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Beyond Skills: Explaining Psychological Readiness Deficit in Digital Transformation

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Abstrak

Artificial intelligence and digital transformation are fundamentally reshaping contemporary work systems, yet human adaptation has not kept pace with these rapid changes. Existing research on organizational change, technology acceptance, and digital transformation remains fragmented in explaining how individuals develop psychological readiness under conditions of continuous technological acceleration. This study addresses this gap by developing a conceptual framework that explains psychological readiness deficit as a multidimensional condition arising from the misalignment between technological demands and human psychological capacity. Drawing on an integrative synthesis of literature across organizational behavior, human resource development, and digital transformation, the study identifies three core mechanisms: cognitive overload, emotional strain, and identity disruption, that undermine individuals' readiness in digitally intensive environments. The proposed model further highlights the moderating roles of psychological safety and meaningful work in mitigating readiness deficit. This study contributes to theory by reframing readiness as a dynamic and failure-prone process rather than a static precondition of change. It also provides practical insights for organizations to design human-centered transformation strategies that address deeper psychological dimensions of work.

Keywords

psychological readiness deficit; digital transformation; artificial intelligence; technostress; meaningful work; psychological safety

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1. Introduction

The rapid acceleration of digital technologies and artificial intelligence (AI) is fundamentally reshaping how organizations operate, compete, and create value. Across industries, firms are increasingly adopting advanced digital systems to enhance efficiency, innovation, and decision-making processes (Vial, 2019; Verhoef *et al.*, 2021). This transformation is not merely technological but systemic, altering workflows, organizational structures, and the nature of human work itself. As digital transformation intensifies, organizations are expected to become more agile, data-driven, and adaptive to continuous change.

Despite these advancements, a growing body of evidence suggests that technological progress has not been matched by an equivalent level of human adaptation. Employees are experiencing increasing levels of disengagement, burnout, and resistance to change in digitally intensive work environments (Tarafdar *et al.*, 2019; Salanova *et al.*, 2013). Rather than alleviating work pressures, digital technologies often introduce new forms of cognitive overload, role ambiguity, and emotional strain (Ragu-Nathan *et al.*, 2008; Tarafdar *et al.*, 2013). These challenges indicate a deeper structural issue: while organizational systems evolve at an exponential pace, human psychological adaptation tends to occur incrementally.

This misalignment highlights a critical but underexplored dimension of digital transformation—psychological readiness. Traditionally, the concept of readiness has been examined within the domain of organizational change, where it is defined as the extent to which individuals and organizations are prepared to implement and sustain change initiatives (Armenakis *et al.*, 1993; Holt *et al.*, 2007; Weiner, 2009). Existing studies have identified key antecedents of readiness, including beliefs about change efficacy, leadership support, and individual attitudes toward change (Oreg *et al.*, 2011; Rafferty *et al.*, 2013). However, much of this literature has been developed in the context of discrete, episodic change rather than continuous, technology-driven transformation.

Parallel research streams have explored related constructs such as technology readiness and technology acceptance. The Technology Readiness Index (TRI) and subsequent models, including the Unified Theory of Acceptance and Use of Technology (UTAUT), have provided valuable insights into individuals' willingness to adopt new technologies (Parasuraman, 2000; Venkatesh *et al.*, 2003, 2012). While these frameworks explain adoption behavior, they primarily focus on usage intention and perceived usefulness, offering limited insight into deeper psychological processes such as identity disruption, emotional strain, and meaning erosion in the face of ongoing digital change.

More recent studies on digital transformation and AI readiness have begun to address organizational-level preparedness, emphasizing capabilities, leadership, and structural alignment (Jöhnk *et al.*, 2021; Gfrerer *et al.*, 2021). However, these approaches remain largely organization-centric and do not sufficiently explain how individuals develop the psychological capacity to cope with continuous technological acceleration. At the same time, research on technostress has demonstrated that digital environments can act as persistent stressors, generating negative outcomes such as fatigue, reduced performance, and decreased well-being (Tarafdar *et al.*, 2019; Srivastava *et al.*, 2015). Yet, these studies often treat stress as an outcome rather than integrating it into a broader framework of readiness.

Taken together, these fragmented perspectives reveal a significant theoretical gap. Existing literature has examined readiness for change, technology adoption, and digital transformation largely in isolation, without fully integrating the psychological mechanisms that underpin human adaptation in digitally accelerated environments. In particular, there is limited understanding of how cognitive, emotional, and identity-related processes interact to shape individuals' readiness under conditions of continuous technological change.

This study addresses this gap by developing a conceptual framework that explains psychological readiness deficit in the context of digital transformation. Unlike prior models that focus on skills, attitudes, or adoption intentions, this study conceptualizes psychological readiness as a multidimensional construct shaped by three core mechanisms: cognitive overload, emotional strain, and identity disruption. By integrating insights from organizational behavior, human resource development, and digital transformation research, the proposed framework offers a more holistic understanding of why individuals struggle to adapt despite increasing investments in technological and skill development

The novelty of this study lies in three key contributions. First, it introduces the concept of psychological readiness deficitas a distinct construct that captures the gap between technological demands and human psychological capacity. Second, it advances a mechanism-based explanation by linking digital transformation pressures to behavioral outcomes through cognitive, emotional, and identity-related processes. Third, it provides an integrative perspective that bridges previously disconnected research streams, offering a unified framework for understanding human adaptation in AI-driven work systems.

The implications of this study are both theoretical and practical. Theoretically, it extends the literature on organizational change and technology adoption by embedding psychological mechanisms within the broader context of digital transformation. Practically, it highlights the limitations of skill-based interventions and underscores the need for organizations to design human-centered transformation strategies that address deeper psychological dimensions, including meaning, safety, and identity. Without such interventions, digital transformation efforts risk being undermined by persistent disengagement, resistance, and human capital fragility.

