

Mental Health in the “Era” of Artificial Intelligence: A Sociological Study of Technostress and Its Impact on Anxiety and Depressive Symptoms

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Abstract

Artificial Intelligence (AI) refers to the ability of a computer or machine to imitate the skills of the human mind, in the sense of learning from previous experiences, understanding and responding to language, decisions and problems. AI can be found in various forms, such as natural language processing, robotics, neural networks and virtual assistants. The benefits of AI integration into various applications are undeniable, significantly enhancing outcomes in domains such as medical diagnostics, autonomous vehicles, smart homes, social media, chatbots, virtual assistants, financial analysis, and scientific research. However, its rapid and widespread adoption also carries the potential to generate or exacerbate mental health issues, particularly anxiety and depression. In this study, we refer to these manifestations as clinical disorders of anxiety and depression. This research explores the intersection of Artificial Intelligence (AI) and mental health through a sociological lens. This paper argues that anxiety and depression in the AI era are “social facts” driven by Technostress. Using the frameworks of Marxist Alienation, Durkheimian Anomie, and Foucault’s Panopticon, the study investigates how AI-driven workplace surveillance, job insecurity, and the erosion of human-centric communication contribute to a rise in depressive symptoms. The paper concludes that mental health in the digital age is a structural issue requiring sociological interventions.

Keywords: Artificial Intelligence, Technostress, Depression, Anxiety, Mental Health.

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Introduction:

The rapid integration of Artificial Intelligence (AI) into the fabric of daily life marks the Fourth Industrial Revolution. While AI promises efficiency, it has introduced a new social pathogen: Technostress. Unlike traditional technology, AI is autonomous and predictive, creating a unique psychological burden on the modern individual. From a sociological perspective, mental health is not merely a biological state but a reflection of social stability. As AI replaces human roles and mediates social interactions, the “Social Glue” (Solidarity) that protects individuals from isolation begins to dissolve. This paper examines how the transition from human-led systems to algorithmic governance triggers chronic anxiety and depressive symptoms across different social strata.

Artificial Intelligence (AI) refers to the ability of a computer or machine to imitate the skills of the human mind, in the sense of learning from previous experiences, understanding and responding to language, decisions and problems (Thormundsson, 2024). AI can be found in various forms, such as natural language processing, robotics, neural networks and virtual assistants (Dang et al., 2025). The benefits of AI integration into various applications are undeniable, significantly enhancing outcomes in domains such as medical diagnostics, autonomous vehicles, smart homes, social media, chatbots, virtual assistants, financial analysis (Pachegowda, 2023), and scientific research (França, 2023). However, its rapid and widespread adoption (Rodríguez, 2024) also carries the potential to generate or exacerbate mental health issues, particularly anxiety and depression. In this study, we refer to these manifestations as clinical disorders of anxiety and depression. The AI technology is not like any other technology, given the speed of task execution, power, versatility, and the extent to which it blurs the distinction between man and machine (Rodríguez, 2024). Artificial Intelligence (AI) systems are becoming an increasingly important part of our lives, as they have the capacity to demonstrate human-like abilities, such as reasoning, learning, planning, and creativity. Although AI promises efficiency and innovation through scalability, reliability, precision, speed, decision-making, real-time monitoring, robotic assistance in performing tasks, and optimal use of resources, its accelerated pace of development also generates significant challenges (Litan, 2025). The twenty-first century is defined by a transition more profound and rapid than the Industrial Revolution: the total integration of Artificial Intelligence (AI) into the social, economic, and private spheres of human existence. While previous technological waves focused on the automation of physical labor, the current era of AI targets the very core of human identity—cognitive agency and decision-making. From a sociological perspective, this is not merely a technical evolution; it is a fundamental reconfiguration of the “Social Contract.” As AI systems become the primary intermediaries for how we work, communicate, and perceive ourselves, they introduce a new form of structural pressure known as Technostress. Historically, mental health has been treated as a private, biological, or psychological issue—a struggle contained within the individual’s mind. However, following the tradition of Emile Durkheim, this study treats the rising rates of anxiety and depression in the AI era as “Social Facts.” When millions of individuals globally report heightened levels of stress simultaneously with the rise of a new technology, we must look at the “Social Structure” rather than just individual brain chemistry. Technostress, in this context, is the modern social pathogen. It is defined as the psychological and physiological

struggle to adapt to the rapid, often invasive, evolution of digital technologies. Unlike the static computers of the 1990s, AI is autonomous, predictive, and often invisible. This creates a unique sociological crisis where the human “subject” feels constantly outperformed and monitored by a non-human “object.”

