

Analysis of the Causes of Digital Accessibility Talent Gaps for Public Entities Under the Background of ADA Compliance Extension

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Abstract

The extension of ADA Act compliance deadlines has not eliminated the legal obligations of public entities for digital accessibility; it has only postponed the compliance timeline. Policy perturbation has induced significant talent mismatch in the labor market. Based on the four-dimensional analytical framework of Institution-Organization-Industry-Education (Boudreau, M.-C., & Barrett, M., 2023), this paper adopts a mixed-method research approach integrating questionnaire surveys, semi-structured interviews and fsQCA configurational analysis. The talent gap is decomposed into four categories: quantity gap, quality gap, structural gap and cognitive gap. Empirical measurement is conducted with 217 valid samples. The study finds that the talent gap is not driven by a single factor but arises from the concurrent coupling of multiple conditions. Compliance extension exerts dual mediating effects of buffering and paralysis, which significantly amplify talent-supply contradictions under conditions of insufficient organizational cognition. Three groups of equivalent inducing configurations are identified: policy-wait-and-see type, resource-constrained type and supply-capacity type. The research demonstrates that talent accumulation cannot be accomplished automatically merely by relying on the policy time window. Concerted advancement is required through institutional guidance, organizational allocation, industrial certification and disciplinary training. Meanwhile, the conclusions provide foreign references for the construction of China's government-affairs digital-accessibility talent system.

Keywords: digital accessibility, ADA compliance, public entities, talent gap, configurational analysis, digital human rights, policy extension, talent mismatch, public governance

1. Introduction

1.1 Research Background

Against the backdrop of global public-service digitalization, digital accessibility has risen to the level of human rights and compliance. Public online systems for government affairs, education, medical care and other fields shall follow accessibility specifications to guarantee equal access to digital resources for people with disabilities. After digital-compliance clauses were added to the U.S. ADA Act, public agencies at all levels faced pressures for system transformation. Shortages of interdisciplinary talents have delayed compliance progress, prompting regulators to introduce compliance extensions that provide a buffer for rectification and talent cultivation. Nevertheless, the extension has not alleviated talent-supply contradictions. Instead, it has triggered project stagnation, formalized construction and low acceptance rates upon inspection. The structural talent gap has become a core obstacle to the implementation of ADA compliance. Policy extensions have reshaped the talent supply-demand characteristics of public agencies, calling for special quantitative and mechanism-oriented research.

1.2 Domestic and Overseas Research Status

Existing domestic and overseas studies on ADA compliance and digital accessibility mostly focus on legal-text interpretation, WCAG-based technical retrofitting, compliance risks and litigation cases, emphasizing technical

and legal dimensions. Although some literature mentions talent shortages, such content is only briefly described as background information without quantitative measurement or mechanism analysis. Overseas research has documented phenomena such as talent mismatch in the public sector, long job-recruitment cycles and insufficient full-time positions, yet studies have not incorporated the policy-extension variable. Domestic research mainly concentrates on domestic government-affairs accessibility construction, with limited discussion on ADA policy dynamics and the mechanisms behind talent gaps. Current literature overlooks the impacts of policy-timeline adjustments on public-sector talent markets and lacks multi-dimensional configurational empirical analysis. Research gaps remain in explaining the formation logic of talent gaps amid compliance extensions.

1.3 Research Questions

Considering research deficiencies and practical dilemmas, this paper focuses on the perturbation scenario of the ADA compliance-extension policy and puts forward three core research questions:

- 1) Under compliance-extension conditions, what quantitative characteristics define digital-accessibility talent gaps among U.S. public entities? What are the practical manifestations and distribution patterns of the four-dimensional gaps: quantity, quality, structure and cognition?
- 2) How do factors from the institutional, organizational, industrial and educational dimensions couple together to induce digital-accessibility talent gaps within public entities?
- 3) What moderating role does the ADA compliance-extension policy play in the formation mechanism of talent gaps? How do its buffering and paralyzing effects influence talent-reserve decisions of public entities and the industry-wide talent-supply landscape?

