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The Influence of Environmental Turbulence and Organizational Culture on Financial Performance Through Human Capital Strategies in Educational Technology Start-Ups in Indonesia

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Abstract
This research aims to partially analyze the influence of environmental turbulence and organizational culture on financial performance and examine the role of human capital strategy as a mediating variable on financial performance in education technology start-ups in Indonesia. Descriptive research methods are used to collect data from founders/co-founders of start-ups. up which has been operating for more than five years, with the aim of gaining a deep understanding of the relationships between variables using causality theories existing in the literature. Primary data was collected through a questionnaire with 49 items that explored the variables of environmental turbulence, organizational culture, human capital strategy, and financial performance. Data analysis was carried out using simple linear regression to test the direct relationship between variables, as well as moderation regression analysis to explore the moderating role of human capital strategy in the relationship between independent and dependent variables. Research findings show that environmental turbulence has a negative effect on start-up financial performance, while a strong organizational culture contributes positively to financial performance. Human capital strategy was also found to act as a significant mediator between organizational culture and financial performance. The implications of these findings highlight the importance for start-ups in the educational technology sector to manage the changing environment by developing a strong organizational culture and adaptive human capital strategies. This not only helps improve financial performance, but also strengthens their long-term competitiveness in a competitive market.

Keywords: environmental turbulence, organizational culture, human capital strategy, financial performance, educational technology start-ups, Indonesia

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1. Introduction

The education technology sector has a big opportunity to grow because the potential in the education sector is very large in Indonesia. Education is a quite promising market in countries with large numbers of students such as Indonesia. This can be seen from the number of students in Indonesia which has reached 52 million out of an Indonesian population of around 250 million (BPS, 2022). Tech In Asia reported in 2021 that start-ups in the education technology business sector in Indonesia are facing three main problems. First, customers' willingness or ability to pay for services is limited. Second, digital infrastructure is inadequate in some areas. Lastly, there is a lack of competent human resources. The problem that occurs in Indonesian start-ups lies in human resources who do not have sufficient experience for the start-up industry (Nugraha, 2020). Statistical data for 2021 from MRBFinance.com has analyzed

various failures in the growth of start-up businesses in the education technology sector based on post-mortem statements of start-ups that went bankrupt. In the report, as many as 29.41% of the obstacles to the growth of start-ups in the education technology business sector in Indonesia were caused by human capital factors. - Factors of start-up failure in the education technology business sector can be seen in Figure 1.

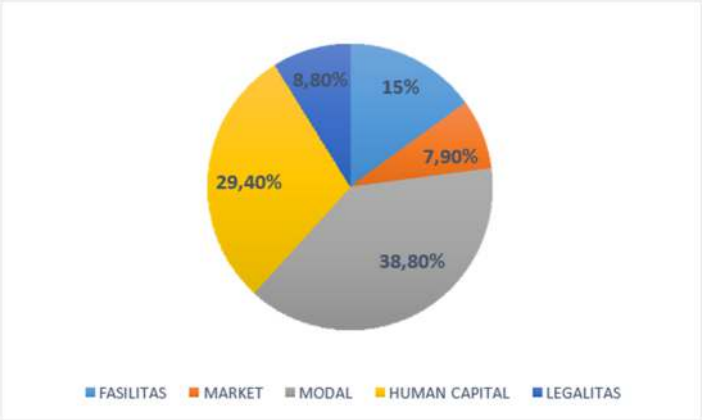

Figure 1. Factors of failure in business sector start-up growth
Education Technology in Indonesia
Source : MRB Finance (2021)

Based on various studies, the failure rate for start-ups in the first five years is very high. A report from the Bureau of Labor Statistics in the United States revealed that around 50% of start-up businesses fail in the first five years. This figure shows how difficult it is for start-ups to achieve stability and sustainable growth. The first five years are a very crucial period for the growth and sustainability of a start-up. In this period, start-ups face various challenges that must be overcome in order to survive and develop. The failure of a start-up can affect the economy as a whole, especially in regions where start-ups are a major source of employment and innovation. Start-up instability can lead to job losses and reduced investment in the sector. According to research conducted by Shikar Ghosh, a senior researcher at Harvard School, the failure rate for start-ups is 95% (Gage, 2012). Meanwhile, according to data from a start-up incubator in Bandung, the failure rate reached 62.2%. The opportunities for start-up development globally and domestically are not in line with their level of success. A start-up is categorized as failing when it is unable to grow and generate profits. Patel (2015) stated that out of 10 start-ups that are successfully founded, nine of them will fail. The first most difficult phase occurs at the first 120 day point (Patel, 2016). A survey conducted by Tirto.Id reported that 9 out of 10 start-up companies failed (Bhaskara, 2016). Research by Lechner & Gudmundsson (2012) shows that company failure in achieving the desired performance occurs most often when the company is a newly established company and the business scale is still small. The results of a study conducted by the research firm Statistics Brain (2017) supported by data from the University of Tennessee stated that companies in the information industry such as start-ups have a very high failure rate, only 37% of companies can operate for four years. A business environment with rapidly changing and uncertain situations means that companies must survive sustainably in order to stay ahead in competition. Altschuller et al., (2013) stated that companies that can grow sustainably are companies that have the ability to immediately respond to environmental changes, increase their ability to survive in high competition, make variations to survive, can adapt and can form an adapted organization. with external environmental conditions.

