

Article

A Predictive Study on the Employment Pathways for People with Disabilities in the Context of Education and Business Informatization

Jiaxuan Luo^{1,*}
¹ Xiamen University Tan Kah Kee College, Xiamen, China

* Correspondence: Jiaxuan Luo, Xiamen University Tan Kah Kee College, Xiamen, China

Abstract: In recent years, China has entered a new phase in advancing comprehensive education and employment opportunities for people with disabilities, driven by rapid developments in educational and business informatization. To gain a thorough understanding of employment development pathways for this population, this study analyzes data spanning 2020 to 2022, encompassing statistics on educational institutions serving people with disabilities, centralized employment arrangements, employment rates, and digital infrastructure platforms. The research investigates how educational informatization influences employment trajectories for individuals with disabilities. First, the study employs CiteSpace for bibliometric text mining, revealing a significant increase in scholarly literature on disability education and employment since 2008, with research interest demonstrating a clear upward trend. Notably, the majority of existing studies concentrate on information technology integration and intelligent assistive solutions. Subsequently, PEST and SWOT analytical frameworks are applied to identify varying challenges associated with the digitalization of disability education and related support initiatives across China. Finally, a linear regression model combined with quantitative data analysis from 2020 to 2022 reveals that three key factors—the number of special education senior high schools established for persons with disabilities, the enrolled student population within these institutions, and the quantity of national and local government digital platforms supporting disability-related services—exert a statistically significant positive influence on employment outcomes. The findings indicate that strengthening educational institutions and digital infrastructure for persons with disabilities can substantially enhance employment prospects and support the sustainable development of disability-related initiatives.

Keywords: disability employment; special education; informatization; digital infrastructure; linear regression; path prediction

Received: 01 July 2026

Revised: 25 August 2026

Accepted: 05 September 2026

Published: 08 September 2026



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1. Introduction

1.1. Research Background

In 2021, official policy documents emphasized the importance of enhancing the well-being of persons with disabilities and strengthening their capacity for self-development, setting a goal to achieve relatively high-quality and adequate employment by 2025. To realize this objective, detailed plans and measures were released in April 2022 for implementing employment targets during the subsequent planning period, aiming to create one million new jobs for persons with disabilities nationwide within three years [1]. In recent years, China's education and employment development for persons with disabilities has entered a new phase. It has been stressed that advancing the comprehensive development of disability-related affairs must firmly focus on achieving shared prosperity for all persons with disabilities. Modernization aimed at shared prosperity for all citizens identifies persons with disabilities as a particularly crucial group in realizing this goal. In recent years, stable economic development has been achieved

while the employment issues of people with disabilities have received high priority. Policy initiatives outline clear strategies to ensure inclusive access to employment and education for this group. The report specifies that the initiative primarily targets unemployed individuals with disabilities in urban and rural areas who have employment needs and suitable conditions, aims to enhance the government's role in promoting employment, further implement support policies for disability employment and entrepreneurship, strengthen vocational skills training programs for people with disabilities, continuously improve the quality and effectiveness of employment services, and stabilize and expand job opportunities for this population.

From 2022 to 2024, the employment of one million new people with disabilities across urban and rural areas nationwide was achieved. The employability and entrepreneurial capabilities of people with disabilities have continued to improve, their employment rights have been better protected, and a favorable social environment characterized by understanding, care, and support for their employment and entrepreneurship has been fostered. Currently, vocational education for people with disabilities serves as the fundamental approach to promoting their employment, encompassing primary vocational education during compulsory schooling with specialized curriculum design, secondary vocational education at the high school level, and higher vocational education at the university level—all aimed at enhancing employment opportunities for this group. Although significant progress has been made in vocational education for people with disabilities, challenges remain, such as a year-by-year decline in the number of schools dedicated to this population and the size of classes within these institutions. To achieve comprehensive development in both disability education and employment initiatives and drive overall improvement in employment outcomes, governments, educational institutions, and society at large must collaborate to continuously refine the vocational education system for people with disabilities, enhance educational quality, and increase enrollment rates [1]. Additionally, stronger safeguards and support for their employment rights are essential to cultivate a societal atmosphere that actively encourages and assists their employment and entrepreneurship endeavors.

1.2. Research Significance

1.2.1. Practical Significance

According to data from the seventh national population census, China has approximately 85 million people with disabilities. This figure is calculated based on the internationally recognized definition of disability and includes individuals with visual, hearing, speech, physical, intellectual, mental, and multiple impairments. Specifically, the number of people with visual impairments stands at 28.565 million, accounting for the highest proportion of the total disabled population. Although China has made significant efforts in promoting employment and education for persons with disabilities, challenges such as limited employment opportunities, inadequate barrier-free environments, and low overall educational attainment continue to hinder their development [2]. In recent years, while China has consistently advocated for employment equality and inclusive education, there remains a widespread lack of effective implementation mechanisms to support the educational advancement and employment integration of persons with disabilities. The implications for disability employment are as follows:

First, employment for persons with disabilities is fundamental to ensuring their equal participation in social life and their shared access to societal material and cultural benefits. It enables them to fully engage in social life, realize their potential and personal value, while also enhancing their overall quality of life so they can benefit from the progress of social development [1]. From a broader perspective, employment for persons with disabilities also contributes to stabilizing social order and fostering harmonious social development.

