Growth: Journal Management and Business
Volume 03 No 01 June 2025
E ISSN : 3031-7959

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Transformational Leadership and Innovative Behavior: Investigating The Role of Knowledge Sharing and Self-Efficacy in Indonesian Manufacturing Firms

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Received: 22-06-2025 Revised : 17-06-2025 Accepted : 17-07-2025 Published : 28-08-2025

Abstract
The innovation gap in the Indonesian manufacturing sector, where only 20% of companies have adopted Industry 4.0 technology, highlights the need for leadership that fosters innovative behavior. This study examines the influence of transformational leadership on innovative behavior, with knowledge sharing as a mediating variable and self-efficacy as a moderating variable. A quantitative approach was used with 124 employees from manufacturing companies in South Cikarang selected through purposive sampling. Data were analyzed using Structural Equation Modeling (SEM) with SmartPLS. The results show that transformational leadership has a significant positive effect on both innovative behavior and knowledge sharing. Knowledge sharing also positively influences innovative behavior and mediates the relationship between transformational leadership and innovative behavior. However, self-efficacy does not significantly moderate the relationship between transformational leadership and innovative behavior. These findings underscore the importance of transformational leadership in encouraging innovation through the facilitation of knowledge exchange. Theoretically, this study contributes to the development of leadership-based innovation models by confirming the role of knowledge sharing as a key mechanism. Practically, it offers insights for organizations to enhance innovation by implementing leadership development programs and strengthening knowledge sharing systems. The study recommends that manufacturing firms invest in leadership and learning infrastructure to remain competitive in the Industry 4.0 era.

Keywords: transformational leadership, innovative behavior, knowledge sharing, self-efficacy, manufacturing companies

Introduction

Human resources (HR) have an important role in maintaining the sustainability and development of an organization. The ability of employees to think creative And create solution just become main factors in facing competition Which the more strict. Wrong One form contribution HR to organization is through innovative behavior, namely employee actions in generating, developing, and implementing new ideas in the workplace (Saif et al., 2024). However, some previous explanations about innovative behavior tend to be repetitive and less elaborated, so this research aims to strengthen its position by integrating both theoretical relevance and contextual urgency.

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Today's organizations are faced with rapid change and demands to continuously adapt. In context This, behavior innovative employee become key in maintaining the competitiveness and sustainability of the organization. Employees who are motivated to develop new ideas can help the organization in creating creative solutions, increase efficiency, as well as find opportunity business new. Support from leaders who are able to inspire, provide challenges, and open up space for exploring ideas to become important factors in encouraging innovative behavior in the workplace (Choi et al., 2016) in (Sudibjo & Prameswari, 2021).

Table 1. report global innovation index

Global Innovation Index Rankings 2022		
Ranking	**Country**	**Score**
1	Switzerland	64.6
2	American Union	61.8
3	Sweden	61.6
4	Britain Raya	59.7
5	Dutch	58
6	Republic Korea	57.8
7	Singapore	57.3
8	German	57.2
9	Finland	56.9
10	Denmark	55.9
36	Malaysia	38.7
75	Indonesia	27.9
132	Guinea	11.6

Source: World Intellectual Properties Organization (WIPO)

Based on the global innovation index report table, it is clear that Switzerland has succeeded occupy ranking top in list country with improvement the world's most significant innovation with a score of 64.6 points out of 100 in 2022. The United States is in second place with a score of 61.8 points. Next, followed by Sweden, the United Kingdom, And Dutch with score GII (Global Innovation Index) each of 61.6 points, 59.7 points, And 58 points. Singapore become the only one country from Southeast Asia region which managed to enter the top 10 rankings. According to the WIPO report, Singapore occupy ranking seventh with score as big as 57.3 points. WIPO reported that Indonesia for the first time performed above expectations in the field of innovation for the level of economic development. Indonesia managed to enter the 80th rank. big And occupy position 75th with score 27.9 points. Even though so, unfortunately Indonesia Still is at Far in lower a number of country with economy intermediate in other Southeast Asian regions, such as Malaysia, Thailand, the Philippines, and Vietnam. This context serves as a pressing call for structural innovation and leadership transformation within Indonesia’s industrial ecosystem, especially in regions heavily populated by manufacturing

companies.