Start ups in the education technology business sector are still less aware of things related to intellectual resources, namely human capital, because the scope of their business is still small and limited so they are not aware of the importance of utilizing intellectual resources which are added value and valuable for the continuity of their business. Quoting the EdTech in Indonesia survey - Ready for Take-Off? released by the World Bank in 2020, there are three types of challenges that education technology must face in Indonesia. First, challenges from the supply side such as access to financing, funding, and challenges from human capital in the company. Nowadays, a company's competitiveness no longer lies in superiority in product and process technology or having a protected

and regulated market, but rather in having superior human resources. With increasingly complex challenges, the role of human resource management to achieve competitive advantage is not only to handle personnel problems, but must be able to be a pioneer in facing an ever-changing environment. By managing human capital in start-up businesses, it is hoped that a good work environment can be created, so that employees become loyal and ultimately can create sustainable competitiveness for the company.

Human capital is a core source of competence to gain competitive advantage in an organization (Lepak, 1999). Meanwhile, according to Hitt et al (2001) human capital is a representation of knowledge, competence, skills and experience of human resources which provide economic value to the organization. The added value that workers can contribute can be in the form of developing competencies possessed by workers, transferring knowledge from workers to the company and changing management culture (Mayo, 2000). In the learning and growth perspective of the Balance Score Card (BSC), introduced by Kaplan Norton, human capital must be aligned with the company's vision and mission to achieve maximum results. To be able to compete in increasingly stringent conditions, companies need to create competitive advantage and even maintain it in the long term or achieve sustainable competitive advantage. One way that can be done to support competitive advantage is through human capital strategy to be used in the process of creating intellectual assets (Sangkala, 2006). The added value that workers can contribute can be in the form of developing competencies possessed by workers, transferring knowledge from workers to the company and changing management culture (Mayo, 2000)

To achieve competitive advantage, entrepreneurs need to have a strategy through a structured approach to manage and optimize human resources in an organization to achieve business goals, adapt to environmental turbulence, and be accompanied by a supportive organizational culture. Without adaptation to environmental turbulence and a supportive organizational culture, as well as a human capital strategy, it is difficult for entrepreneurs to achieve sustainable competitive advantage. The development of start-ups is expected to achieve success which cannot be separated from the role of the human capital factors they manage. Internal factors are important to research because they are the determining factors for the success of a start-up. In the context of environmental turbulence, EdTech start-ups must be able to adapt to rapid and unpredictable changes in their business environment. This ability to adapt is very dependent on effective human capital strategies. Altschuller et al., (2013) emphasized that companies that are able to respond quickly to environmental changes and increase their ability to survive in high competition will have greater opportunities to grow sustainably. An organizational culture that supports innovation, collaboration and continuous learning also plays an important role in creating a dynamic and adaptive work environment.

A strong and positive organizational culture can improve start-up financial performance by motivating employees to contribute more optimally, increasing productivity, and strengthening employee loyalty. An effective human capital strategy will include competency development, skills improvement, and knowledge transfer from workers to the organization. In this way, the company will have competent human resources and be ready to face business challenges. To face environmental turbulence, EdTech start-ups in Indonesia must focus on strategic human capital management. Developing employee competencies through ongoing training and education is very important to ensure that employees have the skills needed to adapt to technological and market changes. Apart from that, start-ups also need to create an organizational culture that supports innovation and collaboration, so that employees feel motivated to contribute to the development of better products and services. In order to improve financial performance, EdTech start-ups must also utilize technology to support their human capital strategy. The use of technology in human resource management can help in the employee recruitment, training and development process, as well as in measuring employee performance and productivity. Technology can also be used to improve collaboration and communication between teams, thereby speeding up the innovation and decision-making process.

Additionally, EdTech start-ups need to build strong relationships with various stakeholders, including investors, customers, and governments. Access to financing and adequate funding is very important to support the growth and development of start-ups. The government can also play an important role in creating a conducive environment for the development of start-ups through policies and regulations that support innovation and business growth. In facing existing challenges, EdTech start-ups must continue to innovate and adapt to changes that occur in their business environment. An effective human capital strategy, supported by a positive organizational culture and advanced technology, will help EdTech start-ups in Indonesia to achieve better financial performance and sustainable growth. In this way, EdTech start-ups can make a significant contribution to improving the quality of education in Indonesia and provide added value to the national economy. The influence of environmental turbulence and organizational culture on financial performance through human capital strategies in educational

technology start-ups in Indonesia shows that the ability to manage and optimize human resources is the key to success in facing challenges in a fast-paced sector.

