E-ISSN: 3108-4176

APSSHS

Academic Publications of Social Sciences and Humanities Studies
2021, Volume 2, Page No: 192-203
Available online at: https://apsshs.com/

Annals of Organizational Culture, Leadership and External Engagement Journal

Effects of Digital Leadership and Job Satisfaction on Workplace Performance Among Indonesia's Generation Z

Anna K. Nowak[1], Tomasz Zielinski[1]*, Pawel J. Marciniak[1]

1. Department of Organisation and Management, Faculty of Economics, University of Warsaw, Warsaw, Poland.

Abstract

This research seeks to explore the roles of digital leadership and digital transformation in shaping job performance, while examining job satisfaction as a mediating factor in these relationships among Generation Z workers during the digital age in Jakarta, Indonesia. The study adopted a quantitative approach, applying structural equation modeling (SEM) through AMOS software version 25 to handle multiple regressions with a substantial sample. Data were gathered via a survey comprising 44 items. Non-probability sampling with purposive selection yielded 389 suitable participants, all freelance writers on emerging paid online content platforms in Indonesia. Results revealed strong positive effects of digital leadership and digital transformation on job satisfaction, alongside a notable impact of digital leadership on job performance. In contrast, digital transformation showed no direct effect on job performance. Digital leadership emerged as the primary driver for both job satisfaction and job performance. Job satisfaction acted as a partial mediator in the link between digital leadership and job performance. The investigation is limited to Generation Z freelance writers on digital platforms. It reflects Indonesia's unique cultural and economic context, where norms around organizational culture, leadership expectations, and worker mindsets may vary from other nations. Such elements influence perceptions of digital leadership, job satisfaction, and performance. Thus, results may not fully apply to Generation Z in regions with differing cultural or economic settings. Subsequent studies could test these variables in varied global contexts to identify potential variations. Across the eight assessed dimensions, the strongest ratings appeared in digital leadership, particularly in areas of leader support. This indicates Generation Z values supervisors with advanced technical expertise, superior overall knowledge, and effective remote team management. The weakest ratings occurred in digital transformation, showing that despite strong digital skills in this group, they desire transparent company communication on objectives and yearly plans. Additionally, Generation Z prefers employers providing full work equipment instead of personal tools. Overall, this cohort appreciates leaders blending digital proficiency with strong management abilities, while favoring organizations that invest in technology resources rather than expecting workers to supply their own. Employment in creative digital sectors offers a viable way to tackle employment shortages driven by the surge in working-age populations. This model demands lower capital for physical infrastructure and greater focus on digital tools that support both recreation and earning potential. Earlier studies mainly examined links between Generation Z job satisfaction and performance. This work incorporates digital transformation and digital leadership as fresh variables. It fills prior gaps by treating job satisfaction as a mediator specifically for Generation Z, integrating these aspects to assess their satisfaction and output.

Keywords: Generation Z (GZ), Digital Leadership (DL), Two-Factors Theory (TFT), Virtual Team (VT), Job Satisfaction (JS), Job Performance (JP)

How to cite this article: Nowak AK, Zielinski T, Marciniak PJ. Effects of digital leadership and job satisfaction on workplace performance among indonesia's generation Z. Ann Organ Cult Leadersh Extern Engagem J. 2021;2:192-203. https://doi.org/10.51847/sVRQodSeJi

Received: 29 May 2021; **Revised:** 28 August 2021; **Accepted:** 01 October 2021
Corresponding author: Tomasz Zielinski
E-mail ✉ tomasz.zielinski@outlook.com

Introduction

Generation Z and millennials currently form the majority of the global populace. Per 2024 Mercer Research Center figures, those born post-1996 (Generation Z) represent 25% worldwide, compared to 23% for millennials (1981–1996). Forecasts

from the US Workforce suggest Generation Z will comprise 31% of workers by 2031, up from 15% in 2022 (www.mercer.com). Globally, Generation Z makes up 32% of the population, 42% in the US, and around 260 million in China as of 2021 [1].

In Indonesia, statistics from the Central Bureau indicate Generation Z as the dominant group, nearing 75 million, with millennials at about 70 million in a total population exceeding 270 million. This demographic scale poses significant human resource challenges in Indonesia, requiring approaches to optimize their contributions for enhanced productivity. These issues intensify in a volatile, uncertain, complex, and ambiguous (VUCA) environment. As noted by Alin and Ăr [2], this cohort features distinct viewpoints and tech-savviness. Additional research highlights their preferences for supportive, adaptable workplaces, training opportunities, cutting-edge tools, and community initiatives [1].

Notably, the COVID-19 crisis led Generation Z to pursue pastimes like streaming, reading, and creating content online. Over 20 new platforms for reading and authoring, mostly originating from Singapore and the US, appeared in Indonesia (www.gramedia.com). These sites emphasize fictional works in multiple categories. Users pay for content access, and creators receive income based on readership volume. Higher engagement yields greater rewards, often starting at USD 300—matching regional minimum wages in Indonesia.

Such digital authoring has turned into a primary revenue source for numerous Generation Z members nationwide. They favor roles lacking rigid schedules, choosing online creation over conventional jobs. This differs from prior generations, who prized stable office positions as symbols of success and familial honor. Generation Z, however, leans toward remote or hybrid setups, partnering with groups across Indonesia and Asia.