Based on a survey from Capgemini Consulting, it shows that innovation is considered a top strategic priority in many organizations. Of the 375 respondents surveyed, 24.5% stated that innovation is their top priority, while 52% classified it as one of the top three priorities. Thus, a total of 76.5% of organizations make innovation a part of their three priority strategic most important they. Besides that, 20.5% put innovation as a top ten priority, while only 2.9% considered it not a priority at all. These data emphasize a clear awareness of innovation importance, but fail to explain the internal mechanisms such as leadership and knowledge exchange that can make innovation operational and sustainable within organizations.

The manufacturing sector in Indonesia faces significant challenges in developing innovations that support global competitiveness. Global Innovation Index 2022 data shows that Indonesia is still ranked 75th with a score of 27.9, far behind neighboring countries such as Malaysia which is ranked 36th with a score of 38.7. The Indonesian Ministry of Industry (2021) stated that this innovation gap is a serious problem considering that the manufacturing sector is a significant contributor to Indonesia's GDP. According to the article site walking.co.id (2024), survey from Ministry Industry shows that only about 20% of Indonesian manufacturing companies have adopted Industry 4.0 technology. So Indonesian manufacturing companies still tend to rely on traditional business models and are less likely to adopt innovative technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI) causing stagnant productivity and dependence on labor-intensive work, even though according to a Capgemini Consulting survey, 76.5% of organizations make innovation part of their three most important strategic priorities.

This gap in innovation in the Indonesian manufacturing sector shows the need for a leadership approach that can drive change and innovation in organizations. Bass & Ronald (2006) explained that transformational leadership characterized by the leader's ability to inspire and motivate employees to achieve goals that go beyond their personal interests has proven as approach effective in increase behavior innovative employees. Research conducted by Jung et al. (2003) found that transformational leaders create a climate that supports innovation by encouraging employees to question assumptions, take risks, and explore approach new in settlement problem. In line with That, Saif et al. (2024) showed that transformational leadership contributes significantly in build culture innovation with to articulate vision Which clear about the future and encourage creativity in the team. In the context of the manufacturing industry, Chang (2016) showed that transformational leadership has a positive impact on process and product innovation through employee psychological empowerment. Although various previous studies have stated that transformational leadership style is positively related to innovative work behavior (Jung et a. 2003; Saif et a. 2004; Chang, 2016), in fact Still there is research results that show inconsistencies. A study conducted by Wulandari & Santosa (2025) found that transformational leadership does not influential significant to behavior Work innovative employee. Findings Studies that still show inconsistency can be an indication of the need for further testing to understand the mediation and moderation mechanisms that can explain the relationship between transformational leadership style and innovative work behavior.

One variable mediation important Which can explain connection This is Knowledge

Sharing. Wang & Wang (2012) in (Dewi et al., 2023) explains that knowledge sharing is the process of exchanging knowledge between individual Which can facilitate creation knowledge new in organization. Le & Lei (2019) explains that transformational leaders can build a culture of sharing knowledge through influence ideal And stimulation intellectual Which encourage employees to exchange ideas, experiences, and skills. Research conducted by Le & Lei (2019) found that knowledge sharing significantly mediates the relationship between transformational leadership and organizational innovation . According to results study they, process share knowledge facilitating the increase in the organization's capacity to absorb, recognize, and integrate information from the external environment, which in turn encourages innovation within the company.

