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ALGORITHMIC PRESSURE AMONG INDONESIAN GIG WORKERS IN THE CREATIVE INDUSTRY: THE EFFECT OF ALGORITHMIC ANXIETY ON SUBJECTIVE WELL-BEING THROUGH TECHNOSTRESS ON INSTAGRAM AND X

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Abstract

As gig workers in the creative industry, their access to work and income depend on opaque and ever-changing social media algorithms, which may give rise to algorithmic anxiety, a condition believed to trigger technostress and reduce subjective well-being. This study analyzes the effect of algorithmic anxiety on the subjective well-being of commissioned artists in Indonesia, with technostress as a mediator, based on the Transactional Model of Stress and Coping. The study employed a quantitative cross-sectional approach involving 108 active commissioned artists in Indonesia who market their services on Instagram and X (Twitter), participants were selected via purposive sampling and analyzed using PLS-SEM. The results show that algorithmic anxiety has a strong, positive, and significant effect on technostress ($\beta = 0.648$; $p < 0.001$), whereas the effects of both algorithmic anxiety and technostress on subjective well-being are not significant, neither directly nor through technostress as a mediator. Technostress also does not have a significant effect on subjective well-being ($\beta = 0.177$; $p = 0.387$), with an R^2 for subjective well-being of only 0.018. Since algorithmic anxiety does not necessarily reduce subjective well-being. The most direct target for intervention is technostress. This study makes a theoretical contribution to the field of digital work psychology and the gig economy, and offers practical implications for social media platforms by recommending that they reduce algorithmic opacity through easily understandable explanations of visibility signals, advance notice of algorithm changes, labeling of generative AI content, and algorithmic literacy resources for commissioned artists to strengthen their coping resources and reduce technostress.

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INTRODUCTION

In the age of the 4.0 Industrial Revolution, marked by swift progress in the information technology field, including the rise of automation, big data analytics, robotic engineering, artificial intelligence (AI), and the Internet of Things (IoT) (Siagian, 2023). Digital transformation is undeniably influencing multiple sectors, one of which is the creative industry, as one of the key drivers of the Indonesia's national economy amidst, this sector continues to demonstrate remarkable resilience and adaptability (Putri, 2025). According to the (Badan Pusat Statistik, 2025), the creative economy absorbed 27.40 million workers in 2025, accounting for 18.70% of Indonesia's total national workforce, up from 26.48 million workers in the previous year; within this sector,

advancing technology has given rise to a gig economy that enables commission artists, as part of the creative gig workforce, to reach global markets through social media platforms like Instagram and X (Twitter) to market their custom illustration services.

However, behind the success, creative economy practitioners, particularly commission artists, are currently experiencing a phenomenon of digital precariousness triggered by extreme dependence on automated systems. The categorize of creative workers, including artists, graphic designers, and content writers, as part of the gig economy ecosystem in which access to work, performance evaluation, and income are heavily shaped by algorithmic mechanisms, leaving workers with very limited control over the systems that govern their livelihoods (Pratomo et al., 2025). Commission artists, as one form of creative worker within this gig economy ecosystem, are increasingly dependent on digital platforms to obtain work and generate income, placing them within the same structural conditions of algorithmic dependency identified in the literature. At the experiential level, this structural condition translates into genuine psychological burden, creative platform workers frequently navigate opaque and unpredictable algorithmic systems, leading them to protect their ratings and platform standing, behaviors shaped not only by professional choice but also by concern about opaque rating algorithms (Alacovska et al., 2024). In the Indonesian context specifically, creative autonomy among Gen Z platform workers is increasingly mediated by algorithmic visibility metrics, producing a paradox in which perceived freedom coexists with structural insecurity and income volatility (Yazid, 2026). This dependence on platform algorithms creates job insecurity and the potential for psychological stress among platform workers (Naibaho, 2025).

The phenomenon that arises from these dynamics is known as algorithmic anxiety, which is anxiety resulting from the increasing use of algorithmic systems and AI in the workplace, triggering career uncertainty, a decreased level of worker control over work processes, and anxiety about the future of employment (Shekhar & Saurombe, 2026). This phenomenon stems from the fact that ever-changing algorithms can alter how work is evaluated across various evolving fields, especially in the field of commissioned art, thereby creating uncertainty for workers in this field, often referred to as commissioned artists (Jhaver et al., 2018). Since this anxiety toward algorithmic systems is conceptually rooted in individuals' broader anxiety toward AI-driven workplace systems, as reflected in the definition by (Shekhar & Saurombe, 2026), this study draws on the Artificial Intelligence Anxiety Scale by (Wang & Wang, 2022) to operationalize algorithmic anxiety within the context of platform algorithms.

Because this study focuses on a specific occupational group, it is necessary to clarify who commission artists are. “Commission” literally means to formally appoint someone to carry out a specific task, or to formally request that someone execute a specific task (Cambridge Dictionary, n.d.). In this study, the concept of “commission artist” refers to an artist who produces works based on specific orders from clients. An artist is an individual who views themselves and is viewed by others, as a creator of artistic works and ideas (Lena & Lindemann, 2014). As part of the broader gig economy, commission artists work independently on a project basis through digital technology, with payment determined by project completion rather than long-term contracts (Kemnaker, n.d.).