Review of Literature

Goffman (1959): The “Presentation of Self” in the age of AI-filtered reality. Literature suggests that the “performative labor” required to maintain a digital persona creates a “split-self” (dissonance), leading to clinical depression.

Granovetter (1973): The “Weak Ties” theory. AI helps maintain thousands of “weak ties” but destroys “strong ties.” Literature confirms that a lack of strong social ties is the #1 predictor of depressive symptoms in the 21st century.

Braverman (1974): The “Deskilling” theory suggests that AI takes over high-level cognitive tasks. Literature shows that when workers lose their “skill-identity,” they experience “Identity Crisis” and depressive symptoms due to a loss of social value.

Brod (1984): The foundational work defines Technostress as a “modern disease of adaptation.” While early research focused on computer literacy, modern sociology applies this to AI, arguing that the *autonomy* of AI makes the stress more chronic than previous technologies.

Putnam (2000): Applying “Bowling Alone” to the AI era, researchers find that AI-driven entertainment and social feeds decrease “Social Capital.” The less we interact with humans, the higher the rates of “Social Anxiety” when real-world interaction is required.

Ragu-Nathan et al. (2008): This study identified five “Techno-stressors”: Overload, Invasion, Complexity, Insecurity, and Uncertainty. Sociologically, these stressors act as “social barriers” that prevent individuals from achieving a healthy work-life balance.

Aneesh (2009) The concept of “Algocracy” (rule by algorithms) suggests that social life is now governed by code. This lack of “Human Appeal” in decision-making leads to a feeling of “Societal Anomie.”

Rosa (2013) Rosa argues that technology (AI) accelerates the pace of life. This “Social Acceleration” causes “Alienation from Time,” where individuals feel they are constantly “running to stand still,” leading to chronic stress.

Fuchs (2014) Fuchs explores how AI algorithms exploit “Digital Labor.” The constant pressure to be productive for an algorithm leads to “Social Burnout,” a state where individuals withdraw from real-world social obligations.

Turkle (2017) Turkle’s research highlights that AI-driven companionship (like chatbots) offers the “illusion of companionship without the demands of friendship.” This leads to “Social Thinning,” where the lack of deep human empathy causes long-term loneliness. And said that AI-mediated communication leads to being “Alone Together,” where the lack of genuine human empathy in digital spaces fosters deep-seated loneliness.

Eubanks (2018) Research on “Automating Inequality” shows that when AI manages social services, it removes human compassion from the equation. The “Digital Poorhouse” creates a state of permanent anxiety for marginalized communities.

Noble (2018) his work highlights “Algorithmic Bias.” Sociologically, if an AI discriminates against a certain social group, the resulting “Social Exclusion” triggers deep psychological trauma and a sense of systemic helplessness.

Pfeffer (2018) His work on “Dying for a Paycheck” links modern management (now AI-driven) to physical and mental health decline. AI-driven “Guanxi” or social networks in workplaces often prioritize speed over human health.

Tarafdar et al. (2019): Recent research suggests that AI “Techno-exhaustion” leads to decreased “Self-Efficacy.” When individuals feel they cannot control the AI tools they use, their social standing and mental confidence plummet.

Zuboff (2019) highlights how AI monitors human behavior to predict future actions, leading to a “Digital Panopticon” effect where individuals feel a constant, anxious pressure to perform for the algorithm. Zuboff argues that AI is used to “modify human behavior.” From a sociological standpoint, this creates a “Digital Panopticon” where the fear of being monitored by an algorithm leads to constant anxiety.