Secondly, employment for persons with disabilities is of great significance for their access to material necessities, increase in economic income, and improvement of living and development conditions. Employment serves as a crucial pathway for persons with

disabilities to obtain material necessities, as well as an important means to enhance their economic earnings and improve their living and developmental circumstances. In the post-pandemic era, amid the broader context of stabilizing and ensuring employment, promoting employment and entrepreneurship among persons with disabilities will become more challenging, yet its importance will be even greater [2]. Employment outcomes for persons with disabilities reflect, to a certain extent, the effectiveness of related support systems. Comprehensive rehabilitation, education, and support services form the foundation for achieving employment; thus, disability employment represents a comprehensive indicator of the quality of work involving persons with disabilities.

Finally, ensuring employment for people with disabilities is a vital manifestation of their equal participation and shared integration into society. In modern society, employment serves not only as a key means of obtaining material necessities but also as a concrete realization of individual capabilities and social inclusion. Enabling people with disabilities to secure employment, integrate into mainstream society, and work happily with dignity represents a significant indicator of societal progress and civilization.

This study conducts data collection and analysis from both the perspectives of disability education and related initiatives, thereby examining the significance of educational informatization in shaping employment pathways for people with disabilities in China [1].

1.2.2. Theoretical Significance

China's current employment and education policies for persons with disabilities draw upon interdisciplinary theoretical frameworks from political science, sociology, and economics. Research in this domain is broadly divided into survival-oriented and opportunity-oriented paradigms. In production-oriented employment, existing job placements have yielded limited improvements in overall employment outcomes, as employers—acting as rational economic agents—make hiring decisions based on objective assessments rather than arbitrary considerations [3]. Under the opportunity-oriented paradigm, individuals seeking employment in the absence of readily available positions are encouraged to identify or cultivate alternative **labor** market pathways to generate new employment opportunities.

1.3. Literature Review

Employment serves as a crucial pathway for persons with disabilities to achieve social participation and integration, forming the prerequisite and foundation for their comprehensive development and shared prosperity. In the new stage of development, strengthening statistical monitoring of employment among persons with disabilities holds significant practical importance. With the advancement of industrialization, the number of persons with disabilities continues to rise, making efficient and high-quality employment services particularly essential. Under the context of promoting shared prosperity for all citizens, facilitating relatively full and high-quality employment for persons with disabilities is of great significance. Conducting statistical monitoring and evaluation of employment quality can provide robust statistical support for government agencies in formulating and implementing policies to enhance employment outcomes for this group. Effectively addressing employment issues for persons with disabilities is fundamental to protecting their rights and improving income levels [4]. Providing tax incentives to relevant market entities constitutes an important policy measure for promoting disability employment and achieving social harmony and stability. With economic development and profound changes in social structures, research on disability employment has become increasingly focused, sophisticated, and detailed in both scope and content.

A review of the literature reveals that China has established relevant policies to actively promote employment for persons with disabilities, and their legal and social impact has been progressively strengthening [5]. However, challenges such as a large population of persons with disabilities, limited job opportunities, and inadequate employment and educational environments have resulted in an overall unfavorable

employment situation for this group, coupled with incomplete education coverage. Therefore, this paper conducts analysis and research from the perspective of disability education and related initiatives.

1.4. Research Content and Objectives

Based on the aforementioned background and significance of the research, combined with current domestic and international literature on special education, informatization in disability services, and employment pathways for persons with disabilities, it is evident that scholarly work in these areas remains limited, and a comprehensive theoretical evaluation framework aligned with contemporary social development needs has yet to be established. This paper aims, through systematic analysis of existing literature, to conduct an in-depth investigation into how educational and institutional informatization influences employment pathways for persons with disabilities, thereby enhancing the precision, practicality, and scientific rigor of predictive research [6].

This study is divided into six sections in total, with detailed descriptions of each section as follows:

I. Introduction. This section examines the social context of employment pathways for persons with disabilities, analyzes their research significance through theoretical frameworks and two analytical approaches, and investigates the current status, trends, and challenges associated with these pathways; it further synthesizes domestic and international research on educational and institutional informatization for persons with disabilities to identify valuable findings [1].

II. Theoretical Basis [3]. Building upon the literature review, this section defines the research content and objectives, ultimately establishing a comprehensive technical framework whose overall structure is interconnected through the research purpose, methodology, and findings.

III. Text mining on employment pathways for persons with disabilities based on CiteSpace in education and institutional informatization. Through literature analysis using CiteSpace software, this section focuses on the impact of disability education and institutional informatization on employment pathways for persons with disabilities to identify relevant influencing factors [7].