Beyond this definition, the way commission artists obtain clients and income makes them particularly exposed to algorithmic change. For creative laborers whose material gains are tied to platform visibility, even small algorithmic changes can make

or derail an entire career, for example like content creators on Instagram whose income depends on platform visibility frequently experience distress, hypervigilance, and compulsive platform-monitoring behavior in response to unpredictable algorithmic changes, a condition they term "algorithmic precarity" (Duffy et al., 2021; Register et al., 2023). Although existing studies have largely focused on creative workers, freelancers, and content creators rather than commission artists specifically, commission artists share many of the same structural characteristics identified in the literature. Their ability to obtain clients, maintain income, and sustain their careers depends heavily on visibility within platform ecosystems governed by opaque and continuously evolving algorithms, making them a visibility-dependent subgroup of creative gig workers and a relevant context for analyzing algorithmic anxiety. Much of the literature on algorithmic management draws its illustrative cases from transportation and delivery platforms, such as Uber and Deliveroo (Chigbu, 2026), includinglinking algorithmic control to technostress, for instance, has examined Uber drivers (Cram et al., 2022), and conceptual accounts of algorithmic domination have likewise been applied to ride-hail and food delivery work (Muldoon & Raekstad, 2023). whereas creative professionals have received comparatively little attention in studies of gig work (Alacovska et al., 2024). Studies of remote online gig work, closer to the situation of commission artists, indicate that algorithmic control offers flexibility and autonomy but is also associated with overwork, social isolation, and exhaustion (Wood et al., 2019). In contrast, remote creative gig work is one in which the worker's sense of self is closely tied to the work itself, and platform demands and opaque algorithmic evaluation can be experienced as threats to artistic identity (Alacovska et al., 2025). This suggests that the psychological stakes of algorithmic anxiety for commission artists may be distinct from, and potentially more acute than, those documented among transportation-based gig workers, which reinforces the urgency of dedicated research on this population.

For commission artists, this situation creates uncertainty or doubt that leads individuals to question the extent of the control they actually have in a highly dynamic digital workplace (Bista, 2025). Beyond its broader association with technology-induced stress, AI-related anxiety itself has been shown to reduce workers' life satisfaction, a key indicator of subjective well-being, an effect found to operate primarily through negative emotional responses rather than as a standalone direct pathway (Feng et al., 2025). Previous research confirms that strain resulting from technology use is negatively associated with individuals' subjective well-being, manifesting in reduced life satisfaction alongside heightened negative affect such as anxiety and frustration (Umair et al., 2023). This condition disrupts an individual's perception of control, which in the literature on work psychology is recognized as a primary determinant of the emergence of stress (Lazarus & Folkman, 1984). To understand the psychological mechanisms underlying this phenomenon, this study is based on the Transactional Model of Stress and Coping developed by (Lazarus & Folkman, 1984). This theory conceptualizes stress not just as either a stimulus or a reaction, but as the outcome of an active interaction between a person and their surroundings, shaped by cognitive evaluation. In the two phases of evaluation, primary appraisal involves an individual's judgement of the level of threat a situation poses to them, whereas secondary appraisal pertains to an individual's evaluation of the resources they have available to manage that threat. In the context of this study, commissioned artists conduct a primary appraisal of algorithm changes as a real threat to the visibility of their work and the stability of their income. When, during the secondary appraisal stage, they assess that their available resources

and capabilities are insufficient to cope with the uncertainty of these algorithms, a stress response emerges in the form of technostress.

Technostress itself was defined as a modern problem arising from an individual's inability to adapt to technology, which subsequently triggers various forms of psychological stress (Brod, 1984), is multidimensional, comprising work overload, role ambiguity, invasion of privacy, work–home conflict, and job insecurity (Ayyagari et al., 2011). In the realm of digital platforms, algorithmic control is a major source of stress because workers feel monitored by an invisible system (Cram et al., 2022; Umair et al., 2023), that much like digital curator that determines which artists gain visibility based on accumulated social capital rather than artistic merit alone (Sunjoto, 2025). In the context of the online labor market (OLM), this pressure often appears as job insecurity driven by frequent and uncertain algorithm changes, which generate technostressors (Umair et al., 2023). This is supported by findings that technostress is closely linked to decreased productivity and job satisfaction, while also triggering behavioral stress and psychological disorders ranging from anxiety to mental exhaustion(Molino et al., 2020).

