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# From Human Capital to Adaptive Workforce Ecosystems: Explaining Labor Resilience under AI-Driven Economic Transformation

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## Abstract

*Artificial intelligence (AI) is rapidly transforming labor markets by reshaping occupational structures, competency requirements, and organizational work systems, creating persistent challenges for workforce resilience that existing theories explain only partially. While Human Capital Theory, Dynamic Capability Theory, Employability Theory, and Digital Transformation research provide valuable insights, they remain fragmented across different levels of analysis and fail to explain how labor resilience emerges through coordinated adaptation among multiple institutional actors. This conceptual paper addresses this theoretical gap by developing Adaptive Workforce Ecosystem Theory (AWET) as a middle-range theory that explains workforce resilience in the context of AI-driven economic transformation. Using an integrative theory-building approach, the study synthesizes complementary perspectives from strategic management, human resource management, labor economics, and digital transformation to construct a coherent conceptual framework centered on Adaptive Capability Synchronization (ACS) as the core generative mechanism. The proposed theory conceptualizes labor resilience as an emergent ecosystem capability arising from recursive interactions among organizations, workers, educational institutions, governments, and technology providers. By introducing a new ecosystem-level explanatory logic, the study extends existing theories beyond isolated individual and organizational perspectives, provides a foundation for future empirical research, and offers strategic insights for organizations and policymakers seeking to build resilient workforce ecosystems in the age of AI.*

## Keywords

adaptive financial ecosystem; adaptive financial resilience; economic transformation; financial resilience; polycrisis; systemic resilience

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# 1. Introduction

Artificial intelligence (AI) has rapidly evolved from a productivity-enhancing technology into a transformative economic force reshaping industries, labor markets, and national competitiveness. Unlike previous waves of automation that primarily substituted routine manual tasks, recent advances in generative AI and machine learning increasingly affect cognitive work, knowledge-intensive occupations, and organizational decision-making. Consequently, governments and firms worldwide have accelerated investments in AI capabilities to improve productivity and sustain economic growth (Brynjolfsson *et al.*, 2025; Noy & Zhang, 2023; Vial, 2019).

However, despite unprecedented AI investments, labor market outcomes remain highly uneven. While some organizations experience productivity gains and create new forms of employment, others encounter widening skill gaps, job displacement, declining employability, and organizational resistance to technological change. This paradox suggests that technological investment alone does not automatically generate workforce resilience. Rather, organizations increasingly face the challenge of continuously adapting workers' competencies, organizational routines, and institutional arrangements to cope with AI-driven transformation (Acemoglu & Restrepo, 2020; Felten *et al.*, 2021; Parker & Grote, 2022).

Existing studies have extensively examined AI adoption from technological, strategic, and economic perspectives. Research has demonstrated that AI influences organizational productivity, innovation capability, decision quality, and competitive advantage (Jarrahi, 2018; Raisch & Krakowski, 2021; Verhoef *et al.*, 2021). Parallel streams of labor economics have investigated automation risks, task substitution, and occupational restructuring (Acemoglu & Restrepo, 2019; Autor *et al.*, 2003). Human resource management research has similarly explored algorithmic management, AI-enabled recruitment, digital work, and employee adaptation (Budhwar *et al.*, 2022; Kellogg *et al.*, 2020; Tambe *et al.*, 2019). Collectively, these studies have substantially advanced understanding of AI implementation across multiple organizational contexts.

Nevertheless, the existing literature remains fragmented. Strategic management primarily emphasizes organizational capabilities, labor economics focuses on technological substitution, and HRM concentrates on employee-level adaptation. Few studies explain how organizations, workers, educational institutions, governments, and labor market intermediaries jointly interact to produce resilient labor systems under continuous AI disruption. Consequently, workforce adaptation is often conceptualized as an organizational responsibility rather than an ecosystem-level phenomenon.

The limitation becomes even more apparent when examining the theoretical foundations underpinning current research. Human Capital Theory explains how investments in education and skills improve individual productivity (Becker, 1962), while Dynamic Capability Theory emphasizes firms' abilities to integrate, build, and reconfigure resources in changing environments (Teece, 2007; Teece *et al.*, 1997). Employability Theory and Career Adaptability Theory further explain how individuals respond to career transitions and changing work environments (Fugate *et al.*, 2004; Savickas & Porfeli, 2012). Although each perspective contributes valuable insights, they largely operate at different levels of analysis and provide limited explanations regarding the collective adaptation processes required in AI-driven labor markets.

More importantly, AI transformation continuously reshapes work itself. Jobs increasingly evolve through task reconfiguration rather than simple job replacement, requiring continuous learning, cross-functional collaboration, digital literacy, and organizational experimentation. Under such conditions, workforce resilience depends not merely on individual competencies or organizational capabilities but on the adaptive interactions among multiple actors

operating within interconnected labor ecosystems (Cascio & Montealegre, 2016; Faraj *et al.*, 2018; Parker & Grote, 2022).

This conceptual gap motivates the development of a broader theoretical perspective. We argue that workforce resilience emerges from an adaptive workforce ecosystem, defined as a dynamic configuration of organizations, workers, educational institutions, governments, digital technologies, and labor market institutions that collectively enable continuous capability renewal under technological disruption. Rather than treating employees as isolated human capital assets, this perspective conceptualizes labor resilience as an emergent property arising from ecosystem-wide adaptation.

Accordingly, this paper develops Adaptive Workforce Ecosystem Theory, a middle-range theory explaining how AI-driven economic transformation stimulates labor resilience through coordinated interactions among organizational capability, workforce adaptability, institutional support, and continuous learning mechanisms. The proposed theory integrates insights from Human Capital Theory, Dynamic Capability Theory, Employability Theory, Career Adaptability Theory, and Digital Transformation research while addressing the explanatory limitations of each individual perspective.

The proposed theory contributes to the literature in four important ways. First, it shifts the analytical focus from individual workers toward workforce ecosystems as the primary unit of explanation. Second, it integrates strategic management, human resource management, labor economics, and digital transformation into a coherent explanatory framework. Third, it proposes causal mechanisms explaining how ecosystem coordination generates labor resilience under AI disruption. Finally, it provides a middle-range theoretical foundation that can guide future empirical investigations across different institutional and economic contexts.

The remainder of this paper proceeds as follows. Section 2 critically reviews the theoretical foundations and identifies unresolved conceptual gaps. Section 3 develops the Adaptive Workforce Ecosystem Theory by specifying its core constructs, mechanisms, boundary conditions, and propositions. Section 4 presents the formal middle-range theory. Section 5 discusses theoretical and managerial implications as well as future research directions. The paper concludes by summarizing the contribution of the proposed theory to the emerging literature on AI-driven labor transformation.

