

DIGITAL TRANSFORMATION FOR INCLUSIVE ENTREPRENEURSHIP: A LITERATURE REVIEW ON ECONOMIC EMPOWERMENT FOR PEOPLE WITH DISABILITIES

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Abstract: People with disabilities represent approximately sixteen percent of the global population, yet they continue to experience disproportionately high unemployment, lower incomes, and exclusion from mainstream economic life. Entrepreneurship has been proposed as an alternative or complementary pathway to economic empowerment, while digital transformation including artificial intelligence, digital platforms, mobile financial services, and assistive technologies may reduce barriers to economic participation. At the same time, unequal access, resources, and skills can reproduce or deepen exclusion. This study uses a descriptive literature review of thirty-one peer-reviewed articles published between 2021 and 2026. The literature was categorized by publication year, geographic context, research method, and thematic focus, then synthesized through descriptive and thematic analysis. The findings identify five interrelated mechanisms: the access, resource, and skills dimensions of the digital divide; organizational and technological readiness; digital-skills and AI training outcomes; digital financial inclusion; and AI, automation, and assistive technologies as both enabling and constraining forces. The review also identifies tension between individual entrepreneurial empowerment and broader structural change, as well as differences between high-income, low and middle-income contexts. The study provides a theory-grounded synthesis for inclusive digital entrepreneurship and identifies implications for policy, training, technology design, and future research.

Keywords: assistive technology; digital transformation; people with disabilities; economic empowerment; inclusive entrepreneurship

1. Introduction

More than 1.3 billion people, roughly sixteen percent of the world's population, live with some form of disability (World Health Organization, 2025). This represents a substantial part of the global labor force and consumer market, yet people with disabilities (PwD) continue to experience persistent economic exclusion. (Jurado-Caraballo & Quintana-García, 2025) report that only 50.8% of PwD in the European Union are employed, compared with 75% of people without disabilities, while 37.6% of PwD remain economically inactive compared with 17.6% of their non-disabled peers. Comparable patterns are documented across different institutional settings, including Ghana, Italy, Chile, and Uganda (Peprah et al., 2023); (Moscatelli et al., 2024); (Scapini, 2026); (Bechange et al., 2021) (Greenwood et al., 2023). These patterns persist despite legal and policy instruments intended to support equal participation. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) establishes rights related to non-discrimination and access to work. However, the reviewed literature indicates an implementation gap.

Jurado-Caraballo and Quintana-García (2025) note limitations in European quota and incentive schemes, and Moscatelli et al. (2024) find that Italian employers may remain reluctant to hire PwD even within a mandatory placement system. Against this background, entrepreneurship through self-employment, small-business ownership, and independent economic activity has been proposed as an alternative or complementary route to economic empowerment. Development-sector and academic work in Uganda, Vietnam, Chile, and Saudi Arabia links entrepreneurship support with livelihood development and inclusive entrepreneurial ecosystems (Bechange et al., 2021; Greenwood et al., 2023; Hai Anh & Vinh, 2024; Alatawi, 2026).

At the same time, economic activity is increasingly shaped by digital transformation. The term refers to the widespread application of technologies such as artificial intelligence (AI), the Internet of Things, big-data analytics, blockchain, cloud computing, robotics, and mobile connectivity across workplaces, markets, and public institutions (Jetha et al., 2023). Fernandez et al. (2026) frame this transformation through the Fourth Industrial Revolution and Industry 5.0, where sustainability, resilience, and human-centricity become explicit concerns. Digitalization has also become closely connected to the Sustainable Development Goals. Khan et al. (2025) examine AI-driven business models involving machine learning, natural language processing, computer vision, and autonomous systems, while Hariyani et al. (2026) describe the use of IoT, AI, blockchain, big data, geographic information systems, digital twins, and augmented or virtual reality in sustainable-city development. At the firm level, Díaz-Fernández et al. (2026) associate digital transformation with corporate social sustainability, and Feng and Yang (2026) link digital mergers and acquisitions with increased firm value through digital resources and innovation capability. For entrepreneurship, Ghauri et al. (2022) conceptualize digital technology as a potential mechanism through which marginalized communities can access non market strategies, jobs, and income. Financial technology is particularly relevant because Mohd Daud et al. (2024), using panel data from eighty-four countries, find that digital technology complements financial inclusion and economic growth while helping narrow the gender gap in financial inclusion. Irikefe et al. (2026) similarly show among 417 Malaysian SMEs that digital readiness strengthens the relationship between dynamic coordinating capability and economic sustainability.

However, the literature does not present digital transformation as an automatic equalizer. Its effects depend on who can access technology, who has the resources to use it, and who possesses the skills required to benefit from it. Rui et al. (2026), using evidence from 287 Chinese cities, find that the digital economy is positively associated with overall life satisfaction while also being associated with wider satisfaction gaps among elderly, low-income, and low-education groups. Their concept of equity of life satisfaction therefore emphasizes that average improvement should be considered together with distributional consequences. This concern is especially relevant to disability, because unequal access and resources may shape whether digital opportunities become meaningful economic opportunities. Jetha et al. (2023), based on forty interviews with Canadian policymakers, disability-employment service providers, and future-of-work specialists, identify three intersecting dimensions of the digital divide: an access divide involving connectivity and inclusive design, a resource divide involving income, housing, and infrastructure, and a skills divide involving technical and soft skills. They also report concerns that AI used in hiring and performance management can reproduce existing biases when inclusive design is not incorporated. Zhuang and Goggin (2024) extend this

critical position by treating disability as a source of knowledge and embodiment rather than simply a deficit to be corrected by technology. Their analysis emphasizes that AI and automated decision-making can empower disabled workers while also carrying contradictions that require deliberate design responses. Hidegh et al. (2022), meanwhile, show that entrepreneurship can provide negative and positive freedom for disabled entrepreneurs while still failing to produce broader social freedom when individual solutions leave structural exclusion unchanged.