In an era where technological advancement continues to accelerate, understanding psychological readiness is no longer optional but essential. The success of digital transformation will ultimately depend not only on the sophistication of technologies but also on the extent to which organizations can align these technologies with the psychological realities of the human workforce.

2. Literature Review

2.1 Readiness for Organizational Change

The concept of readiness for change has long been positioned as a critical determinant of successful organizational transformation. Early work conceptualized readiness as a shared psychological state reflecting individuals' beliefs, attitudes, and intentions regarding the necessity and capability of change (Armenakis *et al*., 1993). Subsequent research refined this view by operationalizing readiness as a multidimensional construct encompassing cognitive, emotional, and behavioral components (Holt *et al*., 2007; Weiner, 2009). These studies emphasize that individuals must not only recognize the need for change but also believe in their ability—and the organization's capacity—to successfully implement it.

Further developments in the literature highlight the role of contextual and relational factors, such as leadership support, communication quality, and perceived organizational support, in shaping readiness (Rafferty *et al*., 2013; Oreg *et al*., 2011). Importantly, readiness has often been examined within the context of discrete and time-bound change initiatives, such as restructuring or strategic reorientation. In these settings, readiness is treated as a precursor to change acceptance and implementation success.

However, this body of work exhibits two key limitations when applied to contemporary digital transformation contexts. First, it assumes that change is episodic, whereas digital transformation is continuous and iterative. Second, it tends to conceptualize readiness at the organizational or group level, with less emphasis on the dynamic psychological processes

experienced by individuals in rapidly evolving technological environments. As a result, traditional readiness frameworks provide an incomplete explanation of how individuals cope with persistent and accelerating change.

2.2 Individual Psychological Readiness

At the individual level, psychological readiness has been linked to various dispositional and cognitive factors, including self-efficacy, openness to change, and emotional stability. Research suggests that individuals with higher confidence in their abilities and greater tolerance for uncertainty are more likely to engage positively with change initiatives (Judge *et al.*, 1999; Jimmieson *et al.*, 2004). Similarly, resistance to change has been conceptualized as a stable individual difference, reflecting tendencies to avoid uncertainty, maintain routines, and perceive change as threatening (Oreg, 2003).

Emotional intelligence and affective responses also play a significant role in shaping readiness. Individuals who are better able to regulate their emotions are more likely to interpret change as an opportunity rather than a threat (Vakola *et al.*, 2004). These findings suggest that readiness is not solely a cognitive evaluation but also an affective experience influenced by how individuals process and respond to change-related stimuli.

Despite these insights, existing studies largely treat psychological readiness as a static or trait-like construct. This perspective overlooks the dynamic nature of readiness in environments characterized by continuous technological disruption. In digitally intensive contexts, individuals are exposed to ongoing demands that simultaneously challenge their cognitive capacity, emotional resilience, and sense of identity. Therefore, a more process-oriented understanding of psychological readiness is required—one that captures how individuals continuously adapt (or fail to adapt) to evolving work conditions.

2.3 Technology Readiness and Acceptance

Research on technology readiness and acceptance provides important insights into how individuals engage with digital tools. The Technology Readiness Index (TRI) conceptualizes readiness as a combination of optimism, innovativeness, discomfort, and insecurity toward technology (Parasuraman, 2000; Parasuraman & Colby, 2015). Similarly, models such as the Unified Theory of Acceptance and Use of Technology (UTAUT) emphasize factors such as perceived usefulness, ease of use, and social influence in shaping technology adoption (Venkatesh *et al.*, 2003, 2012).

While these frameworks have been widely applied and validated, they primarily focus on the decision to adopt or use technology. As such, they are more concerned with behavioral intention than with deeper psychological adaptation. For example, an individual may be willing to use a new digital system while simultaneously experiencing stress, confusion, or identity-related concerns. This indicates that technology acceptance does not necessarily imply psychological readiness.

Moreover, technology readiness models often assume a relatively stable interaction between users and technologies. In contrast, digital transformation involves continuous upgrades, system changes, and evolving expectations, requiring ongoing adaptation rather than one-time acceptance. Consequently, existing models provide limited explanatory power for understanding the sustained psychological challenges associated with digital transformation.

2.4 Technostress and Digital Pressure

The concept of technostress has emerged as a critical lens for understanding the negative psychological consequences of digitalization. Technostress refers to the stress experienced by individuals due to their inability to cope with the demands of information and communication technologies (Ragu-Nathan *et al.*, 2008). Key stressors include information

overload, constant connectivity, system complexity, and rapid technological change (Tarafdar *et al.*, 2013).

Empirical studies have shown that technostress is associated with reduced job performance, lower job satisfaction, and increased emotional exhaustion (Salanova *et al.*, 2013; Srivastava *et al.*, 2015). More recent research distinguishes between techno-distress and techno-eustress, suggesting that technology can both hinder and enhance performance depending on how it is experienced (Tarafdar *et al.*, 2019). However, even positive forms of stress require psychological resources, which may become depleted over time in high-pressure digital environments.

Despite its relevance, technostress research tends to treat stress as an outcome rather than integrating it into a broader framework of readiness. This limits its ability to explain how stress interacts with cognitive and identity-related processes to influence individuals' preparedness for change. In the context of continuous digital transformation, technostress should be viewed not merely as a consequence but as a central mechanism shaping psychological readiness.