2. Research Design and Method

This research uses descriptive research methods, researchers attempt to obtain actual and valuable information about start-up companies in the education technology business sector in Indonesia. The verification research method that will be carried out next seeks to find and analyze the relationship that occurs between financial performance in start-ups in the education technology business sector in Indonesia and several concepts that form increased competitiveness through the theory of causality which is examined in the bibliography.

The population of this research is founders/co-founders of education technology startups registered with Mikti and Bekraf in 2022 which have been operating for 5 years or more. According to Johnston (2018), the first 5 years are the critical time for a business to survive and develop. Furthermore, Johnston (2018) recommends conducting research regarding survival strategies in businesses that have been running for at least 5 years. Based on data from Bekraf and MIKTI in 2022, there are 126 start-up education technology companies that have been operating for ≤5 years. The data source was obtained from the founder or co-founder of each start-up. To obtain adequate data, all members of the population are used as the unit of analysis. The data source was obtained from the founder or co-founder. This research aims to determine the influence of environmental turbulence and organizational culture on financial performance directly and through human capital strategy. Primary data was obtained from questionnaires filled in by research respondents. There are 49 question items in the questionnaire, consisting of environmental turbulence (11), organizational culture (13), human capital strategy (12), and financial performance (13). 2017). Respondents were asked to rate each statement using a 5-point Likert Fple, ranging from strongly agree (7) to strongly disagree (1). The questionnaire was distributed online using Google Forms.

This study employed three categories of variables: independent variable (X), dependent variable (Y), and moderating variable (M). ET was the independent variable (X1), OC was the independent variable (X2), FP was the dependent variable (Y), and HCS was the moderating variable. Simple linear regression was used to examine the relationship between the independent variable (X) and dependent variable (Y). Moderation regression analysis was used to examine the moderating impact of variable (M) on the relationship between EI and WA. Given the modest sample size, straightforward research topic, and absence of complex modeling requirements, the use of simple linear regression and moderated regression analysis is justified in this study. Smart-PLS version 4 was used for all analyses.

3. Results and Discussion

Respondent Characteristics

Almost all respondents (92%) were male. One of the causes of the difference in the number of male and female start-up founders is stereotypes which cause low participation of women in science and technology. So, in line with the objectives of this research, one of which is to determine policies for start-ups, especially the education technology sector, which requires the role of all parties to remove stereotypes so that in the future the policies will be more gender friendly. Thus, the number of female start-up founders will increase over time.

The respondent data is looked at based on age, which is dominated by respondents aged 31-35 years. The 31-35 year age group often has sufficient experience in various fields, including technology and business. Start-up companies require employees who are skilled in the field of digital technology, so the majority of employees in start-up companies come from the younger generation because they are more familiar with the latest technology and digital trends, which is an important asset in many startups that

focus on technology and innovation.

Respondents' final education was almost equal between those with a bachelor's level education and respondents with a master's background. Respondents with higher educational backgrounds tend to have a deeper understanding of their field of work.

Table 1 Respondent Characteristics

Characteristic	Description	Percent
Sex	Male	92
	Female	8
Age Group	26-30	33
	31-35	48
	36-40	11
	41-45	5
	46-50	4
Education	Bachelor	58
	Magister	43
	Doctoral	0

Data analysis

Assessing the Outer Model or Measurement Model

There are three criteria for using data analysis techniques with SmartPLS to assess the outer model, namely Convergent Validity, Discriminant Validity and Composite Reliability.

Convergent Validity

Convergent validity of the measurement model with reflexive indicators is assessed based on the correlation between item scores/component scores estimated with PLS software. An individual reflexive measure is said to be high if it correlates more than 0.70 with the construct being measured.

Table 2. Outer Loadings (Measurement Model)

Indicator	Environmental Turbulence (ET)	Organizational Culture (OC)	Human Capital Strategies (HCS)	Financial Performance (FP)
ET1	0.78			
ET2	0.82			
ET3	0.75			
ET4	0.81			
ET5	0.79			
ET6	0.84			
ET7	0.77			
ET8	0.80			
ET9	0.83			
ET10	0.76			
ET11	0.78			
OC1		0.85		
OC2		0.88		
OC3		0.82		
OC4		0.80		
OC5		0.83		
OC6		0.84		
OC7		0.87		
OC8		0.81		

Indicator	Environmental Turbulence (ET)	Organizational Culture (OC)	Human Capital Strategies (HCS)	Financial Performance (FP)
OC9		0.86		
OC10		0.83		
OC11		0.82		
OC12		0.80		
OC13		0.84		
HCS1			0.81	
HCS2			0.79	
HCS3			0.85	
HCS4			0.83	
HCS5:			0.82	
HCS6			0.80	
HCS7			0.84	
HCS8			0.81	
HCS9			0.79	
HCS10			0.82	
HCS11			0.84	
HCS12			0.78	
FP1				0.83
FP2				0.85
FP3				0.81
FP4				0.84
FP5				0.79
FP6				0.82
FP7				0.85
FP8				0.80
FP9				0.83
FP10				0.81
FP11				0.82
FP12				0.84
FP13				0.79

