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# The Role of Human Capital Management in Enhancing the Competitiveness of Startup Companies

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**ABSTRACT**

The rapid expansion of the startup ecosystem necessitates the strategic management of human talent as a core asset for sustained business viability and competitive differentiation. Accordingly, this study investigates the role of Human Capital Management (HCM) practices in enhancing startup competitiveness within dynamic and resource-constrained markets. A quantitative approach was employed by integrating official secondary data across three levels—firm, talent market, and ecosystem context—with primary HCM data collected from Jakarta-based startups as Indonesia's national digital economy hub. Multiple regression analysis was used to examine the effects of key HCM variables, including training investment, equity-based compensation, and employee turnover, on performance indicators such as revenue growth and funding success. The findings reveal that higher investment in employee development and the provision of equity compensation have a positive and statistically significant impact on funding success and employee productivity. In contrast, elevated turnover rates exhibit a significant negative relationship with revenue growth, highlighting the critical importance of employee retention. Overall, the study concludes that strategic and adaptive HCM practices oriented toward long-term value creation are essential for startups operating in highly competitive ecosystems.

**Keywords:** Human Capital Management; Startup Competitiveness; Talent Development; Equity Compensation; Jakarta Ecosystem.

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## 1. Introduction

### *Background and Startup Context*

The global digital economy is marked by the rapid proliferation of entrepreneurial ventures, commonly referred to as startups, that are dedicated to market disruption and innovative value creation. In Indonesia, particularly in Jakarta as the country's primary innovation and digital economy hub, startups have emerged as key drivers of economic growth and technological advancement [1]. These firms operate in environments characterized by high uncertainty, limited resources, and the constant pressure to scale rapidly. Under such conditions, competitive advantage is no longer derived primarily from physical assets or financial capital, but from a firm's ability to attract, develop, and retain highly skilled human resources [2]. Human capital therefore represents the most valuable and inimitable asset for startups, especially in industries with short product life cycles and innovation-driven competition [3].

### *The Imperative of Human Capital Management (HCM)*

Human Capital Management (HCM) is defined as a systematic collection of methods and procedures designed to maximize the strategic value of human resources through continuous investment in the knowledge, abilities, and competencies of the workforce [4, 5]. Within the volatile startup environment, the scope of HCM fundamentally deviates from conventional, administrative HR functions. Startup HCM strategically focuses on cultivating an innovative organizational culture, expediting organizational learning processes, and ensuring that rapidly shifting business strategies remain aligned with talent capabilities. A startup's proficiency in competing, measured by metrics such as the pace of revenue growth, achievement of funding success, and employee productivity, is intrinsically linked to the efficacy of the implemented HCM practices.

### *Literature Review Gaps and Research Objectives*

The body of human capital management literature broadly confirms a positive association between sophisticated HCM practices and overall organizational performance [6]. However, the majority of existing research concentrates on large,

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well-established corporations. This conventional view fails to account for the unique characteristics of startups, which require different HCM priorities. Startups are characterized by short product life cycles, constant organizational flux, and extreme resource constraints, necessitating highly adaptive HCM strategies that often deviate substantially from "best practices" identified in mature organizations.

To address this critical gap, this study will organize the discussion of HCM practices relevant to the startup ecosystem into three core sub-themes:

1. Talent Acquisition and Retention Strategies (e.g., Equity Compensation, Speed of Hiring)
2. Organizational Learning and Development (e.g., Cross-Functional Training, Mentorship)
3. Performance and Culture Alignment (e.g., Flexible Work Arrangements, Rapid Feedback Cycles)

The core objective of this study is, therefore, to empirically and comprehensively assess the role of these specific Human Capital Management (HCM) practices in elevating the Competitiveness of Startup Companies within the Jakarta, Indonesia, ecosystem, by integrating data across the firm, talent market, and ecosystem levels.

## 2. Materials and Method

### *Research Design and Approach*

This study adopted a quantitative approach using a causal–correlational research design. The proposed model examined the influence of Human Capital Management (HCM) practices as independent variables on startup performance and competitiveness as dependent variables, while explicitly controlling for talent market conditions and ecosystem-level factors. In this study, HCM variables were not treated as mediators but as direct predictors of competitiveness outcomes. This methodological approach enables the identification of statistically robust relationships between targeted investments in human capital and measurable startup performance indicators. The selection of Jakarta as the empirical setting is particularly relevant, as its dense startup ecosystem, high competition for skilled talent, and strong venture capital presence provide a unique context for examining the strategic role of HCM in emerging markets [7].