2.5 Digital Transformation and AI Readiness

The growing literature on digital transformation emphasizes the strategic and organizational dimensions of technological change. Studies highlight the importance of leadership, organizational culture, and dynamic capabilities in enabling successful transformation (Vial, 2019; Verhoef *et al.*, 2021). Within this stream, the concept of AI readiness has emerged, focusing on organizations' ability to integrate artificial intelligence into their operations (Jöhnk *et al.*, 2021).

Research in this area identifies factors such as data infrastructure, technological capabilities, and leadership vision as key enablers of readiness (Gfrerer *et al.*, 2021; Hradecky *et al.*, 2022). While these contributions are valuable, they remain largely organization-centric, with limited attention to individual-level psychological processes. As a result, they do not fully explain why employees often resist or struggle with digital transformation despite organizational readiness.

Furthermore, digital transformation is not only a structural change but also a human experience that reshapes how individuals perceive their roles, competencies, and identities. Without incorporating these psychological dimensions, existing frameworks provide an incomplete understanding of transformation outcomes.

2.6 Psychological Safety, Meaning, and Engagement

Beyond cognitive and behavioral factors, deeper psychological dimensions such as safety, meaning, and engagement play a crucial role in shaping individuals' responses to change. Psychological safety, defined as the shared belief that it is safe to take interpersonal risks, has been shown to facilitate learning and adaptation in uncertain environments (Edmondson, 1999). When individuals feel psychologically safe, they are more likely to experiment, ask questions, and engage with new systems.

Similarly, the concept of meaningful work highlights the importance of purpose and significance in shaping employee motivation and well-being (Rosso *et al.*, 2010). Meaningful work is associated with higher levels of engagement, resilience, and commitment, particularly in times of change (Bailey *et al.*, 2019). In contrast, the erosion of meaning can lead to disengagement and reduced motivation, even when individuals possess the necessary skills and resources.

These perspectives suggest that psychological readiness extends beyond cognitive and emotional capacity to include existential dimensions related to identity and purpose. However, these dimensions are rarely integrated into models of digital transformation or

technology adoption. As a result, an important layer of human experience remains underexplored in the current literature.

2.7 Synthesis and Research Gap

Taken together, the reviewed literature reveals a fragmented understanding of psychological readiness in the context of digital transformation. Research on organizational change provides foundational insights into readiness but is limited by its focus on episodic change. Technology acceptance models explain adoption behavior but overlook deeper psychological processes. Technostress research highlights the negative consequences of digitalization but lacks integration with readiness frameworks. Meanwhile, studies on digital transformation and AI readiness emphasize organizational capabilities while underrepresenting individual experiences.

This table clarifies the conceptual boundaries of the core constructs to prevent overlap and ambiguity. It establishes analytical precision by distinguishing each mechanism and the readiness deficit in terms of their defining features and functional roles within the model.

Table 1. Core Constructs in the Psychological Readiness Deficit Framework

Construct	Core Definition	Analytical Role in the Model
Cognitive Overload	A condition in which individuals' information-processing capacity is exceeded by the volume, speed, and complexity of digital demands	Functions as a primary cognitive mechanism through which digital transformation pressure impairs individuals' ability to interpret and respond to change
Emotional Strain	The accumulation of stress, anxiety, and fatigue resulting from continuous adaptation to technological demands	Translates cognitive pressure into affective responses that reduce motivation, engagement, and adaptive capacity
Identity Disruption	A misalignment between individuals' self-concept and evolving roles in digitally mediated work environments	Represents a deeper psychological mechanism that undermines meaning, role coherence, and long-term engagement
Psychological Readiness Deficit	A condition in which technological demands exceed individuals' cognitive, emotional, and identity-related capacity to adapt effectively	Captures the failure state of readiness, emerging from the interaction of multiple psychological mechanisms under sustained digital pressure

Source: Developed by the author

Table 1 establishes the conceptual distinctiveness of the key constructs, ensuring that each mechanism is analytically differentiated rather than overlapping. By clarifying how cognitive, emotional, and identity-related processes operate at different levels, Table 1 strengthens the internal coherence of the model and supports a mechanism-based explanation of psychological readiness deficit.

This fragmentation points to a critical gap: the absence of an integrative framework that explains how individuals develop psychological readiness under conditions of continuous technological acceleration. In particular, there is a need to understand how cognitive overload, emotional strain, and identity disruption interact to shape readiness in digitally intensive work environments.

Addressing this gap requires a shift from viewing readiness as a static state to conceptualizing it as a dynamic process embedded within broader socio-technical systems. Such an approach enables a more comprehensive understanding of human adaptation and provides a foundation for developing more effective organizational interventions.

3. Conceptual Synthesis and Model Development

3.1 The Missing Link in Psychological Readiness Research

The preceding review highlights a fundamental fragmentation in the literature on psychological readiness in the context of digital transformation. While research on organizational change has established readiness as a key determinant of successful transformation (Armenakis *et al.*, 1993; Holt *et al.*, 2007; Weiner, 2009), it largely assumes episodic and bounded change processes. In contrast, contemporary digital transformation—driven by artificial intelligence and continuous technological innovation—represents an ongoing, dynamic, and often unpredictable process (Vial, 2019; Verhoef *et al.*, 2021).

Parallel streams of research have contributed valuable but partial insights. Technology acceptance models, including UTAUT, explain how individuals form intentions to use new systems (Venkatesh *et al.*, 2003, 2012), while technology readiness frameworks capture general predispositions toward technology (Parasuraman, 2000; Parasuraman & Colby, 2015). However, these models focus primarily on adoption behavior rather than deeper psychological adaptation. Similarly, research on technostress has documented the adverse effects of digital environments, such as cognitive overload and emotional exhaustion (Ragu-Nathan *et al.*, 2008; Tarafdar *et al.*, 2019), yet it does not fully integrate these mechanisms into a broader readiness framework.