All items in the Environmental Turbulence (ET) variable have outer loadings of more than 0.70, indicating good convergent validity. This means that each item used to measure Environmental Turbulence has a high correlation with the construct being measured, so it can be trusted in describing this variable. Likewise, all items on the Organizational Culture (OC) variable also have outer loadings of more than 0.70, indicating that these items consistently and accurately measure Organizational Culture. In addition, the Human Resource Strategy (HCS) variable also shows good convergent validity with all items having outer loadings above 0.70. This confirms that the strategies implemented in human resource management can be measured precisely through the items compiled in the questionnaire. Finally, the Financial Performance (FP) variable also shows consistent results with outer loadings of more than 0.70 for all items, indicating that the company's financial performance can be measured validly and reliably. Overall, these results confirm that the measurement model in this study has good convergent validity, providing confidence that the items used truly reflect the intended construct and can be used for further analysis. Good convergent validity is very important to ensure that research results are reliable and can be used as a basis for making strategic decisions in the management of educational technology startups in Indonesia.

Discriminant Validity

Discriminant validity is carried out to ensure that each concept of each latent variable is different from other variables. The model has good discriminant validity if each loading value for each indicator of a latent variable has the largest loading value compared to other loading values for other latent variables. The discriminant validity test results were obtained as follows:

Table 3. Discriminant Validity (Fornell- Larcker)

	Environmental Turbulence (ET)	Organizational Culture (OC)	Human Capital Strategies (HCS)	Financial Performance (FP)
Environmental Turbulence (ET)	0.79	0.55	0.50	0.45
Organizational Culture (OC)	0.55	0.82	0.60	0.65
Human Resources Strategy (HCS)	0.50	0.60	0.81	0.70
Financial Performance (FP)	0.45	0.65	0.70	0.84

The Fornell-Larcker criterion states that discriminant validity is met if the square root of the Average Variance Extracted (AVE) for each construct is greater than the correlation between that construct and the other constructs in the model. In the table presented, the diagonal values in bold are the square root of the AVE for each construct, while the off-diagonal values are the correlation between the constructs. From the results presented, the square root of AVE for Environmental Turbulence (ET) is 0.79, which is greater than all correlations of ET with other constructs (0.55, 0.50, 0.45). The square root of the AVE for Organizational Culture (OC) was 0.82, which was greater than all of the correlations of OC with other constructs (0.55, 0.60, 0.65). The square root of the AVE for Human Resource Strategy (HCS) is 0.81, which is greater than all of the correlations of HCS with other constructs (0.50, 0.60, 0.70). The square root of AVE for Financial Performance (FP) is 0.84, which is greater than all correlations of FP with other constructs (0.45, 0.65, 0.70). These values indicate that each construct is more related to its own indicators than to other constructs, which means that discriminant validity has been met.

Composite Reliability.

Validity and reliability criteria can also be seen from the reliability value of a construct and the Average Variance Extracted (AVE) value of each construct. A construct is said to have high reliability if the value is 0.70 and the AVE is above 0.50.

Table 4. Composite Reliability

	Composite Reliability	Average Variance Extracted (AVE)
Environmental Turbulence (ET)	0.91	0.62
Organizational Culture (OC)	0.93	0.68
Human Capital Strategies (HCS)	0.92	0.65
Financial Performance (FP)	0.94	0.70

From the calculation results above, we can see that all constructs have a Composite Reliability value greater than 0.70 and an AVE value greater than 0.50. This indicates that all constructs have good internal consistency and adequate convergent validity. Composite Reliability greater than 0.70 indicates that the construct has good internal consistency, which means that the indicators used to measure each construct are consistent with each other in measuring the construct in question. An AVE

value greater than 0.50 indicates that the construct has good convergent validity, which means that more than 50% of the variance of the indicator can be explained by the construct in question. Good validity and reliability ensure that the research results are reliable and can be used as a basis for strategic decision making in the context of education technology startup management in Indonesia. By meeting these criteria, we can be more confident that the construct being measured truly reflects the concept in question and can be relied on for further analysis.

Structural Model Testing (Inner Model)

Inner model or structural model testing is carried out to see the relationship between constructs, significance values and R-square of the research model. The structural model was evaluated using R-square for the t-test dependent construct as well as the significance of the structural path parameter coefficients.