## 2. Theoretical Foundations and Conceptual Gaps

### 2.1 Human Capital Theory and the Limits of Skill Accumulation

Human Capital Theory has long served as the dominant theoretical lens for explaining workforce productivity and economic growth. Becker (1962) conceptualized education, training, and experience as productive investments that enhance workers' knowledge, skills, and future earnings. Since then, the theory has become a cornerstone of labor economics, human resource management, and development economics because it explains how investments in people generate competitive advantage at both organizational and national levels. Subsequent studies have consistently demonstrated that firms investing in employee development generally achieve higher innovation capability, productivity, and organizational performance (Barney, 1991; Becker, 1962)

The rapid diffusion of AI, however, fundamentally challenges one of the underlying assumptions of Human Capital Theory—that skills remain valuable long enough to generate economic returns. AI technologies continuously redefine task structures, automate cognitive activities, and create entirely new occupational requirements. Consequently, workforce capability is no longer determined solely by accumulated knowledge but increasingly by workers' capacity to continuously renew competencies throughout their careers (Acemoglu & Restrepo, 2019; Autor *et al.*, 2003).

Recent evidence further indicates that technological disruption shifts labor demand away from stable occupational skills toward adaptive capabilities, digital literacy, interdisciplinary collaboration, and continuous learning (Felten *et al.*, 2021; Parker & Grote, 2022). Under these conditions, skill accumulation alone becomes insufficient to explain why some organizations maintain resilient workforces while others experience severe labor displacement despite comparable investments in training.

Moreover, Human Capital Theory largely conceptualizes capability development at the individual level. It provides limited explanations regarding how organizations, governments, educational institutions, and labor market actors jointly coordinate workforce adaptation during periods of rapid technological transformation. As AI increasingly reshapes labor markets through ecosystem-wide interactions, the explanatory power of individual-centered human capital investment becomes progressively constrained.

## 2.2 Dynamic Capability Theory Beyond Organizational Adaptation

Dynamic Capability Theory extends the resource-based view by emphasizing an organization's ability to integrate, build, and reconfigure internal and external resources in response to environmental change (Eisenhardt & Martin, 2000; Teece *et al.*, 1997) Rather than viewing competitive advantage as arising from static resource ownership, the theory argues that sustained performance depends upon continuous organizational renewal.

This perspective has significantly advanced research on digital transformation, strategic agility, and innovation management. Organizations possessing superior sensing, seizing, and transforming capabilities are generally more successful in responding to technological disruption and maintaining long-term competitiveness (Bharadwaj *et al.*, 2013; Teece, 2007; Zollo & Winter, 2002).

Nevertheless, Dynamic Capability Theory primarily explains organizational adaptation rather than workforce adaptation. Employees are frequently conceptualized as organizational resources whose competencies can be reconfigured through managerial action. Such an assumption overlooks the reciprocal relationship between organizational transformation and workers' adaptive behavior. AI adoption not only requires organizations to develop new capabilities but also depends upon workers' willingness and capacity to learn, collaborate with intelligent systems, and redefine professional identities.

Furthermore, the theory provides limited insight into how adaptive capabilities emerge through interactions among firms, educational institutions, governments, labor market intermediaries, and technology providers. As AI transformation increasingly extends beyond organizational boundaries, adaptation becomes an ecosystem phenomenon rather than an exclusively organizational capability.

## 2.3 Employability, Career Adaptability, and Workforce Resilience

Research on employability and career adaptability complements Human Capital Theory by recognizing that sustainable careers require continuous adaptation rather than one-time skill acquisition. Employability reflects individuals' capability to obtain, maintain, and transition between employment opportunities under changing labor market conditions (Fugate *et al.*, 2004; Heijde & Van Der Heijden, 2006). Similarly, Career Adaptability Theory emphasizes psychosocial resources: including concern, control, curiosity, and confidence, that enable individuals to cope with career transitions and uncertainty (Savickas & Porfeli, 2012).

More recent scholarship on sustainable careers further argues that career success increasingly depends on lifelong learning, employability renewal, and the interaction between individual agency and contextual opportunities (Akkermans *et al.*, 2020; De Vos *et al.*, 2020). These perspectives acknowledge that technological disruption continuously reshapes career trajectories and requires individuals to repeatedly adjust professional competencies.

Although these theories substantially improve understanding of individual adaptation, they remain centered on personal career development. They pay comparatively less attention to organizational coordination, institutional support, and systemic interactions that collectively influence workforce resilience. Consequently, they explain why some individuals adapt successfully but provide limited explanations regarding why entire labor systems exhibit varying degrees of resilience under similar technological pressures.

## 2.4 Digital Transformation, AI, and the Emerging Workforce Challenge

Digital transformation research has increasingly recognized AI as a general-purpose technology capable of reshaping organizational structures, business models, and economic systems (Verhoef *et al.*, 2021; Vial, 2019). Unlike earlier technological innovations, AI simultaneously influences operational processes, managerial decision-making, knowledge creation, and workforce composition.

Recent studies further demonstrate that AI transforms work through task augmentation rather than simple labor substitution (Jarrahi, 2018; Raisch & Krakowski, 2021). Employees increasingly collaborate with intelligent systems, requiring organizations to redesign work processes, redefine professional roles, and establish new governance mechanisms (Faraj *et al.*, 2018; Kellogg *et al.*, 2020).

Human resource management research has similarly documented the emergence of algorithmic management, AI-assisted recruitment, digital performance evaluation, and continuous workforce analytics (Budhwar *et al.*, 2022; Tambe *et al.*, 2019). These developments indicate that workforce adaptation depends not only on technological implementation but also on organizational learning, leadership, institutional regulation, and employee trust.

Despite these advances, the literature remains fragmented across disciplinary boundaries. Strategic management focuses on organizational competitiveness, HRM examines employee adaptation, labor economics investigates employment dynamics, while information systems research analyzes technological implementation. Few studies integrate these perspectives into a coherent explanation of how labor resilience emerges across interconnected workforce ecosystems. To facilitate comparison across the principal theoretical perspectives, the following table summarizes their analytical focus, major strengths, and unresolved limitations that motivate the development of a broader ecosystem-based explanation.

**Table 1.** Comparative Analysis of Existing Theories

| Theory | Primary Unit of Analysis | Core Strength | Major Limitation | Gap Addressed by AWET |
|---|---|---|---|---|
| Human Capital Theory | Individual | Explains skill investment | Assumes relatively stable skill value | Continuous capability renewal across ecosystems |
| Dynamic Capability Theory | Organization | Explains organizational adaptation | Limited workforce perspective | Workforce–organization co-adaptation |
| Employability Theory | Individual | Explains employability | Weak institutional explanation | Multi-actor workforce adaptation |
| Career Adaptability Theory | Individual | Explains career transitions | Ignores ecosystem governance | Collective labor resilience |
| Digital Transformation Theory | Organization | Explains technology implementation | Fragmented across disciplines | Integrated explanation linking AI, organizations, institutions, and labor resilience |

*Source: Developed by the author based on Becker (1962), Teece et al. (1997), Eisenhardt and Martin (2000), Fugate et al. (2004), Savickas and Porfeli (2012), Vial (2019), Verhoef et al. (2021), and Raisch and Krakowski (2021).*

Table 1 demonstrates that each theoretical perspective contributes valuable insights into workforce adaptation but remains confined to a specific analytical level. Collectively, these theories explain individual capability, organizational adaptation, career development, or technological transformation without adequately capturing coordinated adaptation across multiple institutional actors. This unresolved conceptual gap provides the theoretical justification for proposing Adaptive Workforce Ecosystem Theory in the subsequent discussion.

