



IWB Influenced By Digital Leadership, With A Climate For Initiative And Job Autonomy As Mediators

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ABSTRACT

Company management is expected to be able to carry out new strategies innovatively, this is of course closely related to digital leadership which can influence the climate in the environment and work autonomy. This research aims to see the impact of digital leadership on innovative work behavior with a fork in the mediating role of climate for initiative and work autonomy. This research uses a population, namely employees at Public Institutions at the Head Office, Jakarta using a sample of 262 respondents. Data hypothesis testing in this research was carried out through structural equation model (SEM) analysis using the LIS application. The research results show that digital leadership has a positive and significant effect on innovative work behavior. Digital leadership has a positive and significant effect on the initiative climate. Initiative climate has a positive and significant effect on innovative work behavior. Digital leadership has a positive and significant effect on work autonomy. Work autonomy has a positive and significant effect on innovative work behavior. Climate for Initiative can mediate the relationship between digital leadership and innovative work behavior. Work autonomy can mediate the relationship between digital leadership and innovative work behavior.

INTRODUCTION

Strategic management is basically concerned with identifying and elaborating strategies that leaders or managers can adopt to improve competitive advantage and organizational performance. A company is considered to have a competitive advantage when its profitability is higher than the average profitability of its competitors (Arundel, A., Bloch, C., & Ferguson, 2019). The adaptation of various aspects of private-sector experience has brought several improvements for the public interest, while also creating challenges in the formulation of public-sector strategies (Ferlie, E., & Ongaro, 2022).

This can be achieved by improving the efficiency of existing resources, carrying out innovation to discover new alternatives, and creating policies that prioritize the welfare of the wider community. Broadly speaking, innovation includes management efforts and decisions

aimed at introducing new solutions, improving operational efficiency, encouraging adaptive organizations, and advancing the quality of public services (Queyroi, Y., Carassus, D., Maurel, C., Favoreu, C., & Marin, 2022).

Organizational behavior can be influenced by external factors, particularly technological change, so a sound strategy is needed to respond to changes occurring in the organizational environment (Al-Shami, S. A., Rashid, N., & Cheong, 2023). Technological changes, including electronic data processing, personal computing, communication technology, the internet, and social media, are among the most important developments marking the history of information technology (Brunetti, F., Matt, D. T., Bonfanti, A., De Longhi, A., Pedrini, G., 2020).

Recent advances such as big data and artificial intelligence (AI) have legitimized keywords such as digitalization and digital transformation, which are widely discussed as signals of a new era in information technology. In other words, digital transformation is everywhere; no industry or business organization is immune to its impact (Hess, T., Matt, C., Benlian, A., & Wiesböck, 2020). Efforts to strengthen the competitiveness of human resources among national leaders include capacity-building programs related to digital leadership for employees who are prospective leaders. The three key takeaways that can provide new perspectives and added value in the formulation of economic and financial policies are: (1) strengthening a forward-looking perspective, (2) improving capacity as agents of change, and (3) developing a digital mindset or digitally oriented leadership (Publik, 2022).

As the Covid-19 pandemic began to subside, digital economic and financial transformation became a key factor in economic recovery. According to research by Google, Temasek, Bain & Company, Indonesia's digital economy was estimated to be worth USD 77 billion in 2022, growing by 22% year-on-year, and is projected to nearly double by 2025 to reach USD 130 billion (Perekonomian, 2023).

Innovative work behavior (IWB) provides creative ideas for problem-solving and opportunities, making it an important asset for organizations in driving transformation through innovation development. Innovative behavior in the workplace has become a major strategic focus for most organizations, particularly in relation to technological advancement and continuous change, as it helps build and maintain competitive advantage (Kpinpuo, S. D., Akolgo, I. G., & Naimi, 2023). Therefore, it is important for organizations to recognize the need for innovation in order to proactively respond to rapid change and secure sustainable advantage (Lee, W. Choi, S. B., & Kang, 2021).

In facing today's disruptive dynamics, technology-based digital leadership is required. Digital leadership is a combination of leadership style and the use of digital technology to achieve digital transformation. A digital leader must possess characteristics and behaviors that enable them to achieve the objectives of digital transformation (Borowska, 2019).