In addition to the mediation mechanism, the relationship between transformational leadership and innovative behavior can also be influenced by moderating variables such as self-efficacy. Shahzadi & Khurram (2020) explain that self-efficacy is a belief individual to his ability in finish task, facing challenges, and maintaining effort and focus in situations full of uncertainty. Study previous Which done by Kalsoom (2020) stated that self-efficacy significantly drives innovative work behavior, because individuals with efficacy self Which tall capable balancing activities that contradictory And still productive in environment Work Which dynamic. In line with that, Hammond (2011) show that self-efficacy influence behavior innovative with increase readiness face change as well as resilience in a challenging work environment, enabling individuals to remain effective and adaptive in stressful situations.

Based on exposure in on, study This contribute For explores the moderation mechanism of Self Efficacy on the direct influence of Transformational Leadership on Innovative Behavior as well as on the indirect influence through the mediator Knowledge Sharing. The novelty of this study lies in the use of the Self Efficacy variable in the relationship between transformational leadership and innovative behavior which is still rarely studied in the corporate context. manufacturing in Indonesia. Variables in the form of Knowledge Sharing is expected to be a connecting mechanism between transformational leadership and innovative behavior. The originality of this research lies in the integrated testing of both mediation and moderation in one empirical model, offering deeper insight into how transformational leadership shapes innovation behavior across organizational levels.

Method

The approach used in this study is a quantitative approach. Population in study This is all over employee on company manufacturing in South Cikarang. This study uses a non-probability sampling method with a purposive sampling technique to select samples that are in accordance with the research objectives. This technique was chosen because it allows researchers to focus on individuals who meet specific criteria relevant to the conceptual model being tested, ensuring that respondents possess sufficient knowledge and experience related to the constructs measured. Although not random, purposive sampling is appropriate for analytical generalization in SEM-PLS, particularly in behavioral and organizational research contexts where specific roles or exposures are required. Determination of sample size using the Hair et al. (2021) formula which states that the minimum sample size for SEM-PLS analysis is the number of indicators times 5,

so size sample minimum Which required is 24 x 5. The sample criteria set are employees who work in manufacturing companies in South Cikarang, have worked for at least 6 months, and are directly involved in the company's operational processes. Based on the results of data collection, a sample of 124 respondents was obtained who met the research criteria and had exceeded the minimum requirements according to the Hair et al. (2021) formula for Structural Equation Modeling (SEM) analysis using SmartPLS.

Data collection was carried out through the distribution of structured questionnaires containing statements related to research variables. The questionnaire consists of five parts. main: (1) data demographic respondents, (2) leadership transformational, (3) knowledge sharing, (4) innovative behavior, and (5) self-efficacy. Each variable was measured using a 5-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5). The questionnaire instrument was adapted from previous studies that have been tested for validity and reliability.

Data analysis using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach with the help of SmartPLS 3 software. Data analysis was carried out through two main stages: evaluation of the measurement model (outer model) and evaluation of the model structural (inner model). On stage outer model, done test convergent validity through the outer loading value (≥0.70), Average Variance Extracted/AVE (≥0.50), and reliability test through the Composite Reliability value (≥0.70). Furthermore, in inner stage The model is tested using the hypothesis testing through path coefficient analysis, t-statistic value, and p-value. Mediation testing is carried out using the bootstrapping technique. For test significance indirect effect, whereas testing moderation is done through interaction effect analysis. The criteria for accepting the hypothesis are t-statistic value >1.96 and p-value <0.05 at a significance level of 5%.

Results and Discussion

Table 2 Type Sex

Type sex	Frequency	Percentage
Man	49	40%
Woman	75	60%
Total	124	100%

Source: Output SmartPLS 3 (2025)

Based on the gender table, the majority are women, 75 people or as big as 60%, whereas Respondent man amount to 49 person or 40%. This composition shows that women's participation in filling out the questionnaire is more dominant than men. This can reflect that in the context of this study, women more Lots involved or more easy reachable For become respondents. These differences in proportions can also affect the perspectives presented in the research results.