IV. Impact of education and institutional informatization on employment pathways for persons with disabilities based on PEST and SWOT analyses. This section identifies varying degrees of challenges in the current informatization efforts within China's disability education system and related institutional frameworks [8].

5. Prediction of disability employment status based on a linear regression model for education and vocational informatization [1]. Analysis of relevant data on disability education and employment from 2020 to 2022 reveals that three factors—the number of special education high schools established for persons with disabilities, the number of students with disabilities enrolled, and the number of national and local government platforms dedicated to disability vocational informatization—have a positive impact on disability employment in China.

VI. Summary and Prospects. The development of education and information technology for persons with disabilities has a significant impact on their employment pathways. It is recommended that employment support policies be further expanded and the employment environment continuously improved [9].

1.5. Research Methods and Technical Approaches

1.6. Research Methods

1.6.1. Literature Analysis Method

A comprehensive review and analysis of relevant domestic and international literature was conducted to identify foundational theoretical frameworks in special education, digital infrastructure development for the disability sector, and employment pathways for persons with disabilities [10]. Subsequently, the CiteSpace literature mining visualization tool was employed to construct a knowledge map illustrating the evolution

of these research domains. Keyword frequency maps and co-occurrence charts were generated to provide an objective, visual representation of current research trends and emerging thematic hotspots.

1.6.2. PEST Analysis

Based on a comprehensive review of relevant research materials, the author has developed a thorough understanding of education for persons with disabilities, their employment opportunities, and the digital transformation of disability-related initiatives. The study analyzes and summarizes the current status and challenges facing educational and digital development for persons with disabilities in China from political, economic, social, and technological perspectives [11].

1.6.3. SWOT Analysis

Applying systems analysis methodology, this study comprehensively examines the interplay among disability education, digital transformation of disability-related initiatives, and disability employment, yielding key insights into how these factors collectively influence employment outcomes and associated challenges [12].

1.6.4. Linear Regression Model

The regression equation models the quantitative relationships among special education schools, students with disabilities enrolled in special education programs, and the informatization level of disability services, quantifying their collective influence on disability employment outcomes to support evidence-based forecasting [8].

2. Text Mining Based on CiteSpace Visualization Analysis of How Educational and Institutional Informatization Impacts Employment Pathways for People with Disabilities

2.1. Analysis of Annual Document Output Volume

As illustrated in Figure 1, the chart depicts the publication trends from 1985 to 2024 concerning education and employment for individuals with disabilities, alongside the advancement of information technology applications within related domains.

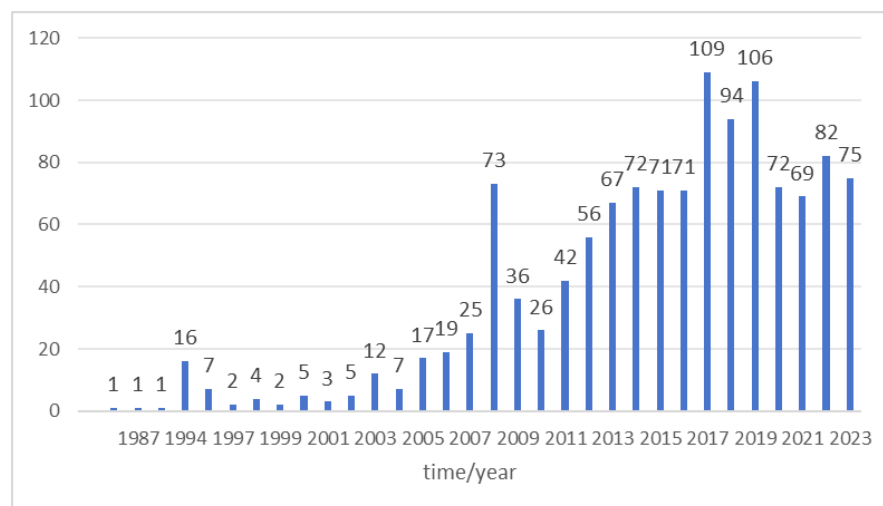


Figure 1. Trends in the Number of Publications on Education, Employment, and Informatization Development for Persons with Disabilities from 1985 to 2024

Source: Self-created by the author, China National Knowledge Infrastructure (CNKI)

The analysis indicates that over the past 39 years, publication volume has exhibited an overall pattern characterized by relative stability in the early period followed by a sharp increase in the later period, with 2008 serving as a significant turning point. The average annual publication count rose from approximately 5 articles prior to 2008 to 75 articles thereafter [13]. This shift is likely attributable to the transition into a new phase of

disability development and the increasing emphasis placed on employment education for individuals with disabilities.

2.2. Overview of Research Hotspots Regarding the Contribution of Keywords

To illustrate the relationships between clusters and their dynamic evolution, a timeline chart was generated using CiteSpace. The analysis reveals that research focal points related to disability employment, disability education, and digital transformation in disability services have undergone continuous shifts: while themes such as disability employment and education dominated in 2005, recent years have seen a shift toward digitalization of disability education and artificial intelligence. Analysis of the co-occurrence timeline of keywords identifies three distinct phases in the emergence of these research hotspots [5].