At the organizational level, studies on digital transformation and AI readiness emphasize structural and strategic capabilities, including leadership, data infrastructure, and organizational alignment (Jöhnk *et al.*, 2021; Gfrerer *et al.*, 2021; Hradecky *et al.*, 2022). While these perspectives are critical, they insufficiently address the individual-level psychological processes that ultimately determine whether transformation efforts succeed or fail.

This fragmentation results in a critical theoretical gap: the absence of an integrative explanation of how individuals develop (or fail to develop) psychological readiness under conditions of continuous technological acceleration. In particular, existing research has not sufficiently theorized the mechanisms through which digital pressures translate into behavioral outcomes such as resistance, disengagement, and reduced adaptability.

This table situates the study within the broader literature by systematically comparing major research streams and identifying their limitations. It clarizes how the present framework extends and integrates these perspectives to address the missing link in understanding psychological readiness under continuous digital transformation.

Table 2. Research Streams and Integrative Contribution

Research Stream	Core Focus and Limitation	Contribution of This Study
Organizational Change Readiness	Focuses on attitudes, beliefs, and intentions toward change, typically in episodic and time-bound contexts; limited attention to continuous change and underlying psychological mechanisms	Reframes readiness as a dynamic and failure-prone process under continuous technological pressure, extending beyond episodic change contexts
Technology Acceptance Models (e.g., UTAUT, TRI)	Emphasizes technology adoption, usage intention, and perceived usefulness; overlooks deeper psychological processes such as stress, identity, and meaning	Moves beyond adoption to explain how individuals psychologically adapt (or fail to adapt) through cognitive, emotional, and identity-related mechanisms
Technostress Literature	Examines stress as an outcome of technology use (e.g., overload, complexity); lacks integration with broader readiness frameworks	Positions technostress-related factors as core mechanisms within a causal model of psychological readiness deficit

Research Stream	Core Focus and Limitation	Contribution of This Study
Digital Transformation and AI Readiness	Focuses on organizational capabilities, strategy, and infrastructure; underrepresents individual-level psychological processes	Integrates individual psychological mechanisms into digital transformation research, bridging macro-level readiness with micro-level adaptation processes

Source: Developed by the author

Table 2 clarifies the theoretical positioning of the study by demonstrating how it bridges previously disconnected research streams. By explicitly identifying the limitations of existing perspectives and articulating the integrative contribution, Table 2 strengthens the argument that psychological readiness deficit represents a necessary conceptual advancement rather than an incremental extension.

3.2 Conceptual Tension in Digitally Accelerated Work Systems

To address this gap, it is necessary to identify the core tensions that characterize contemporary work environments. Three interrelated tensions emerge from the synthesis of the literature.

1) Speed of Change vs. Human Capacity

Digital transformation introduces a level of speed and complexity that challenges traditional models of human adaptation. Organizations are expected to continuously update systems, processes, and capabilities, creating an environment of perpetual change (Vial, 2019). However, human cognitive and emotional systems are limited in their ability to process and adapt to such rapid shifts. Research on technostress demonstrates that excessive technological demands can lead to overload and reduced performance (Tarafdar *et al.*, 2013; Srivastava *et al.*, 2015). This tension reflects a structural mismatch between the pace of technological advancement and the limits of human adaptation.

2) Skill Development vs. Psychological Readiness

Many organizational interventions focus on developing technical skills to support digital transformation. However, evidence suggests that skill acquisition alone is insufficient to ensure successful adaptation. Individuals may possess the necessary competencies yet still experience anxiety, resistance, or disengagement (Jimmieson *et al.*, 2004; Oreg, 2003). Technology acceptance models further illustrate that willingness to use technology does not necessarily imply deeper psychological preparedness (Venkatesh *et al.*, 2003). This tension highlights the distinction between functional capability and psychological readiness.

3) Technological Efficiency vs. Meaning and Identity

Digital transformation not only changes how work is performed but also reshapes how individuals perceive their roles and identities. The increasing reliance on algorithms and automation can create feelings of reduced autonomy and diminished meaning (Faraj *et al.*, 2018). Research on meaningful work emphasizes the importance of purpose and identity in sustaining motivation and engagement (Rosso *et al.*, 2010; Bailey *et al.*, 2019). When technological systems disrupt these elements, individuals may experience identity conflict and disengagement, even in highly efficient environments.

3.3 Core Argument: Psychological Readiness as a Multidimensional Process

Building on these tensions, this study advances a central theoretical argument: psychological readiness in digitally accelerated work systems is not a static state but a dynamic, multidimensional process shaped by interacting cognitive, emotional, and identity-related mechanisms.

This perspective extends existing readiness frameworks in several ways. First, it shifts the focus from readiness as a precondition of change to readiness as an ongoing process that evolves in response to continuous environmental demands. Second, it integrates insights from technostress and digital transformation research to account for the persistent pressures experienced by individuals. Third, it incorporates deeper psychological dimensions, including identity and meaning, which are often overlooked in traditional models.

Specifically, three core mechanisms are proposed:

1. **Cognitive Overload**: the inability to process the volume and complexity of information associated with digital systems (Ragu-Nathan *et al.*, 2008; Tarafdar *et al.*, 2013).
2. **Emotional Strain**: the accumulation of stress, anxiety, and fatigue resulting from continuous adaptation demands (Salanova *et al.*, 2013; Tarafdar *et al.*, 2019).
3. **Identity Disruption**: the misalignment between individuals' self-concepts and evolving work roles in digitally mediated environments (Faraj *et al.*, 2018; Rosso *et al.*, 2010).

