
**THE INFLUENCE OF DIGITAL TALENT MANAGEMENT ON
ENHANCING EMPLOYEE INNOVATION IN ENDOWMENT FUND
MANAGEMENT INSTITUTIONS: A CASE STUDY AT THE INDONESIAN
ENDOWMENT FUND FOR EDUCATION**



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Abstract

This study examines the influence of digital talent management on enhancing innovative work behavior among employees at the Indonesia Endowment Fund for Education (LPDP), a key institution under the Ministry of Finance that manages education endowment funds. The research has three main objectives: 1) to identify the characteristics of digital talent at LPDP, 2) to analyze the influence of digital talent management, digital leadership, digital competence, and digital culture on innovative work behavior, and 3) to formulate managerial recommendations for developing digital talent management strategies. This study adopts a quantitative approach. Data were collected from 167 LPDP employees across four directorates who completed the questionnaire. The data were gathered through a structured online survey and analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method. The results indicate that digital talent management significantly influences innovative work behavior, both directly and indirectly through mediating factors such as digital competence, digital leadership, and digital culture. Digital competence and digital leadership have particularly strong effects, while digital culture reinforces a work environment that is conducive to innovation. The managerial implications of these findings include the need to strengthen career development pathways, improve performance evaluation and compensation systems, and foster a digital culture that promotes collaboration and risk-taking. In conclusion, enhancing innovation among public sector employees requires a strategic and comprehensive approach to digital talent management that aligns with the institution's vision of preparing globally competitive human resources and promoting national innovation.

Keywords: Digital Talent Management, Digital Leadership, Digital Competence, Digital Culture, Innovative Work Behavior, PLS-SEM

INTRODUCTION

In the continuously evolving era of digital transformation, talent management has become one of the strategic aspects influencing organizational success. Organizations are not only required to leverage the latest technologies but also to ensure that their human resources possess the relevant competencies to face future challenges. Within this context, the concept of digital talent management emerges as an essential approach to fostering innovation and productivity.

In this regard, the Indonesia Endowment Fund for Education (LPDP) plays a crucial role in supporting the government's vision of creating superior human resources. LPDP holds a strategic mandate to manage endowment funds in the fields of education, research, and culture. The importance of this role demands a high level of internal innovation capability to design and implement sustainable strategic programs.

However, there exists a significant gap between LPDP's strategic role and the current state of national innovation. According to data from the World Intellectual Property Organization (WIPO), Indonesia's Global Innovation Index (GII) in 2024 remains ranked sixth in Southeast Asia, indicating ongoing challenges in building a strong innovation ecosystem. The key to innovation at the organizational level is closely related to innovative work behavior at the individual level, as human resources are the drivers of new ideas that transform into better products, services, and work processes. This issue is further complicated by a resource gap, as reported by Kominfo (2024), which projects Indonesia will face a digital talent deficit of up to 3 million by 2030. The limited availability of ICT-competent talent poses a fundamental challenge for institutions in Indonesia, including LPDP, in their efforts to enhance innovation.

To address this issue, this study is grounded in the theoretical framework of human resource management and organizational behavior, which asserts that innovative performance is shaped by internal factors. Innovative work behavior, defined as the ambition to create and implement new ideas in the workplace, is strongly influenced by various competencies in the digital era. Key concepts such as digital competence—which includes the knowledge, skills, and attitudes to effectively utilize digital resources (Perifanou & Economides, 2019)—as well as digital culture and digital leadership, are considered important variables that may influence innovation.

Based on this theoretical framework, the objectives of this research are to: 1) Identify the characteristics of digital talent within LPDP, 2) Analyze the influence of digital talent management, digital leadership, digital competence, and digital culture on innovative work behavior, and 3) Formulate managerial recommendations for talent development strategies.

The originality of this study lies in testing a comprehensive model of influence within the context of a public endowment fund management institution in Indonesia. Accordingly, the main hypothesis is formulated that digital talent management, digital leadership, digital competence, and digital culture—both jointly and partially—have a significant effect on enhancing employees' innovative work behavior at LPDP.