If technostress is not managed properly, its impact leads to a decline in an individual's Subjective Well-Being (SWB), which referring to (Diener, 1984) fundamental theory, refers to a personal evaluation of one's quality of life comprising three core components: life satisfaction, elevated positive affect, and diminished negative affect. In the context of commission artists, SWB serves as a crucial indicator of how they maintain career satisfaction amid the uncertainties of the digital market. In the context of commission artists, SWB serves as a crucial indicator for measuring how they maintain career satisfaction amid the uncertainties of the digital market. Individuals with high SWB tend to be more resilient to exposure to technostress (Cuadrado et al., 2024) whereas unmanaged technostress will damage the affective dimension of SWB, characterized by an increase in negative emotions such as frustration and anxiety (Umair et al., 2023). Because this study conceptualizes technostress specifically through its job insecurity dimension, this expectation is further reinforced by a long-standing line of occupational stress research showing that job insecurity is among the most consistent predictors of diminished psychological well-being, undermining both life satisfaction and emotional stability (De Witte, 1999). This pattern is empirically supported by (Helbling & Kanji, 2018), whose five-year panel study found that subjective concerns about job security had an adverse and lasting effect on workers' life satisfaction, whereas holding an objectively insecure position, such as a fixed-term contract, did not by itself predict lower life satisfaction. Because commission artists' work arrangements largely fall outside conventional employment contracts, their experience of insecurity is almost entirely subjective, reinforcing the premise that algorithmic anxiety may exert a similarly persistent and detrimental influence on their subjective well-being. This body of literature reveals an interconnected chain of relationships, in which pressure from algorithmic systems leads to technostress, which directly threatens individuals' subjective well-being. This sequence parallels the technostress model of (Ayyagari et al., 2011), in which characteristics of technology give rise to stressors, including job insecurity, that in turn produce strain. Each link has support in platform-based work, algorithmic control has been shown to give rise to technostressors among Uber drivers (Cram et al., 2022), and technostress in online labour markets has been linked to different dimensions of subjective well-being (Umair et al., 2023). Appraisal-based accounts point in the same direction, as algorithmic management has been shown to be appraised as both a

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challenge and a hindrance, with different behavioral consequences (Zhang et al., 2023). Building on the appraisal process outlined above, once artists judge their coping resources insufficient against algorithmic uncertainty, the resulting technostress does not remain an isolated occupational strain. It depletes the cognitive and emotional resources individuals rely on to sustain positive affect and life satisfaction (Diener, 1984; Umair et al., 2023). This resource-depletion pathway is empirically supported by (Litan, 2025), who found that although AI-related technostress did not directly affect quality of life, it exerted a significant indirect effect through the erosion of positive and negative affect, indicating that affective resources function as the mechanism transmitting technostress into well-being outcomes. However, technostress was the predictor and affect the mediator, so the finding supports the broader logic of an indirect pathway rather than the mediating role of technostress itself (Litan, 2025). A comparable mediating function of technostress has also been documented outside the AI-specific context, where technostress was found to selectively mediate the effect of digital workload on workers' disengagement behavior, (significant for digital presenteeism but not for boreout), indicating that technostress can operate, at least for some outcomes, as transmission mechanism rather than a mere correlate of digital-era stressors (Damayanti et al., 2026). This pattern of relationships suggests that algorithmic anxiety may affect commission artists' subjective well-being, with technostress serving as a mediating mechanism that explains how anxiety regarding algorithms translates into a decline in subjective well-being. Considering the limited literature examining the integration of these variables specifically within the creative economy sector, particularly among commission artists who have a strong identity attachment to their work, this research is crucial.

This raises the questions of how algorithmic anxiety affects the subjective well-being of commission artists, and whether this relationship is mediated by technostress. In line with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), algorithmic anxiety can be understood as reflecting the primary appraisal of algorithmic uncertainty as threatening, while technostress is positioned in this study as the stress response that follows when coping resources are judged insufficient, and therefore as the step through which algorithmic anxiety may reach subjective well-being. Because evidence on such indirect pathways remains partial (Damayanti et al., 2026) and has not been examined among commission artists, this mediating role is tested empirically rather than assumed. Therefore, this study aims to analyze the influence of algorithmic anxiety on the subjective well-being of commission artists, with technostress as a mediating variable, founded on the theoretical framework of the Transactional Model of Stress and Coping by (Lazarus & Folkman, 1984).

Based on the theoretical framework established, the connections between the different factors in this study are shown in Figure 1.

Figure1. Conceptual Framework



Source : Created by authors (2026)

Based on the discussion above, this study proposes the following hypotheses:

H1: Algorithmic anxiety is significantly negatively associated with commission artists' subjective well-being, is associated with reduced life satisfaction, primarily through an indirect emotional pathway (Feng et al., 2025).

H2: Algorithmic anxiety is significantly positively associated with commission artists' technostress, as a stress response to the uncertainty of the platform's algorithmic system (Lazarus & Folkman, 1984).

H3: Technostress is significantly negatively associated with commission artists' subjective well-being, consistent with evidence that job insecurity undermines psychological well-being more broadly (De Witte, 1999), and, more specifically, reduces life satisfaction as a core component of subjective well-being (Helbling & Kanji, 2018), an effect further compounded by strain arising from algorithmically governed, platform-based work (Umair et al., 2023).

H4: Technostress acts as a mediator between anxiety about algorithms and subjective well-being of commissioned artists, serving as a mechanism that explains how algorithmic anxiety translates into a decline in subjective well-being.

RESEARCH METHODS

This study uses a quantitative method with a cross-sectional setup to examine a mediation model that describes the effect of algorithmic anxiety on the subjective well-being of commission artists, with technostress serving as the mediating variable. The analysis examines the causative-predictive relationship among the variables simultaneously at a single point in time, in line with the characteristics of the precarious digital phenomenon experienced by commission artists within an ever-changing platform ecosystem.

The study population consists of all active commission artists in Indonesia who market custom illustration services through digital social media platforms, defined by three criteria: being an Indonesian citizen or resident, having actively accepted or offered commissioned artwork services within the past year, and using at least one social media platform (Instagram or X) as a marketing tool. Instagram and X (Twitter) were selected because of their large and growing user bases in Indonesia (as of late 2025, approximately 108 million and 22.9 million users, respectively, within the accessible Indonesian population(Kemp, 2025)), and their use as channels for selling creative services directly to clients has been empirically documented in Indonesia (Masakazu et al., 2023), as evidenced by the widespread "open commission" or "open commission art" posts on both platforms and the "menfess" feature on X used to circulate commission offers. As there is no official registration data recording the number of commission-based artists in Indonesia, this is an open population, and sampling was conducted using purposive sampling based on the established criteria.

