From Algorithms to Advantage: How AI Adoption and Digital Competency Shape Future Employability Through Skill Adaptability

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ABSTRACT

Artificial Intelligence (AI) has spread rapidly across industries, and that spread has raised a pressing question about workforce readiness. Demand for AI literacy, data analysis and advanced digital proficiency now runs well ahead of supply, and the resulting skills gap continues to widen. Job roles are being restructured and routine tasks automated, yet individuals have little visibility into the specific competencies that will keep them in sustainable employment. This conceptual study builds an integrated theoretical framework to examine how AI adoption at the individual and organizational level, together with foundational AI skills, shapes future employability, with digital competency and skill adaptability treated as the key mediating mechanisms. The study uses a conceptual, narrative review method, drawing multidisciplinary literature mainly from Scopus (2020-2026) and anchoring the synthesis in Human Capital Theory and Career Construction Theory. The findings indicate that AI skills are essential modern human capital but fall short on their own, since their value depends on behavioral agility. What emerges instead is a cumulative feedback loop: raw AI capability builds broader digital competencies such as data literacy, and once these are paired with stronger skill adaptability (learning agility and resilience), an individual's internal and external marketability improves. The resulting framework offers a strategic roadmap for stakeholders. Higher education needs to move away from static technical curricula toward lifelong adaptive capacity, while organizations should shift from degree-based hiring to a skills-first approach that rewards continuous upskilling and protects the workforce against rapid technological obsolescence.

Keywords: AI Adoption / AI Skills, Digital Competency, Future Employability, Skill Adaptability, Workforce Transformation

INTRODUCTION

The global digital economy has evolved quickly, and workplaces have changed with it. Artificial intelligence (AI) adoption and digital competency now sit at the centre of what determines career success (Alainati et al., 2026; Đorđević et al., 2025). As organizations bring AI tools into their operations to lift productivity and simplify workflows, the conditions that once secured a career are being rewritten (Garg & Punjani, 2026). Digital competencies, which cover information literacy, data management and proficiency with specialized tools, are no longer a useful extra. They have become basic operating requirements in the labor market (Imjai et al., 2025; Piotrowski & Revtiuk, 2026). This raises an urgent question for educators, organizational leaders and policymakers: how do individuals combine advanced technologies with core digital skills in order to protect and improve their standing at work (Hrnjić et al., 2025; Rais & El Maliki, 2025)?

A growing body of work documents what AI integration and general digital skills each contribute to job readiness and performance (Cicha & Rutecka, 2026; Mohaimen et al., 2026). AI adoption reorganizes job roles by absorbing routine tasks and placing a premium on higher-order critical thinking, while broad digital competency allows workers to move through complex technological environments with some confidence (Di Virgilio et al., 2026; Pandit et al., 2025). Access to technology and basic digital literacy, however, do not

guarantee long-term viability in a labor market where skills expire quickly (Freise et al., 2026; Theben et al., 2025). Much of this research links technological tools directly to career outcomes, yet the internal mechanism that converts raw technological capability into lasting career resilience remains poorly specified (Ananthram & Klarin, 2026).

What the literature still lacks is an integrated framework explaining how AI adoption and digital competency work together to shape future employability through intermediate behavioral mechanisms. Scholars accept that AI skills correlate positively with employment outcomes, but studies often treat technological proficiency as a fixed asset rather than a trigger for dynamic adaptation (Prasad & Das, 2026). This study addresses that theoretical and empirical gap by proposing a conceptual framework in which skill adaptability takes the role of a key mediating variable. The paper sets out to examine how AI adoption and digital competency shape future employability, both independently and in combination, and to clarify the indirect pathways through which continuous skill adaptation converts technological capability into a lasting advantage in the labor market.

Two theories underpin the study: Human Capital Theory (Schultz, 1961) and Career Construction Theory (Savickas, 2005). Human Capital Theory holds that investment in AI adoption and digital competencies raises an individual's intrinsic market value and productive capacity, which in turn improves employability outcomes. Career Construction Theory, through its concept of career adaptability, explains how people put personal capabilities such as AI skills and digital literacy to work through adaptive behaviors such as skill flexibility and continuous learning as workplace demands shift (Savickas & Porfeli, 2012). Treating skill adaptability as the bridge between technological inputs and career longevity gives the study both theoretical and practical value. It offers higher education institutions a basis for refining curricula so that graduates stay job-ready, gives organizations strategies for building workforce resilience, and provides job seekers with a route to continuous employability.