In the digital era, a leader must demonstrate commitment, adaptability, and a high level of curiosity. The success of digital transformation and government management depends on digital leadership that guides change and the rapid diffusion of technology. Digital transformation will shape a digital future for the Indonesian government. In the digital era, leaders must be equipped with both digital and emotional intelligence in order to operate in uncertain and complex environments (Mihai, 2019). The climate for initiative owned by employees within an organization refers to a construct related to formal and informal organizational practices and procedures that guide and support a proactive, self-initiated, and persistent approach to work (Lisbona, 2020). Factors that may influence the climate for initiative from employees' perceptions include variations in the work environment rather than variations among individuals (Shea, T., De Cieri, H., Vu, T., 2021). Digital transformation is one of today's best business practices and is an effective way to ensure that companies remain consistently competitive in an uncertain environment (Ponsignon, F., Kleinhans, S., 2019). For example, governments accelerate the development of modern industrial systems, promote the internet,

big data, and artificial intelligence, and encourage industrial digital transformation (Zhang, W., Chu, J., Zhang, T., 2023).

Innovative work behavior (IWB) is the behavior of individuals directed toward the intentional initiation and introduction of new and useful ideas, processes, products, or procedures (Al-Shami, S. A., Rashid, N., & Cheong, 2023). Employee IWB refers to the purposeful introduction and implementation of new ideas to solve problems and promote them within the organization. Individual innovative behavior is defined as a set of complex actions consisting of three workplace activities: generating, promoting, and realizing new ideas (Xue, L., Zhang, Q., 2022). A climate for initiative can foster departmental innovation by empowering employees and providing sufficient resources (Gao, A., Lin, Y., 2020). Organizations must first believe that a particular change initiative will be beneficial and achievable. Change may result in new strategies, new policies and procedures, new job descriptions, or the introduction of new technologies (Mladenova, 2022). Therefore, organizations generally identify ways to encourage innovation by emphasizing job autonomy. In particular, job characteristics have been shown to be a driving force for innovative work behavior (Mankins and Garton, 2017; Oldham and Cummings, 1996; Shipton et al., 2016 in Hassi et al., 2022). Job autonomy refers to the extent to which employees regulate their own work schedules, determine the sequence of tasks, and use their own initiative or judgment to complete their work (Nie et al., 2023).

Digital leadership is associated with directing organizations toward digital transformation so that they become more adaptive to rapidly changing social and digital ecosystems. Therefore, leaders must have the ability to make decisions even when information is ambiguous (Chatterjee, S., Chaudhuri, R., Vrontis, D., & Giovando, 2023). Digital leadership can be influenced by several indicators, namely technological capability, the promotion of digital technology, keeping up with technological developments, building a digital culture, and digital literacy (Karakose, T., Polat, H., & Papadakis, 2023). It also functions as a job resource and positively influences managers' well-being (Zeike, S., Bradbury, K., 2019).

LITERATURE REVIEW

Innovative Work Behavior (IWB) refers to individual behavior directed toward the creation, promotion, and implementation of new ideas, processes, products, or procedures that are useful for improving organizational performance. IWB is not limited to generating creative ideas, but also includes the ability to communicate, develop, and apply those ideas in the workplace. In the context of organizational change and digital transformation, IWB becomes an important factor because employees are required to respond creatively to technological development, work complexity, and dynamic environmental demands. Organizations that encourage innovative behavior are more likely to build sustainable competitive advantage, improve service quality, and adapt effectively to rapid change.

Digital leadership plays an important role in encouraging innovative work behavior because leaders are responsible for directing, facilitating, and strengthening the use of digital technology in organizational processes. Digital leaders are expected to possess technological awareness, digital vision, adaptability, and the ability to build a culture that supports innovation. Through effective digital leadership, employees can be encouraged to use digital tools, explore new work methods, and develop creative solutions to organizational problems. A leader who supports digital transformation can also increase employee confidence in facing technological change, thereby creating conditions that stimulate innovative behavior in the workplace.

Climate for initiative and job autonomy can serve as mediating factors in the relationship between digital leadership and innovative work behavior. A climate for initiative reflects an organizational environment that supports proactive behavior, creativity, and employee willingness to propose new ideas. When digital leadership creates a supportive climate, employees become more motivated to take initiative and contribute innovative solutions.

