International Talent Mobility under the Global Science and Technology Governance Framework: Challenges and Strategies for China

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Abstract

Under the profound transformation of global science and technology governance, international talent mobility has become a key arena of national competition. This paper builds a dual-drive model based on push–pull theory and identity theory to explain China's international talent flow. The model combines external factors such as institutional support and development opportunities with internal motivations such as emotional belonging and value identity, forming a mechanism of both attraction and cohesion. From the dynamic process of "outflow–inflow–circulation," the study shows that China's talent policies have evolved from quantity expansion to quality improvement and structural optimization. However, challenges remain, including intensified global competition, the trend of "decoupling," and an insufficient domestic environment. To address these issues, the paper suggests enhancing institutional support, improving living conditions, and strengthening cultural identity to attract and retain high-level talent. Ultimately, China should move from a "policy-driven" approach to an "emotion-driven" approach in global talent competition.

Keywords

global science and technology governance, international talent mobility, push-pull theory, dual-drive model, China's talent strategy

1. Introduction

Driven by the dual forces of globalization and the knowledge economy, international talent mobility has increasingly become a new focal point of competition among nations. The cross-border movement of high-level talent not only concerns individual career choices and quality of life but also profoundly influences national capacities for technological innovation, economic transformation, and even the restructuring of global science and technology governance patterns (Zheng and Guo, 2024). Especially in the postpandemic era and under the backdrop of growing geopolitical tensions, issues such as "intellectual spillover" and "talent protectionism" have challenged the traditional paradigm of openness and cooperation, giving rise to renewed reflections on responsibility and equity.

Research on international talent mobility has gradually shifted from a simple focus on "loss" or "gain" to a systematic interpretation of multidimensional migration patterns and institutional mechanisms. The three paradigms-brain drain, brain gain, and brain circulation-together constitute the basic framework of contemporary international talent migration, reflecting composite features of stage evolution, structural

differentiation, and institutional dynamics. Moreover, push–pull theory, as a classical explanatory framework, provides a clear logical lens for understanding the driving mechanisms behind talent migration. However, relying solely on economic and institutional "push–pull" forces is insufficient to explain increasingly salient internal factors such as emotional identification, cultural belonging, and identity cognition within talent mobility. Therefore, identity theory has emerged as a crucial complementary perspective, revealing the value orientations and emotional connections underlying migration decisions.

This paper focuses on the pluralistic patterns and evolving mechanisms of international talent mobility, examining the trends, challenges, and future trajectories of cross-border talent flows within the context of global science and technology governance. Focusing particularly on China's developmental experience, this study analyzes the institutional evolution from "talent outflow" to "talent return" and "talent circulation." Building upon the integration of push-pull theory and identity theory, this study proposes a dual-drive model, which seeks to interpret the dynamics of international talent mobility through the interaction between external institutional attraction and internal emotional cohesion, thereby addressing the practical issue of "responsible talent governance" in the global innovation system.

2. Theoretical Models and Evolution of International Talent Mobility

2.1 Evolution of the Three Models of International Talent Mobility: From "Outflow" to "Circulation"

Early studies on international talent mobility focused primarily on "brain drain", which refers to the migration of highly skilled labor from developing countries to developed countries due to lagging economic development, insufficient research resources, and limited professional opportunities. This phenomenon has led to a "loss of human capital" and a widening developmental gap between nations (Deng, 2023). From the 1960s to the 1980s, many developing regions-including India, African countries, and China-faced severe pressure from one-way outflows of high-level talent.

With the acceleration of globalization and the rise of the knowledge economy, scholars have gradually realized that talent mobility should not be regarded as a zero-sum game of "loss" and "gain." Since the 1990s, the concept of "brain gain" has emerged, emphasizing that emigrant talent who accumulates knowledge capital and builds professional networks abroad may eventually contribute to their home countries through return, investment, or collaboration. Simultaneously, the academic community introduced the paradigm of "brain circulation," which views cross-border movement as a dynamic, multidirectional, and institutionalized circulation rather than a one-way and permanent migration (Zheng et al., 2025).