This investigation stands apart from prior works, such as Jameson *et al.* [3], which surveyed 85 employees in distribution roles with innovation outcomes as the focus. Another study targeted millennial workers in private firms along Sudirman Road, emphasizing engagement levels [4]. Further, Dong *et al.* [5] examined 304 educators across primary and secondary levels, incorporating emotional intelligence. Outcomes suggested self-efficacy lacked direct ties to engagement, diverging from findings by Gong *et al.* [6] and Hassanzadeh-Mohassel *et al.* [7]. This inconsistency prompts exploration of additional influencing elements.

Research aims and queries

The aims focus on enabling firms to optimally guide this distinctive cohort for peak output by addressing their workplace preferences. Specifically, the work assesses if digital leadership and transformation directly affect performance or require job satisfaction mediation for Indonesian Generation Z. The goals and queries take a comprehensive view of behavioral theories and HRM applications, particularly in performance frameworks, to navigate VUCA challenges and generational traits. Key preliminary queries are: (a) What draws Generation Z to remote or hybrid setups? (b) Which roles fit Generation Z's inclination for autonomous operation with light oversight? (c) How do oversight and colleague interactions aid goal attainment alongside satisfaction? (d) What drives their optimal output? (e) Which compensation and perk models appeal most?

Relevance of research

This research tackles the essential requirement for organizations to guide Generation Z effectively in professional settings, enabling them to achieve strong output while maintaining contentment, avoiding exhaustion, and preventing mental health issues [8], as well as steering clear of tendencies toward quiet quitting [9]. The core focus involves assessing worker contentment using Herzberg's two-factor theory [10], which provides a formative assessment framework and supports the creation of metrics for work-life quality [11].

As noted by Hong *et al.* [12], this cohort exhibits distinct traits like strong personal independence alongside appreciation for varied perspectives and unique identities, rather than unquestioning adherence to higher-ranking figures. Their analysis of 188 South Korean nurses revealed that aspects such as guidance styles, enhancements in workplace environment, opportunities for professional advancement, and alleviation of workload strain played key roles in retention.

Mosca and Merkle [13] point out that Generation Z's exposure to varied media on numerous gadgets has shortened their focus duration on individual topics. Recommendations from their work include leveraging portable devices at work, prioritizing online gatherings over face-to-face ones, encouraging tech-based teamwork, and extensively employing video content on platforms like YouTube to clarify corporate approaches and their application.

Although highly skilled in technology, Generation Z generally has limited professional tenure relative to prior cohorts, and external affirmation often acts as confirmation of their own abilities, potentially triggering stress or mood disorders. Vieira *et al.* [14] observe that this group is less equipped to navigate rivalry and intricate situations, having grown up in relatively steadier financial climates than previous ones.

Beyond navigating a VUCA environment, Generation Z has contended with pandemic-related shifts that introduced remote-based routines—coordinating and executing tasks via digital means. Compelled to steer clear of traditional offices, they adjusted to home-based operations and international connectivity through modern tools. In this regard, Ivasciuc *et al.* [15]

explored the broader economic and social effects of remote work, focusing on equilibrium between professional and personal life, efficiency, and well-being among various age groups in Romania.

Remote arrangements have boosted output when supported by appropriate digital guidance, according to Liao *et al.* [16]. Nonetheless, home-based setups can extend daily effort due to lacking routines tied to commuting or office closure.

To leverage Generation Z's digital fluency, Öngel *et al*. [17] investigated how digital guidance affects personal innovation and worker efficiency, asserting that contemporary uncertainties demand tailored leadership traits.

Erhan *et al*. [18] advocate moving away from traditional approaches toward digital ones, noting benefits for remote operations that yield substantial savings by reducing needs for brick-and-mortar facilities. They further analyzed connections among digital guidance, creative processes, and output levels.

Whereas earlier investigations largely linked Generation Z contentment directly to output, this work brings in digital transformation and guidance as new elements. It aims to bridge existing voids, especially by establishing contentment as a mediating element for this specific cohort, where such mediation has been scarcely explored. Moreover, it tackles shortages in understanding drivers of Generation Z output relative to earlier cohorts. By resolving discrepancies in past results, the study provides organizational guidance on optimizing this group's efficiency, capitalizing on their tech strengths and boosting contentment via the motivator and hygiene elements of the two-factor framework, thereby elevating overall workplace results.

Literature review and hypothesis formulation

Digital leadership

The worldwide COVID-19 outbreak enforced movement limitations, accelerating digital shifts and altering societal and administrative structures. This necessitated remote operations and tech competencies for continuity [17]. Digital leadership merges transformative guidance with tech advancements to promote novel conduct in professional settings [19].

It builds on e-leadership principles, connecting guides and teams via online realms and diminishing conventional rank barriers. In e-leadership, overseers might primarily monitor without direct involvement, using systems for data storage and routine updates with limited direct exchanges [16].

VUCA pressures drive the evolution toward digital guidance, promoting inclusive participation and decisions from various levels, shifting beyond solely hierarchical flows to incorporate broader input. Success in such settings depends on rapid choices, robust resolution capabilities, and integrated digital strategies that bolster oversight competencies [20].

Research hypotheses

H1: Digital leadership impacts job performance.

This style increasingly boosts Generation Z output by aligning with their tech-oriented values and routines in both personal and professional spheres. Pandey *et al.* [20] emphasize its necessity for firms pursuing digital shifts, prioritizing workforce readiness for new tools, behaviors, choices, and evaluation systems over mere tech deployment. Rakovic *et al.* [21] connect it to leader actions that energize staff amid tech adoption, opening avenues for growth, skill building, and tech enthusiasm while nurturing effective remote groups [22]. Gao and Gao [19] relate it to virtual and e-guidance, where the former overcomes location barriers via tech-mediated interaction, and the latter shapes staff mindsets and conduct digitally. Combining these elevates results, driving gains and longevity.