Data was collected using a Google Forms questionnaire from April through May 2026, with distribution primarily focused on the X (Twitter) and Instagram platforms. The questionnaire was distributed on the social media platform X (Twitter) by reaching out to individuals deemed to meet the study's criteria, such as through the "communities" feature on X (Twitter) to several Indonesian artist community channels on X, as well as via the "mention confess" or "menfess" mechanism, which involves sending anonymous messages to autobase accounts that are then forwarded to all of

those accounts' followers (Riauan & Salsabila, 2022), on several autobase accounts dedicated to artists, including those focused on Japanese popular cultures such as anime and manga, given the significant overlap between media fan communities and commissioned artists who frequently create fan art-based works.

Respondents who were interested and met the criteria expressed their willingness to participate by commenting on posts in the Indonesian artist community channels on X (Twitter) or on "menfess" posts on autobase accounts, after which the researcher sent the questionnaire link to each commenter via Direct Message (DM). On Instagram, the researcher sent the questionnaire directly via DM to commission artist accounts deemed suitable based on the study's criteria. All respondents participated voluntarily, and the collected data was kept confidential and processed anonymously. The questionnaire link was distributed approximately 130 times across these recruitment channels, of which 108 complete responses were returned and used in full for analysis, yielding a response rate of approximately 83%; reporting this figure supports assessment of the sample's adequacy and representativeness (Holtom et al., 2022). This rate is calculated from the links sent individually, as the number of people who saw the public posts could not be determined, so it reflects the response among those who received the link. The representativeness of respondents is considered more important than the response rate itself (Cook et al., 2000) and the present sample is not claimed to represent all commission artists in Indonesia. Of the 108 respondents, four were recruited through Instagram and the remaining 104 through X (Twitter), reflecting the platform-distribution pattern described above. This study involves three main variables measured using a Likert scale with a score range of one to five. All measurement items for algorithmic anxiety, technostress, and subjective well-being were reworded to reflect the context of commission artists.

Algorithmic anxiety, as the independent variable, was measured using ten items adapted from two dimensions of the Artificial Intelligence Anxiety Scale (AIAS) developed by (Wang & Wang, 2022), which are job replacement and sociotechnical blindness, while the other, more general dimensions of the original scale were excluded to maintain the construct's relevance to this population. Job replacement is relevant because commission artists face a real threat of being replaced by increasingly accessible generative AI content, making anxiety about role replacement the dimension that most directly represents their pressure. In the Indonesian context, public discourse on X (Twitter) regarding AI's role in digital art reflects this tension directly, with sentiment analysis revealing substantial public ambivalence 37% negative sentiment toward AI's growing presence in creative work (Zakharia et al., 2025). Furthermore, the sociotechnical blindness is relevant because platform algorithms are opaque, commissioned artists lack access to the system logic that determines the visibility of their work, and this inability to understand the system is the second major source of anxiety. Due to the lack of instruments specifically designed to measure algorithmic anxiety in the context of the creative gig economy, this adaptation serves as an exploratory step in a preliminary investigation of a topic with very limited literature. Following a translation-and-contextualization approach consistent with cross-cultural instrument adaptation principles (Brislin, 1970), the original English items were translated into Indonesian and reworded for the commission-artist context (e.g., replacing generic references to "my job" with client acquisition, platform visibility, and commission income), and the item wording was reviewed by the research supervisor prior to distribution.

Technostress, as a mediating variable, was measured using three items adapted from the job insecurity dimension in the technostress instrument (Ayyagari et al., 2011), in line with this study's focus on job insecurity triggered by changes in platform algorithms. This study deliberately narrows its operationalization of technostress to the job insecurity dimension, rather than the full five-stressor model of (Ayyagari et al., 2011), because job insecurity most directly corresponds to the core threat commission artists face from algorithmic change, namely the risk of losing client visibility and income to competitors. This narrowed operationalization follows an established practice in the technostress literature, where researchers commonly focus on a subset of the technostress process rather than assessing every dimension simultaneously, given the complexity of capturing all elements within a single study (Umair et al., 2023), and is consistent with recent gig-economy research showing that algorithmic control mechanisms specific to platform work, such as automated gatekeeping and behavioral guidance, generate technostressors distinct from those found in conventional employment (Cram et al., 2022). Job insecurity in particular may operate differently in platform-mediated or algorithmically governed work than in conventional employment, since workers are not formally dismissed but instead lose access to visibility, task offers, or income through mechanisms beyond their control (Cram et al., 2022; Umair et al., 2023). This is especially pronounced for creative and cultural workers, whose livelihoods depend on algorithmically mediated visibility on social media platforms and who consequently experience a distinct form of algorithmic precarity tied to unpredictable and opaque platform changes (Duffy, 2020), closely paralleling the position of commission artists in this study**.** This narrowing is also a limitation of the study. Work overload, role ambiguity, invasion of privacy, and work–home conflict were not measured, so the mediating role of technostress tested here applies only to job insecurity and may not hold for the other dimensions. Consequently, findings regarding technostress in this study should be interpreted narrowly as job-insecurity-driven technostress, not as a comprehensive assessment of the construct's full multidimensional nature.