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***Study Location and Sample (Startups in Jakarta)***

- Location: The research was concentrated on startups operating within the Jakarta, Indonesia region. Jakarta was selected due to its status as the area with the highest concentration of startups and venture capital (VC funding) activity across Southeast Asia, making it a highly representative sample for studying competitive dynamics in an intense ecosystem [8]
- Sample: The target population included startups that had progressed past initial funding stages (seed funding through Series B). Purposive sampling was employed to ensure the inclusion of companies that had either established defined HCM systems or allocated significant resources to the HR function [9].

***Official Raw Data Sources and Variables***

To assess the effect of HCM on startup competitiveness, the study amalgamated verifiable data from official sources at three distinct levels:

Startup Level (Firm-Level Raw Data)

- Official Data Sources: World Bank Enterprise Surveys data (specific questions related to firm performance and workforce), official Ministry of Cooperatives and SMEs (Kemenkop UKM) publications in Indonesia (business registration and classification), and ecosystem data from the Startup report concerning Jakarta startups.
- Example Variables: $company_{id}$, $founding_{year}$, $sector$, $headcount_{total}$, $revenue_{annual}$, $funding_{raised_{usd}}$, $export_{status}$.
- Application: Measurement of Competitiveness (revenue growth, funding success, employee productivity).

HCM Practices (Firm HR Variables)

- Official Data Sources: A combination of primary data (HR microdata collected via survey from startup respondents) and relevant data extracted from the World Bank Enterprise Surveys (2020-2023).

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- Example Variables: $has_{recruitment_{policy}}$ (0/1), $training_{spend_{per_{employee}}}$, $avg_{training_{hours_{per_{employee}}}}$, $performance_{appraisal_{exists}}$ (0/1), $equity_{compensation}$ (0/1), $turnover_{rate}$.
- Application: Independent/mediator variables to test the effectiveness of HCM practices.

Talent Market / Supply Indicators

- Official Data Sources: World Bank Human Capital Index (HCI) data for Indonesia, UNESCO education statistics (STEM graduates), and the National Labor Force Survey (Sakernas) from BPS Indonesia.
- ExampleVariables: $HCI_{score}$ (Indonesia), $pct_{population_{with_{tertiary_{education}}}}$ (regional), $num_{cs_{graduates_{per_{year}}}}$ (regional).
- Application: Control variables for the general availability of human capital.

Ecosystem & Market Context (Competitiveness Proxies)

- Official Data Sources: Startup Genome (2023) reports and OECD diagnostic data related to digitalization.
- ExampleVariables: $\$regional_{startup_{density(Jakarta)}}$, $vc_{funding_{per_{capita}}}$, $number_{of_{exits}}$ (regional).
- Application: Control/interaction variables for ecosystem strength.

Performance / Competitiveness Outcomes

- Metrics: $revenue_{growth_{\%}}$, $employee_{productivity} = \frac{revenue}{headcount}$, $funding_{success}$ (binary).
- Source: Company registries / Kemenkop UKM public data / Enterprise Surveys.

***Data Collection Techniques (Survey and Secondary Data)***

Data pertaining to HCM practices (training spend, equity compensation) were gathered through a structured online survey administered to Chief Human Resources Officers (CHROs) or CEOs of the startups. The official secondary data (Enterprise Surveys, Startup Genome, BPS, World Bank) were then

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integrated and synchronized using a Company ID or location/sector proxy to validate the ecosystem context and performance of the surveyed startups. The analysis period encompassed the relevant recent years.

***Data Analysis Techniques***

Statistical analysis proceeded in the following stages:

- Descriptive Analysis: To visually summarize the distribution of core HCM and competitiveness variables.
- Correlational Analysis: To initially identify linear relationships between HCM variables and performance outcomes.
- Multiple Regression Analysis: Used to test the primary hypotheses regarding the impact of HCM practices on $revenue_{growth}$ and $funding_{success}$, while accounting for talent market and ecosystem control variables.

$$Y = \beta_0 + \beta_1(HCM) + \beta_2(Talent) + \beta_3(Ecosystem) + \epsilon$$

Where $Y$ is the competitiveness metric. The analysis was conducted using STATA statistical software, focusing on statistical significance ($p$-value) and the effect size.

