

A Comparative Study of Chinese–Germany Overseas Young Scientific and Technological Talent Introduction Policies from the Push–Pull Theory Perspective

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ABSTRACT: Against the backdrop of globalization and shifting geopolitical dynamics, young scientific and technological talent has emerged as a critical determinant of national competitiveness. Based on the push-pull theory, this study conducts a comparative analysis of youth science and technology talent introduction policies in China and Germany from two dimensions—“pull-factor construction” and “push-factor transformation”—and across three levels: policy, practice, and socio-culture. The Study focuses on China's “Thousands of People Plan”, “Ten Thousand Talents Plan” and K-visa, alongside Germany's Skilled Immigration Act (Fachkräfteeinwanderungsgesetz) and its subsequent amendments, as well as Skilled Labour Strategy: India (Fachkräftestrategie Indien). The findings indicate that China demonstrates notable strengths in administrative efficiency and the transformation of external push factors, but continues to face challenges in developing a comprehensive social integration system. In contrast, Germany exhibits clear advantages in social integration, rule-of-law transparency, and targeted talent attraction, while encountering constraints related to administrative efficiency and interdepartmental coordination. This study offers reciprocal policy insights for both countries in refining their talent attraction strategies and contributes a comparative perspective to understanding the underlying policy logic of global talent competition.

KEYWORDS - Comparative study between China and Germany, Pull-push theory, Talents introduction policies, Youth scientific and technological talents

I. INTRODUCTION

The world today is undergoing profound changes unseen in a century. Young scientific and technological talents have become a key variable for nations in driving innovation and strengthening the core competitiveness of their industries. Research by the Organisation for Economic Co-operation and Development (OECD) confirms that high-skilled migrants exert a significant positive impact on host countries' Research and Experimental Development investment, patent output, and productivity growth, thereby serving as a core engine of innovation.[1]Consequently, how to effectively attract and cultivate such talents has become an integral component of national strategies. Existing studies have predominantly focused on the talent policies of a single country or region, with a relative lack of comparative research on economies under different institutional backgrounds within a unified theoretical framework. China and Germany, as two major economies, exhibit both similarities and significant differences in their youth science and technology talent introduction policies. Addressing this research gap, this study applies the push-pull theory to conduct a comparative analysis of the relevant policies of China and Germany, explores the underlying causes of their differing strategies, and provides both theoretical and practical references for improving talent introduction policy systems.

II. LITERATURE REVIEW

International talent mobility, particularly the cross-border migration of young scientific and technological talents, has long been a central issue of academic inquiry. The existing literature on the talent policies of a single country or region is already extensive. For instance, Li et al. analyzed the current status and structural system of South Korea's overseas talent attraction policies, finding that South Korea adopts a clear and refined categorization of target talents, accompanied by full-cycle management and supporting services.[2]

Research perspectives on Germany and the European Union are comparatively more diverse. Lange T. systematically reviewed the evolution of high-skilled immigration policies in Europe before and after the 2008 global financial crisis, pointing out that the economic downturn lowered the threshold for high-skilled migrants and emphasizing the need to incorporate gender perspectives into policy evaluation and design.[3]Cerna et al. focused on the entry policies for non-EU immigrant entrepreneurs in France, Germany, and the Netherlands, constructing a policy evaluation model encompassing three dimensions: material conditions, procedural regulations, and participating actors.[4]Wang comprehensively elaborated on Germany's institutional arrangements for attracting, incentivizing, and nurturing top scientists and emerging talents, thereby clarifying the German experience of organically combining compensation, autonomy, platforms, recognition, and career development pathways.[5]

Studies focusing on China have largely concentrated on the effectiveness of subnational policies. Sun et al. constructed an indicator system for subnational youth science and technology talent introduction policies, suggesting that local governments should avoid simple imitation and instead pursue differentiated and refined policy design based on local industrial and talent needs.[6]Zhu et al., through a textual analysis of policies from 24 provincial-level governments in China, revealed deep-seated problems such as regional imbalances, homogeneous competition, and a lack of scientific rigor.[7]

However, the existing studies exhibits corresponding limitations that constitute the starting point of this study. First, there is a lack of systematic comparative research between China and Germany, with no in-depth comparison placing the two countries within a unified analytical framework. Second, insufficient attention has been paid to how policies transform or mitigate the "push factors" from talent-origin regions.