A growing body of empirical work has begun to connect these broader debates directly with disability-inclusive entrepreneurship. Hai Anh & Vinh (2024) examine thirty-five women with disabilities completing digital-business training in Vietnam and find that course relevance predicts course expectancy, which predicts learning outcomes and satisfaction. Drydak (2025) studies 121 non-native, disabled, and non-heterosexual entrepreneurs in the United Kingdom and reports that digital-competency gains after AI-business training are associated with customer satisfaction, empowerment, and revenue growth, with AI adoption strengthening the relationship with business outcomes. Alatawi (2026) identifies digital government infrastructure as the foundational factor in a structural hierarchy of success factors for PwD entrepreneurship. Yet the evidence also demonstrates conditional and differentiated outcomes. Scapini et al. (2026) find an initial income gap between women entrepreneurs with and without disabilities in Chile, but the difference becomes statistically insignificant after socioeconomic and business variables are controlled, supporting an intersectional interpretation. Fernandez et al. (2026) similarly describe “Inclusion 4.0” as producing upskilling, reskilling, or deskilling depending on disability type and organizational context.

Despite this growing literature, three gaps remain. First, existing disability-related digital or wellbeing syntheses have not focused specifically on entrepreneurship and economic empowerment. Morales Almeida and Alemán Ramos (2026), for example, show that disability-wellbeing research is dominated by quality of life, mental health, rehabilitation, and participation, while entrepreneurship is not a major conceptual cluster. Second, relevant evidence remains distributed across disciplinary silos. Information-systems and technology-management studies address digital transformation and AI adoption; disability and rehabilitation studies examine accessibility and participation; and entrepreneurship studies address entrepreneurial experiences, but these streams rarely integrate their theoretical frameworks. Third, there is limited practical synthesis showing which digital-transformation mechanisms have stronger empirical support, which remain context-dependent, and where evidence is too limited for confident program design. These gaps are particularly important because the reviewed corpus includes both high-income, low and middle-income country contexts whose digital realities differ substantially.

Accordingly, this study aims to synthesize peer-reviewed evidence on how digital transformation shapes inclusive entrepreneurship and economic empowerment among PwD through a descriptive literature review. Three research questions guide the analysis:

RQ1. What theoretical frameworks and constructs have been used to explain the relationship between digital transformation and economic outcomes for people with disabilities?

RQ2. Through which empirically documented mechanisms does digital transformation enable, or constrain, inclusive entrepreneurship and economic empowerment for people with disabilities?

RQ3. What contextual, methodological, and geographic patterns characterize the current evidence base, and what gaps should future research prioritize?

The review is significant because it brings together technology-adoption perspectives such as the Technology Organization Environment framework, the digital-divide skills triad, self-efficacy and social-capital accounts of digital literacy, critical-disability perspectives on freedom, and structural modeling of entrepreneurial success factors (Kulkarni et al., 2024; Jetha et al., 2023; Park, 2025; Hidegh et al., 2022; Alatawi, 2026). Practically, it identifies digital government infrastructure, structured AI and digital-skills training, mobile financial services, and inclusive technology design as recurring areas of intervention. The remainder of the paper presents the theoretical foundations, descriptive method, findings and discussion, implications, conclusion, and recommendations.

Materials and Method

Research Design

This study adopts a descriptive literature review design. The approach is intended to map, categorize, and narratively synthesize an emerging body of peer-reviewed research rather than statistically pool effect sizes. It differs from a systematic review governed by PRISMA-style procedures and from meta-analysis because the present corpus contains heterogeneous qualitative, quantitative, mixed-methods, conceptual, and structural-modeling studies. A descriptive design is appropriate because the intersection of digital transformation, entrepreneurship, and disability remains fragmented across disciplines and because the review seeks to characterize the evidence base by time, geography, method, theory, and theme as well as to synthesize substantive findings.

Source Identification and Search Strategy

Sources were identified through targeted database searching and citation-network tracing across ScienceDirect, Emerald Insight, JMIR Publications, and IGI Global. Search terms were organized into three conceptual clusters. The digital-transformation cluster included “digital transformation,” “digitalization,” “artificial intelligence,” “digital divide,” “digital literacy,” “digital readiness,” “Industry 4.0,” and “automated decision-making.” The entrepreneurship and economic-empowerment cluster included “entrepreneurship,” “inclusive entrepreneurship,” “self-employment,” “economic empowerment,” “livelihoods,” “financial inclusion,” “SME,” and “small business.” The disability cluster included “disability,” “people with disabilities,” “persons with disabilities,” “intellectual disability,” “visual impairment,” “hearing impairment,” and “vulnerable groups.” Citation tracing was used to identify relevant studies that might not have been captured by the initial combinations. Because the topic crosses disciplinary boundaries, a limited set of adjacent studies on corporate digital transformation, social sustainability, financial inclusion, and AI-driven business models was retained where the theoretical or empirical mechanism was directly relevant to the review questions.

Selection Criteria

Studies were included when they were peer-reviewed journal articles written in English and treated digital technology, digitalization, or digital transformation as a substantive variable or theme while addressing entrepreneurship, employment, economic empowerment, livelihoods, or financial inclusion. Disability was required for the core disability-specific studies; a smaller number of theoretically foundational studies

addressed analogous forms of marginalization or vulnerability where their framework was judged transferable. Editorials, non-peer-reviewed preprints, conference abstracts without full text, and book chapters without a clearly extractable empirical or conceptual contribution were excluded. No publication-year restriction was imposed at the outset, although the final corpus concentrated strongly in 2021–2026.

Thirty-one sources met the inclusion criteria. The corpus spans 2021–2026 and includes studies from Uganda, Saudi Arabia, China, Spain, Vietnam, South Korea, Canada, Indonesia, Ghana, Italy, Hungary, Chile, Malaysia, Sierra Leone, the United Kingdom, Brazil/Mexico, the United States, and multi-country datasets. Twenty-four sources were published through Elsevier platforms, five through Emerald, one through IGI Global, and one through JMIR Publications. Methodologically, nine sources used qualitative designs, eight used quantitative survey-based approaches such as structural equation modeling or path analysis, five used panel or longitudinal econometric designs, four were conceptual, taxonomic, or review studies, three used structural modeling, and two used mixed-methods or cross-sectional designs. The thematic classification included digital divide and readiness; technology adoption and organizational readiness; digital-skills training and entrepreneurial outcomes; digital financial inclusion; AI, automation, and assistive technology; disability employment policy and institutions; gender and intersectionality; and broader digital-transformation and SDG contexts. Several studies were conceptually relevant to more than one theme, but each was assigned a primary classification for narrative organization.