Table 3 Age

Age	Frequency	Percentage
<20 Year	29	23%
21-35 Year	81	65%
36-45 Year	7	6%
46-55 Year	7	6%
Total	124	100%

Source: Output SmartPLS 3 (2025)

Based on the age table, the 21–35 age group dominates the number of respondents, which is 81 people or around 65%. Furthermore, respondents aged in lower 20 year amount to 29 person (23%), whereas group age 36–45 years and 46–55 years each amounted to 7 people (6%). This shows that the majority of respondents are in the early productive age, which is usually active in world Work And own experience Which Enough relevant with topic study. Proportion age Which more old relatively small, so that corner view from senior circles is more limited.

Table 4 Education

Education	Frequency	Percentage
High School / Vocational High School	85	69%
D3	4	3%
S1	34	27%
S2	1	1%
Total	124	100%

Source: Output SmartPLS 3 (2025)

Based on the education table, the majority of respondents are high school graduates with a total of 85 people or around 69%. Then, respondents with a bachelor's degree are 34 people (27%), while D3 and S2 graduates are only each 4 person (3%) And 1 person (1%). Data This show that most of the Respondent own background behind education intermediate Which related with the type of job or position they hold. The low number of higher education graduates can be a reflection of the average educational qualifications in the company or region studied.

Table 5 Long Work

Length of work	Frequency	Percentage
<3 Year	82	66%
3-5 Year	21	17%
>5 Year	21	17%
Total	124	100%

Source: Output SmartPLS 3 (2025)

Based on table long Work, part big Respondent own time underwork from 3 year, namely as much as 82 person or 66%. Respondents Which has work during 3–5 year And more from 5 year each amount to 21 person or 17%. Things This show that part big Respondent Still classified as employee new or recently joined the workforce. This condition can be caused by high numbers of new recruits, high turnover rates, or the characteristics of companies that employ more young workers.

Table 6 Outer Model

Variables	Outer Loading	Composite Reliability	AVE
KP	0.772 – 0.812	0.880	0.594
KS	0.661 – 0.814	0.891	0.557
PI	0.702 – 0.801	0.891	0.557
SE	0.746 – 0.910	0.926	0.676

Source: Output SmartPLS 3 (2025)

Based on the table of results of the measurement model analysis, all variables in this study showed adequate validity and reliability. Transformational Leadership (KP) own mark outer loading range between 0.772 until 0.812 with a composite reliability of 0.880 and an Average Variance Extracted (AVE) of 0.594. Matter This indicates that indicators Which used to measure transformational leadership has good internal consistency and is able to explain variables with adequate validity.

Knowledge Sharing (KS) show mark outer loading Which range between 0.661 until 0.814, with composite reliability 0.891 And AVE 0.557. Although AVE value A little in lower standard ideal 0.6, However Still can accepted Because composite reliability exceeds 0.8, indicating that the knowledge sharing measurement instrument has high reliability. Innovative Behavior (PI) has the same characteristics as KS, namely outer loading 0.702-0.801, composite reliability 0.891, And AVE 0.557, show consistency Which Good in measuring employee innovative behavior.

Self-Efficacy (SE) show performance Which most Good with mark The highest outer loading ranges from 0.746 to 0.910, composite reliability 0.926, and AVE 0.676. These values indicate that self-efficacy has very good convergent validity and reliability, indicating that the indicators of employee self-confidence are measured very consistently.

Table 7 R Square

	R Square	**R Square Adjusted**
KS	0.371	0.366
PI	0.439	0.420

Source: Output SmartPLS 3 (2025)

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The results of the R-square analysis show that the model has moderate to substantial predictive ability. Knowledge Sharing (KS) can be explained as 37.1% by Leadership Transformational (R^2 = 0.371), with R^2 adjusted by 0.366. This shows that transformational leadership has a significant contribution in encouraging knowledge sharing behavior within organization. Temporary That, construct Behavior Innovative (PI) own better predictive ability, where 43.9% of the variance can be explained by exogenous variables in the model (R^2 = 0.439), with an adjusted R^2 of 0.420. This value indicates that the combination of transformational leadership, knowledge sharing, and self-efficacy is able to explain almost half of the variation in employee innovative behavior.