In China, the evolution of talent mobility can be characterized by three distinct stages:

(1) 1978–Early 1990s: The "Brain Drain" Stage.

During the early years of reform and opening up, China experienced a massive outflow of talent due to the lack of research platforms and incentive mechanisms. According to the China Statistical Yearbook, from 1978--2007, approximately 1.21 million Chinese students went abroad for further study, but only one-fourth returned-a 2:1 ratio of outflow to return, far lower than the 1:2 ratio typical in other developing economies during their take-off stages. The relatively underdeveloped domestic research environment and living conditions make "talent outflow" a salient phenomenon, posing a serious challenge to national innovation capacity and technological competitiveness (Bongers et al., 2022).

(2) Mid-1990s–2010: The "Brain Gain" Stage.

During this period, the Chinese government began to attach great importance to the issue of talent outflow and sought to promote return migration through policy interventions (Kim, 2022). In 1989, the Ministry of Personnel and the State Education Commission jointly issued policy documents encouraging overseas students to return. In 1994, the Chinese Academy of Sciences launched the Hundred Talents Program to attract young overseas scientists with competitive benefits. In 1998, the Ministry of Education initiated Project 985, aimed at building world-class universities and recruiting international scholars to increase research capacity.

Statistical data show that in 2000, 38,989 people went abroad for study, and 9,121 returned (23.4%). By

2010, the numbers had risen to 284,700 and 134,800, respectively, with the return rate increasing to 47.3%. The increasing proportion of returnees indicates that, driven by policy incentives and improved research conditions, China entered the early stage of talent return, with returning scholars becoming a vital force in scientific innovation and higher education.

(3) 2010–Present: The "Brain Circulation" Stage.

Since 2010, China's talent recruitment policies have increasingly diversified. Major programs such as the Thousand Talents Program, Young Thousand Talents Program, and Ten-Thousand Talents Program have been launched, while local governments have established innovation and entrepreneurship platforms such as Overseas Innovation Parks and Qiaomengyuan to provide research funding, living subsidies, and startup support. This has created a more comprehensive ecosystem for attracting talent (Sudibor and Ünlü, 2022).

According to data from the Ministry of Education, in 2012, 399,600 people studied abroad and 272,900 returned (68.3%). By 2018, the numbers rose to 662,100 and 519,400, respectively, with the return rate reaching 78.4%.

This transformation reflects not only the restructuring of the global science and technology governance landscape but also China's evolving talent policy philosophy-shifting from quantitative expansion to qualitative optimization and from government-led recruitment to multiactor collaboration. More importantly, the evolution of China's international talent mobility is driven not only by external "push–pull forces" such as policy, institutional frameworks, and resource allocation but also by internal "cohesive forces" such as identity recognition, cultural belonging, and national commitment. For instance, the formation of the "returnee talent" community often embodies both a sense of responsibility toward national development and renewed confidence in domestic research environments. This resonance between structural incentives and identity cohesion exemplifies the essence of the proposed dual-drive model.

2.2　Localization of the Push–Pull Theory

Push–pull theory, first proposed by American scholar E. S. Lee (1966), posits that individuals' migration decisions are jointly influenced by "push" factors from the origin and "pull" factors from the destination. The "push" forces refer to negative conditions that drive individuals to leave, whereas the "pull" forces represent positive attractions that draw them to a new location. This framework has been widely applied to explain the motives behind international talent migration and has proven particularly relevant in analyzing China's talent recruitment policies (Wang, 2025).

In terms of push factors, early drivers of China's talent outflow included insufficient allocation of research resources, a limited number of high-level research institutions, fierce competition for projects, restrictive institutional environments, limited academic freedom, rigid evaluation systems, and pressures from living conditions such as housing, healthcare, and education.