Data Synthesis

For synthesis, a structured extraction matrix was used to record the bibliographic citation, geography and population, research design and sample or corpus size, theoretical framework, key findings, and relevance to digital transformation and economic empowerment for PwD. The matrix was then read horizontally across studies to identify recurring constructs, convergences, contradictions, and gaps. This process produced the cross-cutting findings and the integrated conceptual interpretation presented in the following sections. Four limitations should qualify the synthesis. The search was descriptive and non-exhaustive rather than protocol-driven; only English-language publications were included; some mechanisms were drawn from adjacent literatures and therefore are transferable rather than directly demonstrated in disability entrepreneurship; and no formal quality-appraisal instrument was used to assign methodological weights to individual sources.

Table 1. Thematic Distribution of Reviewed Sources

Theme	Representative Sources	n
Digital divide, digital literacy, and readiness	Jetha et al. (2023); Park (2025); Rui et al. (2026)	3
Technology-adoption and organizational-readiness theory	Kulkarni et al. (2024); Díaz-Fernández et al. (2026); Vadaga et al. (2025)	3
Digital-skills training and empirical entrepreneurial outcomes	Hai Anh & Vinh (2024); Drydakis (2025); Alatawi (2026); Bechange et al. (2021); Greenwood et al. (2023)	5

Digital financial inclusion	Peprah et al. (2023); Mohd Daud et al. (2024); Irikefe et al. (2026)	3
AI, automation, and assistive technology in work and daily life	Zhuang & Goggin (2024); Fernandez et al. (2026); Fajardo-Castro et al. (2025); Aloudah et al. (2025); Alsaleh et al. (2026); Rajan et al. (2025)	6
Disability employment policy, institutions, and the workplace business case	Jurado-Caraballo & Quintana-García (2025); Moscatelli et al. (2024); Kaindaneh et al. (2024)	3
Gender, intersectionality, and critical perspectives on entrepreneurship	Hidegh et al. (2022); Scapini (2026)	2
Broader digital-transformation and SDG context	Khan et al. (2025); Hariyani et al. (2026); Feng & Yang (2026); Ghauri et al. (2022); Fitri & Utaberta (2026); Morales Almeida & Alemán Ramos (2026)	6

Several sources appear conceptually relevant to more than one cluster; the counts in Table 1 reflect each source's primary classification for the purpose of narrative organization, not an exclusive assignment.

Results and Discussion

Findings

The reviewed evidence identifies the digital divide as the most consistent barrier to inclusive digital entrepreneurship. Jetha et al. (2023) distinguish access, resources, and skills as interconnected dimensions. Access includes the cost and availability of devices and connectivity as well as whether digital tools are accessible for visual, hearing, and mobility impairments. The resource dimension concerns income, housing, and community infrastructure, while the skills dimension concerns technical and soft skills required in increasingly digital workplaces and markets. Their interviews also indicate that existing disability employment training may concentrate participants in lower-level roles that remain vulnerable to automation rather than preparing them for higher-order digital work and entrepreneurship. Park (2025) provides quantitative support for the importance of individual and relational capability. Among 1,922 Korean internet users with disabilities, digital self-efficacy, social capital, education, and income explained 46.4% of the variance in digital-literacy scores, while gender and age were negatively associated with digital literacy, self-efficacy, and helper availability. Rui et al. (2026) add a macro-level qualification: digitalization can raise average life satisfaction while widening gaps among elderly, low-income, and low-education groups. Together, these findings show that digital access should not be treated as a single variable and that program outcomes should consider distributional effects as well as average gains.

A second finding concerns organizational and institutional readiness. Kulkarni et al. (2024), studying 236 employees across Indian MSMEs, apply the TOE framework and report that technological, organizational, and environmental readiness positively predicts social sustainability, with business ethics acting as a partial mediator. The result indicates that technology readiness alone does not determine whether digital transformation generates socially beneficial outcomes. Díaz-Fernández et al. (2026), using seven years of

data from 452 European listed firms, reach a structurally similar conclusion through RBV and Stakeholder Theory: digital transformation is associated with corporate social sustainability through employees' digital competencies. Irikefe et al. (2026), using data from 417 Malaysian SMEs, further show that financial inclusion is not sufficient by itself for economic sustainability. Dynamic coordinating capability functions as an important condition, while digital readiness strengthens the relationship between coordinating capability and economic sustainability. These studies, despite different countries, firm sizes, and theoretical frameworks, converge on the importance of mediating human and organizational capabilities. Vadaga et al. (2025), reviewing AI in pharmaceutical supply-chain management, provide additional cross-sector evidence that AI-generated efficiency gains depend on functioning organizational processes rather than technology being introduced in isolation.

The third finding is that structured training can improve digital capability and business-related outcomes, but training does not operate independently of broader conditions. Nguyen (2024) studied thirty-five women with disabilities who completed a digital-business training program in Vietnam. Exploratory factor analysis and Generalized Structured Component Analysis identified course relevance, course expectancy, instructor quality, learning outcomes, and course satisfaction as important constructs. The factors explained 78.39% of variance, while the structural model explained 61.3% of variance in outcome constructs. Course relevance significantly predicted course expectancy, which predicted learning outcomes and course satisfaction. However, course relevance did not significantly predict instructor quality, and learning outcomes did not significantly predict course satisfaction. These findings show that training quality cannot be reduced to learning outcomes alone. Drydakis (2025) provides evidence from 121 non-native, disabled, and non-heterosexual entrepreneurs who participated in a four-month AI-business-applications program and were followed for one year. Increases in digital competencies were positively associated with customer satisfaction, entrepreneur empowerment, and revenue growth, while AI adoption strengthened the relationship between digital competency and business outcomes. Alatawi (2026) complements these results by identifying digital government infrastructure as the foundational factor in a TISM hierarchy, followed by financial support, digital resources, entrepreneurial capability, and training or skills development.