The first phase spanned 1985–2005, during which research primarily adopted a macro-level perspective, emphasizing three key areas: persons with disabilities, special education, and employment. The main research themes of this period were disability education and disability employment, examining the factors influencing these domains.

The second phase spanned 2006–2015, during which the number of key research milestones increased significantly, the scope of studies continuously expanded, and a clear research framework with distinct branches gradually took shape. Keywords such as 'information systems', 'employment policies', and 'inclusive education' emerged as prominent research focuses. The primary research directions centered on examining how disability education influences employment pathways for persons with disabilities and how the digitalization of disability-related initiatives impacts these pathways.

The third phase spanned from 2016 to 2023, during which research focus shifted toward informatization and artificial intelligence. Keywords such as 'Internet+', 'artificial intelligence', and 'vocational education' emerged as key research themes. The primary research objectives centered on advancing the digital transformation of disability-related initiatives and examining the impact of disability education on employment pathways for persons with disabilities.

Source: Self-created by the author, China National Knowledge Infrastructure (CNKI)

Further analysis revealed that the three most frequently occurring keywords in relevant studies were 'persons with disabilities', 'employment', and 'special education' (Table 1), appearing 462, 98, and 62 times respectively, indicating these three areas have been prominent research themes in recent years. Subsequently, 'countermeasures', 'inclusive education', 'distance education', 'education', 'employment services', 'higher education', and 'Internet+' ranked next with frequencies of 23, 22, 17, 16, 15, 14, and 14 respectively, demonstrating that disability education and employment hold significant importance in related research, whereas institutional digitalization has received relatively limited attention [6].

Table 1. Frequency Distribution of Key Terms

sort	frequency	Centrality	Keywords
1	462	0.96	People with disabilities
2	98	0.58	obtain employment
3	62	0.37	special education
4	23	0.08	the way to deal with a situation
5	22	0.1	confluent education
6	17	0.03	distance learning
7	16	0.07	education
8	15	0.08	employment service
9	14	0.03	higher education
10	14	0.05	internet +

Source: Self-created by the author, China National Knowledge Infrastructure (CNKI)

3. Environmental Analysis Based on PEST Regarding the Current Pathways of Educational and Vocational Informatization for Persons with Disabilities

3.1. Political Aspects

In contemporary China, where social civilization continues to advance and legal frameworks are increasingly strengthened, the protection of rights and interests and the development of initiatives for people with disabilities have garnered significant attention from all sectors of society [14]. To substantially improve the quality of life for people with disabilities and promote the comprehensive advancement of their cause, the country has introduced a series of laws and policies in recent years aimed at safeguarding their employment rights and creating broader opportunities for employment and entrepreneurship.

First, relevant national departments have taken proactive measures by formulating and implementing a series of specialized policies aimed at promoting diversified employment models for persons with disabilities, including proportional employment and supported employment. These policies not only provide diverse employment options but also specify the minimum staffing ratios that employers must adhere to when hiring individuals with disabilities, thereby ensuring their equal participation in the workforce [1].

Furthermore, to further alleviate the financial burden faced by persons with disabilities in the employment process, China has established a series of support measures, including the collection of the Employment Security Fund for Persons with Disabilities and tax incentives. The implementation of these policies has not only reduced employment costs for persons with disabilities but also boosted their motivation to seek employment, enabling them to face the challenges of the job market with greater confidence [14].

In the "14th Five-Year Plan for the Protection and Development of Persons with Disabilities," China has further clarified its objectives for improving employment-related laws and policies for persons with disabilities, and proposed a strategic framework that employs multiple channels and approaches to promote their employment and entrepreneurship. This plan not only calls for concerted efforts by governments at all levels and all sectors of society to provide persons with disabilities with more diverse employment resources and platforms, but also emphasizes enhancing their professional competence to strengthen their employability.

Through the implementation of these legal policies, China aimed to create 1 million new jobs for people with disabilities across urban and rural areas from 2022 to 2024, continuously enhance their employability and entrepreneurial capabilities, and better protect their employment rights. The national government issued the "Three-Year Action Plan for Promoting Employment of People with Disabilities (2022–2024)" (hereinafter referred to as the "Action Plan"), outlining measures to accelerate disability employment efforts in the current and upcoming period and achieve the goal of relatively full and high-quality employment for people with disabilities during the 14th Five-Year Plan period. These initiatives have not only created a more equitable employment environment for people with disabilities but also provided them with greater job opportunities and entrepreneurship platforms. Their implementation will not only promote the high-quality development of disability-related causes but also help meet the diverse and multi-level developmental needs of people with disabilities, enabling them to integrate and thrive more effectively in society.