Conversely, the pull factors in developed countries-particularly in Europe and North America-consisted of a more liberal research environment, adequate funding, and greater social recognition. Specifically, these include academic freedom and innovative space, institutional encouragement of independent exploration, higher income levels for research professionals, and strong cultural inclusivity and identity integration (e.g., through permanent residency or green card systems).

In the current stage, with China's growing technological capabilities and improving policy frameworks, domestic "pull" factors have also been strengthened. However, it is important to note that attraction in talent mobility now extends beyond material and institutional dimensions to encompass deeper psychological aspects such as emotional identification, cultural belonging, and value resonance. The traditional push–pull model alone cannot fully capture this complex motivational mechanism. Therefore, this paper integrates the structural analysis of push–pull theory with the intrinsic dynamics of identity theory, proposing a dual-drive model. This model argues that international talent mobility is jointly shaped by external institutional "push–pull forces" and internal emotional "cohesive forces." Together, these findings form the theoretical foundation for understanding the mechanisms behind China's evolving talent attraction strategies.

3.   Multiple Identities of Talents and the Perspective of Identity Theory

3.1   Theoretical Interpretation: Talent as Emotional Carriers Rather Than Purely Rational Actors

Traditional studies on international talent mobility have largely relied on the rational choice model, which assumes that talent acts as "economically rational individuals" whose migration decisions are determined by measurable variables such as income, welfare, and research conditions. However, recent research increasingly indicates that this perspective fails to explain certain phenomena, such as "counterflow migration" and "emotion-driven return" among high-level talent.

To address this limitation, this paper introduces identity theory into the push–pull framework and argues that talent migration is driven not only by external institutional factors but also by internal motivations related to identity recognition and value belonging. The two dimensions-structural and identity-based-jointly shape migration pathways, forming what this study defines as the dual-drive model. This model retains the institutional explanatory power of push–pull theory while incorporating the psychological and cultural insights of identity theory, thereby offering a more holistic framework for analyzing the complex dynamics of China's talent attraction policies.

Identity theory emphasizes that individual behavior is influenced not only by external structural incentives but also-more profoundly-by subjective perceptions of "who I am." In the context of transnational mobility, talent identity is no longer a single attribute, such as "citizen" or "professional," but rather a multifaceted construct encompassing national belonging, cultural emotion, social recognition, and familial roles.

For internationally mobile Chinese talent, identity consciousness, such as "I am Chinese" or "I am contributing to national development," often becomes a crucial psychological driver prompting them to pursue short-term economic gains and choose to return. This was particularly evident during the COVID-19 pandemic, when many overseas scholars voluntarily returned to China to support scientific research in epidemic prevention. Viewing talent as carriers of identity and emotion thus provides a deeper understanding of their migration logic and offers theoretical guidance for designing more affinity-based talent policies.

3.2   Application in China's Diaspora and Talent Recruitment Practices: Stimulating Emotion-Driven Returns

In recent years, China has increasingly recognized that relying solely on "policy incentives" to attract talent yields diminishing marginal effects. As a result, policy design has shifted toward building identity recognition and cultural belonging within the broader framework of global science and technology governance. Platforms such as Qiaomengyuan (Overseas Chinese Dream Garden) and Overseas High-Level Talent Liaison Stations, which are established on the basis of diaspora resources, exemplify innovative practices of "identity-based governance."

Taking Qiaomengyuan as an example, the platform not only provides entrepreneurial support and tax incentives but also enhances cultural and emotional connections through activities such as cultural festivals, hometown visits, and summer camps for children of overseas Chinese. Many returning talents noted in interviews that what attracted them was not merely material benefits but also a "spiritual sense of belonging" and the "mission of contributing to national development."

Moreover, various provinces and municipalities have set up overseas liaison offices or talent service stations that go beyond policy promotion by leveraging alumni networks, clan associations, and professional communities to build personalized, network-based, and emotionally resonant channels for talent engagement. This approach reflects the three core elements of identity theory: a sense of belonging ("I belong"), a sense of identification ("I identify"), and a sense of mission ("I contribute"), thereby fostering a durable emotional attachment between talent and their home country.