The structure below isolates the internal dynamics among the core psychological mechanisms, moving beyond a linear representation. It explicates how cognitive, emotional, and identity-related processes reinforce one another, forming a cumulative pathway that intensifies readiness deficit under sustained digital pressure.

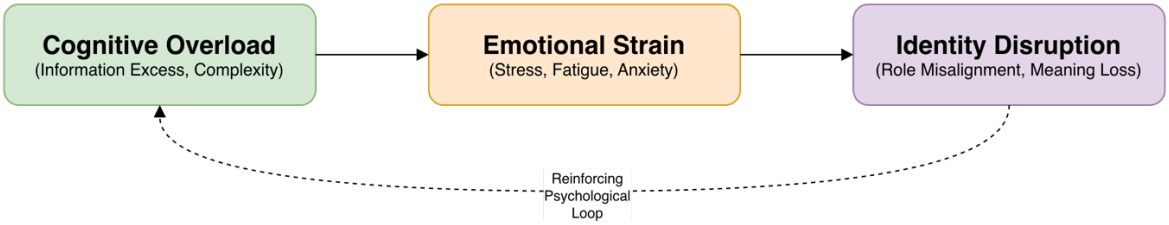

Figure 1. Interaction Dynamics Among Core Psychological Mechanisms
Source: Developed by the author

As elaborated in Figure 1, the three mechanisms do not operate independently but form a reinforcing system in which cognitive overload amplifies emotional strain, which in turn destabilizes identity. The feedback loop indicates that identity disruption can further intensify cognitive difficulties, creating a cumulative cycle of psychological depletion.

These mechanisms interact to influence individuals' capacity to engage with and adapt to digital transformation, ultimately shaping their level of psychological readiness.

3.4 Toward the Psychological Readiness Deficit Model

Drawing on the above synthesis, this study introduces the Psychological Readiness Deficit Model, which conceptualizes readiness as the outcome of interactions between digital transformation pressures and underlying psychological mechanisms.

The framework below consolidates the article's central argument by linking continuous digital transformation pressures to psychological readiness deficit through underlying mechanisms. It captures how misalignment between technological demands and human capacity translates into behavioral consequences, while accounting for key boundary conditions.

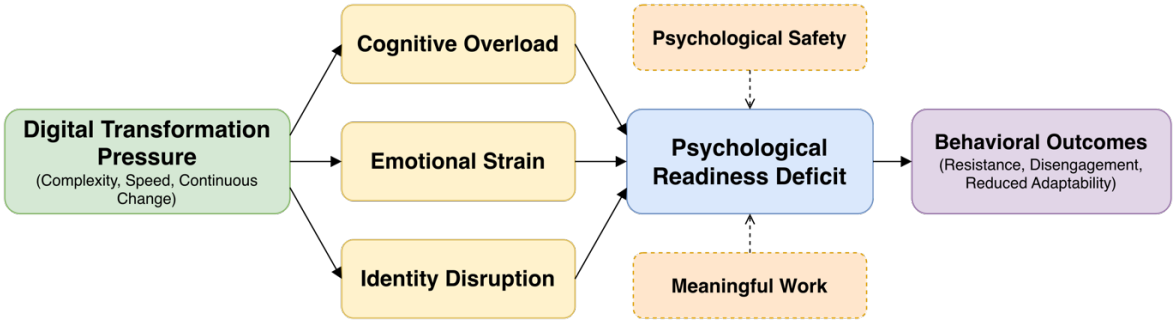

Figure 2. Psychological Readiness Deficit Model in Digital Transformation
Source: Developed by the author

Figure 2 presents the proposed mechanism based model linking digital transformation pressures to psychological readiness deficit and subsequent behavioral outcomes. Digital pressures characterized by complexity, speed, and continuous change activate three core mechanisms, namely cognitive overload, emotional strain, and identity disruption. When these mechanisms exceed individual adaptive capacity, a readiness deficit emerges and leads to resistance, disengagement, and reduced adaptability. Psychological safety and meaningful work function as boundary conditions that shape the strength of these effects.

At the input level, digital transformation generates continuous pressure through technological complexity, system changes, and performance expectations (Vial, 2019; Verhoef *et al*., 2021). These pressures activate the three core mechanisms—cognitive overload, emotional strain, and identity disruption—which collectively influence individuals' psychological state.

When these mechanisms exceed individuals' adaptive capacity, a psychological readiness deficit emerges. This deficit manifests in behavioral outcomes such as resistance to change, disengagement, reduced adaptive performance, and diminished well-being (Oreg *et al*., 2011; Pulakos *et al*., 2000; Salanova *et al*., 2013).

Importantly, the model also recognizes the role of moderating conditions that can buffer or exacerbate these effects. Psychological safety enables individuals to experiment and learn without fear of negative consequences (Edmondson, 1999), while meaningful work provides a sense of purpose that sustains motivation (Bailey *et al*., 2019). Trust in organizational systems and leadership further influences how individuals interpret and respond to digital transformation (Dirks & Ferrin, 2002).

The configuration below isolates the conditional structure of the model by specifying how contextual factors alter the strength of core relationships. It clarizes that the effects of digital transformation pressure are not uniform but contingent on enabling or constraining work environments.