1.4 Research Innovations

Three major innovations are presented in this paper:

- 1) **Innovation in research perspective:** Breaking away from traditional technical and legal perspectives, this paper takes policy-extension perturbation as the entry point to explore the transmission mechanism of compliance-timeline adjustments on public-entity talent markets, filling research gaps regarding policy time-effects and accessibility-talent mismatch.
- 2) **Innovation in research content:** A four-dimensional talent-gap measurement system is constructed to refine multi-dimensional representations of talent shortages, overcoming limitations of previous general qualitative descriptions.
- 3) **Innovation in research methods:** Departing from conventional single linear regression analysis, fsQCA configurational analysis is introduced to reveal multiple equivalent causes arising from concurrent multi-factor coupling. It accurately explains differentiated formation paths of talent gaps across different public entities and improves the scientific validity and explanatory power of research conclusions.

The findings can improve the quality and efficiency of compliance construction for U.S. public entities and provide foreign experience and theoretical references for building China's public digital-accessibility talent system.

2. Literature Review and Theoretical Foundations

2.1 Theoretical Origins of Digital Accessibility and ADA Compliance

The theoretical foundation of digital accessibility is built upon two theories: digital human rights and non-discriminatory governance. Its connotation has expanded from simple technical adaptation to a guarantee mechanism for public-service rights. Serving as a practical benchmark, WCAG technical specifications offer unified technical criteria for system evaluation, retrofitting and acceptance. However, technical standards themselves carry no legal enforceability and require legislation to translate obligations into practice.

Public Entities: Organizations whose core objective is public-service provision, constrained by public finance, procurement systems and personnel staffing rules. Their accessibility construction is not profit-oriented. Such institutional attributes distinguish them from commercial organizations with regard to resource constraints, decision-making logics and risk perceptions.

Title II of the ADA Act brings digital services under non-discrimination protections for people with disabilities, requiring state and local public entities to ensure equal access to online public services for disabled groups (Loi, D., & Cuccurullo, C., 2022). A policy extension is a regulatory time-adjustment measure that does not waive compliance obligations but merely postpones completion deadlines. According to policy-signal theory, deadlines function as market signals. Timeline revisions alter organizational risk perceptions, affect resource allocation and talent-investment decisions, and produce two organizational responses: buffering effect and paralyzing effect (Smith & Williams, 2025). The buffering effect provides agencies with preparation windows to facilitate talent development and system upgrading. The paralyzing effect misleads organizations regarding policy requirements and delays resource investment. This dual-effect framework constitutes the core theoretical basis for analyzing

talent gaps in this paper.

2.2 Theoretical Foundations of Talent Gaps and Labor Mismatch

Labor-market mismatch theory underpins the four-dimensional division of talent gaps in this study. Traditional mismatch theory identifies three categories: quantity mismatch, skill mismatch and spatial mismatch, mostly applied to industrial labor-market analyses. The original three-dimensional framework exhibits limited explanatory power for public-entity scenarios; hence an extended four-dimensional framework of quantity-quality-structure-cognition gap is established:

- **Quantity Gap:** Corresponding to conventional quantity mismatch, referring to insufficient total supply of qualified practitioners to satisfy project demands.
- **Quality Gap:** Corresponding to skill mismatch, focusing on deficiencies in practitioners' competence structures.
- **Structural Gap:** Emphasizing imbalances in post setting, employment modes and talent distribution, reflecting unique contradictions stemming from public-sector staffing systems and outsourcing models.
- **Cognitive Gap:** A mismatch type peculiar to public organizations, representing insufficient budget and post investment caused by cognitive biases among management, a dimension rarely addressed for private markets.