## 2.5 Toward Adaptive Workforce Ecosystem Theory

The preceding review reveals a common theoretical limitation. Human Capital Theory explains capability investment but underestimates continuous capability renewal. Dynamic Capability Theory explains organizational adaptation but insufficiently captures workforce-level interactions. Employability and Career Adaptability theories explain individual resilience but overlook ecosystem coordination. Digital transformation research explains technological change but lacks an integrated mechanism linking technology, organizations, institutions, and labor systems.

These limitations suggest that labor resilience under AI-driven economic transformation cannot be adequately explained by any single theoretical perspective. Instead, resilience should be understood as an emergent outcome arising from continuous interactions among multiple adaptive actors operating across organizational and institutional boundaries.

The collective limitations identified above suggest that workforce adaptation should no longer be conceptualized as isolated individual or organizational adjustment. Instead, a broader ecosystem perspective is required to explain how multiple actors synchronize adaptive capabilities to generate labor resilience.

The conceptual evolution leading to this perspective is illustrated below.To synthesize the preceding theoretical review, the following conceptual evolution illustrates how fragmented explanations of workforce adaptation collectively motivate the development of an ecosystem-based middle-range theory.

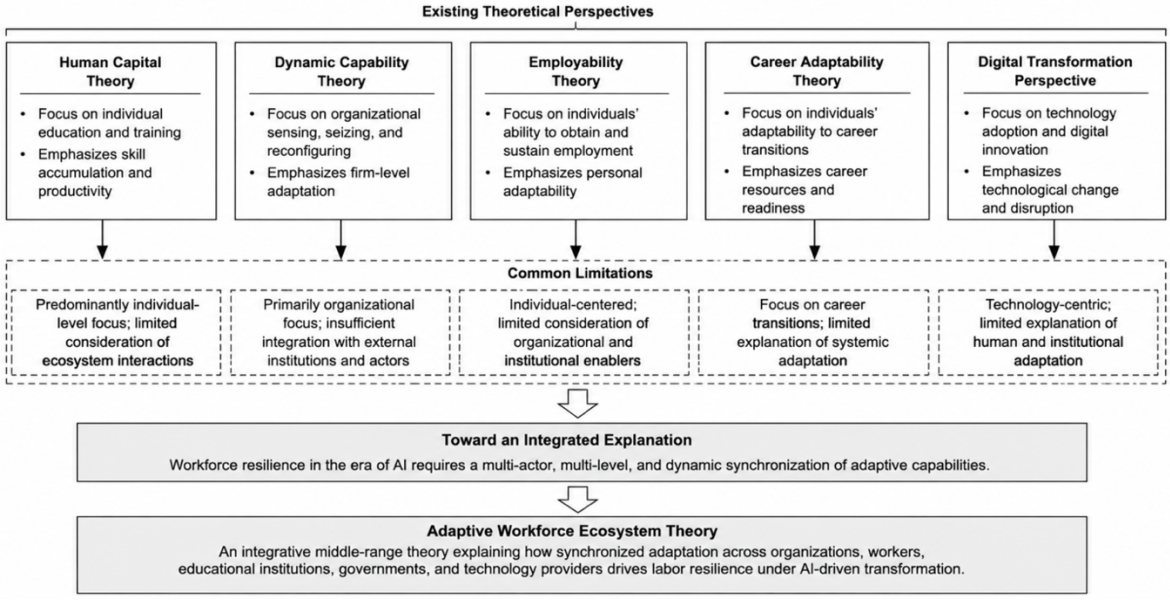


**Figure 1.** Evolution of Workforce Adaptation Theories toward Adaptive Workforce Ecosystem Theory
*Source: Developed by the author based on Becker (1962), Teece et al. (1997), Fugate et al. (2004), Savickas and Porfeli (2012), Vial (2019), and Raisch and Krakowski (2021).*

Figure 1 demonstrates that existing theories explain workforce adaptation from different analytical perspectives, including individual capability, organizational adaptation, career development, and digital transformation. However, their fragmented explanatory logic leaves

important interactions across institutional actors insufficiently addressed. This theoretical progression provides the rationale for proposing Adaptive Workforce Ecosystem Theory as an integrative middle-range explanation of labor resilience under AI-driven economic transformation.

# 3. Building Adaptive Workforce Ecosystem Theory

## 3.1 Domain Specification

Adaptive Workforce Ecosystem Theory (AWET) is proposed to explain how labor resilience emerges under conditions of continuous AI-driven economic transformation. Unlike existing theories that primarily conceptualize workforce adaptation as either an individual capability or an organizational competence, AWET defines workforce adaptation as an ecosystem-level phenomenon resulting from the coordinated interaction of multiple actors embedded within dynamic institutional environments.

The domain of the theory is intentionally bounded. First, the theory applies to industries experiencing continuous technological disruption, particularly those characterized by rapid AI adoption, digitalization, and evolving knowledge requirements. Examples include financial services, advanced manufacturing, healthcare, logistics, professional services, higher education, and public administration. In these sectors, technological innovation continuously reshapes work processes, occupational structures, and competency requirements.

Second, the unit of analysis is not individual employees nor single organizations, but the adaptive workforce ecosystem, comprising organizations, workers, educational institutions, governments, technology providers, professional associations, and labor market intermediaries. These actors collectively influence workforce capability development through continuous interactions involving learning, institutional support, resource allocation, technological diffusion, and policy intervention.

Third, the theory assumes that AI transformation is not a temporary technological shock but a persistent evolutionary process. Consequently, workforce resilience cannot be adequately explained by episodic reskilling initiatives or isolated organizational change programs. Instead, resilience becomes a dynamic capability of the ecosystem itself, emerging through repeated cycles of adaptation, learning, coordination, and institutional renewal.

Finally, AWET focuses on explaining labor resilience, defined as the capacity of workforce ecosystems to sustain employability, productive participation, and adaptive capability despite continuous technological disruption. The theory therefore explains long-term adaptive stability rather than short-term organizational performance.

## 3.2 Core Constructs

Building upon the limitations identified in previous theories, AWET proposes six interconnected constructs that collectively explain labor resilience.

The first construct is AI Transformation Intensity, referring to the degree to which AI technologies fundamentally reshape organizational tasks, decision-making processes, and occupational structures. Unlike conventional digitalization, AI transformation simultaneously affects cognitive work, organizational routines, and professional identities, thereby creating continuous pressure for workforce adaptation (Parker & Grote, 2022; Raisch & Krakowski, 2021).

The second construct is Adaptive Learning Capability, defined as the collective capacity of workers and organizations to continuously acquire, integrate, and renew competencies in response to technological change. This construct extends Human Capital Theory by emphasizing capability renewal rather than capability accumulation.