Subjective well-being, as the dependent variable, was measured using five items based on framework (Diener, 1984), covering the components of life satisfaction as well as the dimensions of positive and negative affect. Convergent validity was assessed through outer loadings (≥ 0.708 recommended) and the Average Variance Extracted (AVE ≥ 0.50), and discriminant validity through the Heterotrait–Monotrait ratio (HTMT; < 0.85 for conceptually distinct and < 0.90 for conceptually similar constructs) (Hair et al., 2019; Henseler et al., 2015). Reliability testing relied on Cronbach's Alpha and Composite Reliability (CR), with values of 0.70 or higher consider satisfactory (Hair et al., 2019). During measurement model purification, indicators with outer loadings below 0.50 were removed when their deletion improved the AVE and CR of the construct, whereas indicators between 0.50 and 0.708 were retained to preserve content validity (Hair et al., 2017). The entire data analysis process was carried out using SmartPLS version 4.1. Hypotheses were tested through a bootstrapping procedure involving 5,000 subsamples, employing a two-tailed test at a 0.05 significance level (Hair et al., 2017). Additionally, the structural model was evaluated using the coefficient of determination (R^2) and effect size (f^2) as the primary evaluation criteria (Hair et al., 2019). The sample size (n = 108) exceeds the minimum required to detect $R^2 \geq 0.10$ at the 5% significance level with 80% statistical power for a construct with up to two predictors (Hair et al., 2017).

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RESULTS AND DISCUSSION

Results

Based on the data presented in Table 1 regarding the demographic characteristics of the respondents, the majority were found to be female, and skewed heavily young, with over three-quarters of respondents (83 people, 76.9%) falling between 19 and 24 years old. Most respondents also had limited experience in the world of commissioned art, with 69.4% having worked for three years or less (less than one year: 34.2%; 1–3 years: 35.2%). The data on earnings per commissioned piece reveals a telling pattern: nearly two-thirds of respondents (62.9%), reported earning less than Rp1,000,000. and only 6.5% earned more than Rp3,000,000 (3.7% in the Rp3,000,001–Rp5,000,000 bracket and 2.8% above Rp5,000,000).

Table 1. Respondent Demographic Data

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Female	100	92.6%
	Male	8	7.4%
Age (years)	≤18	8	7.5%
	19-24	83	76.9%
	25-30	14	13%
	>30	3	2.8%
Years of Experience in the Commission Art Industry	<1 year	37	34.2%
	1-3 years	38	35.2%
	4-5 years	18	16.7%
	>5 years	15	13.9%
Earnings Per-Open Commission	<Rp1.000.000	68	62.9%
	Rp1.000.001 - Rp3.000.000	33	30.6%
	Rp3.000.001 - Rp5.000.000	4	3.7%
	> Rp5.000.001	3	2.8%

Source: Processed Data (2026)

The measurement model was evaluated through convergent validity, discriminant validity, and reliability tests. As shown in Table 2, adequate reliability was established, with CR values surpassing 0.70 (0.850–0.867) and Cronbach's Alpha values exceeding 0.70 (0.738–0.839) (Hair et al., 2019) across all constructs. In the initial model, three Algorithmic Anxiety indicators (X1 = 0.427, X2 = 0.441, and X10 = 0.463) had the weakest outer loadings (squared loadings of 0.18–0.21) and were removed. Their removal improved the AVE of Algorithmic Anxiety from 0.366 to 0.454 and its CR from 0.848 to 0.851. Outer loadings of the retained indicators ranged from 0.557 to 0.882 and were all statistically significant (Table 3). Five indicators (X3, X5, X7, X9, and Y3) fell below the recommended 0.708 but were retained to preserve content validity (Hair et al., 2017). The overall structural pathway of the model is illustrated in Figure 2.

Table 2. Construct Reliability & Validity

Variabel	Cronbach's α	CR	AVE
Algorithmic Anxiety (X)	0.795	0.851	0.454*
Subjective Well-Being (Y)	0.839	0.867	0.570
Technostress (Z)	0.738	0.850	0.655

Source: Processed Data (2026)

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Note: Algorithmic Anxiety is reported after removal of X1, X2, and X10 (before removal: AVE = 0.366, CR = 0.848).

Table 3. Outer Loadings:

Indicator	Loading	T-Stat	P-Value
Algorithmic Anxiety			
X3	0.557	5.800	0.000
X4	0.718	10.803	0.000
X5	0.566	6.083	0.000
X6	0.730	11.739	0.000
X7	0.625	7.416	0.000
X8	0.795	18.131	0.000
X9	0.688	10.816	0.000
Technostress			
Z1	0.852	25.534	0.000
Z2	0.848	23.609	0.000
Z3	0.720	9.122	0.000
Subjective Well Being			
Y1	0.790	3.819	0.000
Y2	0.757	3.592	0.000
Y3	0.612	2.574	0.010
Y4	0.707	3.032	0.002
Y5	0.882	3.721	0.000

Source: Processed Data (2026)

Note: Indicators X1 (0.427), X2 (0.441), and X10 (0.463) were removed from the Algorithmic Anxiety construct