## 3. Result

***Description of Startup Sample Profile***

Data collected from 125 startups in Jakarta, which were successfully matched with secondary data, reveal that a majority (78%) operate within the Fintech and E-commerce sectors. The average founding year suggests a mean age of 5.2 years, placing the firms in early-to-mid growth stages. The average employee headcount was 85.

***HCM Practices in Jakarta Startups***

The survey results concerning HCM practices demonstrate significant variability across the sample:

- Approximately 65% of startups report having a formal recruitment policy (Recruitment Formalization).

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- The mean expenditure on training per employee was USD 385 annually (Training Investment).
- Only 35% of the startups offer compensation tied to company ownership (Equity Compensation).

### *Startup Competitiveness Levels*

Performance data, combined with information from the Enterprise Surveys (2023), indicate that the sample startups achieved an average annual revenue growth of 42.1% (Table 1). The funding success variable (securing a new round of funding within the last 12 months) showed a success rate of 55%.

**Table 1. Sample Startup Performance and Competitiveness Metrics**

| Metric | N | Mean | SD |
|---|---|---|---|
| Revenue Growth, % | 125 | 42.1 | 18.90 |
| Employee Productivity (USD) | 125 | 115,300 | 45,670 |
| Funding Success (Binary) | 125 | 0.55 | 0.50 |
| Turnover Rate, % | 125 | 18.5 | 6.50 |

### *The Impact of HCM on Startup Competitiveness*

The outcomes of the multiple regression analysis (Table 2) clearly show that specific HCM practices have a notable and significant effect on competitiveness.

**Table 2. Multiple Regression Results: Impact of HCM on Startup Competitiveness**

| Independent/Control Variable | Coefficient (β) | Std. Error | t | p-value | Partial $\eta^2$ |
|---|---|---|---|---|---|
| Dependent Variable: Revenue Growth (%) | | | | | |
| $training_{spend_{per_{employee}}}$ (USD) | 0.012 ** | 0.004 | 3.000 | 0.003 | 0.071 |
| $equity_{compensation}$ (0/1) | 4.560 * | 2.110 | 2.160 | 0.033 | 0.039 |
| $turnover_{rate}$ (%) | -0.567 *** | 0.101 | -5.614 | 0.000 | 0.201 |
| $HCI_{score}$ (Talent Control) | 1.200 | 1.550 | 0.774 | 0.440 | 0.005 |

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| | | | | | |
|---|---|---|---|---|---|
| $regional_{startup_{density}}$ (Ecosystem) | 0.089 ** | 0.030 | 2.967 | 0.004 | 0.069 |
| $R^2$ | 0.456 | | | | |
| $F(5,119)$ | 19.980 *** | | | | |
| Dependent Variable: Funding Success (Binary) | | | | | |
| $training_{spend_{per_{employee}}}$ (USD) | 0.005 * | 0.002 | 2.500 | 0.014 | 0.051 |
| $equity_{compensation}$ (0/1) | 1.120 *** | 0.305 | 3.672 | 0.000 | 0.102 |
| $turnover_{rate}$ (%) | -0.089 *** | 0.020 | -4.450 | 0.000 | 0.143 |
| $HCI_{score}$ (Talent Control) | 0.090 | 0.150 | 0.600 | 0.549 | 0.003 |
| $regional_{startup_{density}}$ (Ecosystem) | 0.009 ** | 0.004 | 2.250 | 0.026 | 0.043 |
| $\chi^2$ | 45.670 *** | | | | |

*Note:* *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

### *Analysis of Results by Data Level*

The regression output provides powerful evidence that firm-level HCM practices exert a dominant influence. The variables Training Investment and Equity Compensation positively and significantly affect both Revenue Growth and Funding Success. This finding aligns precisely with the Resource-Based View (RBV), which posits that investments in human capital foster scarce and inimitable resources, critical for startups to sustain competitive advantage.

Sharpening the Focus on Equity Compensation: The positive coefficient for Equity Compensation (β_Rev = 4.560, p = 0.033; β_Fund = 1.120, p = 0.000) is especially notable in the Jakarta ecosystem. Field observations suggest that Indonesian startup talent, particularly those in high-demand tech roles, view equity not just as financial incentive, but as a symbolic commitment to the firm's long-term vision. This practice signals that the company is serious about retention and partnership, appealing strongly to a workforce seeking high-growth opportunities and ownership mentality.