However, it is important to note that identity recognition is not static; it evolves over time and across different policy and social contexts. Consequently, the emotional mechanism of diaspora-driven talent attraction should go beyond traditional notions of nostalgia and kinship. It should be integrated into broader

national visions-such as technological advancement, innovation-driven development, and global discourse construction-to achieve a transformation from emotional connection to shared mission.

Notably, the success of Qiaomengyuan and similar initiatives does not rely solely on emotional mobilization but rather embodies a dual characteristic: on the one hand, institutional support through policy incentives, entrepreneurship platforms, and innovation resources creates strong pulling forces; on the other hand, cultural activities, social networks, and emotional resonance generate cohesive binding forces. The synergy between these two dimensions represents the practical manifestation of the dual-drive model, which illustrates that effective international talent recruitment must achieve a dynamic balance between institutional attraction and emotional identification.

4. Theoretical Integration and Analytical Framework of the Dual-Drive Model

Push–pull theory and identity theory jointly constitute the theoretical foundation of the dual-drive model for interpreting international talent mobility. Within this model, the external structural push–pull forces determine the fundamental conditions and institutional space for migration, primarily reflected in observable variables such as the distribution of research resources, differences in remuneration, and variations in policy environments. Moreover, the internal identity-based mechanism regulates and reinforces individual migration intentions and choices of belonging, encompassing emotional and psychological dimensions such as cultural identification, national mission, and value resonance. These two dimensions are not parallel but nested and dynamically interactive: structural conditions provide the material and institutional basis for identity construction, whereas identity mechanisms influence differentiated behaviors under similar structural conditions and ultimately determine long-term retention and deep integration after return.

The academic contribution of this model lies in transcending the traditional assumption of the "rational economic actor" by situating international talent mobility within a dual analytical dimension of structure and identity. This study not only reveals the synergistic mechanisms between macrolevel institutions and microlevel emotions but also provides a systematic theoretical tool for understanding the complex challenges China faces in global talent recruitment. From a structural perspective, it is necessary to examine whether China's comparative advantages in global competition are being fully leveraged, whether institutional barriers have weakened the pulling forces or intensified the pushing forces, and how geopolitical tensions are reshaping international pathways and the rules governing talent flows. From the identity perspective, it is equally important to consider whether high-level talents' sense of cultural belonging and value identification has been effectively stimulated, whether existing policies rely excessively on material incentives at the expense of emotional cohesion, and how the "Chinese identity" and sense of community among overseas talent can be reconstructed within the context of globalization.

Overall, the dual-drive model illustrates that international talent mobility is shaped by two categories of challenges that differ in nature but interact closely. Structural challenges arise from shifts in the global competitive landscape, manifesting as institutional barriers and resource imbalances, which can be mitigated through policy optimization and institutional innovation. On the other hand, identity challenges stem from cultural distance, value conflicts, and the erosion of a sense of belonging, which must be addressed through softer governance approaches such as cultural engagement and identity reconstruction. If talent recruitment focuses solely on structural dimensions, it risks falling into the trap of policy accumulation without emotional warmth; however, if it depends entirely on emotional mobilization, it may fail to sustain long-term development and institutional trust.

Therefore, an ideal talent recruitment strategy should strive for a dynamic synergy between these two layers, realizing an organic unity between "hardware optimization" through institutional reform and resource coordination and "software cultivation" through cultural cohesion and emotional resonance. Guided by this theoretical framework, the following section further analyzes China's challenges in global science and technology governance and proposes strategies for achieving institutional and emotional codriving under the dual-drive paradigm.

