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The Influence of Leadership Style Mediated by Intellectual Capital and Innovation on International Manufacturing Company Performance

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Abstract: Currently, companies face uncertain situations due to the effects of unstable world geopolitical conditions, and the role of company leaders will affect innovation and company performance. This study analyzes the relationship between leadership style, intellectual capital, and innovation on employee performance in foreign manufacturing companies in Batam City, Indonesia. This study uses quantitative methods with data collection through questionnaires distributed to employees in foreign manufacturing companies in Batam City totaling 303 respondents. The results showed that transformational and authentic leadership styles had a significant positive influence on employee innovation and performance, while transactional leadership style showed a stronger influence in a stable business environment. Intellectual capital proved to be an important mediator in the relationship between leadership style and innovation, which in turn has an impact on improving company performance. This study provides practical implications for managers of manufacturing companies to adopt a leadership style that suits the dynamics of the work environment and maximize intellectual capital to encourage innovation and optimal employee performance.

Keyword: Leadership Style, Intellectual Capital, Innovation, Company Performance.

INTRODUCTION

Many companies today face the challenges of global economic uncertainty and technology-related crises (Akdere & Egan, 2020). Indonesia rose to 27th place in the World Competitiveness Center 2024 rankings, below Thailand. Leadership influences employee innovation, which is critical to a company's success (Han et al., 2020). Leadership style research focuses more on leadership characteristics, without analyzing the suitability for leading the millennial generation (Putriastuti & Stasi, 2019), the millennial generation today and in the future is very much needed to ensure the continuity of manufacturing companies. (Amin & Setiawan, 2022). In addition to being an added value for the company, innovation can contribute to superior performance and better ways of solving problems (Wikhamn et al.,

2018). Based on the Forrester Southeast Asia and Japan Priorities Survey 2022 report, 37% of companies in Southeast Asia have not focused on innovation in 2023. Many companies are trying to increase innovation by designing human resource strategies to create unique and irreplaceable characteristics (Smriti & Das, 2018).

In the transformational leadership style, leaders will carry out practices where they will explain their goals and vision to employees (Lee et al., 2023). In contrast to the transformational style, the transactional leadership style according to Lee et al (2023) utilizes more social behavior to be able to process low costs to maximize existing benefits. Meanwhile, authentic leadership itself will develop the innovation with themselves (Cha et al., 2019). Leaders who tend to be very authentic have more behavior that encourages their less authentic employees to work well (Grošelj et al., 2020). Leadership styles tend to have different impacts and impacts on employee commitment and performance, which in turn will impact the innovation climate (Kesting et al., 2015). The three leadership styles above when associated with millennials, a strategy is needed to manage millennials to achieve high standards (Putriastuti & Stasi, 2019), this strategy needs to be studied further, especially in the context of manufacturing in developing countries that has not been widely revealed. Currently, the manufacturing industry in Indonesia is facing a decline in the Purchasing Manager's Index (PMI) which is approaching 50 (Wuryadani & Zanggi, 2024). The object of this research is foreign manufacturing companies in Batam City, the only city in Indonesia that has received Free Trade Zone facilities. Batam, located in the Riau Islands Province, is an industrial city close to Singapore and Malaysia. Batam is a multi-ethnic metropolitan and industrial city (Saefuloh, 2011), so its characteristics are very diverse. Based on data obtained from Batam Authority (BP Batam), Batam City has 1,309 excellent industrial sectors, among which there are foreign investments. Research related to this issue in a developing country is still rare, and the results of this study can be usefully generalized to other similar regions.

Leadership Styles

The role of a leader is not only to provide direction, but must also have planning and thinking to encourage innovation, which has an impact on the sustainability of the company (Fatyandri et al., 2023). Good leadership style, with transparent relationships, including authentic leadership, can increase employee engagement, satisfaction, and strengthen employee identity. (Purwanto et al., 2021). Transactional leadership emphasizes rewards for hard work (Delegach et al., 2017), which is transformational leadership focuses on subordinate motivation and has a major influence on company performance and commitment (Seitz & Owens, 2021). According to Schermuly & Meyer (2020), it shows that transformational leaders have motivation that drives and the impact on self- sacrifice. On the other hand, authentic leadership in carrying out its leadership process through the use of company resources (Mahdikhani & Yazdani, 2020), so that it will add a good identity to the organization (Purwnanto, 2020).