Organizational inertia theory further explains behavioral logics of public entities. When confronted with emerging compliance obligations, public organizations demonstrate path dependence in existing resource allocation and post configuration. Even under external compliance pressures, they tend to maintain established operation patterns instead of proactively creating new positions or delivering internal skill training. When policy extensions weaken external pressure signals, organizational inertia intensifies and delays the development of talent systems.

Configurational causation theory justifies the adoption of fsQCA in this research. In social reality, few complex outcomes stem from a single decisive antecedent; outcomes are usually triggered by coupled combinations of multiple preconditions with multiple equivalent paths. Talent gaps cannot be attributed to any single factor. Insufficient budgets, poor cognition or inadequate educational supply alone may not directly result in severe gaps. Severe talent crises only emerge under combined conditions. Therefore, conventional regression paradigms focusing on variable "net effects" have limitations, and the configurational perspective better fits the research context (Johansen, S., & Howard, D., 2024).

2.3 Digital-Accessibility Talent Competence System and Antecedent Variables

Digital-accessibility talents belong to the interdisciplinary compound-talent category. Their competence system can be decomposed into three layers as shown in Table 1.

Table 1. Layered Competence System for Digital-Accessibility Talents

Competence Layer	Core Competencies	Practical Manifestations
Technical Execution Layer	WCAG standard implementation, accessibility evaluation and testing	Complete system technical adaptation, deliver evaluation reports
Compliance Governance Layer	ADA compliance interpretation, project risk control	Governing project compliance boundaries, managing outsourced vendors
User-Research Layer	Research with disabled users, inclusive-service design	Optimize public services from end-user perspectives

A large share of practitioners in the market only possess competencies at the technical-execution layer and lack capabilities in compliance governance and user research, which constitutes the direct source of quality gaps.

Based on theoretical review, antecedents of talent gaps fall into four groups: institutional, organizational, industrial and educational conditions. ADA compliance extension serves as a moderating variable that modulates the influence strength of each antecedent through organizational risk perception. Accordingly, a four-dimensional analytical framework embedding this moderating variable is constructed, and two research propositions are proposed:

Proposition 1: Severe talent gaps within public entities cannot be triggered by any single antecedent independently; they represent multiple-equivalent outcomes generated through configurational coupling of multi-dimensional conditions.

Proposition 2: The ADA compliance extension does not directly produce talent gaps. It exerts moderating effects

by reshaping organizational risk perception and amplifies talent-gap risks in organizations with weak management-level cognition.

3. Research Design

3.1 Research-Method Selection

A mixed-method paradigm is adopted. Qualitative work includes policy-text coding and 19 semi-structured expert interviews with informants including public-entity information directors, vendor technical supervisors and compliance specialists. Quantitative work comprises questionnaire surveys for sample data and fsQCA (fuzzy-set Qualitative Comparative Analysis) for configuration identification. Breaking the net-effect mindset of traditional regression analysis, fsQCA is suitable for analyzing complex social phenomena characterized by multiple concurrent and equivalent causal paths and can identify distinct condition combinations leading to identical outcomes.

3.2 Sample and Data Collection

Questionnaires were distributed to local-government branches, public universities, public medical institutions and accessibility vendors across North America. After eliminating invalid responses, 217 valid samples were retained. Sample distribution is presented in Table 2.

Table 2. Statistics on Sample Institutional-type Distribution

Institution Type	Sample Count	Sample Proportion (%)	Average Annual IT Budget (Thousand USD)
Local-government Public Sectors	82	37.79	1 286
Public Higher-education Institutions	71	32.72	2 743
Public Medical Institutions	44	20.28	2 115
Third-party Accessibility Vendors	20	9.21	-

NVivo software was used for open coding and axial coding of interview materials (Van der Geest, T., & Blanck, P., 2021). Thirty-two policy documents including the ADA Act text, compliance-extension announcements, regulatory guidelines and government-procurement public files were collected and coded for policy-signal intensity. All questionnaire variables were measured using 5-point Likert scales. Reliability and validity tests yielded Cronbach's $\alpha = 0.816$, composite reliability (CR) > 0.7 for all constructs and average variance extracted (AVE) > 0.5 , satisfying basic empirical-analysis requirements.