Third, Organizational Reconfiguration Capability reflects an organization's ability to redesign work systems, redefine roles, and integrate AI into operational processes while maintaining employee engagement. Drawing from Dynamic Capability Theory, this construct captures organizational adaptability but explicitly recognizes that organizational transformation depends on workforce participation rather than managerial action alone (Eisenhardt & Martin, 2000; Teece *et al.*, 1997).

The fourth construct, Institutional Workforce Support, represents the availability of educational systems, labor market policies, professional certification mechanisms, digital infrastructure, and government interventions that facilitate continuous workforce adaptation. Unlike previous HRM theories, AWET explicitly incorporates institutional actors as endogenous components of workforce resilience.

The fifth construct is Ecosystem Coordination, representing the quality of collaboration among organizations, governments, universities, technology providers, labor unions, and professional communities. Ecosystem coordination facilitates knowledge diffusion, capability sharing, collective learning, and institutional alignment.

Finally, the dependent construct, Labor Resilience, refers to the ecosystem's capacity to maintain employability, workforce participation, adaptive productivity, and occupational sustainability despite continuous AI-driven transformation.

The proposed theory comprises several interrelated constructs that collectively explain workforce adaptation as an ecosystem-level phenomenon. Their conceptual definitions and theoretical foundations are summarized below.

**Table 2.** Core Constructs of Adaptive Workforce Ecosystem Theory

| Construct | Definition | Theoretical Foundation |
|---|---|---|
| AI Transformation Intensity | Degree of AI-induced task and organizational change | Digital Transformation; AI Management |
| Adaptive Learning Capability | Continuous renewal of workforce competencies | Human Capital; Organizational Learning |
| Organizational Reconfiguration Capability | Organizational ability to redesign work and integrate AI | Dynamic Capability Theory |
| Institutional Workforce Support | Policy, education, and institutional mechanisms supporting workforce adaptation | Institutional Theory; Development Economics |
| Ecosystem Coordination | Collaboration among multiple workforce actors | Ecosystem Perspective; Network Theory |
| Labor Resilience | Long-term capacity to sustain employability and productive adaptation | Proposed Middle-Range Theory |

*Source: Developed by the author based on Becker (1962), Teece et al. (1997), Cohen and Levinthal (1990), Fugate et al. (2004), Vial (2019), Raisch and Krakowski (2021), and Parker and Grote (2022).*

Table 2 clarifies the conceptual architecture of Adaptive Workforce Ecosystem Theory by defining each construct and its theoretical origin. Rather than representing independent variables, these constructs operate as an interconnected system in which adaptive capability synchronization links technological disruption, organizational adaptation, institutional support, and labor resilience. This conceptual specification provides the foundation for developing the causal mechanism and theoretical propositions presented in the following subsection.

## 3.3 Central Generative Mechanism

The central proposition of AWET is that AI itself does not generate labor resilience. Instead, AI acts as a disruptive catalyst that activates a multilevel adaptive process involving organizations, workers, and institutions.

The mechanism begins with increasing AI transformation intensity, which disrupts existing job designs, competency structures, and organizational routines. This disruption creates capability disequilibrium in which previously valuable competencies become partially obsolete while new competencies emerge. Traditional Human Capital Theory explains only the acquisition of new skills, yet it cannot explain how continuous capability renewal is coordinated across multiple actors.

Adaptive learning capability subsequently enables workers and organizations to absorb, integrate, and recombine new knowledge through continuous learning. However, learning alone remains insufficient because organizations must simultaneously redesign work systems and managerial processes to utilize newly acquired competencies effectively. Organizational reconfiguration capability therefore converts individual learning into organizational adaptation.

At the ecosystem level, institutional workforce support accelerates capability renewal by reducing coordination costs through education reform, reskilling policies, certification systems, and labor market incentives. Simultaneously, ecosystem coordination enhances information exchange, trust, and collaborative innovation among ecosystem participants.

The interaction among these mechanisms generates labor resilience as an emergent ecosystem property rather than an individual or organizational outcome. Consequently, resilience reflects the collective adaptive capacity of the workforce ecosystem instead of isolated organizational success.

This ecosystem perspective distinguishes AWET from existing theories by explaining why countries or industries possessing similar technological resources often experience substantially different labor market outcomes. The difference lies not merely in technological adoption but in the adaptive quality of the workforce ecosystem itself.

## 3.4 Boundary Conditions

The explanatory power of AWET depends on several boundary conditions.

First, institutional quality moderates the effectiveness of ecosystem coordination. Countries with robust educational systems, active labor market policies, and supportive digital governance are more likely to develop resilient workforce ecosystems than those with fragmented institutional arrangements.

Second, digital infrastructure influences the accessibility of continuous learning opportunities and AI-enabled work practices. Poor digital connectivity constrains adaptive capability despite organizational commitment.

Third, organizational learning culture conditions the effectiveness of adaptive learning capability. Firms characterized by psychological safety, experimentation, and knowledge sharing are expected to convert technological disruption into workforce resilience more successfully than organizations emphasizing rigid hierarchical control.

Finally, labor market flexibility shapes workforce mobility and knowledge diffusion. Excessively rigid labor markets may inhibit capability reallocation, whereas highly flexible markets without adequate institutional protection may undermine workforce stability.

## 3.5 Proposition Development

Based on the proposed mechanism, the following propositions are advanced.

**Proposition 1.**
*Higher AI Transformation Intensity increases the need for Adaptive Learning Capability within workforce ecosystems.*

**Proposition 2.**

*Adaptive Learning Capability positively influences Organizational Reconfiguration Capability.*

**Proposition 3.**
*Organizational Reconfiguration Capability positively contributes to Labor Resilience.*

**Proposition 4.**
*Institutional Workforce Support strengthens the positive relationship between Adaptive Learning Capability and Organizational Reconfiguration Capability.*

**Proposition 5.**
*Ecosystem Coordination positively influences Adaptive Learning Capability through enhanced knowledge sharing and collaborative capability development.*

**Proposition 6.**
*Ecosystem Coordination positively strengthens the effect of Organizational Reconfiguration Capability on Labor Resilience.*

**Proposition 7.**
*Institutional Workforce Support and Ecosystem Coordination jointly create complementary effects that amplify Labor Resilience.*

**Proposition 8.**
*Labor Resilience emerges as an ecosystem-level adaptive capability rather than the sum of individual or organizational adaptive capacities.*

The theoretical propositions derived from the proposed mechanism are consolidated below to highlight the logical relationships among constructs and their collective contribution to labor resilience.