The paper is organized as follows. The next section reviews current literature on the direct relationships among AI adoption, digital competency, skill adaptability and future employability. The conceptual framework and theoretical model are then set out together with the development of propositions. The methodology section follows, describing how the literature was collected and analyzed in order to trace the proposed direct and indirect relationships. The paper closes with the findings, a discussion of their theoretical contributions and managerial implications, and an account of the study's limitations and the directions future research might take.

LITERATURE REVIEW

AI Adoption / AI Skills

The spread of artificial intelligence (AI) technologies across industries is a primary trigger for labor market restructuring and workforce transformation worldwide (Alainati et al., 2026; Bobitan et al., 2024). As AI tools take over routine tasks and tighten operational workflows, demand for conventional skill sets falls away and organizations look instead for advanced technical competence, sound critical judgment and ethical use of technology (Garg & Punjani, 2026; Rais & El Maliki, 2025). AI-based systems also reshape talent development itself by tracking individual skill profiles, flagging competency gaps and opening personalized learning pathways in real time (Cantú-Ortiz et al., 2020; Freise et al., 2026). Proactive AI adoption is therefore more than a technological convenience; it pushes individuals into continuous skill acquisition if they are to remain relevant in digitally transformed work environments.

Effective AI adoption asks more of individuals than basic operational familiarity. Working smoothly with autonomous systems calls for higher-order cognitive capability and genuine technical fluency. Once generative models and machine learning workflows enter daily business operations, employees move from passive technology use to active AI co-creation, and prompt engineering, data interpretation and validation of algorithmic output become part of the job itself (Bobitan et al., 2024; Garg & Punjani, 2026). Because workplace tasks are increasingly augmented rather than fully automated, organizations look for talent that can use AI platforms to raise productivity and generate new ideas (Alainati et al., 2026). Strong AI skills therefore form the technological foundation that helps workers avoid task displacement and stay competitive as labor markets evolve (Cantú-Ortiz et al., 2020).

Digital Competency / Skill Adaptability

Digital competency is the foundation that allows individuals to operate within changing technological ecosystems, and it covers technical proficiency, data literacy and continuous learning behavior (Bohashko & Bohashko, 2024; Đorđević et al., 2025; Nguyen-Huu & Nguyen-Van, 2026). Studies show that stronger baseline digital skills build user confidence and make it easier to accept advanced AI tools and fold them into everyday work (Cicha & Rutecka, 2026; Piotrowski & Revtiuk, 2026). Digital competency also feeds skill adaptability, meaning the cognitive and behavioral agility needed to keep qualifications current as new market demands emerge (Dyrka et al., 2026; Hrnjić et al., 2025). Rather than sitting still as a body of knowledge, digital skills give employees room to reshape what they can do, take on new methods and keep working efficiently while technology shifts under them.

Digital literacy supplies the baseline tools for navigating software, but skill adaptability is the dynamic mechanism through which people apply those tools when technological disruption accelerates. Employees with strong digital competencies show greater learning agility and less technology-induced anxiety, which lets them change direction quickly once legacy tools become obsolete (Nguyen-Huu & Nguyen-Van, 2026; Piotrowski & Revtiuk, 2026). The combination of digital fluency and psychological openness produces an adaptive mindset, so that workers can unlearn outdated routines and re-skill on a continuing basis (Bohashko & Bohashko, 2024; Dyrka et al., 2026). Digital competency is therefore both an operational prerequisite and the core enabler of sustained behavioral adaptability in high-tech work environments (Đorđević et al., 2025).

Future Employability

Future employability describes an individual's continuing ability to obtain work, keep it and adjust to it within a volatile and increasingly automated labor market (Ananthram & Klarin, 2026; Lytras & Șerban, 2025). Skill adaptability mediates the relationship between technological inputs, namely AI adoption and digital competency, and career outcomes, since it is what turns technical capability into real career resilience (Prasad & Das, 2026). Technical and digital literacy establish baseline qualifications, yet it is the highly adaptable individuals who use AI tools to best effect, absorb the shock of task displacement and take up emerging career opportunities (Arranz Lahuerta et al., 2025). Sustained future employability thus rests on the continuing interaction between technological proficiency and adaptive capacity, which confirms skill adaptability as the indispensable mechanism behind long-term success in the labor market.