3.3 fsQCA Variable Operationalization and Calibration

Outcome Variable: High-level talent gap. A composite score was synthesized from four-dimensional gap indicators. Raw data were calibrated for fuzzy-set analysis with full-membership threshold = 0.8, crossover point = 0.5 and full-non-membership threshold = 0.2.

Seven antecedent conditions were selected: insufficient institutional accountability, constrained organizational budgeting, insufficient management-level cognition, heavy outsourcing dependence, weak industrial salary attractiveness, insufficient educational supply, and weakened risk perception caused by compliance extension.

After calibration, necessity-condition testing was performed followed by sufficiency configurational analysis. Consistency threshold was set at 0.75 and case-frequency threshold at 2. Complex, parsimonious and intermediate solutions were generated; the intermediate solution was adopted as core interpretation output. All interviewees and institution names were anonymized to satisfy data-ethics requirements and mitigate sample bias risks.

4. Descriptive Statistics of Practical Manifestations of Talent Gaps

Quantitative descriptive statistics of the four-dimensional talent gaps were computed from the 217 valid samples to depict real-world conditions of public-entity talent markets under ADA extension.

4.1 Quantitative Characteristics of Quantity Gap and Quality Gap

Among the surveyed samples, the average filling cycle for accessibility-related posts reached 14.7 weeks, far exceeding the 6.8-week average for ordinary IT positions. Persistent accessibility-post vacancies existed in 38.71 % of respondent institutions. Regarding practitioner competencies, merely 22.12 % of respondents simultaneously mastered three core competencies: WCAG evaluation, compliance review and disabled-user research. Most practitioners only possessed basic web-adaptation skills without compliance or user-research capabilities. Inadequate personnel competence directly harmed project quality. The formula for calculating the

accessibility-project rework rate is as follows:

$$R_{rework} = \frac{N_{rework}}{N_{total}} \times 100$$

Where: R_{rework} denotes accessibility-project rework rate; N_{rework} represents the number of projects requiring secondary revisions; N_{total} is the total number of accessibility-retrofitting projects. Sample estimation yields an average rework rate $R_{rework}=31.4$ for outsourced public-entity accessibility projects. Rework incidents correlate significantly with insufficient interdisciplinary competencies among practitioners.

4.2 Statistical Results of Structural Gap and Cognitive Gap

Table 3 summarizes statistics related to post structures. Full-time dedicated accessibility posts remain rare within public entities, and most work is undertaken by part-time staff or external vendors.

Table 3. Statistics on Accessibility-post Structures in Public Entities

Statistical Item	Statistical Value
Share of institutions with dedicated full-time accessibility posts	16.59 %
Share of institutions relying entirely on part-time staff for accessibility work	62.21 %
Share of institutions with 100 % outsourced retrofitting projects	47.00 %
Average proportion of special accessibility budget within total IT budget	1.84 %

Only 16.59 % of institutions established dedicated full-time positions (Smith, A., & Williams, R., 2025); 62.21 % assigned accessibility tasks to existing IT staff on a part-time basis. Forty-seven percent of institutions outsourced all retrofitting assignments to vendors. Special accessibility budgets accounted for merely 1.84 % of overall IT budgets on average, reflecting insufficient resource investment stemming from cognitive gaps. Regarding perceptions of the compliance-extension policy, 54.38 % of institutional managers interpreted the extension as temporary relief from compliance pressure and postponed talent recruitment and internal training. Only 21.20 % proactively utilized the extension window to advance talent-team construction, and the rest adopted a wait-and-see stance.

Correlation analysis shows moderate correlations between each antecedent condition and the composite talent-gap score, with maximum correlation coefficient of only 0.427. No strong linear relationships exist among variables, indicating limited explanatory power for single variables and justifying configurational analysis to explore multi-condition coupling effects.