Intellectual Capital (IC)

Intellectual capital (IC) is intellectual material consisting of knowledge, information, intellectual property, experience, and capabilities that can be used to create wealth and improve company performance (Nadeem et al., 2019). IC can be categorized into three types: human capital (human resources), structural capital (systems and infrastructure), and relational capital (relationships with customers and business partners) (Hesniati et al., 2019). According to Ali & Anwar (2021) IC has an important role in increasing competitive advantage and company success. Many studies show that IC has a positive relationship with company financial performance, such as market value, return on equity (ROE), return on investment (ROI), and earnings per share (EPS). Mubarik et al (2022) state that IC is measured through non-monetary methods such as Balanced Scorecard and monetary such as Economic Value Added (EVA).

H1. Transactional Leadership is significantly positive with Performance mediated by Innovation

Leaders are needed in companies both during success and failure (Li et al., 2018). Leaders have attitudes that influence the behavior of their followers and focus on achieving goals (Berraies & Zine El Abidine, 2019). The transactional leadership style shows an exchange between the leader and his followers (Alrowwad et al., 2020). Passive management by exception means that transactional leaders only intervene when problems are severe (Berraies & Zine El Abidine, 2019). It has a positive effect on performance and is mediated by innovation because transactional leaders have set rewards for targets achieved (Alrowwad et al., 2020).

H2. Transformational Leadership Significantly Positive on Performance mediated by innovation

Transformational leadership has an attitude that builds the enthusiasm of its followers to achieve goals (Le & Lei, 2018). According to Mahdikhani & Yazdani (2020) transformational leaders use their intelligence to create ideals for their organizations and followers. This attitude motivates subordinates to perform well, which in turn affects performance (Alrowwad et al., 2020). Based on research conducted by Sueb & Sopiah (2023) shows that transformational leadership has a positive impact on teams, with high expectations of employee performance which can improve performance (Pradhan & Jena, 2019).

H3. Authentic Leadership is Positively Significant with Performance mediated by Innovation

Authentic leadership is a leader who carries out the leadership process with the support of company resources (Mahdikhani & Yazdani, 2020). With such support, authentic leaders behave positively towards their subordinates (Wirawan et al., 2020), encourage innovative behavior (Purwanto et al., 2021), and increase satisfaction and strengthen identity in the organization (Purwanto, 2020). Authentic leadership also affects employee performance by increasing capabilities that support quality learning According to Domínguez-Escrig et al (2023), authentic leadership also affects employee performance by increasing capabilities that support quality learning.

H4. Transactional Leadership Significantly Positive with Innovation

In companies, innovation is crucial for developing competitive advantages (Alrowwad et al., 2020). Transactional leadership motivates employees to work toward organizational goals with rewards (Yunus, 2018). Research conducted by Rahmah et al (2020) and Agarwal & Gupta (2021) does not significantly affect innovation, as innovation is unpredictable. However, research of Thahira et al (2020) found a positive relationship between transactional leadership and innovation, as rewards motivate employees to work harder. Although transactional leadership focuses on rewards, it does not hinder the stability of the organizational environment (Novitasari et al., 2021).

H5. Transformational Leadership Significantly Positive with Innovation

Transformational leaders influence innovation with a motivational approach that builds employees to perform well (Berraies & Zine El Abidine, 2019). Thus, transformational leadership influences innovation through leader motivation and idea sharing (Alrowwad et al., 2020). Transformational leadership essentially articulates a vision and mission for the future to achieve high quality (Hadi et al., 2023). Susantinah et al (2023) found that Transformational leadership trains employees' leadership talents to enhance professionalism and encourage subordinates to challenge their innovative thinking (Pradhan & Jena, 2019).