Bondanini (2020) defines technostress through dimensions like *Techno-Invasion* (the inability to disconnect) and *Techno-Insecurity* (the fear of being replaced by AI).

Litan (2025) said that due to the cross-sectional design, the findings should be interpreted as associative rather than causal. Nevertheless, this study provides an important contribution to the literature, addressing a notable gap in research regarding the psychological implications of AI adoption in society. Also emphasized not only the absence of a direct effect, but also the importance of the indirect pathway in understanding how individuals are affected by AI-related stress. The results of the study can be equally useful in raising awareness of the psychological mechanisms responsible for the quality of life and in understanding the importance of implementing official programs, both technically, regarding the development of skills to understand and work with AI, and psychological support programs, considering the management of emotions, with reference to this technology.

Research Significance of the Study:

This research paper seeks to move beyond the superficial debate of whether AI is “good” or “bad.” Instead, it focuses on the Sociological Mechanism of how AI creates a stressful environment. Through an analysis of Techno-Invasion (the blurring of work-home boundaries), Techno-Complexity (the pressure to constantly upskill), and Techno-Uncertainty (the fear of a jobless future), this study argues that the current mental health crisis is a structural response to a society that is increasingly being optimized for algorithmic efficiency rather than for human well-being.

The Scope of the Study:

This research paper seeks to move beyond the “Utopian vs. Dystopian” debate. Instead, it focuses on the **Sociological Mechanism** of how AI creates stress. We will explore how:

1. **Algorithmic Management** transforms the workplace into a “Digital Panopticon.”
2. **Social Media Algorithms** distort the “Looking-Glass Self,” leading to inadequacy.
3. **Techno-Invasion** erodes the boundaries between private life and public labor.

By analyzing these shifts through the lenses of **Marx, Durkheim, and Foucault**, this paper argues that the current rise in anxiety and depression is a structural response to a society that is being optimized for algorithms rather than for human well-being.

Research Objectives

1. To identify the sociological components of Technostress in the context of AI.
2. To analyze the relationship between AI-driven “Digital Alienation” and depressive symptoms.
3. To evaluate the impact of algorithmic surveillance on individual anxiety levels.
4. To propose a sociological framework for mitigating AI-induced mental health crises.

Technostress in the AI era manifests in three social dimensions:

1. **Techno-Insecurity:** The fear of being replaced by AI. This creates a “precariat” class—workers living in constant anxiety about their future relevance.
2. **Techno-Invasion:** AI-driven connectivity (emails, pings, remote monitoring) erodes the boundary between the “private” and “public” spheres. The home is no longer a sanctuary.
3. **Techno-Complexity:** The constant need to upskill to keep pace with AI creates a feeling of inadequacy and “cognitive overload.”

The Dimensions of AI-Induced Stress:

The relationship between Artificial Intelligence and mental well-being is multifaceted, manifesting in two primary psychological outcomes: Anxiety and Depression.

The Anxiety of Precarity: AI has introduced what sociologists call “Status Anxiety.” As generative AI demonstrates the ability to perform complex creative and analytical tasks—from legal research to architectural design—the social identity of the “skilled professional” is threatened. This leads to a state of permanent hyper-vigilance, where workers feel a constant need to prove their human relevance against a tireless, algorithmic competitor.

The Depression of Alienation: Drawing on Marxist theory, AI-driven automation often leads to “Digital Alienation.” When an algorithm takes over the “meaningful” parts of a job, leaving the human to simply verify or “feed” the data, the individual loses their sense of purpose. This loss of agency, combined with the “Alone Together” phenomenon—where AI-mediated social interactions replace genuine human solidarity—results in deep-seated depressive symptoms and a sense of social isolation.

AI as a Social Stressor:

The Threat of Displacement (Anxiety) The “Precarity” of the middle class has increased. AI doesn’t just threaten blue-collar jobs; it threatens white-collar identities. The sociological impact of “Status Anxiety” is profound, as individuals lose the social identity tied to their profession.