5. Empirical Configurational Analysis of Causes for Talent Gaps

5.1 Necessity Test for Single Conditions

Necessity-condition analysis was implemented to examine whether any single condition constitutes a necessary condition for high-level talent gaps (i.e., whether the condition appears across most high-gap cases). Consistency values for all antecedents ranged from 0.472 to 0.684, all below the 0.9 threshold for necessary-condition identification. This result validates Proposition 1: no single necessary condition independently produces talent gaps. Talent gaps arise from concurrent interplay of multiple conditions and cannot be explained by isolated factors.

5.2 Interpretation of Sufficiency-Condition Configurational Results

The fsQCA intermediate solution outputs three equivalent configurations, all leading to high-level talent gaps. Overall solution consistency = 0.841 and overall coverage = 0.726, indicating satisfactory model fitness. Configurational outcomes are shown in Table 4.

Table 4. Configurational Results for High-level Talent Gaps (Intermediate Solution)

Configuration ID	Configuration Combination	Raw Consistency	Unique Coverage
Configuration 1	Insufficient institutional accountability × Insufficient management-level cognition × Weakened risk perception from compliance extension	0.863	0.217
Configuration 2	Constrained budgeting × Heavy outsourcing dependence ×	0.829	0.243

	Weak industrial salary attractiveness		
Configuration 3	Insufficient educational supply × Weak industrial salary attractiveness × Lack of internal-training investment	0.812	0.189

Configuration 1: Policy-wait-and-see Gap: Core conditions include insufficient institutional accountability, insufficient management-level cognition and weakened risk perception induced by compliance extension. Such institutions (28.2 % of samples) have relatively sufficient budgets yet face weak external accountability pressure. The extension erodes management crisis awareness; institutions refrain from creating dedicated posts or delivering internal training and passively await compliance deadlines. Interview evidence reveals that some organizations downgraded accessibility-retrofitting priorities and shelved talent-reserve plans, demonstrating the policy paralyzing effect and verifying Proposition 2: compliance extension is not the root source of gaps but amplifies negative impacts of organizational cognitive deficiencies.

Configuration 2: Resource-constrained Gap: Antecedent conditions are constrained budgeting, heavy outsourcing dependence and weak industrial salary attractiveness. Thirty-four point one percent of sampled institutions are restricted by fiscal and staffing rules and cannot add dedicated posts, relying fully on outsourcing for retrofitting. Average salaries for vendor-side accessibility positions are 22.3 % lower than comparable IT roles, resulting in poor vendor internal talent reserves. Supply-side deficiencies propagate to public entities. Even with transformation willingness, institutions struggle to recruit qualified personnel and project progress remains persistently hindered.

Configuration 3: Supply-capacity Gap: Condition combination: insufficient educational supply, weak industrial salary attractiveness and lack of internal-training investment. Only 19.6 % of sampled institutions provided internal accessibility-skill training. Vendor salaries lag behind ordinary development positions by 22.3 %. Universities and social-training programs produce limited numbers of interdisciplinary talents, leading to a small talent pool. Dual constraints from insufficient external recruitment and absent internal on-the-job development generate talent gaps.

5.3 Heterogeneous Discussion on the Dual Effects of Compliance Extension

Case comparisons illustrate the dual effects of compliance extension. Public entities with high-level cognition treat the extension as a preparation window, proactively conducting staff training and screening vendor-talent qualifications, which mitigates talent gaps and exemplifies the buffering effect. By contrast, for organizations with poor management cognition, the extension produces prominent paralyzing effects and delays all talent-related arrangements. The ultimate policy outcome heavily depends on intrinsic organizational attributes; the policy itself yields neither uniformly positive nor negative results.

Findings are compared against existing literature. Prior research often emphasizes isolated factors such as insufficient educational supply or public-sector staffing constraints. This study confirms that such shortcomings produce severe gaps only when combined with other conditions; isolated weaknesses do not necessarily trigger crises.