H6. Authentic Leadership is Positively Significant with Innovation

Authentic leadership affects innovation due to the transparency of authentic leaders (Purwanto et al., 2021). Bai et al (2022) was found that Authentic leadership encourages ethical behavior and creates a positive work environment that supports innovation. Authentic leaders model innovation through rational transparency and balanced information delivery (Abdelhamied Soliman et al., 2023). Authentic leadership drives an innovative culture through openness to new ideas (Uppathampracha & Anwar, 2023). Authentic leaders stimulate innovation by encouraging employees to dare to challenge existing patterns (Laguna et al., 2019).

H7. Transactional Leadership Significantly Positive with Intellectual Capital

Leaders make cultural changes and align company values (Delegach et al., 2017). Transactional leaders motivate employees with rewards for innovative problem solving (Alrowwad et al., 2020). According to Kucharska (2021) Transactional leadership has an inconsistent impact on intellectual capital because of its focus on compliance. However, according to Drewniak et al (2020) Transactional leadership can have an inconsistent impact on intellectual capital because of its focus on compliance, which is less supportive of developing a work culture (Anggreni et al., 2022).

H8. Transformational Leadership Significantly Positive with Intellectual Capital

Transformational leaders stimulate employee morale, increase leader support, and strengthen the company's intellectual capital (Alrowwad et al., 2020). Transformational leadership stimulates intellectual capital by encouraging problem solving and decision making (Sari Ayu et al., 2022). Transformational leaders provide a supportive environment and guidance to help realize their future career values (Magasi, 2021). It motivate employees through influence and motivation that brings positive change and increases intellectual capital in the organization (Kurniawati et al., 2020). Transformational leaders act as role models for ethical priorities that are critical to the development of intellectual capital (Saad, 2021).

H9. Intellectual Capital is significantly positive to Innovation

Intellectual capital is a knowledge and skills carried out by the company to add value to the company (Kamukama & Sulait, 2017). Of course, with intellectual capital, innovation will be formed through training and work motivation (Alrowwad et al., 2020). Intellectual capital represents collective knowledge, processes, etc (Hama & Cavusoglu, 2023). Investing and developing intellectual capital prepares organizations to transform knowledge into innovations that respond to changing market needs (Mohamed & Kanbur, 2022). There is a self-reinforcing cycle where innovation generates new knowledge which then drives more innovation (Arfah, 2021).

H10. Innovation is significantly positive to Performance

The emergence of intellectual capital affects performance, which is driven by innovation, impacting employee performance (Alrowwad et al., 2020). Innovation has a positive impact on the revenue of large companies by reducing production costs, thanks to more resources for implementing innovation (Jin & Choi, 2019). Corporate innovation changes management structures by increasing organizational coordination to encourage knowledge sharing (Sulton et al., 2022). Innovation drives operational efficiency through new technologies and processes, reducing costs, improving quality, and resulting in better financial performance metrics (Becerra-Vicario et al., 2023). Technological and process innovations have a positive impact when respondents assess the level of adoption of these technologies by the company (Kiptoo & P, 2019).

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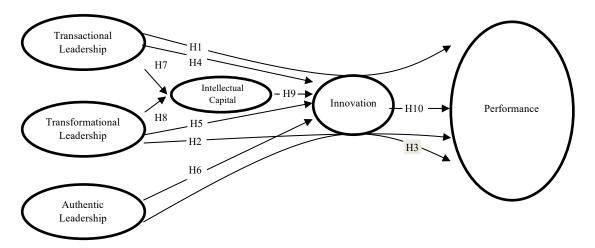


Figure 1. Research Model

METHOD

This study uses a quantitative descriptive method by distributing questionnaires via Google Form to 303 respondents working in international manufacturing companies in Batam, conducted online from December 2023 to March 2024. The results of the calculation of respondents come from the theory Hair et al (2019) which states that if the population is unknown, the sample taken must be 5 times the number of questionnaire statements. This study uses a non-probability sampling technique with a purposive sampling method, where the sample is selected based on the criteria of employees of international manufacturing companies in Batam who have worked for at least 1 year. The respondents will answer 50 questions with a scale choice of strongly disagree (5) to strongly agree (1). The questionnaire questions are derived from existing research and have been translated from English to Bahasa so that respondents can provide thorough answers. Questionaires are based on indicators from previous research. Transactional leadership (Alrowwad et al., 2020), Transformational Leadership (Sheehan et al., 2020), Authentic Leadership (Hadian Nasab & Afshari, 2019), Intellectual Capital (Alrowwad et al., 2020), Innovation (Alrowwad et al., 2020), Performance (Alrowwad et al., 2020).