At the same time, it must be recognized that the employment of people with disabilities still faces numerous challenges [7]. Therefore, continued efforts are needed to strengthen policy support, improve relevant laws and regulatory frameworks, enhance employment training and guidance for persons with disabilities, and provide them with more comprehensive and tailored employment services. Only through such measures can the comprehensive development of the cause concerning persons with disabilities be truly

achieved, enabling every person with disabilities to benefit from the fruits of social progress.

3.2. Economic Direction

China's economy has experienced rapid growth in recent years. By 2020, the proportion of disabled individuals with non-agricultural household registration receiving subsistence allowances or low-income benefits had declined, yet remained at 23%; meanwhile, the poverty rate among disabled individuals with agricultural household registration—excluding those enrolled in targeted assistance programs—exceeded 28%. A people-centered development approach has consistently emphasized expanding employment opportunities for persons with disabilities. Following the strategic deployment of targeted poverty alleviation and related initiatives, supporting persons with disabilities to escape poverty, acquire vocational skills, and achieve social integration through employment and entrepreneurship has become a core objective of vocational education for this group. China has established a relatively comprehensive vocational education system for persons with disabilities, characterized by well-developed institutional channels and structures oriented toward employment promotion. Nevertheless, certain shortcomings and challenges remain in the current state of vocational education for persons with disabilities.

3.3. Social Environment

Within the broader social context, China upholds an inclusive and supportive stance toward employment for persons with disabilities. Guidance issued by the Ministry of Human Resources and Social Security emphasizes equitable access to employment opportunities, integrating on-site service delivery with digital platforms to facilitate free job-matching support for both enterprises and individuals with disabilities. Commercial human resources service providers—including those offering staffing solutions—are actively encouraged to deliver tailored employment assistance. Local governments are expected to foster compliant, transparent operations by these providers, including clear disclosure of service fees and promotion of fee reductions or waivers for persons with disabilities and employers hiring them. Providers must ensure full communication of employment rights to persons with disabilities or their legal representatives, thereby strengthening pathways to sustainable enterprise-based employment.

3.4. Technology

Rapid advances in information technology have expanded opportunities for education and professional development among people with disabilities. Artificial intelligence, big data, and other digital tools facilitate more effective access to knowledge and information, thereby strengthening learning outcomes and workplace competencies. Increasingly, assistive devices and online learning platforms are incorporated into disability-focused education and career support systems. These technological innovations help mitigate barriers to learning and employment, contributing to improved quality of life.

4. Based on SWOT Analysis, Current Research Examines the Pathways for Implementing Educational and Institutional Informatization for Persons with Disabilities

4.1. Advantages of Education and Information Technology for Persons with Disabilities

Current research on employment and education for persons with disabilities indicates that individuals can harness their distinctive capabilities to address societal barriers. For example, blind individuals have established successful careers in massage therapy by applying their specialized sensory and tactile competencies. Furthermore, regional economic advancement and enhancements to social security frameworks have contributed to notable improvements in living standards for this population. Grounded in established psychological theory regarding human motivation, the fulfillment of foundational needs enables individuals to pursue higher-order goals such as personal

growth and self-fulfillment. While certain perspectives may characterize disability-related employment pathways as limited in scope, such views overlook the substantial impact of targeted support mechanisms—including inclusive education initiatives and vocational guidance services—which broaden access and participation. Despite persistent challenges in educational access and labor market integration, persons with disabilities consistently demonstrate resilience, initiative, and sustained commitment to their goals. Many have attained significant achievements through continuous effort and personal development [6, 8].

4.2. Disadvantages of Education and Employment for Persons with Disabilities

The fundamental challenge in education and employment for persons with disabilities stems from diverse functional needs, which influence suitability for certain learning environments and occupational roles. Although vocational education has been progressively integrated into the broader disability education framework, its scale and scope remain limited relative to the population size and evolving educational expectations. Due to individual functional profiles, persons with disabilities may encounter barriers in accessing a broad spectrum of employment options and may require tailored workplace accommodations to sustain health and well-being. Despite sustained national investment in vocational training, current educational provisions still fall short of fully aligning with labor market demands—leading to constrained job access, concentrated occupational distribution, and reduced labor market readiness. The ongoing implementation of the 12-year compulsory education system is expected to contribute to long-term improvements. However, educational resources—including the number of specialized institutions and the professional capacity of teaching personnel—remain comparatively limited.

4.3. Education and Employment Opportunities for Persons with Disabilities

With continuous economic development and industrial restructuring, an increasing number of industries have begun addressing employment challenges for persons with disabilities, expanding their access to job opportunities. Advances in modern technology have enabled more effective assistive devices and tools, supporting their fuller participation in society and the labor market. International engagement with disability-inclusive development has also intensified, fostering greater cross-border exchange and capacity building. However, employment rates among persons with disabilities have remained below 37% in recent years—a persistently low level [5]. Analysis of household income sources indicates that transfer payments constitute 54.9% of income in urban households and 43.5% in rural households headed by persons with disabilities, reflecting substantial reliance on public support. This pattern contributes to sustained fiscal demands on government budgets and often results in low-income status, limiting incentives for labor force participation.