Table 8 Path coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
KP -> KS	0.609	0.617	0.059	10,388	**0,000**
KP -> PI	0.376	0.382	0.105	3,598	**0,000**
KS -> PI	0.334	0.325	0.110	3,030	**0.003**
Moderation Effect 1 -> PI	-0.137	-0.110	0.097	1,407	**0.160**
SE -> PI	0.168	0.138	0.105	1,608	**0.108**

Source: Output SmartPLS 3 (2025)

Based on the table of path coefficients analysis results, Transformational Leadership (KP) is proven to have a very significant influence on Knowledge Sharing (KS) with a path coefficient of 0.609 and a p-value of 0.000 ($p < 0.05$). This relationship shows that the transformational leadership style applied in the organization strongly encourages employees to share knowledge with their coworkers.

Transformational Leadership (KP) also has a significant effect on Innovative Behavior (PI) with a path coefficient of 0.376 and a p-value of 0.000. This finding confirms that transformational leaders are able to inspire and motivate employees to develop innovative ideas in their work. Similarly, Knowledge Sharing (KS) is proven to have a significant effect on Behavior Innovative (PI) with coefficient track 0.334 And p-value 0.003. Matter This shows that the more active employees are in sharing knowledge, the higher their tendency to behave innovatively.

However, there is two connection Which No significant in model This. First, the effect moderation (Moderating Effect 1) to Behavior Innovative show negative coefficient -0.137 with p-value 0.160 ($p > 0.05$), which means that the tested moderator variable is not proven to significantly strengthen or weaken the relationship in the model. Second, Self-Efficacy (SE) does not show a significant direct effect on Innovative Behavior (PI) with a path coefficient of 0.168 and p-value 0.108. Findings This Enough startling Because in a way theoretical, belief self employees should contribute to their innovative behavior.

Table 9 Specific Indirect Effect

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
KP -> KS -> PI	0.204	0.200	0.071	2,856	**0.004**

Source: Output SmartPLS 3 (2025)

Based on results analysis Specific Indirect Effects show existence significant mediation role in the model. Transformational Leadership (KP) has an indirect effect on Innovative Behavior (PI) through Knowledge Sharing (KS) with a coefficient of 0.204 and a p-value of 0.004. This indicates that knowledge sharing acts as a partial mediator in the relationship between transformational leadership and innovative behavior. In other words, transformational leadership not only has a direct effect on innovative behavior, but also indirectly through increased knowledge sharing activities among employees.

Influence Leadership Transformational to Behavior Innovative

The results of the analysis show that transformational leadership has a significant effect on innovative behavior, supporting the first hypothesis (H1). This finding strengthens the research of Jung et al. (2003) which asserts that transformational leaders create a climate of innovation by encouraging employees to question assumptions, take risks, and explore new approaches to problem solving. In line with that, Chang (2016) proved that transformational leadership has a positive impact on process and product innovation through employee psychological empowerment in the context of the manufacturing industry.

Results This strengthen theory leadership transformational from Bass & Ronald (2006) emphasized that transformational leaders are able to inspire and motivate employees to achieve goals that go beyond personal interests, thus encouraging the emergence of innovative behavior. Transformational leaders, through their four main dimensions (idealistic influence, inspirational motivation, intellectual stimulation, and individual consideration), create a conducive environment for employees to develop and implement new ideas.

The practical implication of this finding is that manufacturing organizations in Indonesia need to develop transformational leadership styles to enhance employee innovative behavior. Leadership development programs that focus on improving leaders' ability to inspire, motivate, and stimulate employees' intellectuality need to be implemented. This is particularly relevant in Indonesia, where organizational hierarchies may inhibit bottom-up innovation unless leaders actively cultivate psychological safety and empowerment. Limitations in testing hypothesis This is study dominated by Respondent with time work of less than 3 years who have not fully felt the impact of transformational leadership in the long term.