RESULTS AND DISCUSSION

This study includes descriptive analysis showing that most survey respondents were women (53%), reflecting the precision-oriented nature of manufacturing jobs. The majority of respondents were aged 25-34 (56%), aligning with manufacturing companies' recruitment practices that typically target individuals aged 18-35, classified as millennials. This age range is considered the peak period for strong performance in physically demanding tasks.

Most respondents have a bachelor's degree (64%), as many manufacturing companies require this educational qualification. The most common position is employee (43%), as they are in a position to assess their superiors' performance. Additionally, 74% of respondents work in international manufacturing companies in Batam The majority of respondents (40.30%) earn an income of Rp. 2,500,001 - Rp. 5,000,000. Manufacturing companies typically implement a basic salary system with additional overtime pay, encouraging many employees to work overtime to increase their income.

Table 1. Respondent Demographics

	Tuble 1. Respondent Demographies						
Category	Description	Total	Percentage				
Gender	Male	143	47%				
	Women	160	53%				
Age	18-24 Years Old	61	20%				
	25-34 Years Old	169	56%				
	35-45 Years Old	70	23%				

	Above 46 Years Old	3	1%
Education	High School	43	14%
	Bachelor	194	64%
	Masters or Doctorate	27	9%
	Diploma	39	13%
Employment Status	Employee	130	43%
•	Supervisor	99	33%
	Manager	74	24%
Work Experience in International Manufacturing Company in Batam City	Still Working	225	74%
	Ever Working	78	26%
Domicile	Batam City	303	100%
Income	< Rp. 2.500.000	4	1%
	Rp. 2.500.001 - Rp. 5.000.000	151	50%
	Rp. 5.000.001 - Rp 10.000.000	102	34%
	> Rp. 10.000.000	46	15%

Source. Research Data Processing Results

Outer Model

In the Outer Model analysis, this research uses SmartPLS software and data processing has been carried out for analysis. There are various types of methods used, namely convergent validity test, discriminant validity test, and reliability test.

Convergent Validity

In this test analysis, there are 2 (two) types of tests, namely outer loading and Average Variance Extracted (AVE).

Table 2. Outer Loading and AVE Data Test Results

Variabele	Indicator		AVE
		Outer Loading	AVL
Authentic Leadership	AUL_2	0,80	
	AUL_4	0,77	
	AUL_5	0,80	0,62
	AUL_6	0,77	0,02
	AUL_7	0,78	
	AUL_8	0,80	
Intellectual Capital	ICHC_1	0,86	
	ICRC_3	0,85	0,54
	ICRC_4	0,83	
Innovation	INII_1	0,71	
	INII_2	0,70	
	INII_3	0,72	0.72
	INRI_1	0,78	0,72
	INRI_2	0,76	
	INRI_3	0,72	
Performance	PFCP_2	0,83	
	PFFP_2	0,82	0,66
	PFIPP_1	0,80	0,00
	PFIPP_2	0,81	
Transformational Leadership	TFL_1	0,84	
	TFL_2	0,83	0,77
	TFL_3	0,88	0,77
	TFL_4	0,85	
Transactional Leadership	TSL_1	0,88	
	TSL_2	0,87	0.72
	TSL_3	0,88	0,72
	TSL_4	0,88	

Source: research data processing results

In the results of the outer loading test according to Hair et al (2019) Outer loading measures the convergent validity of the indicator against the latent variable, with a minimum value of 0.70 for validity. Variables such as authentic leadership, intelligent capital, innovation, performance, transformational leadership, and transactional leadership have values above 0.70, indicating the convergent validity of the indicator.