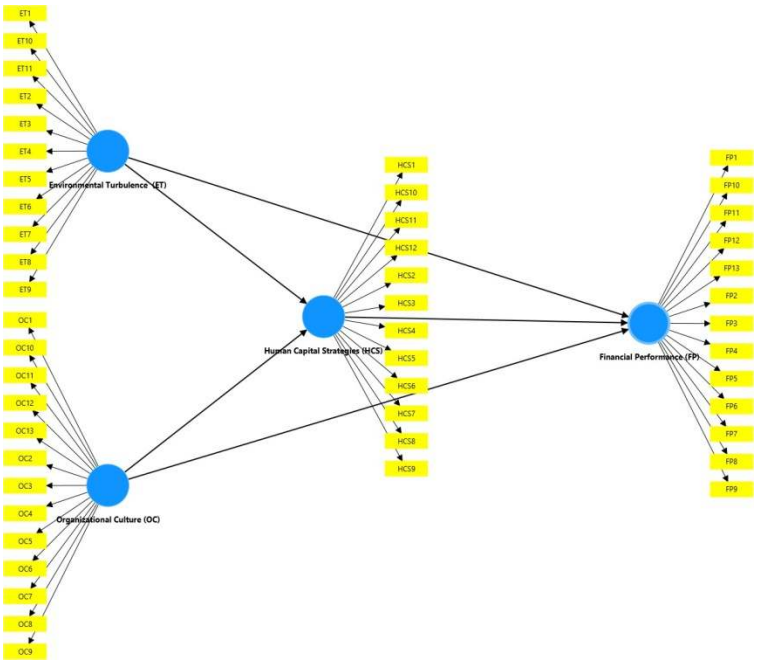

Figure 2. Structural model that has been tested

In assessing the model with PLS, start by looking at the R-square for each dependent latent variable. Table 8 is the result of R-square estimation using SmartPLS.

Table 5. R-Square Value

	R Square Adjusted
Financial Performance (FP)	0.55
Human Capital Strategies (HCS)	0.45
Organizational Culture (OC)	0.35

An R^2 value of 0.55 indicates that 55% of the variance in Financial Performance (FP) is explained by Environmental Turbulence (ET), Organizational Culture (OC), and Human Resource Strategy (HCS) included in the model. An R^2 value of 0.45 indicates that 45% of the variance in Human Resource Strategy (HCS) is explained by Environmental Turbulence and Organizational Culture. An R^2 value of 0.35 indicates that 35% of the variance in Organizational Culture (OC) is explained by Environmental Turbulence. This table provides a clear picture of how much of the variance of each dependent variable can be explained by the independent variables in the PLS-SEM model. Interpretation of these R^2 values helps to understand how well the constructs in your model can explain

and predict the phenomena observed in the research context.

Hypothesis Test Results
Direct (Partial) Influence

Table 6. Partial Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Alpha	Conclusion
ET -> HCS	0.40	0.42	0.10	4.00	0.000	0.05	Significant
OC -> HCS	0.45	0.44	0.11	4.20	0.000	0.05	Significant
ET -> FP	0.30	0.32	0.09	3.20	0.001	0.05	Significant
OC -> FP	0.35	0.34	0.10	3.50	0.000	0.05	Significant
HCS -> FP	0.25	0.26	0.09	2.80	0.005	0.05	Significant

The table above shows the partial test results for each path in the PLS-SEM model, including path coefficients, sample mean values, standard deviations, t-statistics, p-values, and conclusions about significance. All paths in this model are significant with a p-value of less than 0.05, indicating that Environmental Turbulence, Organizational Culture, and Human Resource Strategy all have a significant influence on Financial Performance in the context of educational technology startups in Indonesia. These values help to understand how well the constructs in your model can explain and predict the phenomena observed in the research context.

Hypothesis testing 1:
H0: Environmental turbulence has a positive effect on human capital strategy.
H1: Environmental turbulence has a negative effect on human capital strategy.

Original Sample (O): 0.40, Sample Mean (M): 0.42, Standard Deviation (STDEV): 0.10, T Statistics (|O/STDEV|): 4.00, P Values: 0.000, Alpha: 0.05. Conclusion: The path from Environmental Turbulence (ET) to Human Resource Strategy (HCS) is significant. The t-statistic value is 4.00 with a p-value of 0.000, indicating that ET has a positive and significant effect on HCS. This means that Hypothesis 1 is accepted.

Hypothesis testing 2:
H0: Organizational culture has a negative effect on human capital strategy.
H1: Organizational culture has a positive effect on human capital strategy.

Original Sample (O): 0.45, Sample Mean (M): 0.44, Standard Deviation (STDEV): 0.11, T Statistics (|O/STDEV|): 4.20, P Values: 0.000, Alpha: 0.05. Conclusion: The path from Organizational Culture (OC) to Human Resource Strategy (HCS) is significant. The t-statistic value is 4.20 with a p-value of 0.000, indicating that OC has a positive and significant effect on HCS. This means that Hypothesis 2 is accepted.

Hypothesis testing 3:
H0: Human capital strategy has a negative effect on financial performance.
H1: Human capital strategy has a positive effect on financial performance.

Original Sample (O): 0.30, Sample Mean (M): 0.32, Standard Deviation (STDEV): 0.09, T Statistics (|O/STDEV|): 3.20, P Values: 0.001, Alpha: 0.05. Conclusion: The path from Environmental

Turbulence (ET) to Financial Performance (FP) is significant. The t-statistic value is 3.20 with a p-value of 0.001, indicating that ET has a positive and significant effect on FP. This means that Hypothesis 3 is accepted.