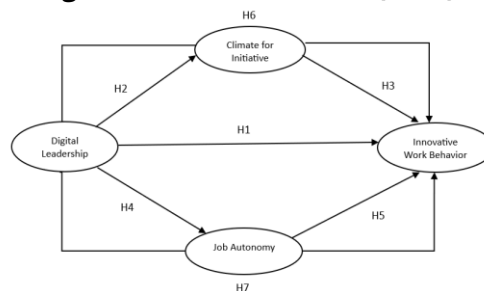
Meanwhile, job autonomy provides employees with freedom to determine work methods, arrange task sequences, and make decisions related to their responsibilities. Higher job autonomy allows employees to explore ideas, experiment with new approaches, and implement innovation more independently. Therefore, digital leadership can influence innovative work behavior more effectively when it is supported by a strong climate for initiative and adequate job autonomy.

METHODS

This study uses a research model developed from previous studies discussing the variables of innovative work behavior, digital leadership, climate for initiative, and job autonomy. The study will be conducted by adopting several previous studies, namely those conducted by Hassi et al. (2022) and Erhan, T., & Uzunbacak, H. H. (2022).

Based on the previous studies above, the researcher adapted the earlier research model and modified the relationships among variables in prior studies, while linking them to the topic of the relationships among variables in this study. The conceptual research model is arranged using the following framework:

Figure 1. Research Model (2023)



Source: Processed by the Researcher (2023)

Based on the research model that has been developed, the hypotheses of this study are as follows:

H1: Digital leadership has a positive effect on innovative work behavior.

H2: Digital leadership has a positive effect on climate for initiative.

H3: Climate for initiative has a positive effect on innovative work behavior.

H4: Digital leadership has a positive effect on job autonomy.

H5: Job autonomy has a positive effect on innovative work behavior.

H6: Climate for initiative mediates the relationship between digital leadership and innovative work behavior.

H7: Job autonomy mediates the relationship between digital leadership and innovative work behavior.

This study consists of four variables, as illustrated in the model above. These four variables are digital leadership, climate for initiative, job autonomy, and innovative work behavior.

Structural Equation Modeling (SEM) is a type of multivariate analysis that can be used to analyze several research variables simultaneously or together (Hair, J. F., Risher, J. J., Sarstedt, M., 2019). The variables required in SEM analysis are as follows:

Latent Variables

Latent variables are variables that cannot be measured directly. Latent variables can function as either independent or dependent variables.

Observed Variables

These variables are represented in the form of indicators in questionnaire items. The total number of observed variables in this study is 45 indicators, consisting of 19 indicators for digital leadership, seven indicators for climate for initiative, nine indicators for job autonomy, and 10 indicators for innovative work behavior.

Research Design

The type of research used in this study is quantitative research. According to Cooper, D. R. (2014), research results that are numerical and processed using statistical analysis indicate that the study is quantitative in nature.

Population refers to the totality of each element to be examined that shares similar characteristics, which may include individuals within a group, events, or objects being studied (Hardani, 2020). The population used in this study consists of 2,900 employees of a Public Institution at the Head Office in Jakarta. The sampling method used in this study is probability sampling. The technique for determining the sample size in this study refers to the guideline proposed by Hair et al. in 2010, as cited in Rahmani (2016), which states that sample size depends on the number of indicators and can be multiplied by 5 to 10. Based on the calculation using the Hair et al. formula, as cited in Rahmani (2016), the minimum sample size obtained is 225 employees of the Public Institution as respondents.

The type of data used in this study is primary data. The data were obtained from questionnaires distributed to permanent employees at the Head Office of the Public Institution in Jakarta. The questionnaires will be distributed through the Office Form platform to facilitate the distribution process and improve time and cost efficiency.

Data Analysis Method

The data analysis methods used in this study include validity testing, reliability testing, descriptive analysis, pre-testing, and Structural Equation Modeling (SEM) analysis.

RESULTS

Goodness-of-Fit Test

The model fit test allows the researcher to determine the level of GOF, which indicates how well the research model is able to reproduce the observed covariance matrix among items or indicators.