III. THORETICAL FRAMEWORK AND METHODOLOGY

1. Push-Pull Theory

This study conducts a systematic comparative analysis of overseas youth science and technology talent introduction policies in China and Germany from the perspective of the classical theory of international talent mobility—the push-pull theory. The push-pull theory is a foundational theory for studying population mobility, originating from the laws of migration proposed by the 19th-century British sociologist E. G. Ravenstein.[8]In the mid-20th century, American sociologist D. J. Bogue systematized the push-pull theory. Subsequently, British scholar E. S. Lee further refined the theory by introducing the concept of "intervening obstacles," clarifying that push factors refer to the forces in the place of origin that hinder survival and development, such as war and conflict or economic underdevelopment; pull factors primarily refer to the favorable conditions and attractiveness of the destination, such as superior socio-economic conditions and broad development opportunities; and intervening obstacles mainly include physical distance, material barriers, linguistic and cultural differences, as well as the migrant's own subjective value judgments.[9]Based on the above theoretical developments, this study constructs its analytical framework and conducts policy analysis along two dimensions: "pull-factor construction" and "push-factor transformation."

2. Policy Research Subjects

The report to the 20th National Congress of the Communist Party of China proposed that China should implement the workforce development strategy and move faster to build world hubs for talent and innovation.[10]In advancing the workforce development strategy, China has strengthened the attraction and

cultivation of global talent through a series of policy instruments. Two core initiatives are the Recruitment Program of Global Experts (“Thousands of People Plan”) and the National High-Level Personnel of Special Support Program (“Ten Thousand Talents Plan”). The former, launched in 2008, explicitly identified the recruitment of high-level overseas talent as a major and urgent strategic task.[11]The latter, launched in 2012, provides targeted support and cultivation for outstanding domestic talents, leading talents, and young top-notch talents on the basis of talent attraction.[12]Together, they constitute the core of China’s full-chain policy system for the “attraction, cultivation, utilization, and retention” of talents.[13]The K visa for young scientific and technological talents is China’s latest targeted policy innovation, implemented from October 1, 2025, and specifically targets young foreign science and technology professionals aged 18 to 45 who hold a bachelor’s degree or above in STEM fields.[14]

Germany promulgated the Skilled Immigration Act (Fachkräfteeinwanderungsgesetz, FEG) in 2019, which came into force on March 1, 2020, amending the existing Residence Act (Aufenthaltsgesetz). In 2023, Germany passed the Act on Further Development of Skilled Worker Migration (Gesetz zur Weiterentwicklung der Fachkräfteeinwanderung), which further amended and supplemented the original provisions and took effect in phases. Key measures in the new amendment include a comprehensive reform of the EU Blue Card, the introduction of the points-based “Opportunity Card” (Chancenkarte), and other related measures. In 2024, Germany adopted the Skilled Labour Strategy: India (Fachkräftestrategie Indien) and established a series of supporting measures.

3. Reasons for Policy Selection

The selection of the above policy texts reflects the different pathways adopted by China and Germany in talent attraction. In 2002, China proposed the workforce development strategy and subsequently established it as a core national strategy. Guided by this macro-level strategy, China has built its talent attraction system through the “Thousands of People Plan” and the “Ten Thousand Talents Plan.” China does not have a unified immigration law; instead, it has established a foreign-related legal framework centered on the Exit and Entry Administration Law of the People’s Republic of China, supplemented by administrative regulations such as the Regulations of the People’s Republic of China on Administration of the Entry and Exit of Foreigners. The K visa represents the latest instrument at the policy implementation level. Germany possesses a systematic immigration legal system, with the Residence Act at its core, which stipulates in detail the rules concerning the entry, residence, employment, integration, and departure or deportation of non-EU citizens. Accordingly, Germany optimizes its talent attraction system by amending the Residence Act, complemented by targeted strategies for specific countries.

The above explains why the selected policy texts in this paper include different types of policy documents, such as strategies, plans, and laws. Although the forms of the selected policies differ, their contents exhibit a high degree of correspondence. The core target populations of both countries focus on young scientific and technological talents, and their core objectives are to reduce institutional barriers, simplify procedures, and attract and retain global young scientific and technological talents. Most of the selected policies are concentrated in the period from 2023 to 2025, thereby ensuring the timeliness and cutting-edge nature of the study.