REVIEW OF LITERATURE

Digital Talent Management

Talent management plays a crucial role in improving the efficiency of various processes such as recruitment, performance development, and career management. By leveraging technology, organizations can make real-time, data-driven decisions that positively impact human resource planning and strategy in the digital era (Garg & Singh, 2020). Strategic digital talent development requires a focus on skills relevant to cutting-edge technologies, as suggested by Wahyudi et al. (2023).

Digital Competency

Digital competency refers to the combination of knowledge, skills, attitudes, abilities, strategies, and awareness required to perform tasks effectively (Kovacevic & Labrovic, 2021). This competency enables individuals to make optimal use of digital technologies. Hidajat et al. (2023) further state that digital competency encompasses capabilities related to technology, digital products, and services, which form the foundation for meeting the demands of the digital era.

Digital Leadership

Digital leadership is a combination of transformational leadership style and the strategic use of digital technologies. According to Larjovuori et al. (2016), digital leadership refers to a leader's ability to create a meaningful vision for the digitalization process and to execute strategies that bring this vision to life. Meanwhile, Erhan et al. (2021) explain that digital leadership encourages the use of digital technologies in the workplace to foster innovation, enhance business and operational efficiency, develop new business models, and improve user experience.

Digital Culture

Organizational culture is considered a highly valuable competitive asset. In the era of digital transformation, the culture built within an organization must enhance employees' awareness of organizational goals and align them with the digital vision. Digital culture consists of values, practices, and expectations that shape how individuals behave and interact using digital technologies (Shin et al., 2023). Furthermore, Duerr et al. (2018) define digital culture as a culture that supports innovation and the creation of new knowledge within organizations.

Innovative Work Behavior

Innovation plays an essential role in ensuring that organizations remain sustainably competitive. Previous studies have shown that the success of organizational innovation largely depends on employees' innovative work behavior (Castellani et al., 2021; Khan et al., 2023). Innovative work behavior consists of several stages, including the generation, promotion, and implementation of new ideas (Saether, 2019). This behavior can be defined as employees' ability to produce and apply new ideas in their work (Newman et al., 2018).

Previous Research

Previous studies used as references in this research were drawn from articles and journals that provided foundational information for the current study.

Table 1.
Previous Research

No	Previous Authors	Variables	Method	Conclusion
1	Al Issa and Omar (2023)	Digital innovation, digital leadership, innovative culture, technology engagement	Quantitative using SEM analysis	Digital leadership and innovative culture influence digital innovation
2	Ibrahim and Alomari (2019)	Talent management and innovation	Quantitative using SEM analysis	Talent management can enhance innovation
3	Lou et al. (2024)	Digital transformation, HRM, HRD, innovative work behavior, and performance	Quantitative using SEM analysis	HRM and HRD facilitate the success of digital transformation in improving employee performance and innovative work behavior
4	Sary et al. (2023)	Digital competency, leadership, and innovative work behavior	Quantitative using SEM analysis	Digital competency and leadership can improve innovative work habits
5	Muller et al. (2019)	Digital culture and digital innovation	Qualitative using value framework	Digital culture enhances digital innovation

Source: Processed by Researchers

RESEARCH METHOD

Data collection in this study was conducted using an online questionnaire from May 1 to June 30, 2025. The research took place at the Indonesian Endowment Fund for Education (LPDP), the primary research institution. Administratively, research coordination was conducted from Bogor, the center of the researcher's academic activities. The survey was distributed to all LPDP employees actively working in four main directorates: the Scholarship Directorate, the Research Facilitation Directorate, the Investment Directorate, and the Finance & General Directorate.

Population and Sample: The population of this study was LPDP employees. The sample consisted of 167 respondents selected to represent each directorate. Participants came from various levels, ranging from staff to Division Heads at LPDP.

Table 2.
Respondent Demographics

Variable	Category	Number	(%)
Directorate	Directorate of Scholarship	71	42.51%
	Directorate of Research Facilitation	17	10.18%