Table 1. Summary of GOFI Indicators for the Model

Fit Measure	Cut-off Value	Test Result	Conclusion
Chi-square	> 0.05	0.00	Poor Fit
CMIN/df	≤ 2.00	2.33	Poor Fit
Goodness-of-Fit Index (GFI)	≥ 0.90	0.78	Poor Fit
Adjusted Goodness of Fit (AGFI)	≥ 0.90	0.75	Poor Fit
Root Mean Square Residual (RMR)	≤ 0.05	0.02	Good Fit
Standardized Root Mean Square Residual (SRMR)	≤ 0.05	0.06	Marginal Fit
Root Mean Square Error of Approximation (RMSEA)	≤ 0.08	0.07	Good Fit
Non-Normed Fit Index (NNFI)	≥ 0.95	0.97	Good Fit
Normed Fit Index (NFI)	≥ 0.95	0.95	Marginal Fit
Comparative Fit Index (CFI)	≥ 0.95	0.97	Good Fit

Source: LISREL, reprocessed (2023)

Based on the GOFI summary in Table 1, it can be seen that most of the model fit indices still show less satisfactory results. Thus, the SEM model formed based on the RMR, RMSEA, NNFI, and CFI indices is considered feasible. Taking these test results into account, the researcher modified the model, with the summary of GOFI indicators presented in Table 2.

Table 2. Summary of GOFI Indicators After Model Respecification

Fit Measure	Cut-off Value	Test Result	Conclusion
Chi-square	> 0.05	0.02	Poor Fit
CMIN/df	≤ 2.00	1.20	Good Fit
Goodness-of-Fit Index (GFI)	≥ 0.90	0.89	Marginal Fit
Adjusted Goodness of Fit (AGFI)	≥ 0.90	0.86	Marginal Fit
Root Mean Square Residual (RMR)	≤ 0.05	0.02	Good Fit
Standardized Root Mean Square Residual (SRMR)	≤ 0.04	0.05	Good Fit
Root Mean Square Error of Approximation (RMSEA)	≤ 0.08	0.03	Good Fit
Non-Normed Fit Index (NNFI)	≥ 0.95	0.99	Good Fit
Normed Fit Index (NFI)	≥ 0.95	0.97	Good Fit
Comparative Fit Index (CFI)	≥ 0.95	1.00	Good Fit

Source: LISREL, reprocessed (2023)

Based on the GOFI summary in Table 2, it can be seen that seven indices, namely CMIN/df, RMR, SRMR, RMSEA, NFI, NNFI, and CFI, produce values that meet their respective cut-off values or fall into the good fit category. Therefore, these seven indices are considered fulfilled. Meanwhile, the GFI and AGFI indices produce values that meet the marginal fit criteria. Nevertheless, the GFI and AGFI values generated by the model are still close to the minimum value required for a model to be categorized as marginal fit, namely 0.80. Therefore, the model can still be considered fit and feasible for use (Hair Jr, J. F., Matthews, L. M., 2017).

Structural Relationship Analysis / Causal Analysis

Table 3. Significance Test Results — Direct Effect

Variable	Coefficient Value	t-value	Conclusion
DL → CI	0.35	4.74	Significant
DL → JA	0.24	3.10	Significant
DL → IWB	0.52	5.82	Significant
CI → IWB	0.14	2.33	Significant
JA → IWB	0.38	5.00	Significant

Source: LISREL, reprocessed (2023)

Based on the table above, the results show the relationships among variables. Overall, all five hypothesized relationships produce significant results. The effect of digital leadership on climate for initiative produces a path coefficient of 0.35 with a t-value of 4.74. These test results indicate that the path coefficient is positive and the t-value is greater than 1.645. The effect of digital leadership on job autonomy produces a path coefficient of 0.24 with a t-value of 3.10. These test results indicate that the path coefficient is positive and the t-value is greater than 1.645.