H2: Digital transformation impacts job performance.

Tech integration extends beyond wealthy nations, with global uptake varying by tools. In Pakistan, early tech familiarity among Generation Z builds expectations for advanced employer-provided equipment to support daily tasks and elevate output and contentment [23]. Studies show it fosters innovation, better services, and eco-friendly advancements, aiding satisfaction [19]. From worker views, it enables distraction-free remote spaces with oversight via reports, promoting positive mindsets and focus, as seen in a survey of 326 members from 36 Chinese firms where many noted greater independence despite some work-life concerns [16].

H3: Job satisfaction impacts job performance.

Prior works confirm contentment as a vital forecaster of output for Generation Z, often more pronounced due to their emphasis on purposeful roles, adaptability, and equilibrium. High levels spark drive, innovation, and commitment, markedly lifting results. Managing their drives and desires is key for enduring viability given their rising workforce dominance [24]. Another analysis pinpointed six retention drivers: leader backing, organizational bond, contentment, input value, affective aid, and alignment with firm goals [25].

H4: Digital leadership impacts job satisfaction.

It promotes adaptable arrangements like remote or hybrid schedules aided by tech, balancing personal and professional demands for this cohort. A survey of 352 Romanian students linked tech adoption skills to individual and collective contentment [26].

H5: Digital transformation impacts job satisfaction.

For Generation Z, it enables preferred flexible, remote setups via apps for storage, teamwork, and mobility. They highly prize adaptability and balance, allowing lifestyle integration, which heightens contentment. Shifts alter processes and platforms for faster operations, suiting this group better than older ones resistant to changes, where conventional styles might reduce retention due to relational dynamics [27].

H6: Digital leadership impacts job performance, with job satisfaction as mediator.

It cultivates contemporary environments, though direct long-term effects may wane; mediation via contentment psychologically converts practices into drive and involvement for superior results. Herzberg's framework, derived from 1950s-1960s surveys of 200 professionals, distinguishes motivators (e.g., stimulating roles, advancement, accomplishment pride) and hygiene elements (e.g., fair pay, secure settings, collegial ties) for satisfaction [10]. A South Korean IT sector study confirmed both sets' influence [10]. Bhatt *et al.* [28] found motivators (role itself, progression, challenges) highly significant ($f > 0.8$) for Indian millennials, versus weaker hygiene aspects (conditions, oversight ties, policies; $f < 0.5$).

H7: Digital transformation impacts job performance, with job satisfaction as mediator.

It generates efficiency and adaptability, optimizing output when contentment intervenes. Per the two-factor model, supportive settings and growth chances tied to transformation elevate satisfaction, spurring better results. A Kazakh study upheld the theory's consistency across genders, with males favoring pay policies and females interpersonal aids; appraisals also emerged as motivators [24]. Yadav's [11] analysis of 841 IT and manufacturing respondents showed all dimensions influential, with top motivator scores for acknowledgment/growth (0.791) and hygiene for wellness (0.738).

Materials and Methods

Sampling and data collection

The target population of this study encompasses the entire Generation Z cohort in Indonesia, which numbers close to 75 million people. The selected sample consists of freelance writers, chosen because they exemplify typical Generation Z traits: a preference for adaptable, technology-driven roles; strong dependence on digital tools for their tasks; and operation within structures guided by digital leadership from platform managers. The approach to sampling was non-probabilistic, applying purposive criteria to ensure relevance. As recommended by Hair *et al.* [29], sample size should be determined by multiplying the number of indicators by a factor ranging from 5 to 10. Given the 44 indicators used here, the minimum required respondents were calculated as $44 \times 5 = 220$.

Research framework and operational variables

Research framework

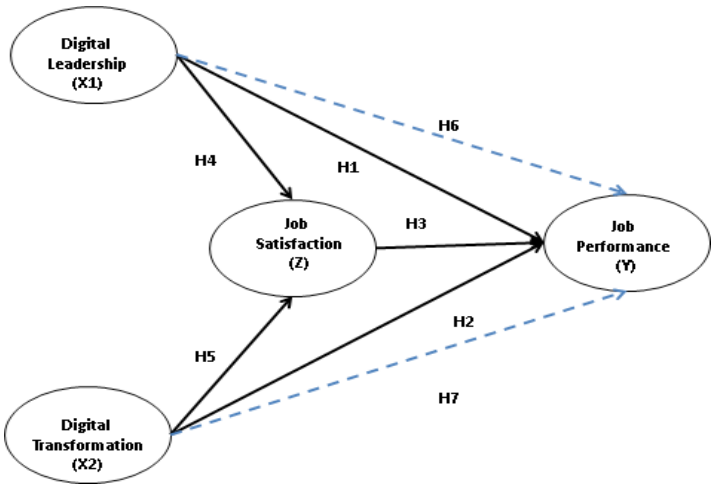

Figure 1. Research Framework

The conceptual framework illustrating the effects of digital leadership (X1) and digital transformation (X2) on job performance (Z), with job satisfaction (Y) serving as the mediating variable, is presented in **Figure 1**.

Operational variables

This study utilized a quantitative design, collecting participant perceptions through a structured questionnaire. All constructs were measured using a 5-point Likert scale: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree, following the approach described by El-Menawy and Saleh [30].

Independent variables

Digital Leadership. As defined by Ivasciuc *et al.* [15], digital leadership emphasizes maintaining team productivity in both remote and on-site settings. It centers on leaders offering constructive support and building trust within the team. Mosca and Merkle [13] highlight leaders' proficiency in guiding teams and their agility in embracing emerging technologies.