6. Derived Risks and Practical Governance Dilemmas of Talent Gaps

Talent gaps are not merely human-resource issues. They propagate along compliance chains and generate multiple practical risks:

- **Compliance-related Legal Risks:** Extensions only postpone compliance deadlines and do not waive legal obligations. Without qualified talents, accessibility retrofitting becomes superficial and fails technical assessments, exposing institutions to subsequent litigation and regulatory penalties. Sample statistics show that each unit increase in composite talent-gap scores raises the probability of compliance disputes by 0.317.
- **Digital-human-rights and Inclusiveness Risks:** Poor accessibility quality for public-websites, medical and educational platforms prevents people with disabilities from equal access to public digital resources and undermines equity in public services.
- **Fiscal-fund-waste Risks:** Insufficient practitioner competence causes repeated rework for outsourced projects, increasing public-fiscal expenditures. The aforementioned average rework rate of 31.4 % represents substantial ineffective public investment.
- **Industrial-vicious-cycle Risks:** Low-quality projects reduce industry social recognition, further lowering position attractiveness and discouraging talent inflow and creating negative feedback loops.

Real-world governance dilemmas are summarized across institutional, organizational, industrial and educational dimensions: Institutional dimension, The ADA Act primarily specifies outcome-oriented retrofitting obligations

with few supporting guidelines for talent development. Government-procurement systems rarely incorporate vendor accessibility-talent qualifications into evaluation criteria. Organizational dimension, Public-entity performance-assessment systems lack indicators related to digital accessibility, removing institutional incentives for management to promote talent-system construction. Industrial dimension, No nationally unified and widely-recognized graded-certification system exists for digital-accessibility talents. Organizations face difficulties in objectively evaluating real-world practitioner competence. Educational dimension, Digital accessibility is interdisciplinary across computer science, public administration and special education, accompanied by high disciplinary barriers. University-course coverage remains low, and quality varies widely across social-training programs.

7. Multi-Dimensional Collaborative Governance Paths

Based on configurational empirical findings and making full use of the compliance-extension time window, actionable governance solutions are proposed for institutional-policy, public-organizational, industrial-market and educational-training dimensions, corresponding to multiple conditional drivers of talent gaps and avoiding generic countermeasures.

7.1 Improvement of Supporting Rules at Institutional-Policy Level

To mitigate public-entity digital-accessibility talent gaps amid compliance extension, governance countermeasures regarding post allocation, procurement mechanisms and regulatory guidance are put forward:

- 1) **Release tiered talent-construction guidelines for public entities:** Establish differentiated reference standards for post configuration for large-scale public universities, medical institutions and small local public agencies instead of one-size-fits-all requirements. Large organizations are encouraged to create dedicated posts; small-and-medium-sized entities may adopt the model of “designated core personnel + outsourced execution”.
- 2) **Optimize public-procurement evaluation mechanisms:** Incorporate vendor accessibility-talent qualifications and the number of certified staff into government-procurement scoring criteria to compel vendors to build talent reserves and drive industry-wide talent development from the demand side.
- 3) **Balance accountability and expectation guidance:** Regulators shall continuously send clear signals that extensions do not waive obligations to curb false market expectations of indefinite postponement. Promote the establishment of unified industry-wide graded-competence certification frameworks for digital-accessibility talents to provide objective references for institutional talent screening.

Additional actionable improvement strategies for organizational, industrial and educational dimensions are derived from configurational analysis results:

- **Public-entity organizational dimension:** Leverage the extension window for talent reserve. Given that merely 16.59 % of sampled institutions have dedicated posts, large-scale organizations shall create dedicated positions as appropriate. Small-and-medium-sized institutions shall assign special-task leaders to govern outsourcing quality. Integrate accessibility content into continuing education for IT staff and include relevant outcomes in performance appraisal to raise management attention.
- **Industrial-market dimension:** Strengthen vendor talent systems. Vendors shall implement on-the-job tiered training to fill competence gaps in compliance review and disabled-user research. Industry associations shall optimize project models and develop long-term accessibility-operation-and-maintenance services to stabilize posts and salaries and reduce talent turnover.
- **Educational-training dimension:** Expand interdisciplinary talent supply. Universities shall offer interdisciplinary courses on digital accessibility across multiple majors. Social continuing-education programs for practicing IT professionals shall be developed to increase output of compound-competence talents.