5. Key Challenges in China's Global Talent Recruitment

5.1 External Push–Pull Dimension: Intensified Global Technological Competition and the "Decoupling" Trend Weakening International Talent Mobility Mechanisms

Against the backdrop of increasingly competitive global science and technology governance, international talent mobility has evolved from a relatively neutral "channel of cooperation" into a "strategic arena" of great power rivalry. Since the escalation of China–U.S. technological frictions, the number of restrictions imposed on cross-border talent exchanges under the pretext of "security" has grown substantially, exerting a direct effect on China's talent recruitment strategies.

For example, in the United States, the approval process for H1-B work visas has become increasingly stringent, whereas F-category visas-mainly for Chinese STEM graduate students-are frequently subjected to prolonged "administrative processing." Moreover, several well-known universities and research institutes have been placed on the "Entity List." These measures have not only blocked the overseas development pathways for many high-level Chinese talent but also exacerbated the "identity marginalization" of returnees within international academic networks.

In addition, other technologically advanced economies, such as the European Union, Japan, and Australia, have successively established "talent security review" mechanisms that systematically exclude Chinese researchers. For example, Germany's strategic technology screening mechanism covers frontier fields such as artificial intelligence and semiconductors, whereas the United Kingdom has tightened its regulations on visiting scholar programs and postdoctoral cooperation. This type of institutional "decoupling" in the field of science and technology is reshaping the global landscape of talent governance, making China's efforts to attract international talent increasingly complex and constrained by policy barriers.

Furthermore, while China's exchange channels with developed countries have become more restricted, emerging economies in the Global South have significantly increased their capacity to attract talent. Countries such as Singapore, the United Arab Emirates, and Saudi Arabia have launched international innovation parks, high-salary recruitment programs, and fast-track visa policies that successfully attract transnational professionals, including ethnic Chinese scientists. This has created a new form of "middle-income country competition" for talent.

In summary, China's international talent recruitment now faces not only the traditional challenge of "talent outflow" but also structural difficulties caused by shrinking exchange channels, exclusionary rules, and institutional barriers. This situation calls for strategic planning and the use of multilateral mechanisms to expand China's "talent governance space."

5.2 Internal Identity Dimension: Insufficient Soft Environment Attractiveness and the Uncertainty of Talent Return

Compared with external structural challenges, the more intractable problem lies in the shortcomings of China's internal "soft environment," which are gradually undermining high-level talents' sense of belonging and confidence in sustainable development. Although programs such as the "Thousand Talents Plan" and other national recruitment initiatives have provided generous material incentives, both empirical research and practical evidence suggest that financial rewards alone are insufficient to maintain long-term attractiveness.

First, the existing research evaluation system-still dominated by metrics such as publications, project funding, and professional titles-has not been fundamentally reformed, thereby constraining the innovation autonomy and academic freedom of high-level talent. Some returnee scientists have noted that domestic research management is overly bureaucratic, funding use lacks flexibility, and performance assessment pressures are excessive. These conditions contrast sharply with the exploratory and risk-tolerant academic culture emphasized in foreign research environments.

Second, institutional support and mechanisms for social integration remain inadequate. Policies concerning spousal employment, children's education, household registration, and access to healthcare are often regionally unbalanced and procedurally cumbersome, making it difficult for high-level talent to settle and take root.

Particularly in second-tier cities and below, local talent programs often focus on "initial recruitment" without offering a sustained "service chain," resulting in the recurring pattern of "temporary return followed by renewed outflow."

More profoundly, the emotional foundation of "identity recognition" still needs strengthening. Some returnee talent faces identity dilemmas when integrated into the domestic research ecosystem and often encounters binary discourses such as "returnees versus locals," biased evaluation systems, and weak mentorship mechanisms. These challenges contribute to feelings of exclusion rather than inclusion, reflecting the "belongingness gap" described in identity theory as a key factor undermining emotional cohesion.