The Average Variance Extracted (AVE) section according to Purwanto & Sudargini (2021) is a this test measures the variance extracted from the indicators to the latent construct. AVE higher than 0.5 indicates validity. Table 1 shows that variables such as authentic leadership, intelligent capital, innovation, performance, transformational leadership, and transactional leadership have AVE values above 0.5, so they are considered valid.

Discriminant Validity Test

Table 3. Cross Loadings Test Results

		1 abic	: 5. Cross Load	uings Test Kesu	its	
Indicator	Authentic Leadershi p	Innovatio n	Intellectua l Capital	Performanc e	Transactiona l Leadership	Transformationa l Leadership
AUL 2	0,80	0,45	0,58	0,61	0,51	0,58
AUL 4	0,77	0,38	0,58	0,57	0,55	0,58
AUL 5	0,80	0,45	0,65	0,59	0,44	0,55
AUL 6	0,77	0,39	0,61	0,57	0,44	0,58
AUL 7	0,78	0,43	0,62	0,61	0,51	0,56
AUL 8	0,80	0,41	0,61	0,64	0,45	0,57
ICHC_1	0,65	0,42	0,86	0,66	0,52	0,58
ICRC 3	0,67	0,43	0,85	0,66	0,52	0,61
ICRC_4	0,64	0,41	0,83	0,66	0,57	0,58
INII 1	0,39	0,71	0,31	0,40	0,22	0,34
INII 2	0,39	0,70	0,34	0,35	0,33	0,36
INII_3	0,38	0,72	0,43	0,38	0,34	0,31
INRI 1	0,47	0,78	0,43	0,45	0,36	0,42
INRI_2	0,34	0,76	0,31	0,36	0,39	0,30
INRI_3	0,37	0,72	0,33	0,36	0,28	0,33
PFCP_2	0,62	0,42	0,61	0,83	0,54	0,62
PFFP_2	0,61	0,39	0,64	0,82	0,55	0,58
PFIPP_1	0,62	0,45	0,67	0,80	0,51	0,57
PFIPP_2	0,62	0,44	0,62	0,81	0,54	0,60
TFL_1	0,63	0,42	0,63	0,60	0,51	0,84
TFL_2	0,57	0,35	0,55	0,66	0,51	0,83
TFL_3	0,67	0,41	0,61	0,63	0,54	0,88
TFL_4	0,60	0,41	0,59	0,60	0,52	0,85
TSL_1	0,54	0,39	0,55	0,58	0,88	0,55
TSL_2	0,53	0,38	0,59	0,59	0,87	0,56
TSL_3	0,57	0,40	0,55	0,58	0,88	0,54
TSL_4	0,52	0,36	0,54	0,57	0,88	0,48

Source: research data processing results

Cross loading is a method for testing the correlation of indicators with constructs (Amora, 2021). Valid cross loading has a minimum value above 0.5, while values below 0.5 are considered low. The table above shows some values above 0.5 and some below it.

Table 4. Fornell Larcker Test Results

Variable	Authentic Leadershi p	Innovatio n	Intellectu al Capital	Performanc e	Transaction al Leadership	Transformation al Leadership
Authentic Leadership	0,79					
Innovation	0,53	0,73				

Intellectual Capital	0,77	0,49	0,85			
Performance	0,76	0,52	0,78	0,81		
Transactional Leadership	0,62	0,44	0,64	0,66	0,88	
Transformation al Leadership	0,73	0,47	0,70	0,73	0,61	0,85

Source: research data processing results

The Fornell-Larcker test is used to evaluate discriminant validity, with the correlation between constructs having to be less than the square root of the AVE to be considered valid (Dien et al., 2022). Table 4 shows that all variables have a correlation smaller than the AVE value, so that Fornell-Larcker in this study is declared valid.