With skill half-lives shortening and job descriptions in flux, future employability now depends far more on an individual's proactive readiness than on a static academic degree. Higher education institutions and corporate training frameworks face the task of moving beyond fixed technical proficiencies toward lifelong adaptability and GRIT (Ananthram & Klarin, 2026; Lytras & Șerban, 2025). Workers who pair strong AI literacy with continuous skill adaptation report higher self-efficacy, greater internal marketability and more career mobility (Arranz Lahuerta et al., 2025; Prasad & Das, 2026). Placing skill adaptability at the centre of the link between technology adoption and career outcomes makes one point clear: long-term employability comes not from predicting which job roles will exist, but from cultivating the capacity to adapt to whichever roles emerge.

METHODOLOGY

Research Design: Narrative Review Methodology

This study uses a qualitative, narrative review design to synthesize the existing literature on artificial intelligence (AI) adoption, digital competency, skill adaptability and future employability. A narrative review suits conceptual work of this kind, since it permits critical evaluation, interpretation and integration of theoretical perspectives and empirical findings drawn from several disciplines (Green et al., 2006; Snyder, 2019). Systematic reviews concentrate on statistical meta-analysis or narrow quantitative aggregation; the narrative approach instead offers the flexibility to trace how concepts have evolved, locate structural gaps in the research and build theoretical models that connect technological capability with individual workforce outcomes (Ferrari, 2015).

Key Steps in Conducting the Narrative Review

1. Literature was identified through the Scopus database, chosen for its broad coverage of high-impact peer-reviewed journals in technology, management and education, so that the search could be conducted rigorously and reported transparently. Four operational steps guided the review process:

2. Search Strategy & Query Formulation: Scopus was searched using Boolean combinations of the core keywords: ("Artificial Intelligence" OR "AI adoption" OR "AI skills") AND ("digital competency" OR "digital skills") AND ("skill adaptability" OR "adaptability") AND ("future employability" OR "employability").

3. Inclusion and Exclusion Criteria: Records were screened for peer-reviewed journal status, relevance and availability in English. Recent seminal and high-impact publications (2020-2026) dealing with workforce transformation, skill evolution and educational outcomes were prioritized, while non-peer-reviewed conference abstracts without full text and non-academic commentary were left out.

4. Study Selection & Screening: Titles and abstracts of the retrieved records were screened for alignment with the study's core variables (IV: AI Adoption & Digital Competency; MV: Skill Adaptability; DV: Future Employability). Articles meeting the criteria were then read in full.

5. Data Extraction & Conceptual Synthesis: Thematic findings, theoretical frameworks such as Human Capital Theory and Career Construction Theory, and empirical mechanisms were extracted from each article. The qualitative synthesis was then organized around the direct and indirect relationships, which provided the structure for the proposed conceptual framework.