	Directorate of Investment	12	7.19%
	Directorate of Finance and General Affairs	67	40.12%
Position Level	Division Head	6	3.59%
	Subdivision Head	23	13.77%
	Staff/Implementer	138	82.63%
Years of Service	1–3 years	26	15.57%
	4–6 years	92	55.09%
	7–10 years	28	16.77%
	>10 years	21	12.57%
Gender	Male	90	53.89%
	Female	77	46.11%
Age	<25 years	5	2.99%
	25–29 years	62	37.13%
	30–34 years	43	25.75%
	35–39 years	33	19.76%
	40–44 years	15	8.98%
	45–49 years	5	2.99%
	50–54 years	4	2.40%
Education	Diploma III (D3)	1	0.60%
	Bachelor’s Degree (S1)	105	62.87%
	Master’s Degree (S2)	60	35.93%
	Doctoral Degree (S3)	1	0.60%
Domicile	Jakarta	78	46.71%
	Bekasi	17	10.18%
	Bogor	16	9.58%
	Depok	22	13.17%
	Tangerang	34	20.36%

Source: Researcher Data

The questionnaire was designed using a Likert scale of 1 to 5, with the aim of measuring respondents' perceptions of the five main variables in this study: Digital Talent Management, Digital Leadership, Digital Competence, Digital Culture, and Innovative Work Behavior. The research variables and indicators are presented in Table 3.

Table 3.
Research Variables and Indicators

Variable	Dimension	Indicator	Code
Digital Talent Management (X1)	Digital Talent Attraction	Company Image	X1.1
		Career Development	X1.2
	Digital Talent Development	Compensation	X1.3
		Enhancing Organizational and Job Satisfaction	X1.4
		Good Work Environment	X1.5
		Flexible Work	X1.6

	Digital Talent Retention	Job Performance	X1.7
		Evaluation	X1.8
Digital Competency (Z1)	Information and Data Literacy	Searching for data, information, and digital content	Z1.1
	Communication and Collaboration	Interacting through digital technology	Z1.2
		Collaborating through digital technology	Z1.3
	Digital Content Creation	Developing digital content	Z1.4
	Problem Solving	Solving technical problems	Z1.5
Digital Leadership (Z2)	Communication Skills	Effectiveness of communication	Z2.1
	Social Skills	Socialization	Z2.2
	Team-Building Skills	Virtual teamwork	Z2.3
	Change Management	Adaptation to change	Z2.4
	Technological Skills	Technical expertise	Z2.5
	Trustworthiness	Trust among colleagues and superiors	Z2.6
Digital Culture (Z3)	Willingness to Learn	Continuous learning	Z3.1
		Trial-and-error mentality	Z3.2
	Digital Awareness	Use of new technologies	Z3.3
	Employee Engagement	Decision-making culture	Z3.4
	Internal Knowledge Sharing	Knowledge sharing	Z3.5
	Digital Skills	Digital skill development	Z3.6
	Risk-taking Culture	Courage to take risks	Z3.7
Innovative Work Behavior (Y1)	Idea Exploration	Identifying problems and opportunities	Y1.1
		Brainstorming	Y1.2
	Idea Generation	Problem solving	Y1.3
		Collaboration	Y1.4
	Idea Championing	Promoting ideas	Y1.5
		Negotiation skills	Y1.6
	Idea Implementation	Idea adoption	Y1.7
		Idea development	Y1.8

Source: Processed by the Researcher

Data analysis was conducted in two stages:

1. Descriptive analysis, used to describe the demographic characteristics of the research respondents, in this case, LPDP employees. The collected data will be organized, grouped, and presented in tables, graphs, and diagrams to facilitate interpretation.
2. Qualitative analysis, using SmartPLS 4 version 4.1.1.2 for structural analysis based on Partial Least Squares–Structural Equation Modeling (PLS-SEM), which allows

researchers to test causal relationships between latent constructs while simultaneously considering the quality of the measurement model (outer model) and structural model (inner model).

RESULT AND DISCUSSION

SEM PLS Analysis

Before testing the hypotheses, SEM PLS analysis was conducted using SmartPLS software. The measurement model's fit criteria were assessed based on the validity of the indicator variables relative to the latent variables. The measurement model analysis consisted of measures of model goodness-of-fit, including convergent validity, discriminant validity, construct validity, and reliability, characterized by composite reliability, Cronbach's alpha, and average variance extracted (AVE). After removing six indicators (Z1.4, Z1.5, Z2.6, Z3.1, Z3.7, and Y1), the loading factor values for all indicators were >0.7 , while the average variance extracted (AVE) for each latent variable was >0.50 .