Table 5. Heterotrait-Monotrait Ratio (HTMT) Test Results

Variable	Authentic Leadershi p	Innovatio n	Intellectu al Capital	Performanc e	Transaction al Leadership	Transformation al Leadership
Authentic						_
Leadership						
Innovation	0,62					
Intellectual Capital	0,62	0,60				
Performance	0,60	0,63	0,61			
Transactional Leadership	0,69	0,50	0,75	0,76		
Transformation al Leadership	0,83	0,55	0,83	0,86	0,69	

Source: research data processing results

Heterotrait-Monotrait Ratio (HTMT) according to Rasoolimanesh (2022), is the HTMT test is used to measure convergent and discriminant consistency between constructs. The HTMT value must be less than 0.9 to ensure discrimination between reflective constructs. Table 3 shows that the variables of authentic leadership, innovation, intellectual capital, performance, transactional leadership, and transformational leadership have HTMT values below 0.9, indicating discrimination between constructs..

Reability Test

Tabel 6. Cronbach's Alpha and Composite Reliability Test Results

Variable	Cronbach's Alpha	Composite Reliability
Authentic Leadership	0,88	0,91
Innovation	0,83	0,87
Intellectual Capital	0,80	0,88
Performance	0,83	0,89
Transactional Leadership	0,90	0,93
Transformational Leadership	0,87	0,91

Source: research data processing results

Cronbach's alpha is an indicator to measure the reliability of a construct, with a reliable value of 0.70. Table 1 shows Cronbach's alpha values for all variables above 0.70, indicating high correlation and good internal consistency.

Inner Model Hypothesis Test Results

Table 7. Indirect Effect

	Tubic 1. Thuri eei Lijjeei						
Indir	ect Effect	Sample Mean (M)	T Statistics (STDEV)	P Values	Description		

Transactional Leadership - > Innovation ->	0,06	1,85	0,03	H1 : Significant
Performance				
Transformational				
Leadership -> Innovation -	0,05	1,46	0,02	H2: Significant
> Performance				•
Authentic Leadership ->	0.16	2.50	0.00	113 C' 'C' 4
Innovation -> Performance	0,16	3,50	0,00	H3: Significant

Source: research data processing results

Tabel 8. Direct Effect

Direct Effect	Sample Mean (M)	T Statistics (STDEV)	P Values	Description
Transactional Leadership -> Innovation	0,11	1,94	0,00	H4 : Significant
Transformational Leadership -> Innovation	0,10	1,51	0,01	H5: Significant
Authentic Leadership -> Innovation	0,30	3,95	0,00	H6: Significant
Transactional Leadership -> Intellectual Capital	0,34	5,08	0,00	H7 : Significant
Transformational Leadership -> Intellectual Capital	0,49	7,64	0,00	H8 : Significant
Intellectual Capital -> Innovation	0,12	1,78	0,00	H9: Significant
Innovation -> Performance	0,52	10,75	0,00	H10 : Significant

Source: research data processing results

The p-value is used to determine whether the null hypothesis (H0) is rejected based on the probability of the same or more extreme outcome. If the p-value A p-value below 0.05 supports the alternative hypothesis (Ha).

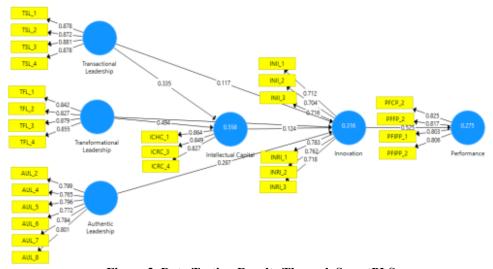


Figure 2. Data Testing Results Through SmartPLS

Discussion

H1 shows a p-value of 0.03 (<0.05), indicating a significant influence of Transactional Leadership on Performance Through Innovation, with 78% of respondents agreeing that leaders provide rewards for good performance. This is supported by research conducted by Alrowwad et al (2020) that transactional leadership aims to provide rewards for improved performance. H2 shows a p-value of 0.02, proving a significant positive effect of Transformational Leadership on Performance mediated by Innovation, according to research by (Sueb & Sopiah, 2023) which confirms that transformational leadership encourages innovation and improves performance. In H3, the p-value of 0.00 indicates a significant effect of Authentic Leadership on Performance mediated by Innovation, with authentic leadership

creating a conducive situation for performance improvement through innovation. Employees will feel more appreciated and improve their psychological well-being, which motivates them to innovate and, in turn, improves their performance. This statement is supported by research conducted by (Yuwono et al., 2023). In H4, the p-value of 0.00 shows a significant influence of Transactional Leadership on Innovation. This is evident because giving gifts and rewards encourages employees to innovate at a more complex level. (Thahira et al., 2020).