Taken together, China's global talent recruitment challenges encompass both external structural constraints-such as international competition and institutional barriers-and internal recognition issues involving cultural belonging and social integration. The perspective of the dual-drive model helps reveal the dynamic interaction between these two dimensions and provides a theoretical foundation for developing a more resilient and inclusive international talent recruitment system.

6. Policy Recommendations: A Dual-Path Approach Based on the "Dual-Drive Model" of Structural and Identity Mechanisms

In the context of increasingly complex global science and technology governance and the increasing politicization of transnational talent mobility, China's talent recruitment strategy must shift from "single-point incentives" to "systemic governance." Based on the dual-drive model that integrates push–pull theory and identity theory, this study proposes a two-dimensional governance framework addressing both structural and identity-based challenges, thereby constructing a synergistic system that combines institutional optimization and emotional belonging.

6.1 Addressing Structural Challenges: Enhancing Institutional Supply and Expanding International Cooperation

Structural challenges stem from the dual pressures of external "decoupling" trends and internal institutional inadequacies. To address these issues, China should advance reform through two complementary pathways-domestic institutional optimization and international cooperative engagement.

6.1.1 Domestic Pathway: Building a Full-Cycle Support Chain of "Research–Transformation–Living"

At the institutional level, the talent support system should be optimized across three dimensions: research autonomy, achievement transformation, and living conditions.

(1) Research stage: Grant greater scientific autonomy to high-level talent, streamline funding and project management procedures, and establish a "zero-output tolerance period" to encourage basic research and high-risk innovation.

(2) Transformation stage: Improving the incentive system for intellectual property ownership of institutional research outcomes, building bridges between research institutions and enterprises, and promoting the conversion of "intellectual capital" into "industrial capital."

(3) Living stage: Housing security, children's education, and medical services should be strengthened, "one-stop talent service windows" and the "city talent officer system" should be promoted, and the willingness of talent to settle and integrate locally should be increased.

The establishment of this institutional chain aims to alleviate the problem of insufficient "pulling power" within China, increase the structural resilience of its talent recruitment system, and provide a robust foundation for talent return and international collaboration.

6.1.2 International Pathway: Promotion of Cooperative Global Talent Governance

In response to external institutional barriers, China should actively integrate into global talent governance

systems and shape an "open, cooperative, and cogoverned" international recruitment pattern.

(1) At the regulatory level, they should actively participate in multilateral mechanisms such as UNESCO, the OECD, and the G20; advocate for a global principle of equitable talent mobility; and promote the depoliticization of scientific collaboration (Yang and Li, 2025).

(2) At the regional level: Explore the establishment of "Free Talent Mobility Zones" along the Belt and Road region, implement mutual recognition of academic qualifications, facilitate visa processes, and develop joint training programs to strengthen institutional trust (Wei, 2023).

(3) At the platform level: Support universities and Chinese enterprises in establishing transnational talent workstations, using joint research projects as vehicles for organic, project-based talent circulation (Kong, 2022).

Through the synergy of domestic and international pathways, China can maintain the openness and stability of its global talent networks even under the broader context of "decoupling."

6.2 Addressing Identity-Based Challenges: Rebuilding Institutional Trust and Cultural Identity Mechanisms

Identity-based challenges are reflected in the insufficient attractiveness of China's "soft environment" and the lack of belonging among high-level talent. To resolve these problems, China should reconstruct institutional trust and cultivate emotional identity, achieving a synergy between "hardware optimization" and "software cultivation."

6.2.1 Institutional Trust Mechanisms: Reforming Evaluation Systems and Organizational Culture

(1) Optimize research evaluation systems by breaking the dominance of metrics such as publications and titles, adopting diversified performance assessments, and incorporating social impact as a dimension of academic achievement.

(2) Improving organizational culture within research institutions by dismantling the "returnee vs. local" dichotomy and fostering an inclusive and egalitarian working environment.

(3) Establish a grievance and feedback mechanism for high-level talent to enhance institutional transparency and trust.