The Uganda studies provide a broader economic-empowerment context for interpreting training evidence. Bechange et al. (2021) followed 252 youth with disabilities who received vocational training combined with start-up support and apprenticeship. Twelve months after the intervention, participants were significantly more likely to have a job or income-generating activity, to have accessed financial resources, and to report community support, although there was no significant change in food security or reported community discrimination. Greenwood et al. (2023) add qualitative evidence from seventy-two members of the broader cohort, with twenty-four peer researchers with disabilities participating in the research process. Participants described gains in financial literacy, independence, and empowerment, while continuing to experience customer-acquisition difficulties, work-related constraints, and community skepticism. Some participants also experienced short-term financial deterioration because they gave up part-time income during training. These findings indicate that capability-building may generate longer-term economic benefits while imposing transition costs that need to be considered in program design.

A fourth finding concerns digital financial inclusion. Peprah et al. (2023), using Ghana's Living Standards Survey and instrumental-variable regression, find that disability reduces the likelihood of using commercial banks, rural banks, and formal financial services, but that people with disabilities are 53.7% more likely to use mobile money than people without disabilities. Mobile money therefore appears as an important channel for reducing some physical-access and service barriers associated with conventional banking. Mohd Daud et al. (2024), using dynamic panel data across eighty-four countries, show more broadly that digital technology complements financial inclusion in supporting economic growth and contributes to narrowing the gender gap in financial inclusion. Irikefe et al. (2026) qualify this mechanism at the SME level by showing that financial inclusion alone is insufficient for sustained economic outcomes. The combined evidence points toward a sequence in which digital financial services can reduce access barriers, but capability, coordination, and digital readiness are needed to convert financial access into sustained enterprise performance.

The fifth finding concerns AI, automation, and assistive technology, where the evidence is simultaneously enabling and constraining. Alsaleh et al. (2026), based on thirty-three users of AI-powered hearing aids, identify intelligent environment management, user experience, social inclusion, wellness functions, and technological superiority as adoption drivers. Their foundational-enabling-enhancing framework connects core hearing functions with broader connectivity and participation. Aloudah et al. (2025), drawing on twenty-five interviews in Saudi Arabia, identify AI-powered job matching and interview-preparation chatbots among desired features for a disability-focused AI application. Fajardo-Castro et al. (2025) similarly find that digitalization is perceived as an opportunity for workers with intellectual disabilities when employers, families, third-sector organizations, and public administration coordinate around the technology. In contrast, Rajan et al. (2025) report low overall use of digital voice assistants and a higher proportion of people with visual disabilities reporting never having used them. Fernandez et al. (2026) explain the variation through "Inclusion 4.0," in which Industry 4.0 technologies may produce upskilling, reskilling, or deskilling depending on disability type and organizational context. Zhuang and Goggin (2024) add that AI and automated decision-making may reproduce ableist assumptions when disabled people's knowledge is absent from design processes.

The evidence also shows differentiated outcomes across gender and intersectional contexts. Scapini et al. (2026) find that women entrepreneurs with disabilities in a Chilean microenterprise program initially have lower income than women entrepreneurs without disabilities, but that the difference becomes statistically insignificant after socioeconomic and business variables are controlled. The finding suggests that disability-related economic disadvantage can operate through associated factors such as education, capital, and sector position. Nguyen and Nguyen (2024) provide evidence from a population consisting entirely of women with disabilities, but their design does not establish a gender comparison. Mohd Daud et al. (2024) identify a digital contribution to narrowing gender gaps in financial inclusion, while Peprah et al. (2023) identify a disability-related advantage in mobile-money use. These findings together establish relevant mechanisms but do not directly demonstrate how gender and disability interact in digital entrepreneurship.

Finally, the corpus shows strong institutional and geographic variation. Alatawi (2026) positions digital government infrastructure as foundational, while Kaindaneh et al. (2024) report that Sierra Leone's Education Management Information System remains at an emerging stage and records disability status only in aggregate. This illustrates how

institutional infrastructure can constrain the ability of governments to plan targeted inclusion. High-income-country studies more frequently examine sophisticated AI, automated decision-making, assistive technologies, and digital governance, whereas studies from Uganda, Ghana, Vietnam, Sierra Leone, and Chile more often address mobile money, vocational training, basic business skills, and start-up support. The distinction is not only methodological. It reflects different stages and lived realities of digital transformation: one literature often asks how advanced systems should be governed inclusively, while the other often addresses how foundational digital and economic access can be established. The temporal and methodological profile of the corpus provides an additional result. The thirty-one sources are concentrated in the most recent years, with two sources from 2021–2022, five from 2023, seven from 2024, eight from 2025, and nine from 2026. This distribution supports the characterization of the field as emergent rather than mature. The methodological spread is similarly broad: nine qualitative studies, eight quantitative survey-based studies, five panel or longitudinal econometric studies, four conceptual or review studies, three structural-modeling studies, and two mixed-methods or cross-sectional studies. This heterogeneity helps explain why the evidence cannot be reduced to a single effect estimate. Instead, the literature provides different kinds of evidence: qualitative work identifies lived barriers and meanings, surveys test relationships among capabilities, longitudinal studies examine change over time, and structural modeling organizes interdependent conditions.

The geographic distribution also deserves attention. Empirical studies cover a broad set of countries, but the evidence remains uneven. Uganda, Ghana, Vietnam, Sierra Leone, Chile, and Indonesia provide important low- and middle-income-country perspectives, while Canada, the United Kingdom, South Korea, Spain, Italy, Hungary, Saudi Arabia, China, Malaysia, and other settings contribute evidence from higher-income or more digitally developed contexts. The resulting contrast is visible in the substantive problems examined. Studies in higher-income settings more frequently consider AI-enabled hiring, automated decision-making, assistive devices, voice assistants, and digital government. Studies in lower- and middle-income settings more frequently address mobile money, vocational and business training, start-up resources, and basic digital access. The contrast should therefore be interpreted as evidence of different digital-development conditions rather than simply as a difference in research sophistication.