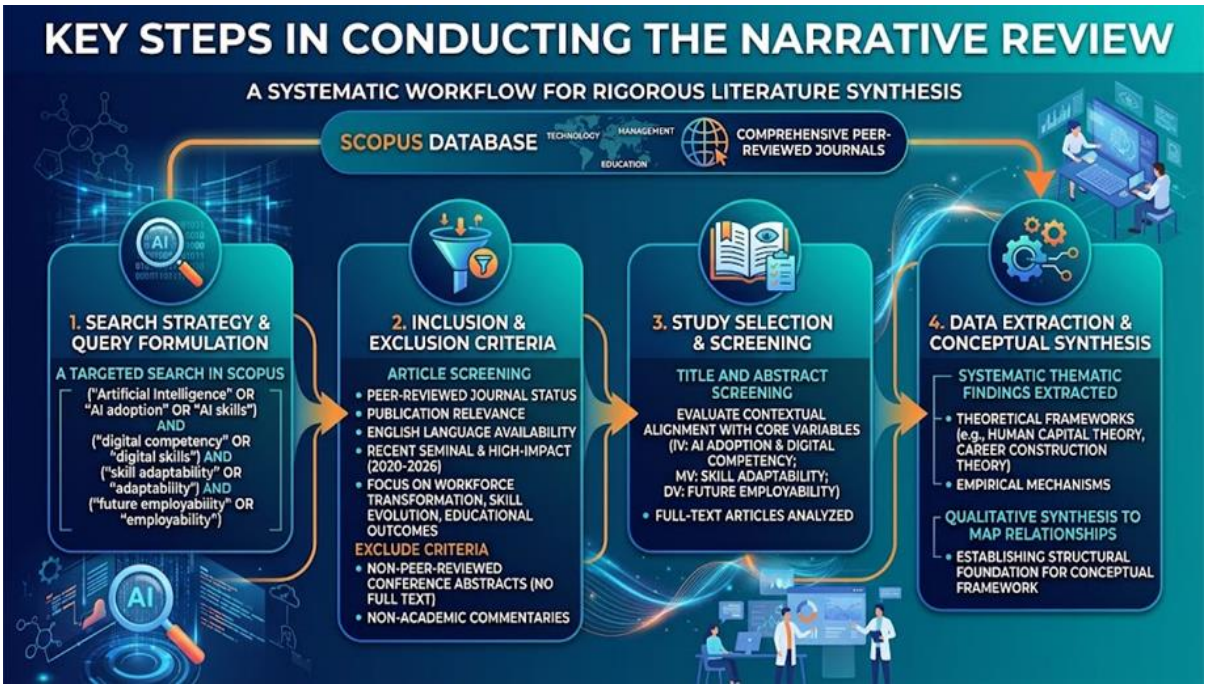


Figure 1: Key Steps in Conducting the Narrative Review

Source: Scopus AI and Gemini AI

Data Collection and Review Strategy

Data were collected from the Scopus database using a structured, multi-keyword search string, which kept the

synthesis transparent and reasonably comprehensive. Four conceptual blocks were combined with the Boolean operators (AND, OR):

- **Artificial Intelligence Technologies:** ("AI" OR "artificial intelligence" OR "machine learning" OR "deep learning")
- **Implementation Dynamics:** ("adoption" OR "implementation" OR "integration" OR "acceptance")
- **Digital Skills:** ("digital competency" OR "digital skills" OR "digital literacy" OR "technological proficiency")
- **Workforce Outcomes:** ("employability" OR "employment" OR "job readiness" OR "workforce")

The overall search string was specified as:

("AI" OR "artificial intelligence" OR "machine learning" OR "deep learning") AND ("adoption" OR "implementation" OR "integration" OR "acceptance") AND ("digital competency" OR "digital skills" OR "digital literacy" OR "technological proficiency") AND ("employability" OR "employment" OR "job readiness" OR "workforce")

The retrieved literature was then synthesized through an **integrative thematic analysis approach**. The analysis moved through three steps:

1. **Coding and Initial Categorization:** Extracted text segments, such as key findings, theoretical constructs and empirical outcomes, were coded iteratively to surface recurring patterns and foundational concepts across the studies.
2. **Theme Identification & Structural Mapping:** Codes were grouped into higher-order themes, separating the direct impact of AI adoption, the baseline role of digital competency, the outcome of future employability, and the mediating mechanism of skill adaptability.
3. 3**. Conceptual Framework Synthesis:** The themes were read against established theoretical perspectives, chiefly Human Capital Theory and Career Construction Theory, to build an overarching conceptual framework mapping the relationships among the study's core variables.

Key Findings from the Narrative Review

The qualitative synthesis points to several thematic mechanisms that govern how artificial intelligence adoption and digital competency affect workforce readiness. The evidence indicates that technological inputs do not work in isolation. They transform individual capability through dynamic skill adjustment.

Table 1: Key Findings on the Artificial Intelligence adoption and Digital Competency Affect

Key Finding Theme	Core Description & Underlying Mechanism	Direct Impact on Employability	Supporting Literature
AI Adoption & Skill Transformation	AI integration reshapes job roles: routine processes are automated and skill requirements restructured. AI-based tools also measure and profile competencies, which supports targeted skill acquisition.	Raises demand for advanced cognitive capability, problem-solving and continuous learning so that skills do not become obsolete.	Alainati et al. (2026); Bobitan et al. (2024); Cantú-Ortiz et al. (2020); Freise et al. (2026); Garg & Punjani (2026); Rais & El Maliki (2025)
Digital Competency Foundation	Covers the technical, cognitive and behavioral skills needed to navigate software and work with data. A high baseline of digital literacy makes AI easier to accept	Improves immediate job readiness, day-to-day performance and individual confidence in technology-rich	Bohashko & Bohashko (2024); Cicha & Rutecka (2026); Đorđević et al. (2025); Dyrka et al. (2026); Hrnjić et al. (2025); Nguyen-Huu & Nguyen-Van (2026); Piotrowski