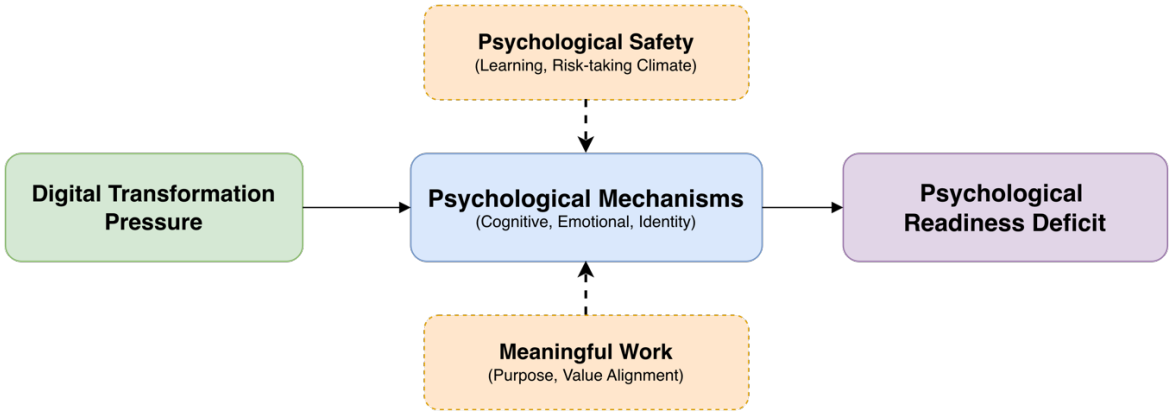

Figure 3. Moderating Effects of Psychological Safety and Meaningful Work
Source: Developed by the author

Figure 3 clarifies the conditional logic embedded in the framework by showing how psychological safety and meaningful work alter the strength of core relationships. Rather than directly influencing outcomes, these factors reshape how digital transformation pressure translates into psychological strain and readiness deficit. By making these boundary conditions explicit, Figure 3 strengthens the explanatory precision of the model and highlights the importance of context in sustaining psychological readiness.

3.5 Theoretical Contributions of the Model

The proposed model contributes to the literature in three key ways.

First, it introduces psychological readiness deficit as a novel construct that captures the gap between technological demands and human psychological capacity. Unlike existing models that focus on readiness as a positive state, this concept emphasizes the conditions under which readiness fails to develop.

Second, it provides a mechanism-based explanation of human adaptation by explicitly linking digital transformation pressures to behavioral outcomes through cognitive, emotional, and identity-related processes. This advances prior research by integrating multiple theoretical perspectives into a coherent framework.

Third, it offers an integrative lens that bridges organizational behavior, human resource development, and digital transformation research. By connecting previously fragmented domains, the model provides a more comprehensive understanding of the human dimensions of technological change.

4. Propositions Development

4.1 Digital Transformation Pressure and Cognitive Overload

Digital transformation introduces continuous streams of information, system updates, and technological complexity that significantly increase cognitive demands on employees (Vial, 2019; Verhoef *et al.*, 2021). Unlike traditional change processes, which are episodic, digital transformation requires ongoing learning and adaptation, thereby imposing sustained cognitive effort (Jöhnk *et al.*, 2021; Gfrerer *et al.*, 2021).

Research on technostress consistently identifies information overload, system complexity, and uncertainty as primary stressors that impair individuals' ability to process information effectively (Ragu-Nathan *et al.*, 2008; Tarafdar *et al.*, 2013). When cognitive demands exceed individuals' processing capacity, performance declines and decision-making quality deteriorates (Srivastava *et al.*, 2015). This aligns with broader cognitive theories suggesting that human information-processing capacity is inherently limited, making individuals vulnerable in high-complexity environments.

Within the context of readiness for change, cognitive appraisal plays a central role in shaping individuals' responses (Armenakis *et al.*, 1993; Rafferty & Griffin, 2006). When individuals are unable to cognitively process change demands, they are less likely to perceive change as manageable or beneficial, thereby reducing readiness. Thus, cognitive overload emerges not merely as a stress outcome but as a critical mechanism undermining psychological readiness.

Proposition 1:
Digital transformation pressure is positively associated with cognitive overload, which reduces individuals' psychological readiness for change.

4.2 Emotional Strain as a Mediating Mechanism

Beyond cognitive challenges, digital transformation generates significant emotional demands. Continuous exposure to technological change can lead to stress, anxiety, and emotional exhaustion, particularly when individuals perceive a lack of control over their work environment (Salanova *et al.*, 2013; Tarafdar *et al.*, 2019). These emotional responses are amplified in contexts where expectations for performance increase alongside technological demands.

The stress and coping literature suggests that emotional strain mediates the relationship between environmental demands and behavioral outcomes (Rafferty & Griffin, 2006). In organizational change contexts, individuals who experience higher levels of stress are more likely to resist change and disengage from organizational initiatives (Oreg *et al.*, 2011). Similarly, research on technostress demonstrates that emotional exhaustion negatively affects job satisfaction, commitment, and performance (Srivastava *et al.*, 2015).

Importantly, emotional strain is not independent of cognitive processes. Cognitive overload can intensify emotional responses by increasing feelings of uncertainty and lack of control (Jimmieson *et al.*, 2004). As such, emotional strain serves as a key mechanism translating digital pressure into reduced readiness.

Proposition 2:
Emotional strain mediates the relationship between digital transformation pressure and psychological readiness, such that higher emotional strain leads to lower readiness.

4.3 Identity Disruption and Resistance to Change

Digital transformation not only alters tasks and processes but also reshapes professional identities. The integration of AI and automation can challenge individuals' perceptions of their roles, competencies, and value within the organization (Faraj *et al.*, 2018). When individuals perceive that their identity is threatened or devalued, they are more likely to resist change and disengage from transformation efforts.

The concept of identity disruption is closely linked to the literature on meaningful work, which emphasizes the importance of alignment between work roles and individuals' sense of purpose (Rosso *et al.*, 2010; Bailey *et al.*, 2019). When technological changes undermine this alignment, individuals may experience a loss of meaning, leading to decreased motivation and engagement.

