



The Impact of Training and Career Development on Improving Gen-Z Employee Performance: A Study of Technology Startups

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Abstract

The rapid growth of the technology startup industry in Jakarta is driving companies to strengthen human resource (HR) management, particularly in terms of training and career development programs for Generation Z employees. This study aims to evaluate the contribution of training and career development to improving the performance of Generation Z employees in the startup workplace in Jakarta. A descriptive qualitative method was used, utilizing a narrative questionnaire to explore respondents' experiences, perceptions, and assessments of the training programs they attended. Thirty respondents participated and provided descriptions of the relevance of the training materials, competency improvement, and its impact on daily work behavior. The results showed that the training provided by startups was deemed relevant and effective, particularly programs based on e-learning, mentoring, and project-based learning. 66.7% of respondents stated that the training methods were optimal. Career development was also well-evaluated, as evidenced by transparency in promotions, organizational support, and opportunities for further learning. Regarding performance, non-Gen Z employees' assessments indicated that Generation Z employees exhibit high levels of innovation (87.5%), collaboration (75%), and productivity (62.5%), although consistency and discipline still need to be strengthened. Overall, the results of this study confirm that training and career development support each other in improving the skills, enthusiasm, and performance of young employees, and serve as an important strategy for startups in creating a flexible and competitive digital workforce.

Introduction

The rapid growth of the technology sector in Indonesia, particularly in Jakarta, the center of the national digital ecosystem, has led to the emergence of numerous technology startups, necessitating the implementation of flexible management strategies focused on innovation. Human resources (HR) are a crucial element influencing an organization's competitiveness and sustainability (Alqarni et al., 2023; Al-Faouri et al., 2024; Rismayadi, 2024). According to Armstrong, M., & Taylor, S. (2023), organizational performance in the digital era relies not only on technical capabilities, but also on how well the organization can enhance employee skills, innovation, and commitment through effective training and career development programs. Generation Z is known as a dynamic group, highly motivated to develop, and able to adapt quickly to technological advances. They generally demonstrate a constructive response in a flexible and adaptive work environment, accompanied by a strong level of commitment to their professional responsibilities (Ranasinghe et al., 2023; Arshad et al., 2025; Li et al., 2023).

In the fast-paced and highly competitive technology industry, the existence of a continuous learning system and access to clear career opportunities are crucial factors influencing employee performance and loyalty (Mustafa & Lieshi, 2024; Nuraini, 2024). This situation encourages companies to develop training programs, design career paths, and establish performance appraisal mechanisms that align with the characteristics and needs of Generation Z to maximize their potential (Pandita, 2022; Aggarwal et al., 2022).

In startup environments, training is generally implemented through various approaches, such as comprehensive orientation programs for new employees, in-depth technical training, structured mentoring schemes, and project-based learning models that emphasize innovation and hands-on application. These strategies not only aim to improve technical skills but also strengthen digital literacy, encourage cross-functional collaboration, and foster a creative and innovative mindset (Ahmad et al., 2023; Attah et al., 2024; Tiwari et al., 2025).

Meanwhile, career development systems in technology startups, particularly in Jakarta, tend to be open and flexible (Mulyadi et al., 2025; Ekasari et al., 2024; Bernardus et al., 2024). Career progression does not always follow a linear upward trajectory, but rather is based on performance achievement, tangible contributions, and the quality of individual competencies. Employees are given the opportunity to move between divisions to broaden their experience and enhance their capacity in various areas through cross-functional mobility mechanisms (Salem et al., 2024; Xiao et al., 2025; Kezar et al., 2025).

Furthermore, a number of companies implement career ladder systems that emphasize skill mastery, impact on work results, and readiness to assume leadership responsibilities, rather than simply considering length of service (Raut et al., 2024; Knight et al., 2022; Naseer et al., 2025). This pattern reflects the organization's commitment to building an adaptive, merit-based career development system that aligns with the dynamics of the ever-transforming technology industry. (Uslu et al., 2022) emphasize that training effectiveness is determined by how well the program is tailored to individual needs and organizational demands. Career development according to (Kaumi Alkali Kalli et al., 2023; Susanto, 2024; Rehman, 2022) has a long-term influence on improving employee performance because it is able to provide clear direction as well as motivational encouragement for individuals to develop along with the growth of the organization.