In contrast, a high Turnover Rate demonstrated a robust negative impact (β_Rev = -0.567, p = 0.000; Partial $\eta^2$ = 0.201) on Revenue Growth. This underscores the fact that the frequent loss of key personnel seriously disrupts the growth momentum essential for startups. The talent market control variable (Recruitment Formalization) did not show a direct significant impact, suggesting that the general availability of talent in the market is less important than the startup's internal management and retention of its existing workforce (Malik & Sanders, 2021). However, the ecosystem

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variable (Ecosystem Density) showed a positive influence, confirming that operating in a dense ecosystem (Jakarta) facilitates competitiveness through beneficial spillover effects and resource accessibility.

## 4. Discussion

### *Interpreting the Role of HCM in Driving Competitiveness*

The results unequivocally support the premise that Human Capital Management is a primary catalyst for startup competitiveness. The positive effect of $training\_spend\_per\_employee$ highlights the necessity of organizational learning and the continuous development of sector-specific and up-to-date skills demanded by startups [10]. In the context of rapidly evolving technology, startups that prioritize training ensure their teams possess superior adaptive capacity and innovation potential, directly contributing to meeting revenue targets.

The most notable outcome is the significant influence of $equity\_compensation$ (equity-based compensation). Granting employee stock ownership or options transforms the employment relationship into a partnership, directly aligning the employees' long-term incentives with the company's growth objectives [11]. For startups, which frequently face cash constraints, equity is a potent retention mechanism and a strong motivator for exceptional performance, thereby critically improving their chances of securing further funding rounds (funding success) and escalating overall company [12].

### *Comparison with Prior Research*

These findings effectively extend the classic framework of Delery & Shaw (2018) regarding High Performance Work Systems (HPWS) into the distinct startup context. While previous studies focused on the advantages of HPWS in large firms, this research demonstrates that core HPWS components, specifically training investment and long-term performance-based reward systems (equity), act as critical success factors in the high-risk startup ecosystem [13]. The strongly negative significance of the turnover rate is also consistent with the work of Ployhart & Moliterno (2021), which emphasizes that the loss of human capital including specific knowledge,

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networks, and tacit knowledge imposes substantial costs that impede growth trajectories [14].

### *Theoretical and Managerial Implications*

Theoretical Implications: This study strengthens the Resource-Based View (RBV) by positioning adaptive HCM practices as the central mechanism for generating valuable, rare, inimitable, and non-substitutable (VRIN) firm resources, which are the bedrock of a startup's sustainable competitive edge [15].

Managerial Implications: Startups in Jakarta are strongly advised to prioritize:

1) HCM as a strategic function on par with product development and sales, moving beyond mere HR administration.
2) Focused Investment: Allocating a meaningful budget for training that directly addresses technological scaling needs.
3) Long-Term Incentive Alignment: Aggressively adopting *equity_compensation* schemes to attract and secure key talent. Managing turnover should be established as a primary HCM Key Performance Indicator (KPI).

### *Limitations of the Study*

Despite employing a verifiable combination of official raw data, this research is subject to limitations. The measurement of HCM practices, particularly qualitative aspects like organizational culture and leadership, is inherently challenging to capture solely through quantitative variables. Furthermore, while the study controlled for ecosystem variables, the dynamic effects of Indonesia's rapidly changing regulatory environment may not be fully captured within a static regression model.

## 5. Conclusions

This study demonstrates that Human Capital Management (HCM) is a critical determinant of startup competitiveness in Jakarta. Empirical evidence indicates that firm-level HCM practices—particularly strategic investment in employee training and the alignment of long-term incentives through equity-based compensation—significantly enhance revenue growth and funding success, while high employee

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turnover undermines sustainable performance. These findings extend the Resource-Based View by confirming that, in dynamic and resource-constrained startup environments, targeted HCM investments function as the primary mechanism for building inimitable competitive advantage. In light of these results, startups are strongly encouraged to prioritize HCM as a strategic function, emphasize continuous employee development, and adopt long-term incentive structures to strengthen retention and long-term competitiveness, while future research may build on this study by incorporating qualitative and longitudinal approaches to further examine the cultural and behavioral dimensions of HCM in startup contexts.

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