**Table 3.** Summary of Theoretical Propositions and Their Explanatory Logic

| | Proposition & Independent Variable | Mediator/Moderator | Outcome |
|---|---|---|---|
| **P1** | AI Transformation Intensity | — | Adaptive Learning Capability |
| **P2** | Adaptive Learning Capability | — | Organizational Reconfiguration Capability |
| **P3** | Organizational Reconfiguration Capability | — | Labor Resilience |
| **P4** | Adaptive Learning Capability | Institutional Workforce Support | Organizational Reconfiguration Capability |
| **P5** | Ecosystem Coordination | — | Adaptive Learning Capability |
| **P6** | Organizational Reconfiguration Capability | Ecosystem Coordination | Labor Resilience |
| **P7** | Institutional Workforce Support × Ecosystem Coordination | Complementarity | Labor Resilience |
| **P8** | Integrated Adaptive Mechanism | — | Emergence of Labor Resilience |

*Source: Developed by the author based on the theoretical synthesis presented in this study.*

Table 3 summarizes the theoretical propositions underlying Adaptive Workforce Ecosystem Theory. Collectively, the propositions explain how AI-driven disruption initiates a recursive process of adaptive capability synchronization involving organizational, institutional, and ecosystem-level interactions. Together, these relationships provide a coherent causal structure linking technological transformation to labor resilience and establish the theoretical foundation for the formal middle-range theory presented in the next section.

# 4. The Proposed Theory: Adaptive Workforce Ecosystem Theory

## 4.1 Fundamental Assumptions of the Theory

Adaptive Workforce Ecosystem Theory (AWET) departs from the assumption that labor resilience cannot be adequately explained by individual competence, organizational capability, or institutional support in isolation. Instead, resilience emerges from the continuous synchronization of adaptive capacities among multiple actors embedded within the workforce ecosystem. AI-driven economic transformation is therefore conceptualized as an ongoing evolutionary process rather than a discrete technological event.

The theory assumes that AI continuously reconfigures task structures, occupational boundaries, and knowledge requirements. Consequently, capability development is no longer episodic but perpetual. Workers must repeatedly update their competencies, organizations must redesign work systems, educational institutions must revise learning content, governments must adapt labor policies, and technology providers must facilitate accessible innovation. These adaptive activities occur simultaneously and interdependently, making workforce resilience an emergent ecosystem property.

Unlike Human Capital Theory, which emphasizes investment in individuals, or Dynamic Capability Theory, which emphasizes organizational adaptation, AWET assumes that sustainable labor resilience depends on the degree to which adaptation is synchronized across ecosystem actors. This synchronization reduces adjustment delays, minimizes capability mismatches, and accelerates collective learning under conditions of technological disruption.

Accordingly, AWET views AI not as the direct cause of workforce resilience but as the triggering force that activates coordinated adaptive responses across the workforce ecosystem.

## 4.2 Adaptive Capability Synchronization: The Central Generative Mechanism

The theoretical novelty of AWET lies in the concept of Adaptive Capability Synchronization (ACS). ACS is defined as the dynamic alignment of adaptive learning, organizational reconfiguration, institutional support, and inter-organizational coordination that collectively enables workforce ecosystems to respond effectively to continuous technological change.

The synchronization mechanism operates through four mutually reinforcing processes.

The first process is capability sensing, whereby organizations, educational institutions, governments, and professional associations continuously identify emerging competency requirements resulting from AI diffusion. This process reduces information asymmetry regarding future labor market needs and facilitates early capability development.

The second process is capability alignment, in which organizations redesign work systems while educational institutions revise curricula, governments update workforce policies, and technology providers adjust learning platforms. Alignment ensures that capability development occurs simultaneously across the ecosystem rather than independently within isolated organizations.

The third process is capability integration, whereby newly developed competencies become embedded into organizational routines, professional standards, and labor market practices. Integration transforms individual learning into collective workforce capability by facilitating knowledge sharing and institutional diffusion.

The fourth process is capability renewal, representing continuous feedback through which ecosystem actors evaluate workforce outcomes, identify capability gaps, and initiate subsequent learning cycles. Rather than restoring equilibrium, capability renewal maintains dynamic adaptability under persistent technological disruption.

These four processes form a recursive adaptive cycle. The outcome is not simply higher workforce competence but the emergence of labor resilience as a collective ecosystem capability capable of sustaining productive adaptation despite ongoing AI-driven transformation.

The proposed theory can be understood as a recursive adaptive mechanism in which synchronized capability development across multiple actors transforms AI-induced disruption into sustained labor resilience.

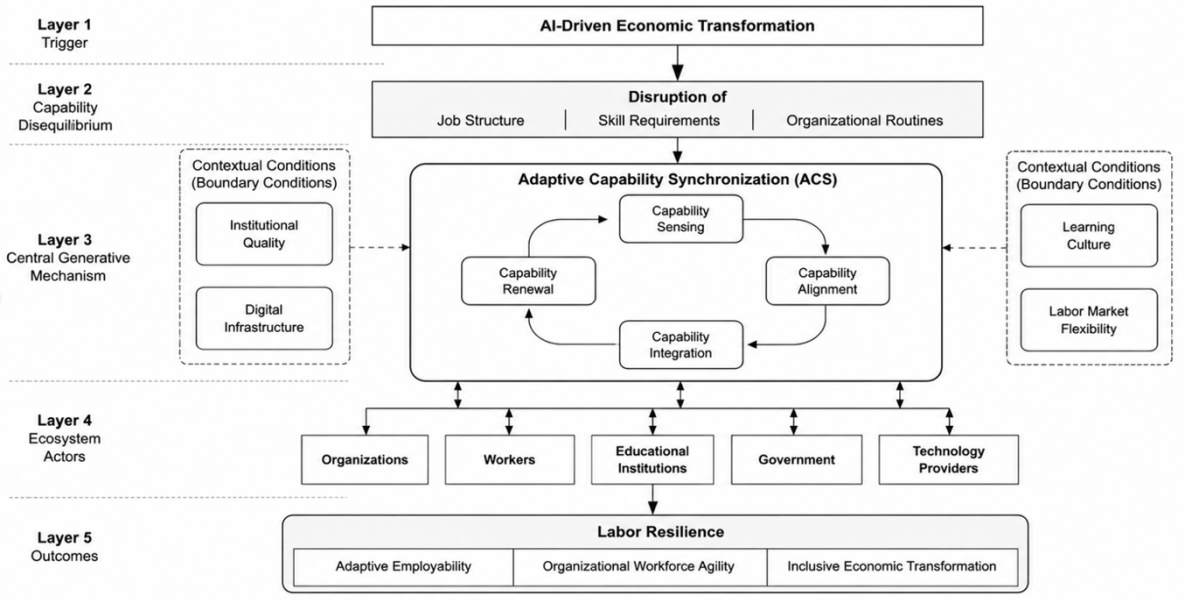


**Figure 2.** Adaptive Workforce Ecosystem Theory: The Adaptive Capability Synchronization Mechanism
*Source: Developed by the author.*

Figure 2 illustrates the causal logic of Adaptive Workforce Ecosystem Theory. AI-driven economic transformation initially creates capability disequilibrium that cannot be resolved through isolated organizational or individual adaptation. Labor resilience emerges when Adaptive Capability Synchronization recursively aligns learning, organizational reconfiguration, institutional support, and ecosystem coordination across multiple actors, while contextual boundary conditions strengthen or constrain the effectiveness of the synchronization process.