Influence Leadership Transformational to Knowledge Sharing

Transformational leadership has been proven to have a significant influence on knowledge sharing, confirm the second hypothesis (H2). These results are consistent with research by Le & Lei (2019) which explains that transformational leaders build a culture of

knowledge sharing through idealized influence and intellectual stimulation, encouraging employees to exchange ideas, experiences, and skills. Research conducted by Carmeli et al. (2021) also strengthens this finding by showing that transformational leaders create a safe psychological environment, where employees feel comfortable sharing knowledge without fear of negative consequences.

Theory leadership transformational from Bass & Ronald (2006) emphasize that Wrong One role of leader is create environment Which facilitate learning and knowledge exchange. Transformational leaders, through intellectual stimulation, encourage employees to question the status quo, explore perspective new, And share knowledge For solve problems creatively. The practical implication is that manufacturing companies need to increase their transformational leadership capacity to foster a culture of knowledge sharing. Mentoring and coaching programs can be implemented to improve skills. leader in facilitate share knowledge. Beyond training programs, leaders should also model knowledge sharing behaviors consistently, as symbolic actions in hierarchical organizations tend to shape norms and values strongly. Limitations In testing this hypothesis, the dominance of respondents with high school/vocational education has different perceptions and needs in the knowledge sharing process compared to employees with higher education backgrounds.

Influence Knowledge Sharing to Innovative Behavior

Knowledge sharing has a significant effect on innovative behavior, supporting the third hypothesis (H3). This finding strengthens Wang & Wang's (2012) research which emphasizes that the process of exchanging knowledge between individuals facilitates creation knowledge new, Which Then push innovation in the organization. Results This in line with Radaelli's research et et al. (2014) Which found that knowledge sharing expands employees' access to intellectual resources and facilitates collective learning processes, which then increases their capacity to generate innovative solutions.

The theory of knowledge management developed by Nonaka & Takeuchi (1995) through the SECI model (Socialization, Externalization, Combination, Internalization) explains how tacit and explicit knowledge can be converted and shared to create new knowledge that drives innovation. Knowledge sharing allows the combination of knowledge from various sources, which can then be integrated to produce innovative solutions. Implications in practice is organization manufacturing need create platforms and mechanisms to facilitate effective knowledge sharing, such as discussion forums, community practitioner, or system management knowledge digital. Limitations in testing hypothesis This is part big Respondent own time Work less than 3 years who do not have enough diverse experience and knowledge to share, so that affect the dynamics knowledge sharing in the organization.

The Influence of Knowledge Sharing on Transformational Leadership and Innovative Behavior

The results of the analysis confirm that knowledge sharing mediates the relationship between transformational leadership and innovative behavior, supporting the fourth hypothesis (H4). This finding is in line with the research of Le & Lei (2019) which proves that knowledge

sharing facilitates increasing organizational capacity in absorbing and integrating external information, thereby encouraging the creation of innovation. Research conducted by Anwar & Abadi (2023) on MSMEs in East Nusa Tenggara Province also shows that knowledge sharing play a role significant in increase capability innovation. Transformational leadership encourages the creation of a work culture that supports learning and active knowledge sharing among employees, which ultimately facilitates the emergence of innovative ideas. Thus, it can be concluded that knowledge sharing own role mediation Which strong in strengthen influence transformational leadership on innovative behavior in organizations.