Table 2. Thematic Synthesis of Findings

No.	Finding Theme	Main Finding	Key Factors/Mechanisms	Representative Studies
1	Digital Divide as a Central Barrier	Limited access, digital resources, skills, and psychosocial resources constrain meaningful digital participation.	Access, affordability, digital skills, self-efficacy, social capital	Jetha et al. (2023); Park (2025); Rui et al. (2026)
2	Digital Readiness and	Organizational and technological	Technology readiness, digital competencies,	Kulkarni et al. (2024); Díaz-Fernández et

	Technology Adoption	readiness determine whether digital technologies can be effectively utilized.	organizational resources, business ethics	al. (2026); Irikefe et al. (2026)
3	Digital Skills and Capability Building	Training in digital and AI-related competencies can strengthen entrepreneurial and employment capabilities. Mobile money and digital financial services can improve financial participation, although access to financial services alone is insufficient. AI and assistive technologies can expand accessibility and employment opportunities while also creating risks related to automation, exclusion, and design.	Digital literacy, AI skills, training, self-efficacy, reskilling	Nguyen & Nguyen; Drydakis; Bechange et al.; Greenwood
4	Digital Financial Inclusion	AI and assistive technologies can expand accessibility and employment opportunities while also creating risks related to automation, exclusion, and design. Disability-related barriers interact with gender and other social characteristics, producing differentiated entrepreneurial experiences.	Mobile money, banking access, financial inclusion, gender	Peprah; Mohd Daud et al.; Irikefe et al.
5	AI, Automation, and Assistive Technologies		AI, automation, assistive technology, accessibility, inclusive design	Alsaleh; Aloudah; Fajardo-Castro; Rajan; Fernandez; Zhuang & Goggin
6	Gender and Intersectionality		Gender, disability, social identity, access to resources	Scapini et al.; Nguyen & Nguyen; Mohd Daud et al.

7	Critical Disability and Freedom	Digital entrepreneurship should be considered not only in terms of individual outcomes but also in relation to autonomy, social freedom, and structural inclusion. Digital inclusion requires	Negative freedom, positive freedom, social freedom, disability rights	Hidegh et al.; Moscatelli et al.; Jurado-Caraballo & Quintana-García
8	Institutional and Policy Support	supportive institutions, policies, governance systems, and implementation mechanisms. The digital empowerment agenda differs across contexts, with differences in technological infrastructure, economic resources, and institutional capacity. Economic empowerment emerges through an interconnected process linking	E-government, EMIS, disability policy, regulation, institutional support	Alatawi; Kaindaneh et al.; Jurado-Caraballo & Quintana-García
9	Geographic and Contextual Disparities	access, readiness, capability building, finance, and contextual support.	Income level, geography, infrastructure, institutional context	Studies from Europe, Asia, Africa, and Latin America
10	Integrated Empowerment Mechanism		Digital access → readiness → capabilities → entrepreneurial/employment outcomes	Synthesis of the 31 reviewed studies

Discussion

Taken together, the findings support an interpretation of digital transformation as a conditional pathway to economic empowerment rather than a direct technological effect. The strongest cross-study pattern is a readiness–capability–outcome relationship. Jetha et al.'s (2023) demonstrates that access, resource, skills framework identifies the conditions for meaningful participation. While Park (2025) shows how self-efficacy and social capital shape digital literacy. Kulkarni et al. (2024), Díaz-Fernández et al. (2026), and Irikefe et al. (2026) demonstrate, in different organizational settings, that readiness must be diated by ethics, competencies, or coordinating capability. Drydakís (2025) and Hai Anh & Vinh (2024) also show that structured training can translate capability into business-related outcomes. Evidence suggests that simply increasing the availability of small technologies will potentially yield equivalent economic benefits unless individuals, organizations, and institutions have limited capacity to use the technology.

This interpretation also clarifies the relationship between individual and structural explanations. The digital divide is not only a problem of individual skills, but also a structural one as resources, infrastructure, institutional systems, and accessibility shape opportunities to acquire and use skills. Alatawi's (2026) TISM analysis places digital governance infrastructure as the basis for entrepreneurial participation, while Kaíndaneh et al. (2024) describe the practical consequences of weak digital government data systems. The implication is that individual-level interventions such as training are embedded in institutional conditions. At the same time, Park's (2025) evidence suggests that social capital and self-efficacy are important in such structural conditions. A multilevel interpretation is therefore more consistent with the reviewed evidence than either an individual-skills model or a technology-deterministic model.

The AI evidence adds an important qualification to this pathway. Assistive technologies, AI-powered job tools, and digitalization can create new forms of participation, but the same systems can reproduce exclusion or produce deskilling. Fernandez et al.'s (2026) distinction among upskilling, reskilling, and deskilling indicates that outcomes depend on disability type and organizational context. Zhuang and Goggin (2024) explain why inclusive design matters by emphasizing disability knowledge as a source of expertise rather than simply a problem for technology to solve. This supports a design principle in which people with disabilities participate meaningfully in the development and evaluation of systems intended to serve them. It also means that adoption rates alone are insufficient indicators of inclusion, evaluation should consider usability, autonomy, task quality, skill development, and distributional effects.

The financial-inclusion findings reinforce the same conditional logic. Peprah et al. (2023) show that mobile money can provide a channel through which PwD participate in formal financial activity even when conventional banking access is lower. Yet Irikefe et al. (2026) demonstrate that financial inclusion does not automatically become economic sustainability. Financial access must therefore be connected to capability, coordination, and digital readiness. This helps explain why bundled interventions that combine capital, training, mentorship, and apprenticeship appear repeatedly across the reviewed literature. The evidence does not establish a universal program formula, but it consistently challenges single-input approaches.