Importantly, ACS explains why regions with comparable technological investments often experience markedly different labor market outcomes. Differences arise from the synchronization of adaptation across ecosystem actors rather than from technology adoption alone.

## 4.3 Formal Theory Statement

Based on the proposed mechanism, Adaptive Workforce Ecosystem Theory can be formally stated as follows:

Labor resilience emerges when adaptive capabilities among organizations, workers, educational institutions, governments, and technology providers become continuously synchronized through iterative processes of capability sensing, capability alignment, capability integration, and capability renewal under conditions of AI-driven economic transformation.

This statement differentiates AWET from existing theories in several respects.

First, the theory changes the primary unit of analysis from individuals or organizations to workforce ecosystems.

Second, it conceptualizes adaptation as a synchronized process rather than isolated capability development.

Third, labor resilience is treated as an emergent ecosystem capability rather than a direct consequence of technological investment or workforce training.

Finally, AI functions as a contextual trigger rather than an independent explanatory variable. Consequently, successful workforce adaptation depends less on technological sophistication than on the ecosystem's capacity to synchronize adaptive responses across multiple institutional levels.

The proposed theory therefore offers a middle-range explanation situated between macroeconomic theories of technological change and micro-level theories of employee adaptation.

### 4.4 Expected Theoretical Outcomes

AWET predicts several theoretical outcomes extending beyond traditional measures of workforce performance.

The primary outcome is Labor Resilience, defined as the sustained ability of workforce ecosystems to maintain employability, productive participation, and adaptive capacity despite continuous technological disruption. Labor resilience is characterized not by resistance to change but by the capacity to continuously evolve alongside technological transformation.

A second outcome is Adaptive Employability, whereby workers maintain long-term labor market relevance through continuous capability renewal rather than occupation-specific expertise. This perspective extends Employability Theory by recognizing that employability increasingly depends upon ecosystem-supported learning rather than individual initiative alone.

Third, the theory predicts Organizational Workforce Agility, referring to organizations' capacity to rapidly redesign work structures without generating persistent skill shortages or employee displacement. Organizations operating within highly synchronized ecosystems should therefore experience lower adjustment costs during technological transitions.

At the ecosystem level, AWET further predicts Inclusive Economic Transformation. Because adaptive capability synchronization reduces structural mismatches between labor demand and workforce capability, economies exhibiting stronger synchronization should experience more equitable technological diffusion, higher workforce participation, and more sustainable productivity growth.

Finally, the theory predicts Institutional Learning Acceleration, whereby governments, universities, and professional bodies increasingly coordinate capability development through continuous feedback generated by labor market outcomes. This recursive learning process strengthens long-term ecosystem adaptability and reduces the likelihood of persistent technological unemployment.

The proposed theory advances the literature in four significant ways.

First, it introduces Adaptive Capability Synchronization as a new explanatory mechanism connecting AI-driven transformation with labor resilience. Existing theories acknowledge adaptation but rarely explain how adaptive activities become coordinated across organizational and institutional boundaries.

Second, AWET shifts the analytical focus from isolated actors to interconnected workforce ecosystems. This perspective recognizes that labor market resilience depends on interactions among firms, workers, governments, educational institutions, and technology providers rather than on any single actor's capabilities.

Third, the theory integrates insights from Human Capital Theory, Dynamic Capability Theory, Employability Theory, and Digital Transformation into a coherent causal explanation while avoiding theoretical redundancy. Rather than replacing these theories, AWET specifies the conditions under which their mechanisms become complementary.

Finally, AWET provides a testable middle-range theory with clearly defined constructs, boundary conditions, and propositions that can be examined across industries, regions, and institutional contexts. This positions the theory as a foundation for future empirical research on workforce adaptation in the era of AI-driven economic transformation.

# 5. Discussion

## 5.1 Theoretical Implications

Adaptive Workforce Ecosystem Theory (AWET) advances the literature by repositioning labor resilience as an ecosystem-level adaptive capability rather than an outcome attributable solely to individual workers or organizations. Existing theories have provided valuable yet partial explanations of workforce adaptation. Human Capital Theory emphasizes investment in education and training as the primary source of productivity (Becker, 1962), Dynamic Capability Theory explains how organizations reconfigure resources to address environmental change (Teece, 2007; Teece *et al.*, 1997), and Employability Theory focuses on individuals' capacity to obtain and sustain employment (Fugate *et al.*, 2004). Although these perspectives have substantially shaped labor and management research, each adopts a relatively narrow level of analysis.

AWET contributes by integrating these perspectives into a multilevel explanatory framework centered on Adaptive Capability Synchronization (ACS). Rather than treating adaptation as a sequence of isolated organizational or individual decisions, the theory conceptualizes adaptation as a coordinated process involving organizations, workers, educational institutions, governments, technology providers, and labor market intermediaries. This shift from isolated adaptation to synchronized adaptation constitutes the principal theoretical contribution of the proposed middle-range theory.

The theory also extends Dynamic Capability Theory by relocating dynamic capabilities beyond organizational boundaries. Traditional dynamic capability research assumes that organizations develop competitive advantage by sensing opportunities, seizing resources, and transforming organizational processes (Eisenhardt & Martin, 2000; Teece, 2007). AWET argues that, under AI-driven economic transformation, these capabilities increasingly depend upon coordinated learning and capability development across multiple institutional actors. Consequently, competitive and labor market resilience become collective ecosystem properties rather than exclusively firm-specific capabilities.

Similarly, AWET broadens Human Capital Theory by replacing the logic of capability accumulation with the logic of capability synchronization. Conventional human capital models assume that investments in education generate sustained economic returns. However, AI continuously shortens the economic life cycle of existing skills, requiring workers and organizations to engage in perpetual capability renewal. Under these conditions, synchronized learning mechanisms become more critical than the absolute stock of human capital.

Furthermore, the proposed theory bridges fragmented literature across strategic management, human resource management, labor economics, and digital transformation. Previous studies have generally examined AI adoption within disciplinary silos, limiting cumulative theoretical development. AWET provides an integrative explanation that identifies common mechanisms underlying workforce adaptation while preserving the distinct contributions of each discipline.

## 5.2 Managerial and Policy Implications

The proposed theory has several implications for organizational leaders. First, workforce resilience should no longer be viewed as the responsibility of human resource departments alone. AI-driven transformation requires coordinated action among strategic management, operations, information technology, organizational learning, and external institutional partners. Organizations that approach AI implementation primarily as a technology investment risk generating capability gaps that undermine long-term competitiveness.

Second, managers should shift from episodic training programs toward continuous learning architectures. Adaptive capability depends on creating organizational systems that facilitate ongoing reskilling, knowledge sharing, interdisciplinary collaboration, and rapid work redesign. This perspective aligns workforce development with strategic transformation rather than treating employee learning as an auxiliary human resource function.

Third, organizational leaders should actively participate in broader workforce ecosystems by collaborating with universities, vocational institutions, professional associations, technology vendors, and government agencies. Such collaboration enables organizations to anticipate changing competency requirements and reduce adjustment costs associated with AI adoption.