Digital Transformation. This construct refers to the comprehensive adoption of technology that reshapes routine operations. Ackermann *et al.* [31] outline it as involving (a) defining organizational objectives, (b) advancing digitalization efforts, and (c) clarifying roles, authority, and responsibilities.

Mediating variable

Job Satisfaction. Job satisfaction acted as the mediating variable. Drawing on Herzberg's two-factor theory as referenced by Lee *et al.* [10] and Büyükbeşe *et al.* [32], it comprises two categories: (1) hygiene factors and (2) motivators. Hygiene factors cover aspects such as organizational vision and mission, supervisory and technical assistance, interpersonal relationships, physical working environment, compensation and benefits, work-life balance, and employment stability. Motivators include elements tied to the nature of the work, recognition, and opportunities for professional growth.

Dependent variable

Job Performance. The outcome variable was job performance. According to Kaur and Kaur [33], job performance reflects the enhancement of employees' knowledge, skills, and abilities (KSA), allowing them to execute tasks efficiently, make informed decisions, and gain suitable rewards and acknowledgment for their contributions.

Validity and reliability testing

A pretest for validity was performed using a minimum standardized loading factor (λ) threshold of ≥ 0.50. Indicators meeting or exceeding this value were deemed valid and retained for the main study. The pretest involved 30 participants.

Convergent validity for the latent constructs in the structural equation model was assessed via Average Variance Extracted (AVE), requiring a value of ≥ 0.50. Internal consistency reliability was evaluated using Composite Reliability (CR), with an acceptable threshold of ≥ 0.70.

Results from the validity pretest, along with AVE and CR values, are summarized in **Table 1** below.

Table 1. Results of Validity and Reliability Tests

No.	Variables	Dimensions	Indicators	Statements	Loading Factor (λ)	AVE	CR
1	Digital Leadership					0.755	0.902
		Team Productivity	Achieving targets in remote or on-site work	1. I feel at ease working from home.	0.805		
				2. I can meet my targets without needing to be in the office daily.	0.785		
				3. Our team meets targets despite working remotely from various locations.	0.801		
		Leaders' Support	Trust and encouragement provided by leaders	1. My manager always assists me when I encounter difficulties.	0.916		
				2. My manager trusts that we can reach targets while working remotely.	0.882		
				3. My manager believes we can quickly adapt to new technologies.	0.908		
		Leaders' Capabilities	Leaders' knowledge, skills, and abilities in using new technologies	1. My manager is competent in leading the team from the office.	0.835		
				2. My manager easily adapts to new technologies.	0.813		
				3. My manager trains us on how to use new technologies.	0.862		
2	Digital Transformation					0.726	0.913
		Setting Organizational Purposes	Defining company goals	1. The manager effectively sets company objectives each year.	0.780		

				2. The company's vision, mission, and goals are clearly communicated to employees.	0.778		
		Addressing Digitalization	R&D for ongoing innovation	1. The company maintains a skilled R&D team for digital research and innovation.	0.801		
			Agility in facing VUCA	2. The company demonstrates agility in responding to technological uncertainties.	0.792		
			Budget allocation	3. The company allocates substantial resources or funding for digital innovation.	0.810		
		Authority and Accountability	Flexible hierarchy	1. Employees are empowered to resolve issues independently.	0.882		
				2. Employees have opportunities to discuss or provide feedback to managers.	0.892		
			Hybrid work environment	1. Since COVID-19, employees frequently work from home.	0.960		
				2. The company supplies adequate equipment for remote workers.	0.964		
				3. Managers trust employees to deliver strong results with minimal oversight.	0.962		
3	Job Satisfaction					0.838	0.912
		Hygiene Factors	Company vision and mission	1. The company clearly communicates its vision and mission to employees.	0.905		
				2. The company clearly shares its strategic plans and individual targets.	0.901		
			Supervision and technical support	1. My manager assigns annual targets.	0.909		
				2. I have a clear job description.	0.899		
				3. My manager provides help when I face challenges.	0.911		
			Interpersonal relations	1. I maintain positive relationships with my superiors.	0.892		
				2. I maintain positive relationships with my colleagues.	0.913		
				3. I maintain positive relationships with my subordinates.	0.921		
			Physical working conditions	1. I have a comfortable workspace in the office.	0.838		
			Benefits and wages	1. I am content with my monthly salary.	0.899		
				2. I am content with the annual performance bonus.	0.909		
			Work-life balance	1. I have sufficient time to complete my tasks.	0.792		
				2. I have adequate personal time after work hours.	0.992		
			Job security	1. I feel secure about long-term employment with the company.	0.898		
				2. The company provides life insurance coverage for me.	0.908		
		Motivation Factors	Nature of the job	1. I take pride in the work I perform.	0.856		
			Recognition	1. My manager acknowledges my strong performance.	0.905		
				2. The company offers additional bonuses for excellent work.	0.910		
			Career advancement	1. My skills have grown considerably in this company.	0.892		
				2. I am confident about my career progression here.	0.899		
4	Job Performance					0.750	0.856
		Knowledge, Skills, and Abilities (KSA)	KSA development	1. I consistently complete tasks ahead of deadlines.	0.701		

		2. I am competent in performing my duties.	0.600
		3. I effectively handle problems and provide optimal solutions.	0.578
	Benefits and contributions	1. I receive a satisfactory annual bonus.	0.782
		2. I make meaningful contributions to the company's development.	0.708

The findings from **Table 1** reveal that every standardized factor loading (λ) across all items is at least 0.50, indicating strong validity for each statement. In addition, the measurement model's reliability is confirmed by composite reliability (CR) values of 0.70 or higher and variance extracted (VE) values of 0.50 or above, making the instrument suitable for subsequent analyses.