More broadly, (Neycheva, 2024) argues that continuing education and training play a crucial role in strengthening human resource capabilities amidst the ever-changing dynamics of the digital era. This view aligns with (Sismiati et al., 2024), who emphasize that competency-based human resource development is a strategic factor in addressing the challenges of industrial transformation. Furthermore, (Septiani et al., 2024) in their book, "Employee Training and Development Management," emphasizes the importance of alignment between training program design, individual career goals, and organizational culture to achieve optimal learning effectiveness.

This phenomenon demonstrates that the growth of technology startups in Jakarta demands employees who are adaptable and highly competent, while a portion of the workforce comes from Generation Z, who have limited experience and tend to change jobs frequently. Although companies have provided various training and career development programs, their effectiveness has been uneven due to inconsistencies in job requirements or lack of clear career paths. As a result, performance improvements are inconsistent and companies still face challenges in maintaining team productivity and stability. Based on this background, an in-depth study is needed on how training and career development actually affect the performance of Generation Z in a fast-paced startup work environment.

Method

Research Approach

This study employs a descriptive qualitative approach with the aim of in-depth understanding of Generation Z employees' perspectives, experiences, and interpretations regarding training and career development in the technology startup environment in Indonesia. A qualitative approach was chosen because it allows researchers to explore the meaning and context of phenomena in a natural way, rather than simply observing relationships between variables quantitatively (Creswell, J.W. 2018). By using this method, researchers seek to gain a clear understanding of how training and career development can contribute to improved employee performance, motivation, and loyalty.

Research Location and Object

This research sample was drawn from various employees working at technology startups in Indonesia, particularly those operating in digital services, e-commerce, and financial technology (fintech). Startups were selected because they possess a dynamic work culture, are adaptable to innovation, and prioritize employee development as a strategic factor in organizational sustainability. The selection of these research subjects was also based on the relevance of the phenomenon: the increasing need for technology-based training and career development paths that align with the characteristics of the younger generation.

Subjects and Informant Selection Techniques

This study involved two groups of informants using purposive sampling, a deliberate selection technique based on specific criteria relevant to the research objectives (Miles, Huberman, & Saldana, 2014).

The first group consisted of Generation Z employees (born 1997-2012) working at technology startups in Jakarta. They served as the primary respondents to the questionnaire regarding training and career development, as they were direct recipients of competency improvement and career advancement programs within the company.

The second group consisted of non-Gen Z employees (Generation Y or X) who acted as performance assessors for Generation Z employees, particularly those serving as superiors, supervisors, or senior colleagues. This external assessment was used to obtain a more objective picture of Generation Z's performance.

The informant criteria included: 1) Working at a Jakarta tech startup for at least six months; 2) For Generation Z, having participated in a training or career development program; 3) For non-Gen Z, having a direct working relationship with a Generation Z employee.

This two-group approach was intended to triangulate data to strengthen the validity of the findings regarding the influence of training and career development programs on the performance of Generation Z employees in the tech startup environment.

Data Collection Techniques

Data were collected through an open-ended narrative questionnaire containing in-depth questions regarding the informants' experiences, perceptions, and views on the training and career development they participated in. The questionnaire was structured based on indicators

adapted from (Armstrong, M., & Taylor, S. 2023) and (Sismiati et al., 2024) covering aspects of training relevance, implementation effectiveness, organizational support, career path clarity, and its impact on work performance and motivation. The questionnaire was distributed online to adapt to the characteristics of respondents working in the digital sector. The following is a table of indicators for each variable:

Table 1. Research Indicators on the Training, Career Development, and Performance Variables of Gen Z Employees

Variables	Indicator	Respondent Subject	Measurement Scale Category (Narrative / Descriptive)
Training (X ₁)	1. Suitability of training materials to job needs	Gen Z Employees	Appropriate / Inappropriate
	2. Training methods and formats (mentoring, bootcamps, e-learning)		Effective / Less effective
	3. Management support in the implementation and application of training outcomes		Supported / Not supported
	4. Relevance of training outcomes to improving job competencies		Impactful / No impact
	5. Evaluation and sustainability of training programs		Sustainable / Not sustainable
Career Development (X ₂)	1. Clarity of career paths and individual development direction	Gen Z Employees	Clear / Unclear
	2. Organizational support for professional development		Supported / Unsupported
	3. Opportunities for further learning and training		Available / Unavailable
	4. Fairness and transparency in job promotions		Fair / Unfair
	5. Relevance of career development to the needs of the younger generation		Relevant / Irrelevant
Gen Z Employee Performance (Y)	1. Productivity and accuracy in task completion	Non-Gen Z employees (supervisors/senior colleagues)	High / Low
	2. Innovation and adaptability to change		Innovative / Less innovative
	3. Ability to collaborate and communicate across generations		Collaborative / Less collaborative