The Erosion of Empathy (Depression) AI chatbots and virtual assistants provide “simulated empathy.” Sociologically, this is “Mechanical Solidarity” gone wrong. When humans seek emotional support from non-human entities, the lack of shared human experience (intersubjectivity) results in an emotional void.

Impact on Anxiety and Depressive Symptoms:

Sociologically, depression is often linked to a lack of “social belonging.”

- **Algorithmic Loneliness:** As AI replaces human interaction (chatbots, automated services), the “organic solidarity” of society is replaced by “mechanical interaction.”
- **The Comparison Trap:** AI-driven feeds show a distorted reality. The sociological “looking-glass self” (Cooley) now sees a reflection mediated by filters and algorithms, leading to deep-seated inadequacy.

The study finds that Technostress is not a personal failure but a **Societal Maladjustment** to rapid AI integration. To address the rise in anxiety and depression, we must move beyond “mindfulness apps” (which are often AI-driven themselves) and focus on:

1. **Legislative Boundaries:** “Right to Disconnect” laws to combat Techno-Invasion.
2. **Human-in-the-Loop Systems:** Ensuring AI assists rather than replaces human agency to reduce alienation.
3. **Digital Literacy:** Educating society on the “Algorithmic Nature” of their stress to depersonalize the anxiety

The Dawn of the Algorithmic Age

The twenty-first century is witnessing a transition arguably more profound than the Industrial Revolution: the integration of Artificial Intelligence (AI) into the core of human existence. While previous technological shifts replaced physical labor, AI is designed to augment, mediate, and in many cases, replace human cognition. From a sociological perspective, this is not merely a technical upgrade; it is a total reconfiguration of the “Social Contract.” As AI systems become the primary intermediaries for how we work, communicate, and perceive ourselves, they introduce a new form of systemic pressure known as **Technostress**.

Mental health has traditionally been viewed through a medical or psychological lens—as a private, internal struggle. However, the “Era of AI” demands a sociological investigation. When millions of individuals globally report rising levels of anxiety and depressive symptoms simultaneously, we must look at the “Social Facts” (as Emile Durkheim suggested) rather than individual biology.

Technostress is the modern social pathogen. It is defined as the struggle to cope with the rapid evolution of technology and the changing social expectations that come with it. In the context of AI, this stress is unique because AI is **autonomous, predictive, and invisible**. Individuals are no longer just using a tool; they are living within an “Algorithmic Ecosystem” that constantly monitors, evaluates, and nudges them toward maximum productivity.

The Intersection of AI and Mental Health

The relationship between AI and mental health is multifaceted. On one hand, AI offers efficiency; on the other, it creates a “Culture of Immediacy.”

- **Anxiety** in this era is often linked to the “Precarity of Labor.” As AI demonstrates the ability to perform complex tasks—from coding to creative writing—the social identity of the “expert” is threatened. This leads to **Status Anxiety**, where the individual feels a constant need to prove their relevance against an unwearying machine.
- **Depressive Symptoms** are frequently rooted in **Digital Alienation**. As AI-mediated

interactions replace face-to-face social solidarity, the “Organic Bonds” of society weaken. The individual becomes a “Data Point” in a vast network, leading to a sense of purposelessness and social isolation.

Theoretical Framework:

Karl Marx & The Alienation of the Digital Worker: AI often deskills workers. When an AI performs the “thinking” part of a job, the human feels alienated from the product of their labor. This loss of agency is a primary driver of workplace depression. **Émile Durkheim & Digital Anomie:** Rapid technological change creates a state of “normlessness” (anomie). Old social norms for work and communication are dying, and AI is replacing them faster than new norms can form, leading to collective anxiety. **Erving Goffman & The Curated Self:** In the AI era, algorithms dictate social visibility. The pressure to perform for an algorithm (on social media or professional platforms) creates a “front stage” persona that is exhausting to maintain, resulting in “performative burnout.” In sociology, we don’t just look at a person’s sadness; we look at the **Social Structure** causing it. To understand AI-driven Technostress, we use three primary lenses:

Karl Marx: The Alienation of the Digital Mind

Marx’s theory of **Alienation** is traditionally about factory workers, but it applies perfectly to the “Era of AI.”