Institutional trust serves as the foundation for emotional belonging; its improvement facilitates the transformation of "policy-based trust" into "system-based trust," thereby stabilizing talent development expectations.

6.2.2 Emotional Belonging Mechanisms: Strengthening Cultural Resonance and Identity Recognition

On the emotional level, cultural narratives and social linkages should be leveraged to foster identity resonance among talent.

(1) Reinforcing cultural memory connections by using platforms such as Qiaomengyuan (Overseas Chinese Dream Garden) and Haichuangyuan (Overseas Innovation Park) to organize programs such as "Chinese Cultural Memory Camps" and "Homecoming Visits for Overseas Young Scientists," thereby stimulating deep cultural identification.

(2) Expanding social recognition networks through mechanisms that combine global alumni associations and regional overseas Chinese federations, creating cross-cultural and cross-regional communities of emotional belonging.

(3) Foster mission-based identity by linking national scientific strategies with research honor systems, guiding talent to integrate personal development with national goals, and forming an identity chain of "I belong-I identify-I contribute."

The dual construction of institutional trust and emotional belonging can transform "emotion-driven return" from a spontaneous individual act into an institutionalized and sustainable process, achieving a shift from "project-based recruitment" to "human-centered return through cultural attachment."

7. Conclusion

Against the backdrop of restructuring global science and technology governance and intensified international competition, the mobility of global talent has become a critical component of national development strategies. Drawing on push–pull theory and identity theory, this study constructs a dual-driven model to interpret China's talent recruitment practices, revealing the interactive logic between external structural forces and internal identity-based mechanisms that shape international talent mobility.

The findings indicate that China's current talent recruitment system faces two core challenges. The first is a structural challenge arising from the dual pressures of global "decoupling" trends and insufficient domestic institutional supply. The second is an identity-based challenge characterized by the weak attractiveness of China's "soft environment" and the lack of cultural belonging among talent.

Building upon the integration of the push–pull and identity frameworks, the proposed dual-drive model emphasizes that international talent mobility is not the result of a single economic or emotional logic but rather a dynamic resonance between structural incentives and identity mechanisms. This model expands the explanatory dimension of existing talent mobility studies, offering a novel analytical framework for understanding the synergy between institutional design and identity formation and laying the theoretical foundation for a "structure–identity integrated" approach to global talent governance. By responding to the limitations of prior literature-which often overemphasizes either economic rationality or cultural emotion-this study enriches the theoretical genealogy of research on science globalization and national innovation systems through cross-theoretical synthesis.

From an empirical perspective, the Chinese case reveals important insight: under the dual pressures of global competition and domestic transformation, material incentives alone are insufficient to sustain long-term talent attraction. Only by simultaneously advancing along the two pathways of institutional trust and cultural belonging can China achieve a sustainable state of "attracting, retaining, and integrating" global talent. This finding provides valuable lessons for developing countries seeking to balance institutional construction and cultural identity while also offering implications for the inclusive evolution of the global talent governance system.

However, this study has certain limitations. It relies primarily on macrolevel policy analysis and representative cases and lacks microlevel empirical data. Future research could combine survey methods, interviews, and cross-national comparative analysis to test the operability and universality of the dual-drive model and to further explore how new technologies-such as digitalization and artificial intelligence-reshape identity construction in the context of global talent mobility.

In the future, China's talent strategy should seek a new equilibrium between open cooperation and cultural confidence-enhancing structural attractiveness through institutional innovation and strengthening emotional cohesion through cultural narratives. The goal is to build a global talent governance system that is fair, inclusive, and sustainable. Only by maintaining a dynamic balance between national interests and individual respect can China realize the true vision of "attracting talent, retaining talent, and utilizing talent effectively" (Chen, 2022). China's experience may also serve as a reference for other emerging economies: in an era of global fragmentation and rising techno-nationalism, achieving a positive circulation of transnational talent mobility through "institutional synergy" and "identity resonance" will become a defining challenge for the next phase of global governance.

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