4.4. Threat Analysis of Employment and Education for Persons with Disabilities

With ongoing societal development and intensifying labor market competition, persons with disabilities face increasing employment pressures and must continuously upgrade their professional skills and competencies to align with evolving market requirements. Shifts in public policy may significantly influence their access to employment and education opportunities; thus, close attention to policy developments and timely adaptation of personal development pathways are essential.

External socioeconomic uncertainties may introduce risks and challenges to the employment and educational advancement of persons with disabilities.

5. A Study on Predicting Employment Paths for Persons with Disabilities Based on Educational and Career Informatization Using a Logistic Regression Model

5.1. Subjects and Methods

Objective: This study investigates the relationship between employment outcomes for persons with disabilities and national initiatives supporting disability education, as well as the development of digital platforms serving this population. The analysis draws

on publicly available data from the official website of the China Disabled Persons' Federation [4, 12].

The data encompass three dimensions: annual national employment statistics for persons with disabilities for 2020, 2021, and 2022; the establishment of special education high schools and dedicated classes by central and local governments; and progress in digital infrastructure deployment within the disability services sector.

Method: Regional comparisons were conducted across the three data dimensions, followed by statistical modeling [5, 10]. A logistic regression model was applied to examine associations among variables. Model parameter significance tests were first performed to assess data reliability; second, regression outputs were interpreted to evaluate the strength and consistency of observed relationships; third, key conclusions were synthesized based on the analytical results.

5.2. Data Cleaning and Analysis

The study selected three categories of data regarding the overall employment situation of persons with disabilities in 2020, 2021, and 2022: high schools and classes established for persons with disabilities by the state and relevant governments, as well as information technology infrastructure development for disability-related initiatives. These data were compared across regions from nationwide to the western regions of China and other 32 administrative regions, with specific focus on employment statistics. In education, data on special education high schools (classes) and student enrollment figures were included. For information technology infrastructure development, comprehensive portal website data were utilized.

First, through data editing and integration, a total of 396 datasets were obtained via the website platform of the China Disabled Persons' Federation. Second, data preprocessing was performed using SPSS software to fill in missing values for all 396 datasets; since the missing values represented zero establishments or zero individuals, they were uniformly filled with 0. Additionally, four factors influencing employment among persons with disabilities were selected: total employment, data on special education high schools (classes), enrolled students, and overall portal websites. For three of these factors (excluding total employment), multiple linear regression analysis was conducted using three-year data. After multiple analyses, it was ultimately determined whether these three variables were correlated with employment among persons with disabilities.

5.3. Results of Linear Regression Analysis

5.3.1. Linear Regression Analysis Results for 2020

Table 1. Linear Regression Analysis Table for 2020

Linear regression analysis results (n=32)									
	Non-standardized		Standardized	t	P	VIF	R2	adjust R2	F
	Coefficient	standard error	Coefficient						
constant	101359.064	42716.719	-	2.373	0.025**	-			
Special Education High School. 2.	-2447.599	21069.248	-0.039	-0.116	0.908	5.919	0.464	0.407	F=8.095 P=0.000**
Missing Value Handling									*

Current Students.							
2_Missing Value Handling Business Information System Development. 2.	143.35	164.52	0.275	0.871	0.391	5.219	
Missing Value Handling							
Dependent Variable: Employment status of persons with disabilities. 2_ Missing value handling							

Note: ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Source: Self-prepared by the author, Statistical Yearbook of Persons with Disabilities 2023

Analysis of the F-test results reveals a significance P-value of 0.000***, confirming statistical significance at the specified level and leading to the rejection of the null hypothesis that the regression coefficient equals zero; consequently, the model fundamentally satisfies the required criteria.

With respect to variable collinearity, all VIF values remain below 10, indicating the absence of multicollinearity issues and confirming the robust construction of the model.

The model formula is expressed as follows: $y = 101,359.064 - 2,447.599 \times \text{Special Education High Schools; 2 - Missing Value Treatment} + 143.35 \times \text{Current Students; 2 - Missing Value Treatment} + 3,982.264 \times \text{Educational Informatization Development; 2 - Missing Value Treatment}$.