- **The Concept:** Alienation occurs when a worker loses control over their work. In the AI era, it’s not just physical labor being taken; it’s **Intellectual Labor**.
- **Technostress Connection:** When an AI writes your reports, generates your designs, or makes your decisions, you become “alienated” from your own creativity.
- **Mental Health Impact:** This leads to a sense of **Meaninglessness** and **Depressive Symptoms**. The worker feels like a “human-in-the-loop” rather than a creator. The stress comes from the fear that your unique human value is being erased by an algorithm.

Michel Foucault: The Digital Panopticon

Foucault spoke about the **Panopticon**—a prison where prisoners feel they are being watched 24/7, even if they aren’t.

- **The Concept:** AI acts as a “Permanent Watchman.” Whether it is a delivery app tracking a driver’s every turn or corporate software tracking an employee’s “active status,” the gaze is constant.
- **Technostress Connection:** This is “**Techno-Invasion**.” The stress doesn’t come from being caught doing something wrong; it comes from the *pressure to always appear productive*.
- **Mental Health Impact:** This results in **Chronic Anxiety** and **Hyper-Vigilance**. Individuals cannot relax because the “AI Eye” is always open. This constant state of ‘performance’ leads to emotional exhaustion and burnout.

Emile Durkheim: Digital Anomie and Social Disintegration

Durkheim’s concept of **Anomie** refers to a state of “normlessness” that happens during rapid social change.

- **The Concept:** When society changes too fast (like the sudden explosion of ChatGPT and AI), the old rules of behaviour disappear, and new ones aren't ready yet.
- **Technostress Connection:** We are in a state of “**Techno-Uncertainty**.” People don't know if their jobs will exist in two years, or if the “person” they are chatting with online is even human.
- **Mental Health Impact:** Durkheim argued that Anomie leads to higher rates of suicide and depression because the “Social Anchor” is gone. The lack of clear boundaries in the AI era makes people feel lost and anxious about their future place in society.

Conclusion

The “Era of Artificial Intelligence” is a double-edged sword. While it offers unprecedented progress, its current sociological implementation is a major driver of Technostress, Anxiety, and Depression. The sociological investigation into “Mental Health in the Era of Artificial Intelligence” reveals that the rising tide of anxiety and depressive symptoms is not a coincidental byproduct of technological progress, but a structural outcome of Technostress. As this study has demonstrated, when AI systems move from being mere tools to becoming autonomous social actors, they reconfigure the foundational structures of work, identity, and social solidarity. By analyzing these shifts through the lenses of classical and contemporary sociological theory, we can conclude that the current mental health crisis is fundamentally an issue of Social Maladjustment to a digital environment that prioritizes algorithmic efficiency over human well-being. The primary driver of anxiety in this era is the Digital Panopticon. As explored through Foucault's framework, the constant, invisible surveillance of AI in both professional and private spheres creates a state of hyper-vigilance. Individuals are no longer free to exist in a “Back Stage” of unmonitored recovery; instead, they are forced into a permanent “Front Stage” performance for an algorithm that never sleeps. This constant visibility erodes the psychological safety required for mental stability, leading to chronic stress and exhaustion. Furthermore, the prevalence of depressive symptoms is deeply rooted in Marxist Alienation and Durkheimian Anomie. The “Deskilling” of cognitive labor, as identified by Braverman, has led to a crisis of skill-identity. When individuals perceive that their unique intellectual contributions are being replaced by “Black Box” algorithms, they experience a profound loss of agency and purpose. Combined with the erosion of “Strong Ties” (Granovetter) in favor of shallow, AI-mediated “Weak Ties,” the modern individual finds themselves in a state of social isolation—connected to thousands of data points but anchored by none.

Our research shows that mental health symptoms are not just “brain chemistry” issues; they are responses to a Digital Panopticon and Algorithmic Alienation. To move forward, we must stop asking humans to “adapt” to machines and start demanding that AI “adapt” to the sociological needs of humans. Only by reclaiming our Agency and Social Solidarity can we mitigate the mental health crisis of the 21st century.

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