A further issue concerns what should count as “empowerment.” Hidegh et al. (2022) distinguish negative and positive freedom from social freedom and show that entrepreneurship may increase individual autonomy without changing the structural

conditions that generate exclusion. Moscatelli et al. (2024) provide an employer-side illustration through continued reluctance within Italy's targeted-placement system, while Jurado-Caraballo and Quintana-García (2025) identify a positive business case for hiring PwD through associations with firm performance and reputation. These findings should be read together rather than as competing claims. Individual entrepreneurship may expand available economic choices, while employment institutions and employer practices remain relevant to broader inclusion. Accordingly, program evaluation should include both individual outcomes, such as income, employment, digital competence, and empowerment, and structural indicators, such as employer inclusion, accessibility practices, and implementation of disability rights.

The geographic pattern further suggests that a single global model of digital inclusion would be inappropriate. In high-income settings, the central question may concern governance and inclusive design of sophisticated AI and automation. In lower-income settings, the immediate constraints may concern connectivity, mobile financial services, training, infrastructure, and start-up resources. The difference does not imply separate theoretical frameworks; instead, the same readiness–capability–outcome logic can operate at different stages. What changes is the location of the binding constraint. The review therefore supports a context-sensitive model in which access, resources, skills, organizational readiness, institutional infrastructure, and critical design conditions jointly shape whether digital transformation contributes to inclusive entrepreneurship.

On this basis, the review proposes an integrated four-stage conceptual model. First, digital-divide conditions and psychosocial resources determine meaningful engagement. Second, organizational and institutional readiness determine whether engagement becomes usable entrepreneurial infrastructure. Third, capability-building and complementary financial or coordination support determine whether infrastructure becomes economic activity and outcomes. Fourth, gender, disability type, socioeconomic context, geography, and ableist assumptions embedded in technology moderate the results. Across all four stages, a critical distinction remains between individual economic empowerment and collective social change. A successful entrepreneurial outcome should therefore be recognized as meaningful without being treated as evidence that structural exclusion has been resolved. This model provides a basis for future empirical testing while preserving the contextual and critical qualifications present in the reviewed studies. The temporal and methodological fragmentation of the field has implications for how evidence should be interpreted. The concentration of publications in 2024–2026 indicates that the topic is still developing, while the mixture of qualitative, survey, panel, conceptual, and structural studies means that apparent convergence should not be treated as statistical confirmation. Rather, convergence is strongest at the level of mechanisms. Across different designs, access, resources, skills, readiness, capability, and institutional support recur as conditions that shape outcomes. The strongest longitudinal evidence comes from interventions such as Drydakis (2025) and Bechange et al. (2021), while qualitative studies such as Greenwood et al. (2023), Jetha et al. (2023), and Hidegh et al. (2022) reveal dimensions that outcome measures alone may miss. This complementarity supports a mixed-methods direction for the field rather than privileging one methodological tradition.

The proposed model can be expressed as a sequence without assuming that every study demonstrates every link. At the first stage, access, resources, skills, self-efficacy, and social capital shape whether digital participation is possible. At the second stage, organizational and institutional readiness shape whether participation becomes usable

infrastructure and opportunity. At the third stage, training, financing, mentorship, and coordinating capability shape whether opportunity becomes entrepreneurial activity and economic outcomes. At the fourth stage, context and intersectional characteristics influence whether the outcome is upskilling, reskilling, deskilling, or uneven participation. Critical disability perspectives cut across the entire sequence by asking whether individual success is accompanied by broader changes in recognition, accessibility, and institutional inclusion. This formulation preserves the findings of individual studies while making their relationships explicit.

Research Implications

Theoretical Implications

This review has theoretical and practical implications for understanding disability-inclusive digital entrepreneurship. Theoretically, it shows that technology-management theories and disability development perspectives contain complementary mediation logics. TOE, the Resource-Based View, and Stakeholder Theory emphasize organizational readiness and capabilities, while digital-divide theory, self-efficacy and social-capital theory, the biopsychosocial model, and critical theories of freedom explain individual, relational, institutional, and structural conditions. Their integration supports a readiness–capability–outcome perspective in which technology access is necessary but insufficient. The review also extends Jetha et al.'s (2023) access, resource, skills triad into entrepreneurship by connecting structural barriers with individual self-efficacy and social capital (Park, 2025), while retaining the critical distinction between individual empowerment and social freedom (Hidegh et al., 2022). The proposed four-stage model can therefore provide a multi-level conceptual basis for future empirical studies.

Practical Implications

Practically, the evidence points to several connected priorities. Policymakers should treat accessible digital-government infrastructure, digital identity, and digital business-registration systems as foundational conditions, particularly where such systems remain at an emerging stage (Alatawi, 2026; Kaindaneh et al., 2024). Training providers should combine application-focused digital and AI skills with financing, mentorship, apprenticeship, and social-capital support rather than treating training or credit as isolated inputs (Drydak, 2025; Bechange et al., 2021; Irikefe et al., 2026). Digital-financial programs should improve awareness and accessibility of mobile-money services for PwD (Peprah et al., 2023). Finally, AI and platform developers should incorporate meaningful participation by people with disabilities from the design stage, because inclusive design and disability knowledge are central to reducing bias and improving accessibility (Jetha et al., 2023; Zhuang & Goggin, 2024). Program evaluation should measure both individual economic outcomes and indicators of broader inclusion. The implications also concern how future evidence should be evaluated. Because the reviewed studies measure different outcomes, researchers should distinguish digital participation, digital competence, business performance, individual empowerment, and structural inclusion rather than treating them as interchangeable indicators. This would allow future studies to test whether improvements at an earlier stage of the model actually carry forward to later stages. It would also make it possible to identify where a program succeeds and where a constraint remains for example, whether limited economic outcomes reflect insufficient training, inaccessible infrastructure, lack of finance, weak market access, or organizational

barriers. For program designers, this also means that success criteria should be staged: infrastructure and access indicators can be assessed before capability, business, and longer-term inclusion outcomes. Such staged evaluation can make implementation constraints visible instead of attributing all differences in outcomes to participants or training quality.