Output 2: Fit Result Visualization

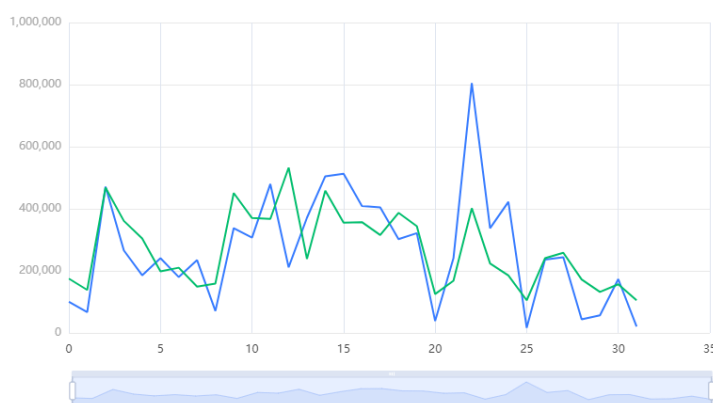


Figure 2. Fit Result Visualization for 2020. Source: Self-prepared by the author, Statistical Yearbook of Persons with Disabilities 2023

5.3.2. Results of Linear Regression Analysis in 2021

Table 3. Linear Regression Analysis Table for 2021

Linear regression analysis results (n=32)								
Non-standardized coefficient		Standardized Coefficient	t	P	VIF	R2	adjust R2	F
B	standard error	Beta						

constant	82962.71 3	36823.09	-	2.253	0.032**	-			
Special Education High School. 1.	5433.306	15923.22 2	0.091	0.341	0.735	5.305			
Missing Value Handling Current Students. 1_Missing Value Handling Business Information System Developme nt. 1.	226.84	142.935	0.431	1.587	0.124	5.457	0.622	0.582	F=15.378 P=0.000** *
Missing Value Handling									
Dependent Variable: Employment status of persons with disabilities. 1. Missing value handling									

Note: ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Source: Self-prepared by the author, Statistical Yearbook of Persons with Disabilities 2023

Analysis of the F-test results reveals a significance P-value of 0.000***, confirming statistical significance at the designated level and leading to the rejection of the null hypothesis that the regression coefficient equals zero. Consequently, the model fundamentally satisfies the required statistical criteria.

With respect to variable collinearity, all VIF values remain below 10, indicating the absence of multicollinearity issues and affirming the robust construction of the model [6].

The model formula is expressed as follows: $y = 82,962.713 + 5,433.306 \times \text{Special Education High Schools (with missing values handled)} + 226.84 \times \text{Current Students (with missing values handled)} + 2,688.025 \times \text{Educational Informatization Development (with missing values handled)}$ (As shown in Figure 3).

Output 2: Fit Result Image

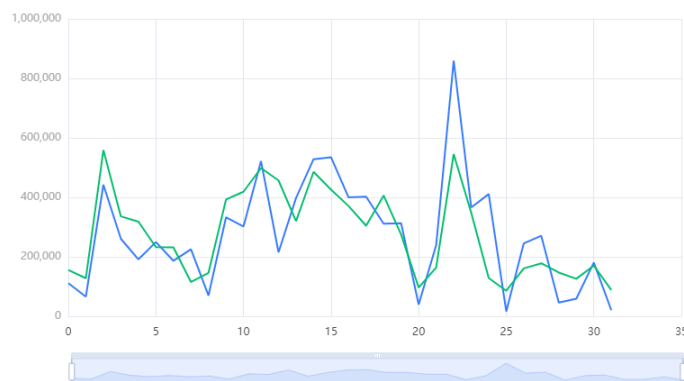


Figure 3. Fit Result Visualization for 2020

5.3.3. Results of Linear Regression Analysis in 2022

Table 4. Linear Regression Analysis Table for 2022

Linear regression analysis results (n=32)								
	Non-standardized coefficient		Standardization Coefficient	t	P	VIF	R2	adjust R2
	B	standard error	Beta					
constant	80216.872	40187.786	-	1.996	0.056*	-		
Special Education High Schools: Handling Missing Values Current Students :								
Missing Value Handling Business Information System Development: Handling Missing Values	22005.027	15938.493	0.365	1.381	0.178	4.694		
	41.457	186.062	0.068	0.223	0.825	6.284	0.582	0.537
								F=13.003 P=0.000**
	3312.001	1219.584	0.452	2.716	0.011**	1.854		

Dependent Variable: Employment Status of Persons with Disabilities – Missing Value Handling

Note: ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Analysis of the F-test results reveals a significance P-value of 0.000***, confirming statistical significance at the designated level and leading to the rejection of the null hypothesis that the regression coefficient equals zero. Consequently, the model satisfies the fundamental requirements for validity.

In terms of variable collinearity, all VIF values remain below 10, demonstrating the absence of multicollinearity issues and affirming the robust construction of the model [3].

The model formula is expressed as follows: $y = 80,216.872 + 22,005.027 \times \text{Special Education High Schools (missing value treatment)} + 41.457 \times \text{Current Students (missing value treatment)} + 3,312.001 \times \text{Educational Informatization Development (missing value treatment)}$.

Output 2: Fit Result Visualization (As shown in Figure 4).