For policymakers, AWET highlights that labor resilience cannot be achieved solely through employment protection or short-term reskilling initiatives. Governments should strengthen institutional coordination by integrating education policy, industrial strategy, labor market regulation, and digital infrastructure into coherent workforce development systems. Policies supporting lifelong learning, micro-credentials, public–private partnerships, and digital inclusion may therefore enhance ecosystem adaptability more effectively than isolated workforce interventions.

The theory is also relevant for developing economies, where AI adoption often outpaces institutional preparedness. In these contexts, strengthening ecosystem coordination may reduce structural skill mismatches and enable more inclusive participation in digital transformation. Consequently, workforce policy should focus not only on increasing human capital investment but also on improving synchronization among ecosystem actors.

## 5.3 5.3 Limitations and Boundary Conditions

Despite its theoretical contributions, AWET is subject to several limitations that define its domain of applicability. First, the theory is designed to explain workforce adaptation under conditions of continuous technological disruption. Its explanatory power may therefore be weaker in labor markets characterized by technological stability or limited AI diffusion.

Second, the theory assumes the existence of multiple interacting institutional actors. In contexts where workforce development is dominated by a single organization or centralized authority, ecosystem dynamics may be less pronounced. Consequently, the synchronization mechanism proposed by AWET may operate differently across institutional environments.

Third, the theory conceptualizes labor resilience primarily at the ecosystem level and does not explicitly model individual psychological processes such as motivation, identity construction, or emotional responses to AI adoption. These mechanisms remain important complementary explanations that future empirical studies may integrate with the proposed framework.

Finally, AWET is intentionally presented as a middle-range theory. It does not seek to explain all dimensions of technological transformation but focuses specifically on the emergence of labor resilience under AI-driven economic change. Its theoretical value therefore depends upon future empirical refinement across different industries, institutional settings, and stages of technological development.

## 5.4 Future Research Agenda

The proposed theory opens several avenues for future research. First, empirical studies should operationalize Adaptive Capability Synchronization (ACS) as a multidimensional construct encompassing capability sensing, capability alignment, capability integration, and capability renewal. Developing valid and reliable measurement instruments represents a critical step toward testing the theory across organizational and national contexts.

Second, future research should examine the relative importance of institutional actors within workforce ecosystems. Comparative studies across countries with different educational systems, labor market institutions, and industrial policies may reveal how contextual factors influence synchronization processes and labor resilience.

Third, longitudinal research designs are particularly valuable because workforce adaptation unfolds over time. Panel data, repeated surveys, and mixed-method approaches could capture recursive learning cycles and explain how ecosystem capabilities evolve during prolonged technological transformation.

Fourth, future studies should investigate sectoral differences in adaptive workforce ecosystems. AI adoption varies substantially across manufacturing, financial services, healthcare, education, logistics, and public administration. Examining these sectors may identify industry-specific boundary conditions that refine the theory.

Finally, researchers may extend AWET by integrating complementary perspectives such as institutional theory, stakeholder theory, social capital theory, or complexity theory. Such theoretical extensions could explain additional mechanisms influencing ecosystem adaptation while preserving the central role of Adaptive Capability Synchronization.

To facilitate future theory development and empirical validation, the following table summarizes key research directions, methodological opportunities, and expected contributions derived from Adaptive Workforce Ecosystem Theory.

**Table 4.** Future Research Agenda

| Research Direction | Key Research Question | Suggested Methodology | Expected Contribution |
|---|---|---|---|
| Measurement Development | How can Adaptive Capability Synchronization be operationalized? | Scale development, CFA, SEM | Establish construct validity |
| Comparative Institutional Studies | How do institutional contexts influence labor resilience? | Cross-country comparative studies | Refine boundary conditions |
| Longitudinal Workforce Dynamics | How does synchronization evolve over time? | Panel data, longitudinal SEM | Capture recursive adaptation |
| Industry-Specific Applications | Does AWET operate similarly across industries? | Multi-industry comparative research | Identify sectoral contingencies |
| Theory Extension | How can AWET be integrated with complementary theories? | Conceptual and empirical studies | Expand explanatory scope |

*Source: Developed by the author.*

Table 4 outlines a structured research agenda for extending and empirically validating Adaptive Workforce Ecosystem Theory. The proposed directions encourage construct operationalization, comparative institutional analyses, longitudinal investigations, and cross-industry applications. Together, these opportunities provide a systematic pathway for refining the theory, evaluating its boundary conditions, and expanding its explanatory scope across diverse economic and organizational contexts.

## 6. Conclusion

Artificial intelligence (AI) is fundamentally reshaping labor markets by continuously redefining occupational structures, competency requirements, and organizational work systems. Although existing research has generated substantial insights into human capital development, organizational adaptation, employability, and digital transformation, these perspectives remain fragmented across disciplinary and analytical boundaries. Consequently, they provide only partial explanations of how workforce resilience emerges under conditions of persistent AI-driven economic transformation. Addressing this unresolved theoretical problem, the present study sought to develop a middle-range explanation capable of integrating these complementary yet disconnected perspectives into a coherent framework for understanding labor resilience at the ecosystem level.

The study contributes to the literature by proposing Adaptive Workforce Ecosystem Theory (AWET) as a novel conceptual framework that repositions workforce adaptation from an individual- or organization-centered phenomenon to a dynamic ecosystem capability. Unlike existing theories that predominantly explain isolated dimensions of adaptation, AWET conceptualizes labor resilience as an emergent property generated through the continuous synchronization of adaptive capabilities among organizations, workers, educational institutions, governments, and technology providers. The introduction of Adaptive Capability Synchronization (ACS) represents the principal theoretical innovation of the study by identifying the generative mechanism through which AI-induced disruption is transformed into sustainable workforce resilience. Rather than emphasizing capability accumulation alone, the proposed theory advances the argument that resilience depends on the recursive alignment, integration, and renewal of adaptive capabilities across interconnected institutional actors.

Beyond proposing a new conceptual perspective, the study extends several established theoretical traditions. Human Capital Theory is broadened by shifting attention from static investments in knowledge toward continuous capability renewal under rapidly changing technological conditions. Dynamic Capability Theory is extended beyond organizational boundaries by demonstrating that adaptive capabilities increasingly depend upon coordinated interactions across workforce ecosystems rather than firm-level resource reconfiguration alone. Employability and Career Adaptability theories are similarly enriched through the incorporation of institutional coordination and ecosystem-level learning processes that collectively sustain long-term labor market resilience. By integrating these complementary perspectives within a single explanatory framework, AWET provides a more comprehensive account of workforce adaptation than existing theories operating at isolated levels of analysis. The proposed propositions, conceptual architecture, and causal mechanisms therefore establish a theoretically coherent foundation for future empirical refinement while offering a parsimonious explanation of labor resilience under AI-driven economic transformation.