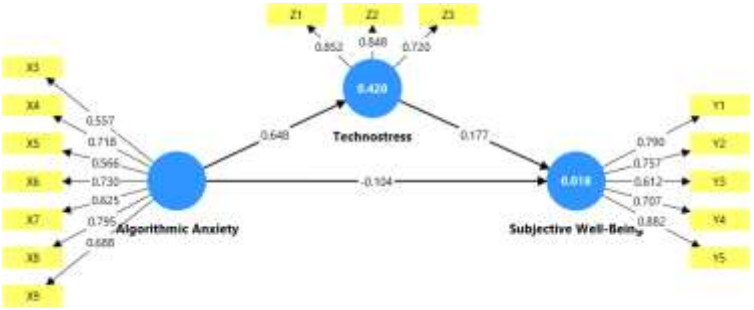


Figure 2. PLS Algorithm Research Model Output
Source : SEM-PLS Processed Data (2026)

After indicator removal, the AVE of Algorithmic Anxiety improved to 0.454 but remained slightly below the 0.50 threshold (Hair et al., 2019), whereas Subjective Well-Being (0.570) and Technostress (0.655) both exceeded it. Removing the remaining low-loading indicators (X3 and X5) might have brought the AVE closer to the threshold, but would have left only five of the original ten indicators and narrowed the construct's content coverage; they were therefore retained. This remains a limitation, and results involving Algorithmic Anxiety should be interpreted with caution. Discriminant validity was further supported by HTMT, with all inter-construct values below 0.85 (highest: AA–TS = 0.825) (Hair et al., 2019; Henseler et al., 2015) (Table 4).

Table 4. HTMT

	AA	SWB	TS
AA	-		
SWB	0.151	-	
TS	0.825	0.157	-

Source: Processed Data (2026)
Note : Algorithmic Anxiety (AA), Subjective Well-Being (SWB), Technostress (TS).

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The structural model was evaluated using the coefficient of determination (R^2). Algorithmic anxiety explained 42% of the variance in commission artists' technostress (R^2 = 0.420), indicating weak-to-moderate explanatory power (Hair et al., 2019), with a large effect size (f^2 = 0.724). In contrast, the R^2 for Subjective Well-Being was only 0.018, meaning the model explained just 1.8% of its variance, which reflects very limited explanatory power.

Table 5. R-Square

Variabel	R^2	R^2 Adjusted	Description
Technostress	0.420	0.414	Weak-Moderate
SWB	0.018	0.000	Very Weak

Source: Processed Data (2026)

To verify these hypotheses, a bootstrapping procedure involving 5,000 subsamples was utilized, including for the indirect effect (H4), using a two-tailed test at a significance level of 0.05. The criteria for rejecting the null hypothesis are a T-statistic value exceeding 1.96 and a P-value below 0.05 (Hair et al., 2017). The comprehensive results of this analysis are presented in Table 6.

Table 6. Hypothesis Testing

Hipotesis	Route	β	T-Stat	P-Value	Result
H1	AA → SWB	-0.104	0.553	0.580	Rejected
H2	AA → TS	0.648	12.368	0.000	Accepted
H3	TS → SWB	0.177	0.864	0.387	Rejected
H4	AA → TS → SWB	0.115	0.833	0.405	Rejected

Source: Processed Data 2026
Note : Algorithmic Anxiety (AA), Subjective Well-Being (SWB), Technostress (TS).

Discussion

The results of the H1 test indicate that algorithmic anxiety does not have a statistically significant effect on commission artists' subjective well-being (β = -0.104; T = 0.553; p = 0.580), so H1 is rejected. Although consistent with the hypothesized direction, the negative coefficient does not demonstrate statistical significance. One possible explanation is that algorithmic anxiety did not directly pressure the subjective well-being of commissioned artists, and because individuals experiencing it may not fully consider it a threat, but rather viewed it as a challenge to grow or learn about the algorithm itself. This aligns with (Diener, 1984) perspective that subjective well-being is multidimensional and influenced by various broader life factors beyond the work context alone; thus, algorithmic anxiety alone is insufficient to serve as the primary determinant of an individual's evaluation of their lives.

This pattern of a non-significant direct effect finds a parallel in recent evidence on a conceptually related, broader construct, algorithmic anxiety is situated within the wider family of AI-driven workplace anxiety (Shekhar & Saurombe, 2026), and within that broader construct, AI job anxiety has been found had no significant direct effect on life satisfaction once negative emotions were accounted for, operating through full mediation (Feng et al., 2025). Although examined general AI-related anxiety among service-industry employees, it suggests that anxiety toward algorithm- or AI-driven systems does not straightforwardly lower well-being without an intervening mechanism, lending plausibility to the interpretation that commission artists' well-being is buffered by appraisal processes (Feng et al., 2025). Further reported that algorithmic control among Uber drivers is associated with both challenge and threat technostressors; if artists experience both simultaneously, their effects on well-being

may partly offset each other, which could also explain the null direct effect (Cram et al., 2022).