CONCLUSION

This descriptive literature review synthesized thirty-one peer-reviewed studies published between 2021 and 2026 to examine how digital transformation shapes inclusive entrepreneurship and economic empowerment for people with disabilities. Five interrelated mechanisms characterize the evidence. First, the digital divide operates through access, resources, and skills, meaning that unequal participation begins before digital entrepreneurship can generate economic outcomes. Second, organizational and institutional readiness determine whether technological access can be converted into usable capabilities and sustainable activity. Third, structured digital-skills and AI-application training can improve competencies and business outcomes, although training may involve transition costs and does not resolve all entrepreneurial barriers. Fourth, digital financial services, particularly mobile money, can reduce some barriers to financial inclusion, but financial access alone is insufficient without complementary capability and coordination. Fifth, AI, automation, and assistive technologies can expand participation while also producing uneven adoption, bias, or deskilling when accessibility and disabled users' knowledge are not incorporated into design.

The review also shows that empowerment should be interpreted at more than one level. Entrepreneurship may increase individual autonomy, income opportunities, and psychological empowerment, but it does not automatically transform the structural conditions that produce disability-related exclusion. The evidence is geographically and methodologically fragmented: high-income-country studies more often address sophisticated AI, automation, and governance questions, while low- and middle-income-country studies more often address foundational access, mobile finance, vocational training, and basic business capability. Future research should therefore test the proposed four-stage model across different contexts, use intersectional designs, and examine both individual outcomes and structural indicators of inclusion. Overall, digital transformation should be understood as a conditional and context-dependent pathway whose economic benefits depend on accessible infrastructure, capability development, organizational readiness, inclusive design, and supportive institutions. The principal contribution of the review is therefore not a claim that one technology or intervention universally improves outcomes, but a synthesis of the conditions under which digital transformation can become economically meaningful for PwD. The evidence supports a connected approach in which infrastructure, accessibility, digital capability, financial access, organizational readiness, and inclusive governance are considered together. Such an approach also keeps individual entrepreneurship connected to the wider objective of economic and social inclusion.

References

- Alatawi, F. M. H. (2026). Examining the Critical Success Factors of Digital Government-Enabled Entrepreneurship Among Persons With Disabilities: A Structural Modeling Approach. *International Journal of Electronic Government Research*, 22(1), 1–17. <https://doi.org/10.4018/IJEGR.412452>
- Aloudah, N. S., Alshehri, M. S., & Alhamad, A. R. (2025). A proposed AI application for enhancing the quality of life of people with disabilities in Saudi Arabia. *Research in Developmental Disabilities*, 167, 105137. <https://doi.org/10.1016/j.ridd.2025.105137>
- Alsaleh, H., Nguyen, M., & Singhal, A. B. (2026). Drivers of artificial intelligence-powered hearing aids by individuals: An in-depth qualitative investigation. *Journal of Enterprise Information Management*. Advance online publication. <https://doi.org/10.1108/JEIM-06-2025-0488>
- Bechange, S., Jolley, E., Gascoyne, B., Smith, K., Griffiths, A., Ngorok, J., & Schmidt, E. (2021). Livelihood outcomes in a cohort of youth with disabilities following participation in an economic empowerment programme in rural Uganda. *Disability and Health Journal*, 14(3), 101069. <https://doi.org/10.1016/j.dhjo.2021.101069>
- Díaz-Fernández, M., Rivera-Prieto, J. C., & López-Cabrera, Á. (2026). Digital transformation and social sustainability: The mediating role of employees' digital competencies. *Technovation*, 156, 103607. <https://doi.org/10.1016/j.technovation.2026.103607>
- Drydakis, N. (2025). AI business applications training and business outcomes: An inclusive intervention for underrepresented entrepreneurs. *Journal of Strategy & Innovation*, 36(2), 200552. <https://doi.org/10.1016/j.jsinno.2025.200552>
- Fajardo-Castro, L. V., Martínez-Tur, V., Moliner, C., Lira, E., & Gracia, E. (2025). Digitalization and integrated employment for persons with intellectual disabilities. *Research in Developmental Disabilities*, 164, 105070. <https://doi.org/10.1016/j.ridd.2025.105070>
- Feng, S., & Yang, B. (2026). Digital M&As, digital resource empowerment and firm value: Evidence from China. *Finance Research Letters*, 101, 110002. <https://doi.org/10.1016/j.frl.2026.110002>
- Fernandez, G., De Assis Dornelles, J., & Ayala, N. F. (2026). Inclusion 4.0: How industry 4.0 drives workforce inclusion of people with disabilities. *Technovation*, 156, 103650. <https://doi.org/10.1016/j.technovation.2026.103650>
- Fitri, H., & Utaberta, N. (2026). What matters most in inclusive smart green spaces: Accessibility and smart technology needs of people with disabilities in technology-enhanced urban green spaces. *City and Environment Interactions*, 31, 100424. <https://doi.org/10.1016/j.cacint.2026.100424>
- Ghuri, P., Fu, X., & Minayora, A. (2022). Digital technology-based entrepreneurial pursuit of the marginalised communities. *Journal of International Management*, 28(2), 100948. <https://doi.org/10.1016/j.intman.2022.100948>
- Greenwood, M., Bechange, S., Emong, P., Lawrence, E., Kyosaba, W., Nsajja, D., Atugonza, I., Sunday, R., Pamella, D., Baguma, J., Abigaba, E., Ngendanabo, H., Kalibeela, S., Kyagondeze, M., Nyamahunge, E., Musika, A., Asiimwe, B., Kirungi, I., Kabanyoro, M., ... Baker, E. (2023). Using a community-based participatory research (CBPR) approach to explore economic empowerment for youth with disabilities in rural Uganda. *Social Sciences & Humanities Open*, 8(1), 100647. <https://doi.org/10.1016/j.ssaho.2023.100647>