Data analysis

Table 2 provides an overview of the respondents' demographic characteristics.

According to the information in **Table 2**, most participants are female (87%), fall within the 20–25 age range, and identify as full-time entrepreneurs, mainly operating as freelance writers on digital writing platforms. These characteristics adequately reflect the perspectives of Generation Z in the study. A large portion of the respondents possess over five years of experience in online writing, with their work predominantly in horror or romance genres. Many started their journeys on free platforms like Wattpad while still in high school. Typically, after gaining experience for 1–3 years, they move to monetized services, including international apps such as Fizzo, Good Novel, Innovel, and similar sites. Earnings on these platforms vary widely, from around USD 300 to USD 30,000, based on audience interaction levels—a range that offers substantial income for entry-level or early-career writers, often approaching or exceeding the monthly salaries of traditional office-based employees who work five days a week. Upon completing high school or university, numerous individuals opt for this career path because it bypasses complex hiring procedures; success depends primarily on the ability to produce content for online platforms and achieve set performance goals. This pattern highlights a preference among Generation Z for self-directed entrepreneurial roles that leverage digital tools, enabling them to work independently while freely channeling their creative ideas into writing.

Table 2. Summary of Respondents' Profiles (SEM Analysis using AMOS, July 2024)

Profile Characteristic	Category	Frequency (n = 389)	Percentage
Gender	Male	50	13%
	Female	339	87%
Type of Publisher	Independent Publisher	47	12%
	Major Publisher	10	3%
	Online Writing Platform	332	85%
Main Activities Besides Writing	Full-Time Employee	97	25%
	Full-Time Employee and Small Business Owner (Entrepreneur)	2	1%
	Full-Time Entrepreneur	250	64%
	College Student	33	8%
	College Student, Full-Time Employee, and Entrepreneur	2	1%
	College Student and Entrepreneur	5	1%
Expertise in Writing (Years)	1–3 Years	67	17%
	More than 5 Years	322	83%
Age Group	21–25 Years Old	385	99%
	Above 30 Years Old	4	1%
Primary Genre	Fan-Fiction	5	1%
	Horror	243	62%
	Non-Fiction	57	15%
	Romance	78	20%
	Thriller	6	2%

Results and Discussion

Descriptive statistics

Table 3 presents an overview of the mean scores computed for each construct.

The digital leadership construct comprises three dimensions, where the highest mean score (4.48) is observed in the technical competencies of managers. This suggests that the majority of participants view their supervisors as highly involved and practically engaged in ongoing projects. In contrast, the lowest mean score (3.66) appears in the dimension related to tracked

team productivity, reflecting certain reservations among respondents about the ability of hybrid teams to consistently meet monthly performance goals.

The digital transformation construct includes four dimensions, with the highest mean score (3.39) recorded for the hybrid work setting. This indicates that most participants feel at ease with predominantly remote work arrangements, as these enable them to juggle several responsibilities at once. On the other hand, the lowest mean score (2.85) is found in the shared vision and mission dimension, pointing to a perception that organizational leaders and managers mainly focus on conveying monthly objectives while providing limited clarity on the broader company vision and mission.

Table 3. Overview of Descriptive Statistics (SEM Analysis using AMOS, July 2024)

Variable	Dimension	Mean	Standard Deviation
Digital Leadership (Overall Mean: 4.05)	Team Productivity	3.66	1.10
	Leaders' Support	4.02	0.70
	Leaders' Capabilities	4.48	0.87
Digital Transformation (Overall Mean: 3.12)	Setting Organizational Purposes	2.85	0.55
	Addressing Digitalization	3.10	0.75
	Authority and Accountability	3.39	0.80
Job Satisfaction (Overall Mean: 3.79)	Hygiene Factors	3.38	0.77
	Motivation Factors	4.21	0.78
Job Performance (Overall Mean: 3.39)	Knowledge, Skills, and Abilities (KSA)	3.82	1.07
	Benefits and Contributions	2.97	0.76

The job satisfaction construct consists of two dimensions, where the highest mean score (4.21) is recorded for motivation factors. This reflects that the majority of participants experience a sense of motivation when operating within the current digital and hybrid work setup. The lower mean score (3.38) is observed in hygiene factors.

Structural model fit

Two structural models were evaluated in this study. The initial model assessed the effects of digital leadership and digital transformation on job satisfaction. The subsequent model explored the impacts of digital leadership, digital transformation, and job satisfaction on job performance. The hypothesis testing outcomes for the structural models, derived from IBM AMOS Version 23.0 with a 95% confidence level, are detailed below.

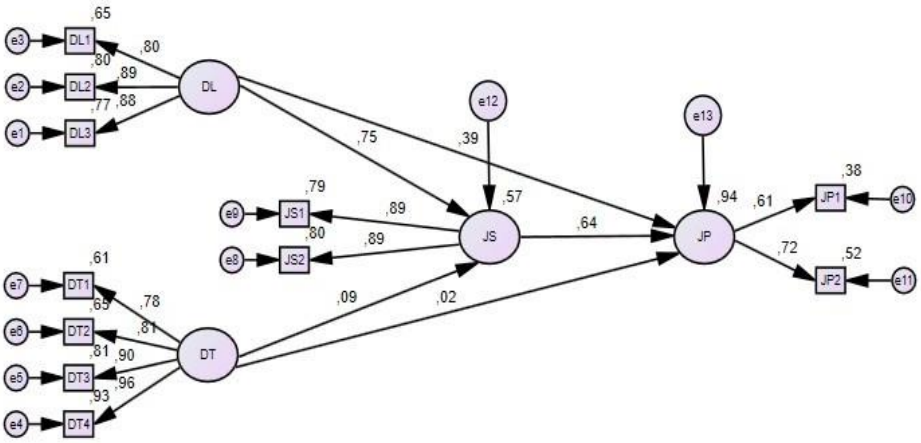

Figure 2. Structural Model Fit (SEM AMOS, July 2024)