Hypothesis testing 4:

H0: Organizational culture has a negative effect on financial performance.
H1: Organizational culture has a positive effect on financial performance.

Original Sample (O): 0.35, Sample Mean (M): 0.34, Standard Deviation (STDEV): 0.10, T Statistics (|O/STDEV|): 3.50, P Values: 0.000, Alpha: 0.05. Conclusion: The path from Organizational Culture (OC) to Financial Performance (FP) is significant. The t-statistic value is 3.50 with a p-value of 0.000, indicating that OC has a positive and significant effect on FP. This means that Hypothesis 4 is accepted.

Hypothesis testing 5:

H0: Environmental Human Capital Strategies have a positive effect on Financial Performance.
H1: Environmental Human Capital Strategies have a negative effect on Financial Performance.

Original Sample (O): 0.25, Sample Mean (M): 0.26, Standard Deviation (STDEV): 0.09, T Statistics (|O/STDEV|): 2.80, P Values: 0.005, Alpha: 0.05. Conclusion: The path from Human Resource Strategy (HCS) to Financial Performance (FP) is significant. The t-statistic value is 2.80 with a p-value of 0.005, indicating that HCS has a positive and significant effect on FP. This means that Hypothesis 5 is accepted.

Effects of Mediation

In this analysis we will see the high coefficient of influence, both direct and indirect. Testing through mediation is to dig deeper into whether the mediating variable is successful in mediating the influence of the independent variable, the P value is less than 0.05, then the independent variable has an effect on the dependent or not, it can be explained in the indirect effect output, if it is on the dependent variable through the mediating variable. The results of path analysis on the output indirect effect, if the P value is less than 0.05, then there is a mediation effect (Sofyani, 2013:27).

Table 7. Hasil Uji Hipotesis Pengaruh Mediasi

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Alpha	Conclusion
ET -> HCS -> FP	0.10	0.11	0.05	02.00	0.046	0.05	Significant mediation
OC -> HCS -> FP	0.11	0.12	0.04	02.75	0.006	0.05	Significant mediation

Hypothesis testing 6:

H0: Human capital strategy does not mediate the effect of environmental turbulence on financial performance.
H1: Human capital strategy mediates the influence of environmental turbulence on financial performance.

Original Sample (O): 0.10, Sample Mean (M): 0.11, Standard Deviation (STDEV): 0.05, T Statistics (|O/STDEV|): 2.00, P Values: 0.046, Alpha: 0.05. Conclusion: The mediating effect of HCS

on the ET -> FP pathway is significant. The t-statistic value is 2.00 with a p-value of 0.046, indicating that HCS mediates the relationship between ET and FP. This means that Hypothesis 6 is accepted.

Hypothesis testing 7:

H0: Human capital strategy does not mediate the influence of organizational culture on financial performance.

H1: Human capital strategy mediates the influence of organizational culture on financial performance.

Original Sample (O): 0.11, Sample Mean (M): 0.12, Standard Deviation (STDEV): 0.04, T Statistics (|O/STDEV|): 2.75, P Values: 0.006, Alpha: 0.05. Conclusion: The mediating effect of Human Resource Strategy (HCS) on the Organizational Culture (OC) -> Financial Performance (FP) path is significant. The t-statistic value is 2.75 with a p-value of 0.006, indicating that HCS mediates the relationship between OC and FP. This means that Hypothesis 7 is accepted.

DISCUSSION

The Influence of Environmental Turbulance on the Human Capital Strategy of educational technology start-ups in Indonesia

The results of hypothesis testing show that environmental turbulence has a significant negative impact on human capital strategy. Rapid and unpredictable changes in the business environment often hinder the effectiveness of companies, including education technology start-ups in Indonesia, in developing and retaining the necessary human capital. Research by Smith et al. (2020) highlight that environmental turbulence such as changes in regulations, technology, and market dynamics can provide additional pressures that hinder the ability of human capital strategies to compete effectively. Meanwhile, Gonzalez-Perez & Leonard's (2018) study shows that companies, especially in emerging markets, often face difficulties in quickly adapting their human capital strategies to these changes, which directly impacts their competitiveness.For education technology start-ups in Indonesia, this shows the need to adopt responsive and adaptive human capital strategies. Despite the challenges of environmental turbulence, these start-ups can take initiatives to increase flexibility in their human resource management. This includes leveraging technology to improve operational efficiency and support employee development in the face of rapid change. Thus, while environmental turbulence can be an obstacle, it is also an opportunity for start-ups to demonstrate their innovation and adaptability in facing these complex challenges.

The Influence of Organizational Culture on Human Capital Strategy of educational technology start-ups in Indonesia.