In the context of readiness, identity-related concerns influence how individuals interpret change. Research shows that resistance to change is often driven not only by uncertainty but also by perceived threats to self-concept (Oreg, 2003; Vakola, 2014). Therefore, identity disruption represents a deeper psychological mechanism that extends beyond cognitive and emotional factors.

Proposition 3:
Identity disruption negatively influences psychological readiness, leading to increased resistance to digital transformation.

4.4 The Moderating Role of Psychological Safety

While digital transformation pressures can undermine readiness, organizational conditions can mitigate these effects. Psychological safety—defined as a shared belief that it is safe to take interpersonal risks—plays a crucial role in enabling individuals to engage with change (Edmondson, 1999). In psychologically safe environments, individuals are more likely to experiment, ask questions, and learn from mistakes, which are essential behaviors in digitally dynamic contexts.

Research indicates that psychological safety enhances learning behavior and adaptability, particularly in uncertain environments (Newman *et al*., 2017). It also reduces the negative effects of stress by providing a supportive context for coping with challenges. In the context of digital transformation, psychological safety can buffer the impact of cognitive overload and emotional strain by encouraging open communication and collaborative problem-solving.

Thus, psychological safety functions as a boundary condition that influences the extent to which digital pressures translate into readiness deficits.

Proposition 4:
Psychological safety moderates the negative relationship between digital transformation pressure and psychological readiness, such that the relationship is weaker in high psychological safety environments.

4.5 Meaningful Work as a Buffer Against Readiness Deficit

Meaningful work represents another critical factor that shapes individuals' responses to digital transformation. When individuals perceive their work as meaningful, they are more likely to remain engaged and resilient, even in the face of significant change (Bailey *et al*., 2019). Meaning provides a sense of purpose that can offset the negative effects of stress and uncertainty.

The literature on work meaning suggests that individuals derive meaning from alignment between their roles, values, and broader life goals (Rosso *et al*., 2010). Digital transformation can either enhance or undermine this alignment, depending on how it is implemented. When meaning is preserved or reinforced, individuals are more likely to interpret change as an opportunity rather than a threat.

Furthermore, meaningful work has been linked to higher levels of motivation, engagement, and adaptive performance (May *et al*., 2004). These outcomes are directly related to psychological readiness, suggesting that meaning plays a buffering role in the relationship between digital pressure and readiness.

Proposition 5:
Meaningful work mitigates the psychological readiness deficit by buffering the negative effects of cognitive overload, emotional strain, and identity disruption.

5. Discussion

5.1 Reframing Psychological Readiness in the Age of AI

This study advances a fundamental reconceptualization of psychological readiness by positioning it not as a static antecedent of change, but as a dynamic and continuously evolving process shaped by persistent technological pressures. Traditional readiness frameworks have largely treated readiness as a precondition that precedes change implementation (Armenakis *et al*., 1993; Holt *et al*., 2007; Weiner, 2009). However, in digitally accelerated environments characterized by ongoing system updates, algorithmic integration, and continuous performance demands, readiness cannot be assumed to stabilize over time.

Recent studies on digital transformation emphasize that organizations are no longer operating within bounded change cycles but within conditions of perpetual transformation (Vial, 2019; Verhoef *et al*., 2021; Nadkarni & Prügl, 2021). This shift fundamentally alters the temporal nature of readiness, requiring individuals to sustain adaptive capacity over extended periods. As such, readiness becomes less about initial acceptance and more about continuous psychological alignment with evolving systems.

This perspective extends prior research by integrating insights from AI readiness and digital transformation literature, which have predominantly focused on organizational capabilities

(Jöhnk *et al*., 2021; Gfrerer *et al*., 2021; Hradecky *et al*., 2022). By contrast, the present study highlights the human-side constraint, demonstrating that even technologically advanced organizations may fail if individuals are unable to maintain psychological readiness over time.

5.2 A Mechanism-Based Explanation of Human Adaptation

A central contribution of this study lies in its mechanism-based explanation of psychological readiness. While prior research has identified antecedents of readiness, such as leadership support and communication (Rafferty *et al*., 2013; Oreg *et al*., 2011), it has not sufficiently explained how environmental pressures translate into individual responses.

By integrating findings from technostress research and organizational behavior, this study identifies cognitive overload, emotional strain, and identity disruption as three core mechanisms through which digital transformation affects individuals. Empirical evidence demonstrates that digital environments generate sustained cognitive demands, leading to information overload and reduced decision-making capacity (Ragu-Nathan *et al*., 2008; Tarafdar *et al*., 2013). At the same time, these demands trigger emotional responses such as stress and fatigue, which further impair adaptation (Salanova *et al*., 2013; Tarafdar *et al*., 2019).

More importantly, this study introduces identity disruption as a critical but underexplored mechanism. While existing research acknowledges resistance to change (Oreg, 2003), it often overlooks the deeper identity-related processes that shape individuals' responses. In AI-driven environments, where automation redefines roles and competencies, individuals may experience a misalignment between their self-concept and their work (Faraj *et al*., 2018). This misalignment can undermine not only readiness but also long-term engagement and commitment.

By linking these mechanisms, the proposed model moves beyond descriptive accounts and provides a causal pathway explaining how digital transformation pressures lead to behavioral outcomes such as resistance, disengagement, and reduced adaptability.

5.3 Integrating Fragmented Research Streams

Another key contribution of this study is the integration of previously fragmented research domains. The literature on readiness for change, technology acceptance, and digital transformation has largely evolved in parallel, with limited cross-fertilization. For instance, technology acceptance models explain user behavior in terms of perceived usefulness and ease of use (Venkatesh *et al*., 2003, 2012), while readiness frameworks focus on attitudes and beliefs about change (Holt *et al*., 2007). Meanwhile, digital transformation research emphasizes strategic and structural factors (Verhoef *et al*., 2021).