Figure 2 illustrates the statistical testing results on structural model measurements, yielding the path coefficients for two structural equations as follows:

$$JS = 0.75*DL0.75 + 0.09*DT, \text{Error var.} = 0.43,0.09\ R^2 = 0.57 \quad (1)$$

$$JP = 0.39*DL0.39 + 0.02*DT + 0.64*JS, \text{Error var.} = 0.06,\ R^2 = 0.94 \quad (2)$$

Remarks:

JS = Job Satisfaction JB = Job Performance

DL = Digital Leadership

DT = Digital Transformation

The findings from Equation (1) reveal a positive association between digital leadership and digital transformation on one hand, and employee job satisfaction on the other. This implies that stronger digital leadership and more effective digital transformation initiatives contribute to higher levels of job satisfaction, collectively explaining 57% of its variance.

Equation (2) further indicates positive relationships between digital leadership, digital transformation, and job satisfaction with employee job performance. Accordingly, advancements in these three areas—digital leadership, digital transformation, and job satisfaction—are associated with greater improvements in organizational job performance.

Analysis of Equation (1) confirms that both digital leadership and digital transformation are positively linked to job satisfaction, suggesting that progress in these domains leads to elevated satisfaction among employees, with a combined explanatory power of 57%. In addition, Equation (2) shows that digital leadership, digital transformation, and job satisfaction each exhibit positive connections to job performance, meaning that superior conditions in these factors drive substantial enhancements in performance levels, accounting for 94% of the variance.

Prior to evaluating the structural model, an evaluation of the goodness-of-fit (GoF) indices was performed to assess the degree to which the proposed theoretical framework corresponds to the actual data obtained from the survey questionnaires. The outcomes of this evaluation are summarized in **Table 4**.

Table 4. Goodness-of-Fit (SEM AMOS, July 2024)

GOF	Acceptable Match Level	Explanation	Model Index
Chi-square	chi-square ≤ 2df (good fit), 2df < chi-square ≤ 3df (marginal fit)	Marginal Fit	2df < 74, 7 < 3df
P-value	P ≥ 0.05	Bad Fit	0.01
GFI	GFI ≥ 0.9 (good fit), 0.8 ≤ GFI ≤ 0.9 (marginal fit)	Good Fit	0.97
RMR	RMR ≤ 0.5	Good Fit	0.03
RMSEA	0.05 < RMSEA ≤ 0.08 (good fit), 0.08 < RMSEA ≤ 1 (marginal fit)	Good Fit	0.06
NNFI	NNFI ≥ 0.9 (good fit), 0.8 ≤ NNFI ≤ 0.9 (marginal fit)	Good Fit	0.98
NFI	NFI ≥ 0.9 (good fit), 0.8 ≤ NFI ≤ 0.9 (marginal fit)	Good Fit	0.97
AGFI	AGF I ≥ 0.9 (good fit), 0.8 ≤ AGFI ≤ 0.9 (marginal fit)	Good Fit	0.93
RFI	RFI ≥ 0.9 (good fit), 0.8 ≥ RFI ≤ 0.9 (marginal fit)	Good Fit	0.96
CFI	CFI ≥ 0.9 (good fit), 0.8 ≤ CFI ≤ 0.9 (marginal fit)	Good Fit	0.99

Table 4 reveals that, among the 10 goodness-of-fit (GoF) measures, only one was classified as poor fit, whereas the remaining indicators showed either acceptable or excellent fit. As a result, the proposed model was deemed suitable for advancing to the stage of hypothesis testing.

Structural hypothesis testing

The hypothesis tests summarized below were conducted using IBM AMOS Version 23.0 at a 95% confidence interval. Statistical significance was established when the calculated t-value exceeded 1.96 or when the p-value was below 0.05.

From the structural model results, the t-value for the path from digital leadership to job satisfaction was 16.08, surpassing the critical t-value of 1.96. Given that this t-value is higher than the threshold at a 5% significance level, H1 is supported while H0 is rejected. This confirms that digital leadership exerts a positive and significant influence on job satisfaction. The direction of the association is positive, suggesting that higher levels of digital leadership are associated with greater job satisfaction, and reductions in digital leadership correspond to lower job satisfaction.

Similarly, the t-value for the path from digital transformation to job satisfaction was 2.26, which likewise exceeds the critical t-value of 1.96. Accordingly, H1 is accepted and H0 is rejected, indicating that digital transformation has a positive and significant impact on job satisfaction. The association is positive in nature, implying that enhancements in digital transformation are linked to improved job satisfaction, while decreases in digital transformation are accompanied by declines in job satisfaction.