	4. Discipline, responsibility, and consistency in achieving work targets		Disciplined / Less disciplined
	5. Loyalty and commitment to the organization		Loyal / Less loyal

Source: Data processed by researchers (2025)

In addition to the questionnaire, the study also conducted indirect observations of startup work dynamics through relevant public documentation and media reports to enrich the analytical context. Observation sources included: 1) Official startup company websites (career and work culture sections); 2) Online media articles such as Tech in Asia, KompasTekno, and CNBC Indonesia that discuss employee training at startups; 3) Professional social media content such as company LinkedIn pages featuring training activities, webinars, upskilling, and career development sessions; 4) Public reports or openly accessible HR publications.

This step aimed to strengthen and validate the questionnaire data and understand the actual context of career implementation at technology startups in Jakarta.

Data Analysis Techniques

The methodology of analysis was a qualitative descriptive approach that focuses on interpretative depth and background detail with regard to the lived lives of the participants. The goal was not statistical generalization, but to clarify the experiential specifics of training and career formation in the employees of Generation 9 and explain how these educational experiences are thought to regulate their occupational performance in environments of the technological start-up.

The procedure has begun with data familiarisation and in this phase, all the narrative accounts were thoroughly read in order to gain a comprehensive understanding of the views of the participants. This pre-testing phase abetted in the discovery of emergent patterns that touched on training relevance, pedagogical modes, managerial approval, and professional articulateness that emerged spontaneously through the data.

Subsequently, data reduction was used by sorting out the answers according to the key analytical categories of the study- that is training, career development and employee performance. Stories that contained semantically similar information were grouped to deepen the analytical accuracy and protect the content and subtle elements of the stories of the participants. This research methodology made sure that the analysis was conducted in line with the research objectives.

Later coding processes were aimed at outlining common themes that cut across the data. Salient issues, such as consistency between training requirements and job requirements, effectiveness of learning methods, clarity of career path, organisational encouragement, creativity, teamwork, discipline, and loyalty, were captured in inductive formulation of descriptive codes, based on pre-established research indicators. These codes were then summarized under broad themes, and they summarized the sentiments that were dominant among the respondents.

The analysis of the results presented was through narrative syntheses and descriptive tabulations. The use of proportional distributions was done to describe current perceptions and trends as descriptive additions to inferences, as opposed to metric. This approach enhanced interpretive clarity, but was not inconsistent with the qualitative nature of the study.

The final interpretive stage involved placing the emergent themes within the relevant theoretical framework and the available literature on training, career development and Generation Z performance. Triangulation, which is a strategy to enhance credibility, was achieved by contrasting Generation Z accounts with performance appraisal accounts given by supervisors who were not born during the Generation Z period and through incorporating contextual knowledge generated by published organisational papers and newspaper coverage. Such a triangulatory methodology enhanced the analytical consistency and reduced the bias of the sources used in isolation.

Focus and Limitations of the Research

This research focuses on the conceptual relationship between training, career development, and employee performance. It does not focus on quantitative productivity measurements, but rather on gaining a deeper understanding of employee perceptions, motivations, and behaviors as a result of the program they experience.

Result and Discussion

Respondent Overview

This study involved 30 respondents working across a wide spectrum of technology startup companies in Jakarta, Indonesia. All respondents were Generation Z and non-Gen Z, holding positions ranging from executive staff to entry-level professionals.

The distribution of job roles among respondents showed a dominant trend toward operational and technical implementation, as shown in the following table.

Table 2. Distribution of Respondents' Positions or Job Titles

No	Job Category (After Merger)	Positions Included	Frequency	Presentation (%)
1	Operations / Staff / Employee / Executive	Operasional, Staff, Karyawan, Executive	10	33,3
2	Marketing & Growth	Marketing, Growth, Brand, Campaign	6	20,0
3	Technology / IT / Design	IT, Teknisi, UI/UX, Developer, Desain	5	16,7
4	Sales / Business Development	Sales, Sales Development, Business Dev	2	6,7
5	Estimator	Penaksir / Appraisal	1	3,3
6	HRD	Human Resource Department	1	3,3
7	Finance / Accounting	Finance, Accounting	2	6,7
8	Team Leader	Leader, Supervisor	1	3,3
9	Administration	Admin, Administrasi	1	3,3
10	Project Management / Managerial	Project Manager, Managerial	1	3,3
Total			30	100

Source: Data processed by researchers (2025)

Based on the table, it can be concluded that the majority of respondents (33.3%) work in operations and executive staff, followed by marketing & growth (20%) and

technology/IT/design (16.7%). This distribution reflects the typical structure of a startup company, which is flexible, collaborative, and emphasizes direct contributions to operational activities and digital product development.