- Hai Anh, N. T., & Vinh, N. T. (2024). Access to online business opportunities: Enhancing digital technology capacity for women with disabilities in the Red River Delta of Vietnam. *Heliyon*, 10(11), e32473. <https://doi.org/10.1016/j.heliyon.2024.e32473>
- Hariyani, D., Hariyani, P., Choudhary, S., & Mishra, S. (2026). Digital technologies for achieving SDG 11 targets: A holistic systems-level perspective. *Sustainable Cities and Society: Advances*, 2(2), 100064. <https://doi.org/10.1016/j.scsadv.2026.100064>
- Hidegh, A. L., Svastics, C., Györi, Z., & Csillag, S. (2022). The lived experience of freedom among entrepreneurs with disabilities. *International Journal of Entrepreneurial Behavior & Research*, 28(9), 357–375. <https://doi.org/10.1108/IJEBr-03-2022-0222>
- Irikefe, P. O., Ozili, P., Falahat, M., & Zainudin, A. D. (2026). Digital readiness as a boundary condition for financial inclusion in sustainable entrepreneurship: Evidence on dynamic coordinating capability and SME socioeconomic sustainability. *Sustainable Technology and Entrepreneurship*, 5(3), 100141. <https://doi.org/10.1016/j.stae.2026.100141>
- Jetha, A., Bonaccio, S., Shamaee, A., Banks, C. G., Bültmann, U., Smith, P. M., Tompa, E., Tucker, L. B., Norman, C., & Gignac, M. A. M. (2023). Divided in a digital economy: Understanding disability employment inequities stemming from the application of advanced workplace technologies. *SSM - Qualitative Research in Health*, 3, 100293. <https://doi.org/10.1016/j.ssmqr.2023.100293>
- Jurado-Caraballo, M. Á., & Quintana-García, C. (2025). Disability inclusion in workplaces, firm performance, and reputation. *European Management Journal*, 43(5), 752–763. <https://doi.org/10.1016/j.emj.2024.08.001>
- Kaindaneh, S., De Kadt, J., Bechange, S., Jolley, E., Smart, N., & Schmidt, E. (2024). An assessment of the Education Management Information System in Sierra Leone and potential for enhanced disability inclusiveness. *International Journal of Educational Research Open*, 7, 100399. <https://doi.org/10.1016/j.ijedro.2024.100399>
- Khan, Md. A., Rahman, A., Mahmud, F. U., Bishnu, K. K., Ahmed, M., Mridha, M. F., & Aung, Z. (2025). A systematic review of AI-driven business models for advancing Sustainable Development Goals. *Array*, 28, 100539. <https://doi.org/10.1016/j.array.2025.100539>
- Kulkarni, A. V., Joseph, S., & Patil, K. P. (2024). Artificial intelligence technology readiness for social sustainability and business ethics: Evidence from MSMEs in developing nations. *International Journal of Information Management Data Insights*, 4(2), 100250. <https://doi.org/10.1016/j.ijime.2024.100250>
- Mohd Daud, S. N., Ahmad, A. H., & Trinugroho, I. (2024). Financial inclusion, digital technology, and economic growth: Further evidence. *Research in International Business and Finance*, 70, 102361. <https://doi.org/10.1016/j.ribaf.2024.102361>
- Morales Almeida, P., & Alemán Ramos, P. (2026). Global trends and inequalities in disability wellbeing research: A bibliometric analysis (2019–2025). *Disability and Health Journal*, 102169. <https://doi.org/10.1016/j.dhjo.2026.102169>
- Moscattelli, M., Pavesi, N., & Ferrari, C. (2024). Targeted placement for people with disabilities in Italy: A perspective from Lombardian companies. *Equality, Diversity and Inclusion: An International Journal*, 43(9), 1–17. <https://doi.org/10.1108/EDI-07-2023-0228>
- Park, E.-Y. (2025). Factors related to digital literacy in people with disabilities: Focus on self-efficacy and attitude toward digital devices and technology. *International Review of Economics & Finance*, 104, 104671. <https://doi.org/10.1016/j.iref.2025.104671>

- Peprah, J. A., Avorkpo, E. A., & Kulu, E. (2023). People with disability and access to financial services: Evidence from Ghana. *Regional Science Policy & Practice*, 15(6), 1198–1216. <https://doi.org/10.1111/rsp3.12643>
- Rajan, M., Furgal, A., Kadri, R., Arman, O., Panzer, K., Wicker, D., McKee, M. M., Plegue, M., Degner, A., & Buis, L. R. (2025). Exploring the Utility of Digital Voice Assistants for Primary Care Patients, Including Those With Physical and Visual Disabilities: Cross-Sectional Study. *JMIR mHealth and uHealth*, 13, e66185–e66185. <https://doi.org/10.2196/66185>
- Rui, J., Shao, C., Qin, L., & Zhao, W. (2026). The digital economy enhances overall life satisfaction but reduces equity among vulnerable groups: Empirical evidence from 287 cities in China. *Applied Geography*, 189, 103925. <https://doi.org/10.1016/j.apgeog.2026.103925>
- Scapini, V., Ruiz-Martínez, R., & Calderón Aros, R. (2026). Analysis of the income gap between women with and without disabilities beneficiaries of a microenterprise program in Chile. *International Journal of Gender and Entrepreneurship*. Advance online publication. <https://doi.org/10.1108/IJGE-12-2024-0455>
- Vadaga, A. K., Dokuburra, U. R., Nekkanti, H., Gudla, S. S., & R, K. K. (2025). Digital transformation in pharmaceuticals: The impact of AI on supply chain management. *Intelligent Hospital*, 1(1), 100008. <https://doi.org/10.1016/j.inhs.2025.100008>
- World Health Organization. (2025, December 17). *Disability*. Retrieved September 18, 2026, from <https://www.who.int/health-topics/disability>
- Zhuang, K. V., & Goggin, G. (2024). New possibilities or problems for disability and inclusion? The case of AI and ADMs across work. *Telematics and Informatics*, 92, 102156. <https://doi.org/10.1016/j.tele.2024.102156>