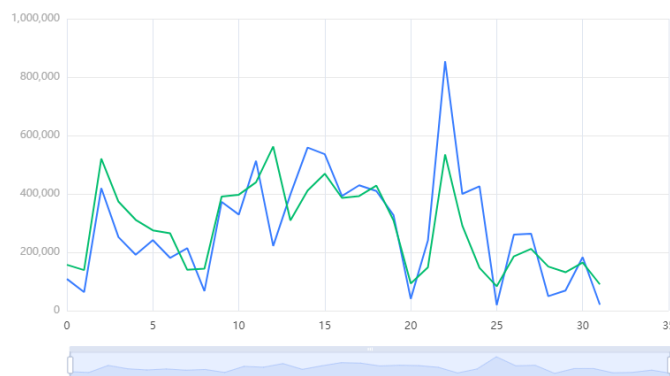


Figure 4. Fit Result Visualization for 2020

5.4. Analysis Results

The aforementioned correlation analysis revealed significant associations between factors influencing employment for persons with disabilities and three variables: data from special education high schools (classes), student enrollment figures, and overall website statistics. Subsequent analyses further examined these factors in relation to the same three datasets, primarily using regression analysis as the methodological approach.

Analysis of data across three years shows that nearly all B-values are positive, indicating a consistent positive association between these three factors and employment outcomes for persons with disabilities. A comparison of annual standardized Beta values indicates that digital infrastructure development for disability-related services exhibited the highest coefficient, suggesting it exerts the strongest influence on employment outcomes. Accordingly, enhancing digital infrastructure for disability services should be prioritized in future initiatives aimed at improving employment opportunities.

This study conducted multicollinearity diagnostics using tolerance and variance inflation factor (VIF) to assess variable relationships among explanatory variables. Multicollinearity reflects intercorrelations among predictors. Tolerance ranges from 0 to 1; VIF, defined as the reciprocal of tolerance, increases with stronger intercorrelation. Conventionally, a VIF below 10 suggests acceptable levels of intercorrelation. In this study, elevated VIF values indicate notable intercorrelation between student enrollment numbers and employment rates of persons with disabilities [10].

The determination coefficients R^2 were 0.464 in 2020, 0.622 in 2021, and 0.582 in 2022; the adjusted R^2 values were 0.407 in 2020, 0.582 in 2021, and 0.537 in 2022, indicating moderate-to-strong model fit, with the selected factors collectively accounting for approximately 50% of the variation in disability employment rates. The F-statistic confirms that at least one predictor significantly contributes to the model, supporting its overall statistical validity.

Regression coefficient p-values for disability employment—relative to data on special education high schools (classes), student enrollment, and overall portal websites—are all below the 0.05 significance threshold, confirming statistical significance. Thus, the proposed regression model is statistically robust. All four standardized regression coefficients are significant and retained in the final model; among them, digital infrastructure development for disability services demonstrates the strongest effect, followed by student enrollment and the presence of special education high schools.

In summary, three factors—the establishment of specialized high schools for persons with disabilities, the number of enrolled students, and government-led digital infrastructure development for disability-related services—each show a positive association with employment outcomes for persons with disabilities. Greater integration and advancement across these domains correspond to stronger support for employment inclusion [2].

6. Summary and Prospects

This study examines employment opportunities for people with disabilities and the factors influencing them. It analyzes the current domestic and international landscape of disability employment and identifies significant correlations between these influencing factors and three key variables: data from special education high schools (classes), student enrollment figures, and overall portal website statistics.

Drawing on existing domestic research and integrating findings from PEST and SWOT analyses, the employment situation for people with disabilities remains challenging. The Seventh National Population Census reported approximately 85 million people with disabilities in the country, underscoring the need to strengthen barrier-free environments to improve accessibility in living and working contexts. Recent national policy developments have placed greater emphasis on inclusion for people with disabilities. This study investigates how educational initiatives, employment policies, and information technology applications for people with disabilities—between 2020 and 2022—affect employment pathways.

Text mining was conducted using CiteSpace, revealing that research on employment education for people with disabilities has grown substantially since 2008, with increasing attention directed toward informatization and intelligent solutions. The analysis shows a dynamic shift in research focus: from employment and education for people with disabilities in 2005 to educational informatization and artificial intelligence applications for this population in recent years. Keyword co-occurrence analysis indicates that thematic development follows three distinct phases.

In parallel with text mining, PEST and SWOT analyses were applied to assess how educational initiatives for people with disabilities and digitalization efforts in disability-related programs may influence employment outcomes.

A linear regression model was used to examine the predictive relationship between education and digitalization initiatives in disability services and employment outcomes for people with disabilities. Multivariate linear regression analysis identified three factors—specialized high schools serving people with disabilities, student enrollment in those institutions, and government-level digital infrastructure development for disability services—as significantly and positively associated with employment rates among this population. These results support evidence-informed policy recommendations for guiding employment pathways.

This article calls for expanded employment opportunities, strengthened educational systems, and heightened global awareness of the needs of people with disabilities. It recommends developing more accessible online platforms tailored to their requirements. At the national level, increased governmental support—including expanded job placement initiatives and equitable access to high-quality educational resources—is warranted. Broader societal engagement is also essential, including enhanced public understanding and inclusive practices across sectors. As members of the younger generation, individuals can contribute by advocating for universally designed environments that foster greater accessibility in daily life and work.

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