	and to use well.	workplaces.	& Revtiuk (2026)
Mediating Role of Skill Adaptability	Acts as the explanatory bridge between technology inputs and career outcomes. Adaptability lets workers unlearn outdated routines and re-skill as demands shift.	Sustains long-term marketability and career resilience, turning exposure to technology into competitive advantage.	Ananthram & Klarin (2026); Bohashko & Bohashko (2024); Freise et al. (2026); Lytras & Șerban (2025); Nguyen-Huu & Nguyen-Van (2026); Prasad & Das (2026)
Educational & Stakeholder Ecosystems	Higher education institutions and organizational leaders need to align curricula and workplace culture so that technological trust, continuous learning and digital adaptation can develop.	Equips emerging professionals and current employees with the durable capabilities that digital labor markets demand.	Arranz Lahuerta et al. (2025); Bohashko & Bohashko (2024); Cantú-Ortiz et al. (2020); Hrnjić et al. (2025); Rais & El Maliki (2025)

Source: Scopus AI and Gemini AI

Summary of Key Findings

Taken together, the synthesis shows that AI adoption and digital competency reinforce one another as antecedents of future employability, though how much they deliver depends on an individual's skill adaptability. Direct exposure to AI systems forces skill restructuring and exposes performance gaps, while baseline digital competency gives workers the footing they need to take up these technologies and use them effectively. Technical proficiency on its own, however, cannot secure a career in automated environments. Skill adaptability is the indispensable mediating process that converts technical literacy and AI tools into lasting career resilience. Individuals, educational institutions and organizations that build adaptive learning capability alongside technological proficiency are in a far better position to absorb labor market shifts and hold on to a competitive advantage in the modern digital economy.

DISCUSSION

Development of the Conceptual Framework

The study draws on Human Capital Theory (Schultz, 1961) and Career Construction Theory (Savickas, 2005) to explain how artificial intelligence (AI) adoption and digital competency drive future employability through the mediating mechanism of skill adaptability. Human Capital Theory treats investment in knowledge, technical skills and capability as something that raises productive capacity and economic value in the labor market (Schultz, 1961), which frames AI skills and digital literacy as critical capital assets in modern high-tech workplaces (Alainati et al., 2026; Đorđević et al., 2025). Career Construction Theory adds a behavioral dimension through its emphasis on career adaptability, explaining how individuals draw on adapt-ability resources to handle workplace transitions and continual task restructuring (Savickas, 2005; Savickas & Porfeli, 2012). In the context of this study, baseline digital competencies and active AI adoption are the technological investments (independent variables) that build continuous skill adaptability (mediating variable), which in turn strengthens long-term future employability (dependent variable) in rapidly evolving, automated industries (Prasad & Das, 2026).

Bringing these theoretical perspectives together with the current empirical literature produces an integrative conceptual model whose central claim is that technical capability alone will not secure a career without continuous behavioral adjustment. The literature shows that AI adoption restructures job roles and creates demand for new technical capabilities (Bobitan et al., 2024; Garg & Punjani, 2026), while robust digital competency supplies the baseline for integrating technology smoothly and using it with confidence (Cicha & Rutecka, 2026; Piotrowski & Revtiuk, 2026). Because technological standards shift so quickly, skill

adaptability becomes the bridge that translates raw technological proficiency into durable workforce readiness (Freise et al., 2026; Nguyen-Huu & Nguyen-Van, 2026). The framework maps these relationships in structural-functional terms, showing that AI adoption and digital competency strengthen an individual's adaptive capacity, which then reduces the risk of task displacement and improves future employability across dynamic digital markets (Ananthram & Klarin, 2026; Lytras & Șerban, 2025).

The framework also carries practical implications for educational institutions, organizational leaders and the workers navigating digital transformation. For higher education and training providers, it points to the need to embed both specialized AI capabilities and adaptive learning into curricula, so that graduates leave with long-term resilience rather than a fixed body of technical knowledge (Cantú-Ortiz et al., 2020; Hrnjić et al., 2025). For organizations, it offers a strategic roadmap for building work environments that reward continuous upskilling, ease technology-induced anxiety and convert employee adaptability into productivity gains (Arranz Lahuerta et al., 2025; Bohashko & Bohashko, 2024). Read together, Human Capital Theory and Career Construction Theory support a single conclusion: future employability is sustained less by acquiring today's AI tools than by using digital competencies to maintain lifelong skill adaptability in an increasingly automated global workforce (Prasad & Das, 2026; Rais & El Maliki, 2025).