Table 5. Hypothesis Test Results (SEM AMOS, July 2024)

Hypothesis	Variable	Path Coefficient	$t\text{-}_{count}$ > 1.96	Summary Hypothesis
H1	DL → JS	0.75	16.08	Accepted
H2	DT → JS	0.09	2.26	Accepted
H3	DL → JP	0.39	4.96	Accepted
H4	DT → JP	0.02	0.41	Rejected
Mediating Hypothesis				
H5	DL → JS → JP	0.04	7.11	Accepted
H6	DT → JS → JP	0.07	2.17	Accepted

The evaluation of job satisfaction's mediating effect on the links between digital leadership, digital transformation, and job performance was conducted via the Sobel test. The resulting Sobel t-value for digital leadership stood at 7.11, whereas for

digital transformation it was 2.17. Consistent with the criteria applied in direct path testing, these figures were evaluated against the critical threshold of 1.96. Since both exceeded this benchmark, the findings affirm that job satisfaction serves as a positive and significant mediator in the associations of digital leadership and digital transformation with job performance.

Conclusion

This research examined two independent variables, one dependent variable, and a single mediating variable. The respondent profile was predominantly female (89%), in the 21–25 age range, and consisted of entrepreneurs operating in creative sectors—primarily as authors of online fiction novels distributed across around 20 paid digital reading and writing platforms. These individuals exhibited advanced digital proficiency and typically worked remotely from home with limited direct oversight.

Across the ten assessed dimensions, digital leadership recorded the strongest performance, especially in the aspect of leaders' proficiency in leveraging emerging technologies for task management. This reflects Generation Z's appreciation for supervisors who possess robust technical expertise and can effectively guide remote teams. In contrast, the weakest scores emerged in digital transformation, particularly regarding organizational vision, where participants reported insufficient transparency about the company's mission, goals, and individualized strategic roadmaps for freelancers. Despite their strong digital skills, these young workers evidently value employers that communicate comprehensive short- and long-term plans. Furthermore, perceptions of organizational agility in navigating VUCA environments were low, notably in terms of providing up-to-date equipment aligned with fast-evolving technology. Most respondents relied on personal devices, highlighting the need for institutional support to optimize tools for tasks like high-resolution image viewing and editing, which are critical for enhancing productivity in online authorship.

Of the four proposed direct-effect hypotheses, three received empirical support: the impacts of digital leadership and digital transformation on job satisfaction, as well as the direct influence of digital leadership on job performance. The hypothesized direct link from digital transformation to job performance, however, was not substantiated. Regarding mediation, job satisfaction demonstrated partial mediation in the pathways from both digital leadership and digital transformation to job performance, given that the indirect effects were smaller in magnitude than the direct ones. Accordingly, digital leadership enhances performance not only directly—through effective guidance, technological integration, and strategic approaches—but also indirectly by fostering job satisfaction that boosts motivation and engagement. Thus, while job satisfaction is a key channel, it does not fully account for digital leadership's overall effect on performance. Similarly, digital transformation can elevate performance directly via improved technological infrastructure, streamlined processes, and better information access, while also operating indirectly by heightening job satisfaction to promote greater motivation, involvement, and dedication. Job satisfaction therefore amplifies the benefits of digital transformation on performance, yet the direct contributions of such initiatives remain substantial and do not depend entirely on satisfaction levels.

Research limitations

With Generation Z increasingly engaging as freelance writers on digital platforms, subsequent studies might extend the inquiry to additional creative domains, including content production and visual design—especially those intertwined with information technology. These fields merit attention due to their emphasis on high creativity and autonomous work arrangements.

Acknowledgments: None

Conflict of interest: None

Financial support: None

Ethics statement: None

References

1. Ali H, Li M, Qiu X. Examination of HRM practices in relation to the retention of Chinese Gen Z employees. Humanit Soc Sci Commun. 2024;11(1):1-12. doi: 0.1057/s41599-023-02472-6.
2. Alin M, Ăr LAZ. Adapting to VUCA: An exploratory study on talent resilience in the IT industry and Generation Z workforce. Rev Int Comp Manag. 2023;24(5):792-815.
3. Jameson J, McDonnell K, Alwarnaidu-Vijayarajan VB, Forristal PD. Knowledge exchange and innovation adoption preferences of arable growers in Ireland’s Atlantic-influenced climate. Sustainability. 2024;16(4):1419. doi: 10.3390/su16041419.