The reliability test was assessed using Cronbach's alpha and composite reliability values. In general, an acceptable Cronbach's alpha value is ≥ 0.6 , while the composite reliability is ≥ 0.7 . Based on Table 4, the Cronbach's alpha value for each variable is ≥ 0.6 , and the composite reliability value is ≥ 0.7 . This indicates that the measurement model constructed is reliable in measuring the latent variables.

Table 4.
Construct Validity and Reliability

Variable	Cronbach's Alpha	Composite Reliability	AVE
X1	0,912	0,926	0,619
Z1	0,836	0,837	0,753
Z2	0,879	0,895	0,674
Z3	0,868	0,877	0,653
Y1	0,888	0,892	0,599

Source: Researcher Data

The structural model analysis was evaluated using R-square for endogenous latent variables. R-square can be used to assess the influence of exogenous latent variables on endogenous latent variables. The R-square results for this study can be seen in Table 5.

Table 5.
Construct Validity and Reliability

Variablr	R Square	R-square Adjusted
Z1	0,188	0,183
Z2	0,216	0,211
Z3	0,213	0,208
Y1	0,437	0,423

Source: Researcher Data

Based on Table 5 above, the R-square value for Digital Competence (Z1) is 0.188. This indicates that 18.8% of the variation in Digital Competence can be explained by the predictor variables. This value is also considered weak. The R-square value for Digital Leadership (Z2) is 0.216. This indicates that 21.6% of the variation in Digital Leadership can be explained by the predictor variables. This value is considered weak. The R-square value for Digital Culture (Z3) is 0.213. This means that 21.3% of the variation in Digital Culture can be explained by the predictor variables. This value is also considered weak. The R-square value for Innovative Work Behavior (Y1) is 0.437. This means that 43.7% of the variation in Innovative Work Behavior can be explained by the independent (predictor) variables in the research model. Based on general criteria, this value falls into the moderate category.

After the constructed model meets the evaluation criteria for both the measurement model (outer model) and the structural model (inner model), the next step is to conduct hypothesis testing to determine the significance of the influence of the exogenous variables on the endogenous variables. Hypothesis testing is performed at a 5 percent significance level, with a significance criterion of t-statistic > 1.96 or p-value < 0.05. Hypothesis testing is performed using the bootstrapping procedure.

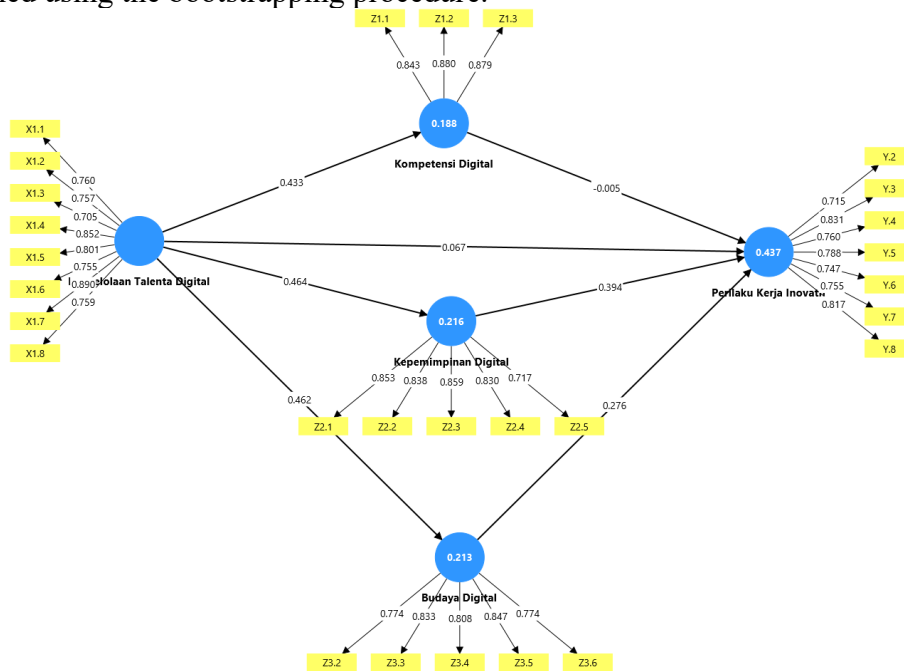


Figure 1.
SEM PLS Model Results

From the figure above, the results of the path coefficient statistical test can be seen in Table 6 below.