In H5, the p-value of 0.01 indicates a significant influence of Transformational Leadership on Innovation. Transformational leaders encourage their subordinates to challenge their thinking, which increases creativity in innovation (Pradhan & Jena, 2019). In H6, the p-value of 0.00 indicates a significant influence of Authentic Leadership on Innovation. Authentic leadership is related to an innovative culture that includes risk-taking, a focus on learning, and idea generation to drive innovation (Uppathampracha & Anwar, 2023). In H7, the p-value of 0.00 indicates a significant influence of Transactional Leadership on Intellectual Capital. Transactional leadership motivates employees intellectually to solve problems with innovative approaches, and uses feedback to improve performance, organizational attitudes, and human resources (Alrowwad et al., 2020). In H8, the p-value of 0.00 indicates a significant influence of Transformational Leadership on Intellectual Capital. Transformational leaders encourage positive intellectual capital stimulation, inspiring employees to provide innovative ideas (Sari Ayu et al., 2022).

In H9, the p-value of 0.00 indicates a significant influence of Intellectual Capital on Innovation. Intellectual capital, which includes collective thinking, skills, and experience, drives companies to generate ideas and innovations in new products and services. (Hama & Cavusoglu, 2023). In H10, the p-value of 0.00 indicates a significant influence of Innovation on Performance. Innovation has a major impact on company productivity, helping to reduce production costs and increase efficiency. (Jin & Choi, 2019).

Each leadership style has a positive effect on company performance mediated by Intellectual Capital and Innovation. Authentic leadership has a greater influence in driving innovation than transformational and transactional leadership on millennial employees. Based on research by Wirawan et al (2020) that showing ethical behavior is a major factor in influencing employees to be able to create new ideas. All leadership styles aim to encourage innovation through intellectual capital to improve company performance (Alrowwad et al., 2020). Transformational leadership is more effective in emphasizing contributions and setting fixed goals for the company (Sueb & Sopiah, 2023). Batam, as a multinational industrial hub, requires adaptive leadership that is in line with global dynamics and local needs. The majority of manufacturing employees in Batam are millennials (25-34 years old) who are responsive to leadership that supports career development and technology learning to drive innovation (Sulton et al., 2022). Therefore, it is important for companies in Batam City to be able to encourage effective leadership and learning strategies in leading millennials.

CONCLUSION

Leadership style plays an important role in improving company performance through innovation. Transactional leadership encourages compliance with policies, while transformational leadership increases employee creativity. Furthermore, Transactional leadership focuses on rewards for performance and is effective in stable business environments. Intellectual Capital (IC), an invisible yet valuable asset, drives innovation and performance through employee creativity, expertise, and skills. This research highlights the importance of adopting transformational leadership to inspire and motivate employees toward higher performance and personal growth. A transformational leader fosters innovation and engagement, leading to increased motivation, job satisfaction, and improved performance.

Managers can enhance transformational leadership by developing a clear vision, creating an empowering environment, investing in development, supporting open

communication, encouraging innovation, risk taking, and strengthening team collaboration to achieve organizational success. Intellectual capital (IC) includes intangible assets such as knowledge, skills, and experience, which play a vital role in driving innovation and improving organizational performance. Improving IC is also important for driving innovation, millennial employee engagement, and overall performance. Intellectual capital depends on employees' skills, knowledge, and experience, which affect productivity and innovation. Companies can support innovation by giving millennial employees space to experiment. Further research can focus on developing sustainable performance for Generation Z employees.

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