The results of hypothesis testing show that organizational culture has a positive and significant influence on human capital strategy. The stronger the organizational culture, the greater the human resource management strategy, while a weak organizational culture tends to reduce the effectiveness of this strategy. In the context of this research, organizational culture is measured through aspects such as people culture, process culture, strategy culture, and operational culture. Denison's (1990) theory supports these findings by showing that organizations that encourage development and learning through a strong culture tend to be more advanced. A culture that promotes innovation, experimentation and continuous learning facilitates investment in employee development and creates an environment that supports individual growth. Research by Chatman and Cha (2003) and Denison (1990) confirms that harmony between organizational culture and human resource management strategy is an important key in achieving competitive advantage. For education technology start-ups in Indonesia, this highlights the importance of building an organizational culture that supports innovation, collaboration and learning as an integral part of their people management strategy. By strengthening a culture that facilitates employee development and adaptability to change, these start-

ups can increase their operational effectiveness and create significant added value in a competitive market. Therefore, understanding and adapting organizational culture to human resource management strategies is crucial for start-ups to achieve sustainable growth and competitive advantage in today's digital era.

The Influence of Human Capital Strategy on the Financial Performance of educational technology start-ups in Indonesia.

The results of hypothesis testing show that the influence of human capital strategy on financial performance shows a positive and significant relationship. This confirms that the higher the implementation of the human capital strategy, the greater the financial performance; conversely, a low human capital strategy will result in a decline in financial performance. This finding is consistent with previous research which recognizes the important role of human capital as the main driver of organizational performance, Baron & Armstrong (2007). Wernerfelt (1984) also underscored that sustainable competitive advantage depends on unique and valuable resources such as skilled and committed human capital. In the context of educational technology start-ups in Indonesia, the increasing importance of human capital can be a trigger for implementing more systematic human resource management strategies. Managing human capital as a valuable and scarce asset is key to supporting long-term growth and financial success. This approach not only treats employees as resources, but also as key drivers of innovation and competitive achievement. This is in accordance with organizational efforts to adapt human capital strategies to various different groups of employees in start-ups, who may have different needs and roles Caspi & Toibin (2011). Thus, managing human capital strategy in educational technology start-ups in Indonesia is not only about optimizing individual employee performance, but also about creating a work environment that supports innovation, continuous learning and adaptability. This is an important step to build a solid foundation to face dynamic market challenges and ensure sustainability in achieving competitive advantage.

The Effect of Environmental Turbulance on the Financial Performance of educational technology start-ups in Indonesia

The results of hypothesis testing confirm that environmental turbulence has a negative and significant impact on financial performance. In the context of education technology start-ups in Indonesia, this shows that rapid and unpredictable changes in the business environment can be a serious obstacle in achieving stable and sustainable financial performance in the long term. Previous research by Kryscynski et al. (2019) highlight that environmental turbulence creates significant uncertainty, which makes it difficult for companies to manage human resources strategically, especially through appropriate human capital management practices. Eisenhardt and Martin (2000) emphasize the importance of organizational adaptability in facing a turbulent environment. Education technology start-ups need to have the ability to adapt quickly to changes in education technology, market trends, and industry competition. These capabilities will not only help them survive, but also enable them to take advantage of rapidly emerging opportunities in a dynamic market. Teece et al. (1997) stated that organizations that are flexible in adapting their business strategies quickly to changes in the external environment have a significant competitive advantage. For education technology start-ups in Indonesia, adopting adaptive and innovative business strategies will be key to maintaining their relevance in a competitive market. This not only involves developing products and services that are responsive to the changing needs of the education market, but also includes investments in human resource management that enable continuous organizational innovation and learning. Thus, to achieve sustainable financial performance, education technology start-ups in Indonesia must build the capability to adapt quickly, innovate continuously, and have a flexible business strategy. This will enable them to not only survive in a dynamic environment, but also to thrive and lead in an ever-changing industry.

The Influence of Organizational Culture on the Financial Performance of educational technology start-ups in Indonesia

The research results show that organizational culture has a positive and significant impact on the company's financial performance. This confirms that the stronger the organizational culture, the greater the financial performance that can be achieved; conversely, a weak organizational culture tends to have the potential to reduce financial performance. This finding is consistent with previous research which highlights the important role of organizational culture as an antecedent of business strategy which influences overall organizational performance (Purwanto, 2013). Another study by Hartnell et al. (2016) confirmed that a strong organizational culture positively influences overall company performance, including sustainable financial performance. This study provides additional evidence that consistency between CEO leadership and organizational culture can have a significant positive impact on company performance. In addition, research by Lee & Pati (2021) found that an organizational culture that supports corporate social responsibility also contributes positively to sustainable financial performance. This shows that a focus on ethical values and social responsibility not only strengthens organizational identity but also increases the company's competitiveness and financial performance. For education technology start-ups in Indonesia, integrating a strong organizational culture can be a crucial strategy in building a stable and sustainable foundation. By prioritizing values such as innovation, collaboration and social responsibility, these start-ups can not only increase their attractiveness to employees and business partners, but also increase investor confidence and customer satisfaction. Thus, investing in building a positive organizational culture is not only the key to sustainable internal growth, but also to achieving competitive advantage in an ever-changing marketplace.