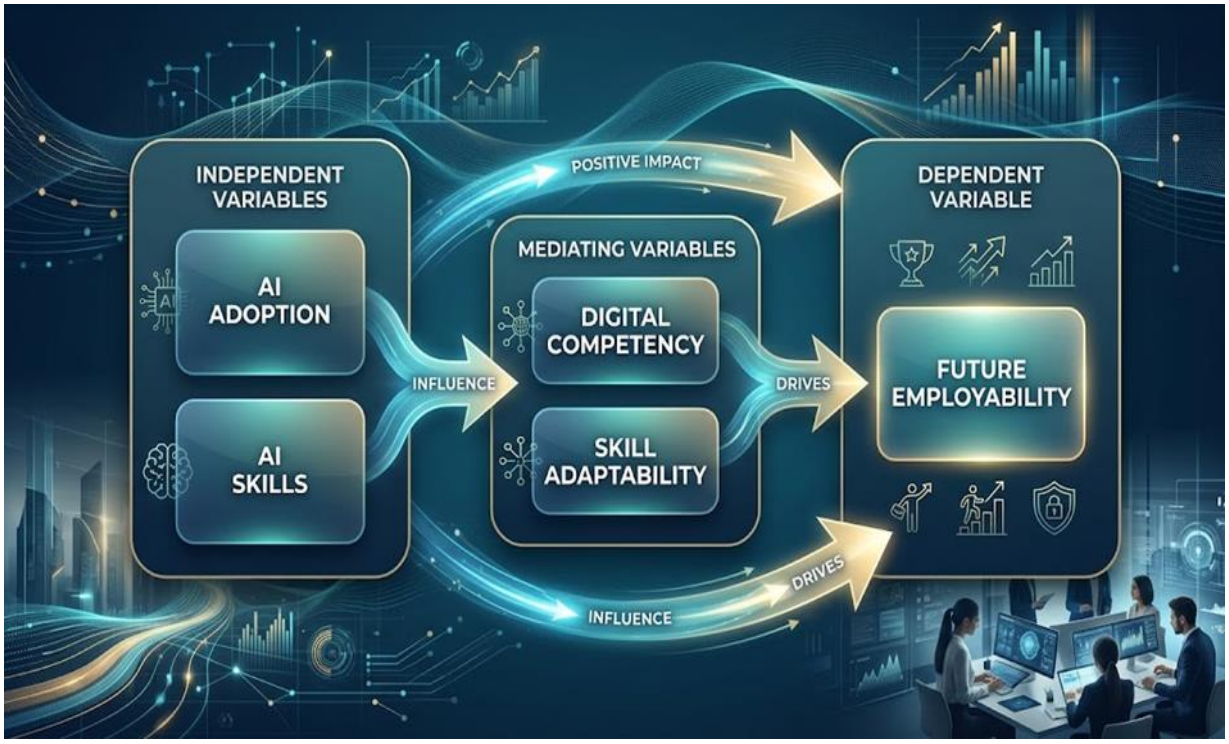


Figure 2: Proposed Theoretical Framework

Proposition Development: AI Adoption / AI Skills positively influence Future Employability in workplace

AI adoption and the AI skills held by the workforce reinforce one another as drivers of future employability, and both function as critical forms of human capital in the contemporary workplace. Human Capital Theory holds that investment in knowledge, technical proficiency and capability raises productive value and, with it, career prospects and marketability (Schultz, 1961). Established research shows that AI adoption pushes organizations to restructure by streamlining routine processes, which in turn raises demand for advanced, non-routine cognitive work among employees (Garg & Punjani, 2026; Rais & El Maliki, 2025). Basic AI familiarity has become a modern baseline, yet graduates and experienced professionals who report deeper knowledge and frequent use of specialized AI tools are considerably more likely to remain employable in technical fields related to their expertise (Freise et al., 2026; Ramos & Caro, 2026). Active engagement with advanced technologies, in other words, accumulates into a market advantage.