Mechanism This mediation can be explained through the integration of transformational leadership theory. from Bass & Ronald (2006) with theory management knowledge from Nonaka & Takeuchi (1995). Leader transformational, through stimulation intellectual and individual considerations, creating conditions that support knowledge sharing. Furthermore, this knowledge sharing process facilitates the creation, integration, and applications knowledge new Which push innovative behavior employees, as described in the SECI model. The practical implication is that manufacturing organizations need to develop transformational leadership programs that explicitly focus on enhancing knowledge sharing as a means to encourage innovative behavior. Leaders need to be trained to facilitate the knowledge sharing process through techniques such as mentoring, coaching, and the formation of learning communities. A limitation in testing this hypothesis is that the research model has not considered contextual factors such as organizational culture and organizational structure that may influence the effectiveness of knowledge sharing mediation mechanisms.

The Influence of Self Efficacy on Transformational Leadership and Innovative Behavior

Different with hypothesis fifth (H5), self-efficacy No proven moderates the relationship between transformational leadership and innovative behavior. These results are contradictory with study Kalsoom (2020) Which show self-efficacy significantly encourage innovative work behavior by improving the ability to balance activities Which each other contradictory in the environment Work dynamic. Research Which done by Doerner et a. (2011) confirm that innovative self-efficacy only influential significant to behavior innovative if supported by high transformational leadership. This means that individual confidence in their innovative abilities is not enough without a supportive work environment. The unconfirmed hypothesis in this study is likely due to differences in organizational characteristics, low perceptions of transformational leadership, or the context of the respondents' work culture.

The theory of Gist & Mitchell (1992) explains that self-efficacy plays an important role in determine so far where individual will take risk And pursuing goals Which challenge, including activity innovative. However, in context In this study, self-efficacy did not strengthen the relationship between transformational leadership and innovative behavior. This indicates that in the context of manufacturing organizations in Indonesia, influence leadership transformational to innovative behavior is direct and powerful, without being moderated by employee self-efficacy. The practical implication is that manufacturing organizations need to focus on developing transformational leadership and a culture of knowledge sharing to improve behavior. innovative, without too depends on development self-efficacy employees. Limitations in testing this

hypothesis include the dominance of respondents with education High School And time Work not enough from 3 year Which Possible own relatively homogeneous levels of self-efficacy, thus not showing a significant moderation effect. In addition, the Indonesian workplace context characterized by collectivism, deference to authority, and group orientation may diminish the salience of individual psychological traits like self-efficacy, thus making leadership behaviors more influential than internal beliefs in shaping innovation.

Conclusion

This study proves that transformational leadership has a significant effect on employee innovative behavior in manufacturing companies. Transformational leadership has also been shown to have a significant effect on knowledge sharing, where knowledge sharing then has a significant effect on innovative behavior. Another important finding is that knowledge sharing has been shown to mediate the relationship between transformational leadership and innovative behavior. innovative, explain mechanism How leadership transformational influence innovation through process share knowledge. However, self-efficacy not proven to play a role as a moderator in the relationship.

Manufacturing companies need to develop comprehensive transformational leadership training programs for managers and supervisors. Organizations should build knowledge sharing infrastructure through digital platforms, discussion forums, and communities of practice. Companies need to create formal systems for evaluating and implementing innovative ideas and implement mentoring programs to help new employees develop innovation capabilities. However, it is important to note that this study is limited by several factors, including the relatively homogeneous characteristics of the respondents most of whom have short work tenure (less than three years) and a high school educational background. These conditions may affect the generalizability of the results and the dynamics of self-efficacy and knowledge behavior in more complex work settings. By addressing these limitations and extending the research model, future studies can provide a more comprehensive and contextualized understanding of the mechanisms linking leadership, knowledge, and innovation.

Future research is advised to explore alternative moderating variables. like psychological safety And organizational culture, use research design longitudinal For understand dynamics connection between variable, diversifying the sample into various industrial sectors, investigating the role of self-efficacy in depth through a qualitative approach, integrating other variables like organizational learning And innovation climate, use multi-source data to avoid common method bias, conduct multi-level analysis, explore multiple mediation mechanisms, and conduct cross-cultural comparative studies to understand the influence of cultural factors on the effectiveness of transformational leadership in encouraging innovative behavior.

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