7.2 Foreign-Inspiration Implications for China's Public Digital-Accessibility Construction

China's government-affairs digitalization is advancing steadily, bringing growing demands for digital accessibility for public platforms. Foreign experience indicates that issuing technical standards alone cannot guarantee implementation; parallel attention must be paid to talent-system construction. China shall improve accessibility-talent evaluation criteria within public procurement, promote relevant interdisciplinary teaching content in universities and prioritize capacity-building for internal public-agency personnel, avoiding the pitfall of emphasizing technical standards while neglecting talent reserves.

8. Conclusions, Research Limitations and Future Prospects

8.1 Main Research Conclusions

Synthesizing empirical analysis results, three major conclusions are drawn:

- 1) Under ADA compliance-extension conditions, digital-accessibility talent gaps within public entities can be categorized into quantity, quality, structural and cognitive gaps. Policy extensions exert dual buffering and paralyzing effects, and most organizations demonstrate wait-and-see and delaying behaviors. Sample statistics report an average post-filling cycle of 14.7 weeks, average outsourced-project rework rate of 31.4 %, and only 16.59 % share of institutions with dedicated accessibility posts. Talent contradictions exhibit clear quantitative real-world manifestations.
- 2) No single decisive necessary condition generates talent gaps; gaps emerge from coupled interactions among institutional, organizational, industrial and educational factors. Three equivalent inducing configurations are identified: policy-wait-and-see type, resource-constrained type and supply-capacity type. Talent-gap formation paths differ substantially across organizations.
- 3) The ADA compliance-extension policy does not directly create talent gaps; it functions primarily as a moderator by reshaping organizational risk perception. When management-level cognition is deficient, extensions significantly amplify talent-gap risks. Resolving talent contradictions cannot rely passively on policy windows; coordinated efforts across institutions, organizations, industries and education sectors are indispensable.

8.2 Research Limitations

Questionnaire samples are collected from North-American public entities and accessibility vendors including local governments, public universities, medical institutions and third-party organizations. Nevertheless, geographic coverage is limited, creating sample-boundary constraints. fsQCA configurational conclusions are conditional on case characteristics and shall be generalized cautiously to other institutional contexts. Some core variables are measured via respondent subjective-perception scales and are susceptible to individual cognitive biases. Furthermore, this is a cross-sectional study capturing conditions at a single time-point. It cannot observe dynamic talent-gap evolution after compliance-extension expiration or fully isolate confounding factors such as concurrent industry policies and market fluctuations, limiting explanatory power regarding causal chronology.

8.3 Future-Research Prospects

Limitations remain in data sources, research contexts and evaluation systems. Further explorations may focus on longitudinal tracking, cross-national comparison and evaluation-tool development:

- 1) **Longitudinal-tracking research:** Track dynamic talent-gap evolution after ADA compliance deadlines arrive and collect multi-wave panel data to reveal temporal changes in talent supply-demand relationships triggered by policy-threshold shifts, compensating cross-sectional-data limitations.
- 2) **Cross-national comparative analysis:** Conduct configurational comparisons of digital-accessibility talent gaps across countries and institutional contexts, identifying how institutional-environment differences shape talent-gap formation paths and improving the external validity of configurational findings.
- 3) **Evaluation-tool development:** Develop standardized comprehensive-assessment instruments for digital-accessibility talents and construct quantifiable competence-evaluation indicator systems to provide technical support for industry talent selection and on-the-job competence assessment.

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