Table 6.
Hypothesis Test Results (Path Coefficient)

Variable Influence	Path Coefficient	t-value	p-value	Conclusion	Description
Hypothesis 1: X1 → Y1	0.067	0.944	0.345	Not Significant	Rejected

Hypothesis 2: Z1 → Y1	-0.005	0.070	0.944	Not Significant	Rejected
Hypothesis 3: Z2 → Y1	0.394	4.130	0.000	Significant	Accepted
Hypothesis 4: Z3 → Y1	0.276	2.813	0.005	Significant	Accepted
Hypothesis 5: X1 → Z1 → Y1	-0.002	0.068	0.946	Not Significant	Rejected
Hypothesis 6: X1 → Z2 → Y1	0.183	3.305	0.001	Significant	Accepted
Hypothesis 7: X1 → Z3 → Y1	0.128	2.658	0.008	Significant	Accepted
Hypothesis 8: X1 → Z1 + Z2 + Z3 → Y1	0.308	6.248	0.000	Significant	Accepted

Source: Researcher Data

The Influence of Digital Leadership on Innovative Work Behavior

The variable of Digital Leadership (Z2) was found to have a significant influence on Innovative Work Behavior (Y1) among employees at the Indonesia Endowment Fund for Education (LPDP). As shown in the test results table, the influence of Digital Leadership on Innovative Work Behavior yielded a *t*-value of 4.130, which is significantly higher than the critical threshold of 1.96. This finding is further supported by a *p*-value of 0.000, which is below the 0.05 significance level. Based on these results, the hypothesis is accepted, meaning that Digital Leadership effectively promotes the enhancement of Innovative Work Behavior among LPDP employees.

This finding aligns with Sary et al. (2023), who specifically found that leadership in the digital context can indeed foster innovative work habits. Digital leadership is not merely about mastering technology, but also about having a vision and the ability to lead people to work in new, more effective ways. In the context of public institutions like LPDP, this means leaders not only encourage technology adoption for administrative efficiency but also inspire employees to use digital platforms to develop breakthroughs in services for awardees, optimize fund management, and formulate more adaptive policies. Thus, digital leaders actively shape an environment that motivates employees to experiment and propose innovative solutions.

The Influence of Digital Culture on Innovative Work Behavior

The variable of Digital Culture (Z3) was found to have a significant and positive influence on Innovative Work Behavior (Y1) among employees at LPDP. Based on the test results table, the influence of Digital Culture on Innovative Work Behavior is indicated by a *t*-value of 2.813, which exceeds the critical threshold of 1.96, and a *p*-value of 0.005, which is below the 0.05 significance level. These results confirm that the hypothesis is accepted, meaning that building a strong Digital Culture effectively fosters Innovative Work Behavior within LPDP.

This finding is consistent with Al Issa and Omar (2023), who identified an innovative culture as one of the two main pillars supporting digital innovation. They argue that without a supportive culture—an environment where new ideas are valued, collaboration is encouraged, and failure is viewed as learning—no level of advanced leadership can be effective. This provides evidence that fostering innovation within LPDP requires building the right culture as much as having the right leaders. Muller et al. (2019) also stated that

Digital Culture is a direct driver of digital innovation. They argue that a culture embracing data transparency, agility, and digital connectivity is closely linked to producing greater innovation.

The Influence of Digital Talent Management on Innovative Work Behavior through Digital Leadership

The variable of Digital Leadership (Z2) acts as a mediator in the relationship between Digital Talent Management (X1) and Innovative Work Behavior (Y1) among LPDP employees. The analysis results show that this mediating path is statistically significant, as evidenced by a *t*-value of 3.305, which significantly exceeds the critical threshold of 1.96, and a *p*-value of 0.001, which is below the 0.05 significance level. Therefore, the hypothesis is accepted. This finding demonstrates that Digital Leadership serves as an effective mediator that transmits the influence of Digital Talent Management toward Innovative Work Behavior within LPDP.

This finding is consistent with Lou et al. (2024), who argued that the human resource function plays a facilitating role in innovation. Human Resource Management (HRM) practices within Digital Talent Management successfully foster Innovative Work Behavior through strengthening Digital Leadership. Additionally, Sary et al. (2023) stated that digital competence and leadership can enhance innovative work habits in the workplace.