AI knowledge also works as a dynamic 'future work skill' that contributes to long-term career sustainability by

building behavioral agility within automated environments (Nguyen-Huu & Nguyen-Van, 2026). Seen through Career Construction Theory, technological assets such as AI skills allow individuals to display the cognitive and behavioral adaptability that continual task restructuring and role evolution demand (Savickas, 2005; Savickas & Porfeli, 2012). Empirical work indicates that employees who use AI platforms to improve productivity are seen as more adaptable and less exposed to technological displacement (Cantú-Ortiz et al., 2020; Garg & Punjani, 2026). The interaction between organizational adoption and an individual's accumulated technological capability therefore offers a strong explanation for future career resilience in high-tech markets (Alainati et al., 2026; Ananthram & Klarin, 2026).

Based on the preceding theoretical and empirical arguments, we present the following proposition:

Proposition 1: AI Adoption and AI Skills in the workplace positively influence Future Employability.

Proposition Development: AI Adoption / AI Skills positively influence Digital Competency / Skill Adaptability in workplace

AI adoption and the cultivation of AI skills act as powerful catalysts for digital competency and skill adaptability at work. Human Capital Theory holds that investment in knowledge, technical proficiency and capability raises productive value and, in doing so, an individual's adaptive capacity (Schultz, 1961). In the digital era, specialized AI skills and organizational AI adoption operate as sophisticated capital assets that push employees to widen their broader digital competencies (Jatobá et al., 2023). Evidence indicates that organizations implementing AI at scale often see substantial gains in formal competency programs, with the sharpest increases in data literacy and data-driven decision-making (Alainati et al., 2026; Chowdhury et al., 2023). Working with advanced technologies, then, sets off a mutually reinforcing cycle of technological upskilling.

AI assets do more than raise static competence; they drive behavioral agility by restructuring job roles and creating conditions in which continuous learning becomes normal. From the perspective of Career Construction Theory, holding specialized capabilities such as AI proficiency supplies the 'adapt-ability' resources needed to manage vocational transitions and automated task restructuring (Savickas, 2005; Savickas & Porfeli, 2012). Research confirms that an AI-rich environment stimulates intrinsic motivation to upgrade both technical and non-technical skill sets, prompted by a sharper awareness of what career sustainability now requires (Kasubi et al., 2025). AI adoption is also reshaping workplace skills more broadly, with AI literacy, resilience and adaptability emerging as the foundational capabilities needed to manage complexity in technology-augmented environments (ILO, 2026; Microsoft, 2026). Accumulated technological capability, in short, provides the flexibility that sustained performance requires during digital disruption.

Based on the preceding theoretical and empirical arguments, we present the following proposition:

Proposition 2: AI Adoption and AI Skills positively influence Digital Competency and Skill Adaptability in the workplace.

Proposition Development: Digital Competency / Skill Adaptability positively influences Future Employability in workplace

Robust digital competency and the capacity for skill adaptability are decisive determinants of future employability in an automated, technology-driven workplace. Human Capital Theory treats an individual's accumulated knowledge, technical skills and productive capability as forms of capital that raise their value and security in the labor market (Schultz, 1961). As artificial intelligence (AI) adoption restructures standard job roles, demand moves rapidly from routine tasks toward higher-order cognitive work, and baseline digital literacy together with specialized technological proficiency becomes non-negotiable for entering and staying in a career (Bohashko & Bohashko, 2024; Đorđević et al., 2025). Empirical studies report that higher digital competencies correlate with better job readiness, stronger operational performance and greater individual confidence, all of which position workers to capture emerging opportunities (Cicha & Rutecka, 2026; Dyrka et al., 2026; Nguyen-Huu & Nguyen-Van, 2026). Broad digital fluency therefore forms the foundational human

capital on which long-term employability rests.

Skill adaptability is the proactive behavioral mechanism that turns existing digital capability into sustained career resilience during continuous technological disruption. Career Construction Theory describes career adaptability as the cognitive and behavioral agility with which individuals navigate vocational transitions, absorb task displacement and re-skill as environmental demands change (Savickas, 2005; Savickas & Porfeli, 2012). The literature confirms that workers with strong digital competencies show higher learning agility and lower technology-induced anxiety, which allows them to abandon obsolete routines and upskill continuously (Piotrowski & Revtiuk, 2026; Prasad & Das, 2026). Digital fluency combined with an adaptive mindset gives employees the means to use AI platforms for productivity and innovation, and job insecurity falls as a result (Arranz Lahuerta et al., 2025; Garg & Punjani, 2026). Treating skill adaptability as a key explanatory resource underlines one point: long-term employability rests not on fixed proficiencies but on the capacity to adapt to whichever technological roles emerge (Ananthram & Klarin, 2026; Lytras & Șerban, 2025).