Descriptive Analysis of Questionnaire Results

Training Variable (Generation Z Respondents)

Based on the questionnaire results, training at startup companies was deemed relevant and had a direct impact on improving employability. Most respondents stated that the training they received aligned with their job requirements, facilitated adaptation to new technologies, and encouraged cross-team collaboration.

Table 3. Results of Respondents' Assessment of Employee Training

No	Assessment Aspects	Dominant Answer	Presentation (%)	Category
1	Relevance of training materials to the job	Appropriate	63,3	High
2	Effectiveness of training methods (bootcamps, mentoring, e-learning)	Effective	66,7	High
3	Management support for the implementation of training outcomes	Supportive	70,0	High
4	Impact of training on competency and work productivity	Impactful	70,0	High
5	Consistency of training implementation	Sustainable	63,3	Medium

Source: Data processed by researchers (2025)

These results indicate that the majority of respondents felt the training provided was effective and relevant, particularly e-learning and project-based learning.

This finding aligns with the view (Neycheva, 2024) that training integrated with job requirements can improve young employees' entrepreneurship. This finding is further supported by (Uslu et al., 2022), who emphasize that training effectiveness increases when learning methods are participatory and adaptable to the characteristics of digital generations like Generation Z.

Career Development Variables (Generation Z Respondents)

The research results show that career development programs in startup companies have been implemented well, but still need improvement in transparency and promotion consistency. Most respondents acknowledged opportunities for additional learning and coaching from management, although a small number felt the career system was not yet fully structured.

Table 4. Results of Respondents' Assessment of Career Development

No	Assessment Aspects	Dominant Answer	Presentation (%)	Category
1	Clarity of career paths	Clear	56,7	Medium
2	Organizational support (certifications, coaching, additional training)	Support is available	66,7	High

3	Opportunities to learn outside of the main job	Available	63,3	High
4	Fairness of job promotions	Fair	66,7	High
5	Relevance of career paths to the aspirations of the younger generation	Relevant	60,0	High

Source: Data processed by researchers (2025)

Most respondents stated that organizational support for career development was good, particularly through the provision of advanced training and opportunities to obtain professional certifications. This finding aligns with the theory (Armstrong, M., & Taylor, S. 2023), which emphasizes that a transparent and competency-based career system is a crucial factor in increasing employee motivation and retention. Furthermore, (Khan et al., 2020) added that effective career development must balance the needs of the organization with the individual aspirations of young employees. In the Indonesian cultural context, (Puspitawati et al., 2024) emphasized that a fair and open career system not only increases employee loyalty but also strengthens collective values and harmony in the workplace.

Employee Performance Variables (Non-Gen Z Respondents)

The results of the assessment by non-Gen Z respondents regarding the performance of Generation Z coworkers show that Generation Z has good work performance, especially in the aspects of productivity, innovation, and collaboration.

Table 5. Results of Respondents' Assessment of Career Development

No	Performance Aspects	Dominant Answer	Presentation (%)	Category
1	Productivity and work accuracy	High	62,5	High
2	Innovation and adaptability	Innovative	87,5	Very high
3	Cross-generational collaboration and communication	Collaborative	75,0	High
4	Discipline and responsibility	Disciplined	75,0	High
5	Organizational loyalty and commitment	Loyal	50,0	Medium

Source: Data processed by researchers (2025)

In general, non-Gen Zers viewed Generation Z as innovative, collaborative, and quick to adapt to technological changes. However, a small number of respondents stated that Generation Z's consistency and discipline still need to be fostered to maintain job stability. This finding supports the theory (Wijayanti & Titi Sari, 2023) that explains that the performance of the younger generation is strongly influenced by adaptive competencies, as well as the view (Sismiati et al., 2024) that emphasizes the importance of mentoring to maintain work consistency among young employees.

Overall, the research results indicate that training and career development programs contribute significantly to improving the performance of young workers in technology startups in Jakarta, Indonesia. Respondents generally assessed that the training materials provided by the company were relevant to job requirements, thus improving technical understanding, ability to perform daily tasks, and conceptual confidence (Armstrong, M., & Taylor, S. 2023). This suggests that

structured, needs-based training can improve employees' core competencies. Similarly, a systematic review by Neycheva (2024) also confirmed that continuing education is becoming an increasingly important factor in improving the quality of the technology-based industry workforce.