4. Aldianto L, Anggadwita G, Permatasari A, Mirzanti IR, Williamson IO. Toward a business resilience framework for startups. Sustainability. 2021;13(6):3132. doi: 10.390/su13063132.
5. Dong F, Zhu J, Li Y, Chen Y, Gao Y, Hu M, et al. How green technology innovation affects carbon emission efficiency: Evidence from developed countries proposing carbon neutrality targets. Environ Sci Pollut Res. 2022;29(24):35780-99. doi: 10.1007/s11356-022-8581-9.
6. Gong S, Li M, Feng J, Wu Z, Kong L. Diffuseq: Sequence to sequence text generation with diffusion models. arXiv. 2022.
7. Hassanzadeh-Mohassel A, Hesarzadeh R, Bagherpour-Velashani MA. Leadership style, knowledge sharing and audit quality. Eur J Manag Bus Econ. 2024;33(3):306-23. doi: 10.1108/EJMBE-08-2022-0250.
8. Chen X, Masukujjaman M, Al-Mamun A, Gao J, Makhbul ZKM. Modeling the significance of work culture on burnout, satisfaction, and psychological distress among the Gen-Z workforce in an emerging country. Humanit Soc Sci Commun. 2023;10(1):1-12. doi: 0.1057/s41599-023-02371-w.
9. Xueyun Z, Al-Mamun A, Masukujjaman M, Rahman MK, Gao J, Yang Q. Modelling the significance of organizational conditions on quiet quitting intention among Gen Z workforce in an emerging economy. Sci Rep. 2023;13(1):1-19. doi: 0.1038/s41598-023-2591-3.
10. Lee B, Lee C, Choi I, Kim J. Analyzing determinants of job satisfaction based on two-factor theory. Sustainability. 2022;14(19):1-20. doi: 10.3390/su141912557.
11. Yadav R. A formative measurement model and development of quality of work-life scale based on two-factor theory: Evidence from Indian private industries. Benchmarking. 2022;30(5):1713-33. doi: 10.108/ BIJ-11-2020-0571.
12. Hong SJ, Lee YJ, Lee SJ, Hong BK, Kang WC, Lee JY, et al. Treat-to-target or high-intensity statin in patients with coronary artery disease: A randomized clinical trial. JAMA. 2023;329(13):1078-87. doi: 10.01/jama.2023.487.
13. Mosca JB, Merkle JF. Strategic onboarding: Tailoring Gen Z transition for workplace success. J Bus Divers. 2024;24(1):1-14. doi: 0.33423/jbd.v24i1.6852.
14. Vieira J, Gomes-da-Costa C, Santos V. Talent management and Generation Z: A systematic literature review through the lens of employer branding. Adm Sci. 2024;14(3):49. doi: 10.3390/admsci14030049.
15. Ivasciuc IS, Epuran G, Vuță DR, Tescașiu B. Telework implications on work-life balance, productivity, and health of different generations of Romanian employees. Sustainability. 2022;14(23):16108. doi: 10.3390/su142316108.
16. Liao M, Li S, Liu H. The impact mechanism of telework on job performance: A cross-level moderation model of digital leadership. Sci Rep. 2024;14(1):1-18. doi: 0.1038/s41598-024-63518-6.
17. Öngel V, Günsel A, Gençer-Çelik G, Altındağ E, Tatlı HS. Digital leadership's influence on individual creativity and employee performance: A view through the generational lens. Behav Sci. 2024;14(1):3. doi: 10.3390/bs14010003.
18. Erhan T, Uzunbacak HH, Aydin E. From conventional to digital leadership: Exploring digitalization of leadership and innovative work behavior. Manag Res Rev. 2022;45(11):1524-43. doi: 10.108/MRR-05-2021-0338.
19. Gao P, Gao Y. How does digital leadership foster employee innovative behavior: A cognitive-affective processing system perspective. Behav Sci. 2024;14(5):362. doi: 10.3390/bs14050362.
20. Pandey J, Majumdarr S, Hassan Y, Benuyenah V. Role of digital leadership capability in shaping IT innovation: A digital agility perspective. J Glob Inf Manag. 2023;31(8):1-21. doi: 10.4018/JGIM.333168.
21. Rakovic L, Maric S, Djordjevic-Milutinovic L, Vukovic V, Bjekic R. The role of leadership in managing digital transformation: A systematic literature review. E+M Ekon Manag. 2024;27(2):87-107. doi: 10.15240/tul/001/2024-2-006.
22. Zhuang H, Liu Y, Yu Z. Influence of digital leadership on employees' digital creativity based on the research perspective of the mediating effect of job crafting. J Electr Syst. 2024;20(2):674-82. doi: 10.52783/jes.1220.
23. Sfodera F, Cain LN, Di-Leo A. Is technology everywhere? Exploring Generation Z's perceptions of sustainable tourism in developing countries. Int Hosp Rev. 2024;38(1):28-53. doi: 10.1108/IHR-05-2022-0025.
24. Kudaibergenov Z, Bolatova B, Kurmanalina A, Balginova K. Analyzing the influence of hygienic and motivating factors on employee performance: Insights of university's HRM practices and industry settings. J East Eur Cent Asian Res. 2024;11(2):202-17. doi: 10.15549/jeecar.v11i2.1429.
25. Bautista PZN, Cahigas MML. Exploring employee retention among Generation Z engineers in the Philippines using machine learning techniques. Sustainability. 2024;16(12):16125207. doi: 10.3390/ su.
26. Toma SG, Hudea OS. Generation Z students' perceptions on the abilities, skills and competencies required in the age of artificial intelligence systems. Amfiteatru Econ. 2024;26(65):162-80. doi: 10.24818/EA/2024/65/162.
27. Ramírez-Herrero V, Ortiz-de-Urbina-Criado M, Medina-Merodio JA. Intergenerational leadership: A leadership style proposal for managing diversity and new technologies. Systems. 2024;12(2):5. doi: 10.3390/systems12020050.
28. Bhatt N, Chitranshi J, Mehta M. Testing Herzberg's two factor theory on millennials. Symbiosis Cardiometry. 2022;22:231-6.

29. Hair JF, Sarstedt M, Ringle CM, Gudergan SP. Advanced issues in partial least squares structural equation modeling: Sage; 2018. doi: 10.1007/978-3-319-05542-8_15-1.
30. El-Menawy SMA, Saleh PS. How does the mediating role of the use of social media platforms foster the relationship between employer attractiveness and Generation Z intentions to apply for a job? Future Bus J. 2023;9(1):65. doi: 10.1186/s43093-023-00233-0.
31. Ackermann M, Schell S, Kopp S. How Mercedes-Benz addresses digital transformation using Holacracy. J Organ Chang Manag. 2021;34(7):1285-99. doi: 10.108/JOCM-12-2020-0395.
32. Büyükbeşe T, Dikbaş T, Çavuş Ö, Asiltürk A. Herzberg's two factor theory and its impact on job satisfaction: A research on bank employees during the COVID-19 period. KMU J Soc Econ Res. 2023;25(45):998-1013.
33. Kaur H, Kaur R. Longitudinal effects of high-performance work practices on job performance via person-job fit. Bottom Line. 2023;36(2):161-80. doi: 10.1108/BL-02-2022-0030.