H2 was found to be significantly supported by the data. Algorithmic anxiety had a positive and significant effect on commission artists' technostress ($\beta = 0.648$; $T = 12.368$; $p < 0.001$), thus H2 is accepted. These findings are consistent with the Transactional Model of Stress and the Coping Model developed by (Lazarus & Folkman, 1984), in which anxiety caused by algorithm changes is viewed as a challenge that exceeds an individual's ability to cope, thereby triggering a technology-induced stress response. These results reinforce the argument by (Umair et al., 2023) that systemic uncertainty from digital platforms constitutes a significant technostressor for platform workers. And so, that is in line with evidence that algorithmic control on gig platforms elicits technostressors among Uber drivers (Cram et al., 2022).

The results of the H3 test indicate that Technostress does not appear to have a significant effect on subjective well-being ($\beta = 0.177$; $T = 0.864$; $p = 0.387$), so H3 is rejected. Interestingly, the direction of the coefficient obtained is positive, contrary to the hypothesis that predicted a negative effect. This finding also contrasts with several prior studies. Technostress has been found to negatively affect well-being among 340 Uber drivers in India, 355 banking employees, and 366 platform workers in online labour markets, the context closest to commission artists (Ali & Sivasubramanian, 2026; Hang et al., 2022; Umair et al., 2023). This discrepancy may be explained by several factors. First, the negative effect in the gig economy context stemmed specifically from hindrance stressors, consistent with the argument that respondents in this study tended to appraise technology-related pressure as a challenge rather than a threat, while job flexibility, which has been associated with gig workers' psychological well-being, may buffer technostress in commission-based creative work (Ali & Sivasubramanian, 2026). Second, the studies differ in context and measurement: the banking study examined workers in formal organizations using techno-stressor dimensions (Ayyagari et al., 2011; Hang et al., 2022), and both the banking and Uber studies measured well-being in a work-related context, whereas this study measured subjective well-being as a global evaluation of life (Ali & Sivasubramanian, 2026; Hang et al., 2022). This distinction is important because technological stressors in online labour markets have been found to affect well-being indirectly, through the strain they generate, rather than through an unmediated direct effect (Umair et al., 2023).

First, commission artists, as a group of creative people accustomed to pressure and uncertainty, may have developed effective coping mechanisms so that technostress does not immediately damage their subjective well-being. Second, this study deliberately operationalized technostress through the job insecurity dimension only (see Methodology), which corresponds most directly to the threat of losing client visibility and income to competitors. Other dimensions of (Ayyagari et al., 2011) were not measured, so the findings may not generalize to technostress as a whole. Third, commission artists may perceive algorithmic pressure as a challenge that motivates them to work harder, in line with the challenge appraisal perspective (Lazarus & Folkman, 1984). This is empirically supported by a study of healthcare workers showing that technostress is dualistic rather than always negative, in that psychological responses to technological stressors depend heavily on how individuals appraise them, and when stressors are perceived as surmountable challenges, technostress transforms into techno-eustress, which correlates with positive rather than negative psychological outcomes (Califf et al., 2020). Algorithmic management has likewise been appraised as

both a hindrance and a challenge among gig workers (Zhang et al., 2023), and the distinction between technoeustress and techno-distress is now well established (Tarafdar et al., 2019). A similar pattern may plausibly apears to hold for commission artists in this study. However, appraisal was not measured here, and job insecurity is commonly treated as a threat- or hindrance-type stressor, so this explanation remains tentative. Therefore, technostress in this context has insufficient predictability for their subjective well-being.

Fourth, these results can also be explained by the respondents' demographic characteristics. Of the commission artists in this study, 76.9% were aged 19–24 years, placing them in emerging adulthood (Arnett, 2000) and in a generation that grew up with digital technology (Prensky, 2001). In Indonesian context, Generation Z shows an internet penetration rate of 89.02% ((APJII, 2026), as cited in (Yonatan, 2026)) and is and the highest AI adoption rate 29.4% ((APJII, 2026), as cited in (Pramana, 2026)). and more than half of online gig workers are under 30 (Datta et al., 2023), so the respondents' age composition matches the profile of Indonesian online gig workers. Evidence on age and technostress is not uniform, that age influenced technostress among 608 ICT end users (Ragu-Nathan et al., 2008), and in an eight-month study of 1,216 employees, found that older age was associated with lower technology-related strain through coping (Hauk et al., 2019). This suggests that what matters for adaptability is less age itself than the digital fluency and coping resources typical of young digital workers. Individuals with higher technology self-efficacy tend to experience lower technostress (Shu et al., 2011), and young gig workers with high digital literacy are more inclined to view algorithmic challenges as opportunities for growth (Xu, 2026). This reinforces a tendency toward challenge appraisal, in which algorithmic pressure is appraised as a challenge rather than merely a hindrance (Zhang et al., 2023), further supported by the flexibility and autonomy that remote gig work offers (Wood et al., 2019). Thus, although algorithmic anxiety increased technostress (H2), the job-insecurity-related technostress by (Ayyagari et al., 2011) that respondents reported may have been appraised as a challenge, were likely experienced as techno-eustress (Tarafdar et al., 2019) and therefore did not reduce subjective well-being (H3). Because age was not modeled as a moderator and the sample was concentrated in one age band, this argument is inferential and should be tested in future research.