The Influence of Digital Talent Management on Innovative Work Behavior through Digital Culture

The variable of Digital Culture (Z3) serves as a mediator in the relationship between Digital Talent Management (X1) and Innovative Work Behavior (Y1) among LPDP employees. The analysis results show that Digital Culture plays a statistically significant mediating role, as indicated by a *t*-value of 2.658, which exceeds the critical threshold of 1.96, and a *p*-value of 0.008, which is below the 0.05 significance level. Therefore, the hypothesis is accepted. This finding confirms that Digital Culture acts as an essential mechanism that channels the positive influence of Digital Talent Management toward fostering Innovative Work Behavior within LPDP.

This finding is consistent with Al Issa and Omar (2023), who identified an innovative culture as a fundamental pillar for innovation. Muller et al. (2019) also explicitly stated that digital culture drives innovation, confirming the significance of the culture–innovation path. Furthermore, this study adds a new layer of understanding by demonstrating that digital culture can originate from strategic interventions in digital talent management.

The Influence of Digital Talent Management on Innovative Work Behavior through Digital Competence, Digital Leadership, and Digital Culture

The variables of Digital Competence (Z1), Digital Leadership (Z2), and Digital Culture (Z3) collectively serve as mediators between Digital Talent Management (X1) and Innovative Work Behavior (Y1) among LPDP employees. The analysis results show a strong and significant multiple mediation effect. This is evidenced by a combined *t*-value of 6.248, which far exceeds the threshold of 1.96, and a *p*-value of 0.000, indicating the highest level of significance. Therefore, the hypothesis is accepted. These findings conclude that although Digital Talent Management has no direct effect, its impact on Innovative Work Behavior becomes highly significant and strong when transmitted through the combination of the three mediating variables: Digital Competence, Digital Leadership, and Digital Culture. The large

and positive total indirect effect coefficient (0.308) indicates the substantial combined impact of these three mediators.

This finding aligns with Al Issa and Omar (2023), who emphasized that digital leadership and innovative culture significantly influence digital innovation and are crucial variables. Lou et al. (2024) concretely demonstrated how the Human Resource Management (HRM) function within Digital Talent Management facilitates innovation by simultaneously building individual capabilities (competence), strengthening leadership, and shaping the environment (culture). Digital Culture serves as one of the most significant mediating mechanisms, fully supporting Muller et al.'s conclusion that culture is the main driver of digital innovation.

CONCLUSION

Referring to the research results and discussion, several aspects can be considered for improvement by the leadership or management of the Indonesia Endowment Fund for Education (LPDP), which is responsible for enhancing employee performance to continuously provide the best public service in line with LPDP's vision and mission. Overall, it can be concluded that Digital Leadership and Digital Culture are the two main variables that have a direct, positive, and significant influence on the enhancement of Innovative Work Behavior. Conversely, Digital Talent Management and Digital Competence were not found to have a significant direct effect when considered individually.

Nevertheless, this study reveals the strategic role of Digital Talent Management, whose influence on innovation is not direct but is effectively mediated through the strengthening of Digital Leadership and Digital Culture. More specifically, Digital Competence, although possessed at a very high level by employees, was found to be ineffective both as a direct driver and as a mediator, indicating that it functions merely as a passive foundational capability.

Ultimately, the holistic research model demonstrates that the three mediating variables—Digital Competence, Digital Leadership, and Digital Culture—jointly serve as a very strong mediating mechanism between Digital Talent Management and Innovative Work Behavior. This reinforces that the most effective approach to fostering innovation at LPDP is a systemic approach that simultaneously integrates individual development, leadership strengthening, and the creation of a supportive work environment.

This study did not measure differences in perception or viewpoint among respondents when completing the research survey. In addition, the researcher acknowledges a limitation in correlating the research findings with the employees' annual performance achievements within LPDP. Therefore, future research should include a confirmation process with respondents through Focus Group Discussions (FGD) and interviews to deepen the findings. Furthermore, similar studies could be replicated in other public sector organizations (such as ministries or government agencies) or state-owned enterprises (SOEs) to examine whether the mediating roles of Digital Leadership and Digital Culture represent a consistent pattern across different types of bureaucratic structures.

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