The study also generates important implications for practice and policy. For organizations, the proposed theory suggests that workforce resilience should be treated as a strategic capability requiring continuous coordination among technological investment, organizational learning, work redesign, and external institutional collaboration. Human resource development should therefore evolve from episodic training initiatives toward integrated learning ecosystems that support perpetual capability renewal. For policymakers, the findings highlight that effective workforce transformation cannot rely solely on labor market regulation or short-term reskilling programs. Instead, resilient labor systems require coordinated policies that integrate education, industrial strategy, digital infrastructure, lifelong learning, and workforce governance. Such ecosystem-oriented approaches may strengthen national adaptability while supporting more inclusive and sustainable economic transformation in the age of AI.

Notwithstanding these contributions, several limitations should be acknowledged. As a conceptual study, AWET has not yet been subjected to empirical validation across organizational or national contexts. Consequently, the proposed constructs, mechanisms, and propositions remain theoretically derived and require systematic operationalization and testing. In addition, the theory deliberately focuses on workforce resilience under AI-driven transformation and therefore does not explicitly incorporate broader sociocultural, political, or ethical dimensions that may also influence adaptive processes. These limitations, however, define the intended scope of the theory rather than diminish its explanatory contribution, reflecting the characteristics of a middle-range theory designed to stimulate cumulative theoretical and empirical development.

Future research should therefore prioritize the empirical operationalization of Adaptive Capability Synchronization and examine its validity using longitudinal, multilevel, and cross-national research designs. Comparative studies across industries and institutional environments may refine the proposed boundary conditions, while mixed-method investigations could provide deeper insights into the recursive interactions among organizations, workers, educational institutions, governments, and technology providers. Further theoretical extensions integrating institutional theory, stakeholder theory, social capital theory, or complexity theory may also enrich the explanatory capacity of AWET and illuminate additional mechanisms underlying ecosystem adaptation. Such research would not only strengthen the theoretical robustness of the proposed framework but also contribute to a more comprehensive understanding of workforce transformation in increasingly complex technological environments.

In conclusion, this study argues that labor resilience in the era of AI cannot be adequately understood through isolated perspectives centered on individuals, organizations, or technology alone. Sustainable adaptation emerges through the synchronized interactions of multiple actors operating within an adaptive workforce ecosystem. By introducing Adaptive Workforce Ecosystem Theory and its central mechanism of Adaptive Capability Synchronization, this study provides a theoretically grounded, integrative, and forward-looking explanation of workforce resilience that advances contemporary scholarship at the intersection of strategic management, human resource management, labor economics, and digital transformation. As AI continues to redefine the future of work, the proposed theory offers a robust conceptual foundation for guiding future research, informing organizational strategy, and shaping policies that enable resilient, inclusive, and sustainable workforce ecosystems.

## References


Acemoglu, D., & Restrepo, P. (2019). Automation and New Tasks: How Technology Displaces and Reinstates Labor. *Journal of Economic Perspectives*, *33*(2), 3–30. https://doi.org/10.1257/jep.33.2.3

Acemoglu, D., & Restrepo, P. (2020). Robots and Jobs: Evidence from US Labor Markets. *Journal of Political Economy*, *128*(6), 2188–2244. https://doi.org/10.1086/705716

Akkermans, J., Richardson, J., & Kraimer, M. L. (2020). The Covid-19 crisis as a career shock: Implications for careers and vocational behavior. *Journal of Vocational Behavior*, *119*, 103434. https://doi.org/10.1016/j.jvb.2020.103434

Autor, D. H., Levy, F., & Murnane, R. J. (2003). The Skill Content of Recent Technological Change: An Empirical Exploration. *The Quarterly Journal of Economics*, *118*(4), 1279–1333. https://doi.org/10.1162/003355303322552801

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Becker, G. S. (1962). Investment in Human Capital: A Theoretical Analysis. *Journal of Political Economy*, *70*(5, Part 2), 9–49. https://doi.org/10.1086/258724

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital Business Strategy: Toward a Next Generation of Insights. *MIS Quarterly*, *37*(2), 471–482. https://doi.org/10.25300/MISQ/2013/37:2.3

Brynjolfsson, E., Li, D., & Raymond, L. (2025). Generative AI at Work. *The Quarterly Journal of Economics*, *140*(2), 889–942. https://doi.org/10.1093/qje/qjae044

Budhwar, P., Malik, A., De Silva, M. T. T., & Thevisuthan, P. (2022). Artificial intelligence – challenges and opportunities for international HRM: a review and research agenda. *The International Journal of Human Resource Management*, *33*(6), 1065–1097. https://doi.org/10.1080/09585192.2022.2035161

Cascio, W. F., & Montealegre, R. (2016). How Technology Is Changing Work and Organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, *3*(1), 349–375. https://doi.org/10.1146/annurev-orgpsych-041015-062352

De Vos, A., Van der Heijden, B. I. J. M., & Akkermans, J. (2020). Sustainable careers: Towards a conceptual model. *Journal of Vocational Behavior*, *117*, 103196. https://doi.org/10.1016/j.jvb.2018.06.011

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, *21*(10–11), 1105–1121. https://doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E

Faraj, S., Pachidi, S., & Sayegh, K. (2018). Working and organizing in the age of the learning algorithm. *Information and Organization*, *28*(1), 62–70. https://doi.org/10.1016/j.infoandorg.2018.02.005

Felten, E., Raj, M., & Seamans, R. (2021). Occupational, industry, and geographic exposure to artificial intelligence: A novel dataset and its potential uses. *Strategic Management Journal*, *42*(12), 2195–2217. https://doi.org/10.1002/smj.3286

Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior*, *65*(1), 14–38. https://doi.org/10.1016/j.jvb.2003.10.005

Heijde, C. M. Van Der, & Van Der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management*, *45*(3), 449–476. https://doi.org/10.1002/hrm.20119

Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. *Business Horizons*, *61*(4), 577–586. https://doi.org/10.1016/j.bushor.2018.03.007

Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at Work: The New Contested Terrain of Control. *Academy of Management Annals*, *14*(1), 366–410. https://doi.org/10.5465/annals.2018.0174

Noy, S., & Zhang, W. (2023). Experimental evidence on the productivity effects of generative artificial intelligence. *Science*, *381*(6654), 187–192. https://doi.org/10.1126/science.adh2586

Parker, S. K., & Grote, G. (2022). Automation, Algorithms, and Beyond: Why Work Design Matters More Than Ever in a Digital World. *Applied Psychology*, *71*(4), 1171–1204. https://doi.org/10.1111/apps.12241

Raisch, S., & Krakowski, S. (2021). Artificial Intelligence and Management: The Automation–Augmentation Paradox. *Academy of Management Review*, *46*(1), 192–210. https://doi.org/10.5465/amr.2018.0072

Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, *80*(3), 661–673. https://doi.org/10.1016/j.jvb.2012.01.011

Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial Intelligence in Human Resources Management: Challenges and a Path Forward. *California Management Review*, *61*(4), 15–42. https://doi.org/10.1177/0008125619867910

Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, *122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, *28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003
Zollo, M., & Winter, S. G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science*, *13*(3), 339–351. https://doi.org/10.1287/orsc.13.3.339.2780