Consequently, since H3 was not found to be significant, H4 is also not substantiated. The mediating impact of technostress on the association between algorithmic anxiety and subjective well-being was determined to be insignificant ($\beta = 0.115$; $T = 0.833$; $p = 0.405$). Because neither the indirect effect nor the direct effect ($\beta = -0.104$) was significant, the pattern corresponds to what (Zhao et al., 2010) call noeffect nonmediation, the opposite signs of the two paths also suggest that any effects may offset each other. This also in line with the findings, that the chain from technology stressors to psychological outcomes is dependent on how individuals appraise these technostressors, either as a hindrance or a challenge, so that mediation does not always proceed linearly as theoretically assumed (Califf et al., 2020).

This result also contrasts with studies that have documented indirect pathways involving technostress. AI-related technostress, affected quality of life indirectly through positive and negative affect (Litan, 2025), while technostress mediate the effect of digital workload on worker disengagement, though only for some outcomes (Damayanti et al., 2026). Unlike these contexts, job-insecurity-driven technostress among commission artists in this study did not function as a significant mediating

pathway, suggesting that the mediating role of technostress may depend on the specific technostress dimension and the population's coping resources, rather than operating as a universally in digital-era occupational contexts. Thus, this study indicates that, within the scope of this sample and measurement approach, technostress does not mediate the influence of algorithmic anxiety on commission artists' subjective well-being.

Overall, this study offers valuable insight into the psychological experiences faced by commission artists within the digital platform era. Although most hypotheses were not supported, algorithmic anxiety strongly predicted technostress, a finding with important implications for understanding the psychological pressures faced by digital creative workers. This study has several limitations. Three indicators of Algorithmic Anxiety were removed despite loadings within the 0.40–0.70 range, and the AVE of this construct (0.454) remained below 0.50, so results involving this construct should be interpreted with caution. Technostress was operationalized through job insecurity only, and the sample (n = 108) limits the power to detect small effects, such as the very small variance explained in subjective well-being (R^2 = 0.018). The inability to prove the mediation pathway also opens opportunities for further research on alternative psychological mechanisms that may be more relevant to commission artists, such as creative self-efficacy, social support from the artist community, or passion for creative work.

CONCLUSION

Based on an interpretation of the challenges outlined above, the source of technostress, namely the uncertainty caused by algorithmic opacity, rather than the outcomes of subjective well-being, is the most direct practical implication of this study. Given that algorithmic anxiety was found to be a strong predictor of technostress in this study, reducing algorithmic opacity represents the most immediate mechanism available to the managers of digital platforms, and four measures follow from the two anxiety dimensions examined here. First, addressing sociotechnical blindness, platforms should provide creator-facing explainability in the form of plain-language descriptions of the signals that determine post visibility, accompanied by account-level feedback indicating why reach has changed. Second, platforms should publish a versioned changelog of visibility-related algorithm updates and announce material changes in advance with a transition period, so that artists are not required to re-learn distribution rules retroactively. Third, addressing the job replacement dimension, platforms should channel for reporting unauthorised reproduction of artists' work. Fourth, platforms should host algorithmic-literacy resources and a dedicated support channel for commission-based sellers, thereby strengthening artists' coping resources. These measures should be understood as means of reducing technostress rather than of directly improving subjective well-being, since the latter pathway was not supported by the present data.

Theoretically, this study extends the Transactional Model of Stress and Coping into the context of creative gig work by showing that the stressor–strain link was strong under algorithmic governance, while the strain–well-being link was not supported in this sample, which suggests that it may depend on appraisal and coping rather than operating automatically. The low value of the coefficient of determination (R^2) for the subjective well-being variable (1.8%) is consistent with (Diener, 1984) foundational premise that subjective well-being is inherently multidimensional, shaped by a broad range of life domains rather than any single contextual factor such as one's digital work

environment. Through a research scope focused on the dimension of job insecurity, this study offers preliminary empirical evidence on the relationship between algorithmic anxiety and technostress within the specific context of Indonesian commission artists, contributing an early empirical account regarding the portrait of digital precariousness.

These interpretations, however, should be considered alongside the boundaries of this study's design, each of which points to a specific direction for future research. First, appraisal style and coping behaviour were not measured, so future research should test the challenge appraisal and adaptive coping explanations directly, for instance by measuring challenge-versus-threat appraisal and peer support among commission artists. Second, technostress was operationalised solely through the job insecurity dimension, so future research should measure the four remaining dimensions of (Ayyagari et al., 2011) instrument, namely work overload, role ambiguity, invasion of privacy, and work–home conflict, and validate the adapted algorithmic anxiety scale. Third, this study was limited to commission artists working through Instagram and X (Twitter); so future research should include artists active on dedicated portfolio platforms such as ArtStation, Pixiv, or DeviantArt with larger samples. Fourth, the limited variance explained in subjective well-being indicates that more proximate protective factors remain untested; future research should examine creative self-efficacy, which determines the extent to which artists believe in their capacity to continue producing high-quality work under algorithmic uncertainty, alongside the strength of social support within digital artist communities. Given these boundaries, the present findings should be generalised with care.

Conflicts of interest

The authors declare no conflict of interest.

Author contributions

Conceptualization, Meyva Emiliana; data collection, Meyva Emiliana; data validation, Meyva Emiliana and Diki Putra Setianto; formal analysis, Meyva Emiliana; writing—original draft preparation, Meyva Emiliana; writing—review and editing, Meyva Emiliana, Diki Putra Setianto, Hafid Kholidi Hadi; visualization, Meyva Emiliana. All authors have read and approved the final version of the manuscript.

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