This study bridges these domains by demonstrating that psychological readiness emerges at the intersection of:

1) technological demands,
2) individual psychological processes, and
3) organizational conditions.

In doing so, it responds to recent calls for more integrative approaches to digital transformation research (Nadkarni & Prügl, 2021; Gong & Ribiere, 2021). The model also aligns with socio-technical perspectives, which emphasize the interdependence of human and technological systems (Kellogg *et al*., 2020; Duggan *et al*., 2020).

Importantly, the integration extends beyond structural and behavioral dimensions to include deeper psychological constructs such as meaning and identity. Research on meaningful work suggests that individuals' sense of purpose is a critical determinant of engagement and

resilience (Rosso *et al.*, 2010; Bailey *et al.*, 2019). By incorporating these dimensions, the study provides a more holistic understanding of human adaptation in digital environments.

5.4 The Role of Psychological Safety and Meaning in Sustaining Readiness

The findings also highlight the importance of contextual factors in moderating the effects of digital transformation pressures. Psychological safety emerges as a key enabler of adaptation, allowing individuals to experiment and learn without fear of negative consequences (Edmondson, 1999; Newman *et al.*, 2017). In high-pressure digital environments, such safety is essential for sustaining engagement and preventing withdrawal behaviors.

Similarly, meaningful work plays a critical role in buffering the negative effects of technological change. When individuals perceive their work as meaningful, they are more likely to interpret change as an opportunity rather than a threat (May *et al.*, 2004; Bailey *et al.*, 2019). This aligns with recent research suggesting that employee experience and engagement are central to successful digital transformation (Malik *et al.*, 2023).

Together, these findings suggest that organizations must move beyond purely technical or skill-based interventions and adopt a more human-centered approach to transformation. This includes designing work environments that support psychological safety, preserve meaning, and foster trust. Without such conditions, even well-designed digital systems may fail to achieve their intended outcomes.

5.5 Toward a Theory of Psychological Readiness Deficit

Building on the above insights, this study proposes the Psychological Readiness Deficit as a foundational concept for understanding human adaptation in digitally accelerated environments. This concept captures the gap between technological demands and individuals' psychological capacity to respond effectively.

Unlike traditional readiness constructs, which emphasize positive states such as willingness and capability, the readiness deficit perspective focuses on failure conditions—situations in which individuals are unable to cope with transformation pressures. This shift is important because it reflects the reality of many contemporary workplaces, where employees are not merely adapting but struggling to keep pace with continuous change.

The readiness deficit framework also offers a basis for future empirical research. For example, it can be operationalized through measures of cognitive overload, emotional strain, and identity disruption, and tested using methods such as structural equation modeling or qualitative analysis. In this sense, the study not only contributes conceptually but also opens new avenues for empirical investigation.

5.6 Implications for Theory and Practice

From a theoretical perspective, this study extends existing models of organizational change and technology adoption by embedding them within a broader socio-technical and psychological framework. It challenges the assumption that readiness can be achieved through discrete interventions and instead emphasizes the need for continuous alignment between human and technological systems.

From a practical perspective, the findings suggest that organizations must rethink their approach to digital transformation. Investments in technology and skills must be complemented by efforts to enhance psychological readiness, including interventions aimed at reducing cognitive overload, managing emotional strain, and supporting identity adaptation.

In addition, leaders play a critical role in shaping the context in which transformation occurs. By fostering trust, promoting psychological safety, and reinforcing the meaningfulness of work, leaders can mitigate the negative effects of digital pressures and support sustained adaptation (Dirks & Ferrin, 2002; Malik *et al.*, 2023).

6. Conclusion

This study responds to a growing but insufficiently theorized problem in contemporary organizations: the inability of individuals to sustain psychological readiness in the face of continuous digital transformation. While technological capabilities continue to advance at an unprecedented pace, human adaptation remains constrained by cognitive, emotional, and identity-related limitations. This misalignment creates a persistent gap that undermines the effectiveness of digital transformation efforts.

By developing the concept of psychological readiness deficit, this study offers a new lens for understanding human adaptation in AI-driven work systems. Rather than viewing readiness as a stable or pre-existing condition, the study conceptualizes it as a dynamic process shaped by ongoing interactions between technological pressures and psychological mechanisms. The proposed framework highlights how cognitive overload, emotional strain, and identity disruption collectively erode individuals' capacity to engage with and adapt to change.

The theoretical contribution of this study lies in shifting the focus from readiness as a positive state to readiness as a condition that can fail under sustained pressure. This perspective enables a more realistic and comprehensive understanding of organizational transformation, particularly in environments characterized by continuous change. By integrating insights from multiple domains, the study establishes a foundation for a more holistic theory of human adaptation in digitally accelerated contexts.

From a practical standpoint, the findings suggest that organizations must move beyond traditional approaches that prioritize technological investment and skill development. Effective transformation requires deliberate attention to the psychological dimensions of work, including how individuals process complexity, manage emotional demands, and reconstruct meaning in evolving roles. Without such attention, organizations risk perpetuating cycles of disengagement, resistance, and reduced performance.

Looking forward, the concept of psychological readiness deficit opens new directions for research and practice. Future studies can explore its measurement, examine its variations across contexts, and test interventions designed to enhance sustained readiness. More broadly, the study underscores a critical imperative for organizations: success in the digital era will depend not only on the technologies they adopt, but on their ability to align those technologies with the psychological realities of the people who use them.

Ultimately, the future of organizational transformation will not be determined by the speed of technological innovation alone, but by the depth of understanding of human adaptation within that transformation.

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