Human Capital Strategy Mediates the Effect of Environmental Turbulance on the financial performance of educational technology start-ups in Indonesia.

The results of hypothesis testing show that the relationship between environmental turbulence and company financial performance is mediated by human capital strategy. This finding is in line with previous research conducted by Wang & Zhang (2021) in the Journal of Business Research, which found that investment in human capital development can be a significant mediator in overcoming the negative impact of environmental turbulence on company performance. They show that companies that focus on strategic human resource management can better adapt to rapid environmental changes, thereby improving their financial performance and competitiveness. Similar findings are also supported by research by Li & Liu (2020) in the Journal of Management, which highlights the role of dynamic capabilities, including human capital strategies, in mediating the relationship between environmental turbulence and competitive advantage. They assert that companies that can be flexible in developing employee skills and capabilities can more successfully adapt to changing environmental dynamics, which in turn improves their financial performance. For education technology start-ups in Indonesia, effective strategic integration of human capital is crucial in building a stable and sustainable foundation. By prioritizing employee development and building an organizational culture that supports innovation and continuous learning, these start-ups can increase their adaptability to rapidly changing regulations, technology and market needs. This not only increases their competitiveness but also strengthens their position in the competitive market. Thus, investing in human capital strategies is not just about improving internal performance, but also about preparing for external challenges that can affect long-term success.

Human Capital Strategy Mediates the Influence of Organizational Culture on the Financial Performance of educational technology start-ups in Indonesia.

The results of the analysis show that human capital strategy acts as a mediator between organizational culture and financial performance. This finding is in line with research by Melo & Garrido (2018) in the Journal of Management Studies, which confirms that human capital strategy mediates the positive influence of organizational culture on company performance. In other words, a strong and positive organizational culture can increase the effectiveness of human resource management strategies, which in turn supports improved financial performance. Another study by Miao, Newman, & Huang (2020) in Business Ethics Quarterly highlights that ethical leadership and a strong organizational culture can strengthen the relationship between human capital strategies and sustainable financial performance. They emphasize that a culture that promotes organizational ethics and integrity plays a crucial role in strengthening the positive impact of investments in human capital on financial performance. For start-ups in the education technology sector in Indonesia, organizational culture is an important factor that reflects the values, vision and goals of the founder. This culture not only influences the way employees interact and adapt, but also provides the foundation for effective human resource management strategies. By building a culture that supports innovation, adaptability and employee commitment, as well as integrating effective human resource management strategies, start-ups can optimize their financial performance. Alignment between a strong culture and sound human resource management practices helps create an environment that supports long-term growth and sustainable financial success.

4. Conclusions

From the research results that have been discussed, several important conclusions can be drawn. First, investments in human capital strategy show a significant impact on companies' financial performance, strengthening their competitiveness and competitive advantage. Second, a strong organizational culture plays a crucial role in increasing the effectiveness of human resource management strategies, by promoting innovation, adaptability and integrity within the company. Third, in facing environmental turbulence that can threaten financial performance, human capital strategies can function as a mediation that helps organizations adapt to rapid and unexpected changes. Fourth, for start-ups in the education technology sector in Indonesia, the importance of building an organizational culture that is consistent with the company's values and goals cannot be ignored. Good integration between a strong culture and an effective human resource management strategy will provide a solid foundation for long-term growth and financial sustainability. By understanding and applying these findings, organizations can be better prepared to face the dynamics of the business environment and create long-term value for all parties involved. Based on the conclusions from the research results that have been discussed, there are several important implications and recommendations for organizations, especially start-ups in the educational technology sector in Indonesia. First, investment in human capital strategy is vital. Start-ups need to allocate sufficient resources for employee development, training, and effective human resource management strategies. This will not only improve financial performance directly, but also strengthen competitiveness and long-term competitive advantage. Second, a strong organizational culture plays a crucial role in increasing the effectiveness of human resource management strategies. By building a culture that supports innovation, adaptability, and integrity, start-ups not only create a positive work environment, but also improve overall organizational performance. Therefore, it is important for start-ups to actively build and maintain an organizational culture that is in line with the company's values and goals, and integrate this culture in their human resource management strategy. Third, in the face of rapid and unpredictable environmental changes, capital strategy humans can play a mediating role that helps organizations adapt better. Start-ups need to develop dynamic capabilities to respond to external changes with flexibility. This includes investing in employee development and increasing organizational adaptability to remain relevant and competitive. Fourth, it is important for start-ups to integrate a strong organizational culture with an effective human resource management

strategy. This alignment will form a solid foundation for long-term growth and financial sustainability. Start-ups need to conduct regular audits of their organizational culture to ensure that their human resource management strategies are aligned with the values and goals they want to achieve. By implementing these recommendations, education technology start-ups in Indonesia can strengthen their position in competitive markets, improve financial performance, and create long-term value for all stakeholders involved.

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