Determination Test

The coefficient of determination is used to measure how far the ability of a model to explain the variation of the dependent variable. The results of the determination test in this study can be explained in Table 5 below:

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.605a</td>
<td>.367</td>
<td>.322</td>
<td>1,343</td>
</tr>
</tbody>
</table>

Source: Processed SPSS Data (2023)

Based on the results of the data analysis in table 5 above, the coefficient of determination value is 0.367, which means that the level of innovative work behavior of 36.7% can be explained by transformational leadership, self-efficacy, and organizational climate, while other factors can explain the remaining 63.3% not discussed in this study.

CONCLUSIONS AND SUGGESTIONS

Conclusion

The results of this research conclude transformational leadership positive and significant effect on innovative work behavior. The transformational leadership style focuses on developing an inspirational vision, providing encouragement to reach maximum potential, and creating a work environment that supports creativity and experimentation. Transformational leaders can inspire and motivate their team members by providing clear direction and communicating challenging but achievable goals. This creates a psychological climate that stimulates interest and the desire to innovate. In addition, transformational leadership also involves providing support, recognition, and intellectual stimulation, all of which are important factors in encouraging innovative work behavior. By creating a work culture that supports exploring new ideas, transformational leadership positively contributes to the development and implementation of innovation in an organization. In the ever-growing digital era, transformational leadership is important for manufacturing companies to face challenges and take advantage of emerging opportunities. This leadership style provides clear direction in facing digital transformation, helping companies adapt quickly to technological and market changes. Transformational leaders can inspire and motivate employees in the face of uncertainty, turning fear into a passion for experimentation and innovation. In the context
of digital manufacturing, where automation, the Internet of Things (IoT), and data analytics are key, transformational leadership encourages collaboration across departments and motivates employees to develop new skills relevant to technology. In addition, transformational leaders also build an organizational culture that is open to change and continuous learning, ensuring that companies can leverage the benefits of digital technology to improve operational efficiency, product quality, and competitiveness in global markets.

The results of this research conclude that self-efficacy positive and significant effect on innovative work behavior. Self-efficacy, or an individual's confidence in their ability to succeed in a particular task or situation, strongly influences innovative work behavior. When people believe they have the skills, knowledge, and capacity to overcome challenges and produce good results, they are more likely to engage in innovative work behavior. High self-confidence provides an internal drive that motivates individuals to try new approaches, overcome obstacles, and develop creative solutions. Individuals with high self-efficacy are also more likely to see failure as an opportunity to learn and improve themselves, rather than as an obstacle that stops innovative efforts. In addition, self-efficacy also plays a role in managing uncertainty and risks associated with innovative behavior. Individuals confident in their abilities are more willing to take risks and explore new ideas without fear of failure. Thus, self-efficacy is not only the main driver of innovative work behavior, but also plays an important role in forming a positive attitude towards challenges and change, which is necessary to create an innovative work environment. In an era of digital manufacturing driven by automation, the Internet of Things (IoT), and data analytics, individuals with high self-efficacy will be better equipped to integrate these technologies into production processes. They also tend to be more proactive in seeking innovative solutions to improve production efficiency, quality and flexibility.

The results of this research conclude organizational climate positive and significant effect on innovative work behavior. Organizational climate plays a crucial role in shaping innovative work behavior in a company. A work environment that supports innovation and creativity encourages employees to engage in innovative work behavior. Organizational climate creates a psychological and social basis influencing employees' perceptions of security for expressing new ideas, sharing knowledge, and taking risks in creating new solutions. In organizations with a climate that supports innovation, employees feel valued and supported to contribute with their creative ideas. The existence of reward systems that recognize and encourage innovation also plays an important role in creating a climate that supports innovative behavior. In addition, open communication, collaboration between teams, and policies that provide freedom for exploring new ideas are key elements in an organizational climate that supports innovation. Conversely, an organizational climate that is rigid, hierarchical, and does not support risk tends to inhibit innovative work behavior. Therefore, to create an innovative culture, organizations need to understand and manage their organizational climate to provide the necessary support for the emergence of productive innovative work behavior. In the context of digital manufacturing, where automation, data analytics, and connectivity via the Internet of Things (IoT) are becoming the norm, an organizational climate that facilitates collaboration and the exchange of ideas between departments is becoming increasingly important. A work atmosphere encouraging creativity
and experimentation stimulates employees to create innovative solutions to improve operational efficiency and product quality.

**Suggestion**

To improve transformational leadership in manufacturing companies in the digital era, certain steps can be taken. First, companies must focus on leadership development through employee training and development. Training programs focusing on developing transformational leadership skills, including the ability to inspire, motivate, and create an inspirational vision, can help leaders hone their skills. Additionally, it is important to ensure that leaders at all levels deeply understand digital technology and its impact on the manufacturing industry. Implementing certain measures can play a key role to increase self-efficacy in manufacturing companies in the digital era. First, companies can provide employee training and development focused on developing skills relevant to digital technology. This training will increase employees' knowledge of digital tools and processes and increase their confidence in facing new technological challenges. Several strategic steps can be taken to improve the organizational climate in manufacturing companies in the digital era. First, companies can support open and transparent communication at all levels. Building effective communication channels will help reduce uncertainty and increase employee understanding of the company's vision in facing digital transformation. For further research, the researcher suggests that the sample size used for further research needs to be increased to a larger sample size from a different region. On the other hand, for larger sample sizes and more complex models, you can use data analysis methods using the Amos application.

**REFERENCE**