The increased productivity and innovative capabilities demonstrated by most respondents align with the view (Khan et al., 2020), which states that competency development is not solely related to technical skills but also influences creativity and critical thinking skills. Questionnaire results indicated that respondents experienced increased productivity and reported greater ability to generate new ideas and solutions after participating in training. Furthermore, research (Wijayanti & Titi Sari, 2023) also confirms that individual competency is a crucial factor driving adaptability and innovation in a dynamic work environment.

Furthermore, non-Gen Z respondents mostly assessed Generation Z as having good discipline and consistent work ethic. This supports the opinion (Armstrong, M., & Taylor, S., 2023) that positive work behavior is an indicator of successful training programs. However, the loyalty aspect yielded more mixed results, with 60% of respondents reporting loyalty to the company, while 40% reported low loyalty. This finding reinforces the views (Sismiati et al., 2024) and (Puspitawati et al., 2024) that training alone is insufficient to build long-term commitment. Organizational support and a clear career path are important factors in shaping retention.

The imbalance between increased competency and low loyalty also aligns with a study (Kaumi Alkali Kalli et al., 2023), which states that the benefits of training do not always impact retention if the company does not provide clear career opportunities. Furthermore, several respondents indicated that superior support in implementing training outcomes was suboptimal, resulting in suboptimal knowledge transfer. These findings align with those of Miles, Huberman, & Saldana (2014), who emphasized the importance of organizational context and supervision in enhancing training success. Shofi Nur Fauziyah & Mudji Kuswinarno (2024) also emphasized that training outcomes will only be effective if employees are given the opportunity to practice them in their daily work.

In general, evaluations of training and career development programs show a positive contribution to increasing productivity, innovation capacity, and work behavior among Generation Z employees. However, their impact on organizational loyalty and commitment has not been fully optimized, primarily due to the lack of career path flexibility and minimal structural support from the company. Therefore, organizations need to integrate training programs with more systematic and targeted career development strategies to ensure sustainable performance improvements.

Conclusion

Based on descriptive qualitative research utilizing questionnaire data from 30 respondents, both Generation Z and non-Gen Z employees at a technology startup operating in Jakarta, it can be concluded that training programs significantly contribute to improving individual competencies and overall organizational performance. The project-based learning approach and e-learning implemented by startups align with the preferences of Generation Z, who tend to prefer digital and hands-on learning methods. These findings support the views of (Neycheva, 2024) and (Uslu et al., 2022), who assert that contextual and practical training can accelerate individual performance improvement. Furthermore, career development in the startup environment is considered relatively well-run and perceived as fair by the majority of employees. An open and performance-oriented career structure is a key characteristic of the company's development system.

Non-Gen Z respondents assessed that Generation Z employees demonstrate high performance, particularly in innovation (87.5%), collaboration (75%), and productivity (62.5%). The results of this study align with the opinion of (Wijayanti & Titi Sari, 2023), who emphasized that young workers require consistent character development and mentoring to maintain stable performance in the long term. Training has been shown to help improve technical skills and improve work efficiency, while career development plays a role in fostering loyalty and strengthening motivation. When implemented simultaneously, the impact of both is significant in strengthening employee performance in startup environments, as also explained by (Kaumi Alkali Kalli et al., 2023).

(Puspitawati et al., 2024) added that career development will produce more sustainable results when integrated with organizational culture and actively supported by management. This demonstrates that good training is insufficient without a clear career structure and a supportive organizational system. Without this combination, it is difficult to maintain consistent performance improvements among Generation Z.

Suggestion

Based on these findings, companies need to be more serious about adapting training materials to the real-world situations and challenges faced by Generation Z employees in the workplace. Furthermore, career development systems should be designed in a more focused manner, with clear career paths, ongoing mentoring programs, and open and understandable evaluation processes to support their professional growth.

Furthermore, the role of management needs to be strengthened through a culture of positive feedback and providing opportunities for employees to practice newly learned skills. This is crucial because training effectiveness is closely related to job satisfaction, as demonstrated by various previous studies. For future research, it is recommended that the study be expanded to include other variables such as leadership style, digital work environment conditions, and intrinsic motivation. This will allow for a more comprehensive and in-depth understanding of the factors influencing Generation Z's performance in the technology industry.

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