Indirect Effect Test

Table 4. Mediation Test Results — Indirect Effect Coefficient

Relationship Between Variables	Indirect Coefficient	t-value	Conclusion
DL → CI → IWB	0.05	2.55	Significant
DL → JA → IWB	0.09	2.79	Significant

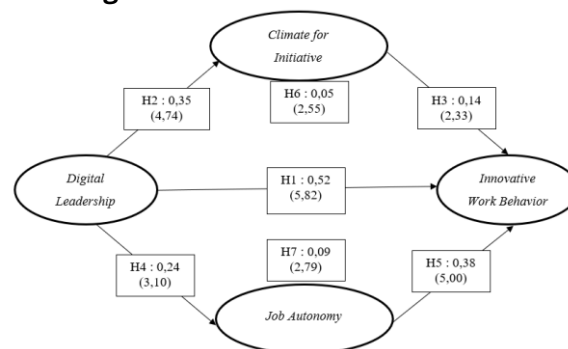
Source: LISREL, reprocessed (2023)

Based on the test results shown in the table above, it can be seen that the effect of digital leadership on innovative work behavior through climate for initiative produces an indirect coefficient of 0.05 with a t-value of 2.55. These test results indicate that the indirect coefficient is positive and the t-value is greater than 1.645. This means that digital leadership has a positive and significant effect on innovative work behavior through climate for initiative.

The effect of digital leadership on innovative work behavior through job autonomy produces an indirect coefficient of 0.09 with a t-value of 2.79. These test results indicate that the indirect coefficient is positive and the t-value is greater than 1.645. This means that digital leadership has a positive and significant effect on innovative work behavior through job autonomy.

The overall analysis results of the research model are shown in the figure below:

Figure 2. Mediation Test Results



Hypothesis Testing Results

Table 5. Results of Research Hypothesis Testing

H	Research Statement	Research Result
H1	Digital leadership has a positive effect on innovative work behavior	The data support the hypothesis
H2	Digital leadership has a positive effect on climate for initiative	The data support the hypothesis
H3	Climate for initiative has a positive effect on innovative work behavior	The data support the hypothesis
H4	Digital leadership has a positive effect on job autonomy	The data support the hypothesis
H5	Job autonomy has a positive effect on innovative work behavior	The data support the hypothesis
H6	Climate for initiative mediates the relationship between digital leadership and innovative work behavior	The data support the hypothesis
H7	Job autonomy mediates the relationship between digital leadership and innovative work behavior	The data support the hypothesis

Source: Processed by the Researcher (2023)

DISCUSSION

This study focuses on examining the effect of digital leadership on climate for initiative, job autonomy, and innovative work behavior; the effect of climate for initiative and job autonomy on innovative work behavior; and the mediating role of climate for initiative and job autonomy in the relationship between digital leadership and innovative work behavior. This research is an extension of the study conducted by Hassi et al. (2022), which aimed to explore the role of leadership, organizational climate for initiative, and job autonomy in stimulating innovative work behavior (IWB) among 444 small and medium-sized enterprises, involving CEOs, managers, and employees.

This study was conducted among employees of a Public Institution at the Head Office in Jakarta. The important context of this study is to determine how digital leadership influences an organization, as digital leadership has not yet been fully optimized at the Head Office of the Public Institution. Therefore, more in-depth research is needed to improve the climate for initiative, job autonomy, and innovative work behavior, which in turn can enhance employee performance.

The results of the validity test show that each indicator of the variables digital leadership, job autonomy, climate for initiative, and innovative work behavior has a significance value above 0.50. Therefore, each statement item used in the questionnaire for these variables is declared valid. Furthermore, the reliability test results show that the CR value for the variables digital leadership, climate for initiative, job autonomy, and innovative work behavior is 0.60. Thus, each statement item for the variables used in this study is considered reliable.

Digital leadership can be a rather ambiguous concept due to its diversity in terms of topics, methodologies, and the disciplines that seek to study it (Banks et al., 2022). Digital leadership has become an agenda for all contemporary organizations as technological innovation continues to accelerate and influence daily life and business activities (Henderikx & Stoffers, 2022). The findings regarding the effect of digital leadership on innovative work behavior are in line with the study conducted by Niu et al. (2022), which stated that digitalization has an effect on organizational innovation. This proves that the higher the implementation of digital transformation in corporate performance management, the greater the increase in digital innovations that contribute to improved company performance.

Companies require a leadership style that enables decision-making in complex contexts and encourages digital transformation and sustainable digital innovation. Such leadership also promotes and disseminates a transformative digital culture throughout the organization, affecting work organization, job roles and capabilities, and workforce management (Barley in Schiuma et al., 2021). The results of this study show that digital leadership has a positive and significant effect on the climate for initiative. Therefore, digital leadership is directly related to the creation of a work environment that supports initiative and the ability to generate new ideas. This positively encourages initiative, creativity, and employees' willingness to produce new ideas in the workplace.