Based on the preceding theoretical and empirical arguments, we present the following proposition:

Proposition 3: Digital Competency and Skill Adaptability positively influence Future Employability in the workplace.

Proposition Development: Digital Competency / Skill Adaptability mediates the relationship between AI Adoption / AI Skills and Future Employability in workplace

Digital competency and skill adaptability are the mediating mechanisms that explain how artificial intelligence (AI) adoption and AI skills improve future employability indirectly. Human Capital Theory holds that investment in specific knowledge and technical capability, AI proficiency among them, raises an individual's intrinsic market value and productive capacity (Schultz, 1961). Emerging literature indicates, however, that although AI adoption forces substantial workforce skill transformation (Alainati et al., 2026; Garg & Punjani, 2026), these technological assets have to be worked through continuous, flexible skill acquisition before they can preserve a career over the long term (Freise et al., 2026; Theben et al., 2025). Robust digital competencies, covering data literacy and technical proficiency, give workers the operational footing to integrate and leverage new AI tools with confidence rather than be displaced by them (Cicha & Rutecka, 2026; Đorđević et al., 2025). Specialized AI capability therefore drives the development of broader digital competency, which is what allows individuals to convert technological access into sustainable job readiness.

Reading these technological inputs through Career Construction Theory shows skill adaptability to be the central process linking AI exposure to sustained career resilience. Technological assets such as AI skills help individuals build career adaptability, that is, the cognitive and behavioral agility needed to move through automated vocational transitions and recover from task displacement (Savickas, 2005; Savickas & Porfeli, 2012). Research demonstrates that workers who combine the use of AI platforms with adaptive, upskilling behavior report higher internal marketability, better performance and reduced job insecurity (Arranz Lahuerta et al., 2025; Prasad & Das, 2026). With high adaptive capacity, employees can keep adjusting their qualifications as market demands fluctuate, which maximizes the career benefit they draw from organizational AI adoption (Mohaimen et al., 2026; Rais & El Maliki, 2025). It is this persistent synergy between technological proficiency and behavioral flexibility that defines long-term career resilience in an automated era (Ananthram & Klarin, 2026; Lytras & Șerban, 2025).

Based on the preceding theoretical and empirical arguments, we present the following proposition:

Proposition 4: Digital Competency and Skill Adaptability mediate the relationship between AI Adoption / AI Skills and Future Employability in the workplace.

CONCLUSION

The arguments developed throughout this conceptual model converge on one conclusion: future employability in an increasingly automated labor market is driven not by technological proficiency alone, but by the synergy

between advanced technology adoption and dynamic human behavior. Artificial intelligence adoption and specialized AI skills are new and critical forms of human capital that set workforce transformation in motion, yet what they deliver depends on an individual's behavioral agility. Robust digital competencies such as data literacy and technical proficiency provide the operational base from which workers can confidently integrate new tools instead of being displaced by them, while skill adaptability is the proactive mechanism that carries employees through vocational transitions and continuous task restructuring. Technological capability, in other words, fosters continuous behavioral adaptation, and it is that adaptation which ultimately strengthens long-term future employability within dynamic digital labor markets. Several implications follow from this synthesis. Theoretically, the study extends Human Capital Theory and Career Construction Theory by positioning skill adaptability as the indispensable conceptual bridge that turns rigid investments in technological capital into sustainable vocational resilience amid continuous disruption. For educational institutions, it points to the value of embedding lifelong adaptive learning frameworks and foundational digital competencies into curricula instead of concentrating on static technical proficiencies. For organizational leaders, it offers a strategic roadmap for cultivating work cultures that incentivize upskilling and minimize technology-induced anxiety. These insights come with limitations. The study relies on a narrative rather than a systematic review, the Scopus database carries its own publication bias, and the literature reviewed leans toward Western, developed-market settings. Future research should therefore pursue longitudinal studies that track the career trajectories of AI-skilled professionals over time, examine how organizational leadership styles affect digital adaptation, and run cross-cultural comparisons to understand employability dynamics in transition economies and emerging markets across the Global South.

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