The results regarding the effect of climate for initiative on innovative work behavior show that a work environment that provides room for initiative and encourages employees to create new ideas tends to generate innovative work behavior. Employees are more likely to try new approaches and contribute to innovative solutions when their work environment encourages, appreciates, and supports creative ideas and initiatives for positive change. This has a direct impact on innovative work behavior among employees. Jekanović et al. (2020) stated that organizational climate represents individuals' perceptions of the organization and serves as a key driving force influencing work behavior within a company, thereby enhancing work-related innovation.

Job autonomy represents an important dimension in the job characteristics model, indicating the extent to which employees can regulate their own work schedules, determine the

sequence of tasks, and use their own initiative or judgment to complete assigned work. Employees with high job autonomy have more opportunities to acquire new knowledge or skills and to experience the intrinsic value of their work. Conversely, employees with low autonomy are unable to independently choose resources and often fail to feel supported by the organization (Hosomi and Sekiguchi in Nie et al., 2023). The findings of this study support the research conducted by Henderikx & Stoffers (2022), which stated that digital leadership has an impact on improving employee performance. Therefore, digital leadership can enhance efficiency and productivity, thereby influencing employees and the performance they produce.

The results also show that job autonomy has an effect on innovative work behavior. This indicates that the higher the level of autonomy employees have in their work, the more likely they are to demonstrate innovative work behavior. When employees have greater freedom and control in carrying out their duties and are trusted by their superiors, they tend to be more motivated to try new things, generate creative ideas, and participate in experiments or new developments, thereby increasing innovation. These findings are in line with previous findings stating that job autonomy affects innovative work behavior.

The climate within an organization indicates that individuals must be able to anticipate aspects of their work so that they can add value to tasks with strong intellectual content in order to develop competitive advantage. In this regard, organizational climate requires features that facilitate or encourage the free flow of knowledge among members of the company, and this knowledge must be used efficiently to improve performance, which directly affects employee performance (Acosta-Prado, 2020).

Climate for initiative can mediate the relationship between digital leadership and innovative work behavior. This indicates that higher levels of digital leadership within an organization can directly influence the level of innovation in work behavior by shaping the work environment and enhancing initiative, creativity, and the courage to try new things. Thus, a digital leadership style can contribute to creating an environment that encourages initiative, which is likely to influence the level of innovation in work behavior among team members or employees.

Job autonomy reflects an individual's perception of the degree of freedom in handling work and making work-related decisions (Name et al., 2021). Job autonomy can mediate the relationship between digital leadership and innovative work behavior. This indicates that higher levels of digital leadership can increase employees' level of autonomy in their work, giving them more opportunities to acquire new knowledge or skills and to experience the intrinsic value of their work. This provides space for employees to explore new ideas, enabling them to implement innovative solutions that contribute to an increase in employees' innovative work behavior.

CONCLUSION

Based on the results of the data analysis and hypothesis testing conducted previously, this study concludes that digital leadership has a positive and significant effect on innovative work behavior. Digital leadership also has a positive and significant effect on climate for initiative, while climate for initiative has a positive and significant effect on innovative work behavior. In addition, digital leadership has a positive and significant effect on job autonomy, and job autonomy also has a positive and significant effect on innovative work behavior. Furthermore, climate for initiative is able to mediate the relationship between digital leadership and innovative work behavior. Similarly, job autonomy is also able to mediate the relationship between digital leadership and innovative work behavior.

LIMITATION

The importance of digital leadership lies in its role in shaping a work environment that encourages initiative, innovation, and creativity among employees. Managers need to focus on developing digital leadership that not only utilizes technology effectively, but also provides clear commitment to digital transformation and facilitates the appropriate resources to support it.

It is also necessary to build a work environment that encourages creativity, initiative, and new ideas among employees. Managers need to consider that the implementation of digital leadership can influence the extent to which employees perceive autonomy in completing their tasks.

In this context, the management of job autonomy becomes a key factor in encouraging employees to demonstrate innovative work behavior. Managers need to recognize that the integration of effective digital leadership with an adequate level of *autonomy for employees can serve as an important foundation for enhancing innovation within the company.*

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