IV. ANALYSIS

Based on the push-pull theory, this study compares the policies of China and Germany along two dimensions—“pull-factor construction” and “push-factor transformation”—and across three levels: policy, practice, and socio-culture. “Pull-factor construction” focuses on analyzing how the two countries proactively enhance their attractiveness to overseas talents through policy measures. “Push-factor transformation” examines how the two countries respond to negative factors in the external environment, converting other countries’ “push factors” into their own “pull factors” for talent attraction, or mitigating the potential push factors they themselves face.

1. Pull-factor Construction

1.1 Policy Level

China's policy pull factors operate by deeply binding individual career development with national strategic needs, thereby offering talents predictable long-term development space. From the reform and opening-up to 2008, the number of Chinese students studying abroad continued to increase, while domestically there was a shortage of leading scientists and technological pioneers to meet the needs of key national development areas. Globally, the 2008 financial crisis dealt a severe blow to the economies of Europe and the United States, destabilizing labor markets and heightening anxieties among highly skilled professionals. Against this backdrop, China implemented the "Thousands of People Plan," which aimed to recruit and provide targeted support to a group of high-level overseas talents to return to China (or come to China) for innovation and entrepreneurship in key national technology areas within five to ten years starting from 2008, and to establish 40 to 50 high-level overseas talent innovation and entrepreneurship bases. This policy primarily focused on attracting ethnic Chinese returnees, and by supporting strategic emerging industries such as new energy and new materials, it ensured that talents could access relevant research platforms and team support immediately upon their return. At the same time, China recognized that integrating both international and domestic talent resources was essential for national development. The "Ten Thousand Talents Plan," launched in 2012, identifies and supports distinguished talents, leading talents, and young top-notch talents in the natural sciences, engineering technologies, and the humanities and social sciences. Together with the "Thousands of People Plan," it establishes a cohesive system for fostering high-level innovative and entrepreneurial talent, covering the entire career lifecycle of talents through financial support, equity incentives, and the granting of appropriate decision-making autonomy. China continues to refine its support and guarantee mechanisms for overseas recruited talents, thereby enhancing the overall policy attractiveness across three dimensions: expanding career platforms, improving service guarantees, and strengthening political guidance.[15]Notably, this system exhibits a coordinated feature between central and local governments. Based on their respective development conditions and needs, various regions across China have demonstrated regional characteristics in their youth science and technology talent introduction policies, continuously optimizing and improving aspects such as compensation and benefits, entry and exit facilitation, and family support. This mechanism of central government leadership and local implementation not only ensures the alignment of talent attraction with national strategies but also accommodates the differentiated needs of regional development, thereby creating a multi-tiered institutional pull.

This study finds that during the phase of the "Thousands of People Plan" and the "Ten Thousand Talents Plan," China primarily targeted top overseas ethnic Chinese scientists and domestic talents as a remedy for brain drain. The K visa, by contrast, focuses on foreign young scientific and technological talents. This shift indicates that China's talent attraction policy has evolved from being ethnic Chinese-centered to globally attract, moving from filling gaps in key areas to achieving early engagement and long-term cultivation of young talents through global recruitment.

Entering the 21st century, the European Union has experienced significant population aging and severe labor shortages. As the pace of population aging accelerates, the decline in the working-age population has directly led to a substantial shortage of knowledge-innovation and technology professionals, thereby adversely affecting the EU's economic development.[16]Faced with severe aging, the labor force within the EU alone has been unable to resolve Germany's challenges, compelling Germany to seek labor and technology talents from abroad. The evolution of Germany's talent attraction policies demonstrates a shift from EU-priority to globally attraction.

First, under Germany's 2004 Residence Act, the Federal Employment Agency was required, before issuing a work visa, to verify whether the job could be filled by a German citizen, an EU member state citizen, or a national of a country with equal employment access to Germany. Only when this condition was not met could a work permit be issued to a non-EU applicant.[17]In the Skilled Immigration Act, this priority check was abolished: as long as applicants possess professional qualifications, have secured an employment contract with a

German employer, and work under conditions equivalent to those of German domestic employees, they can obtain a work permit.[18]Second, Germany's immigration policy had long relied on the EU Blue Card to attract highly educated talent, with no systematic access pathway for skilled workers from non-EU countries. The 2020 Skilled Immigration Act legally defined "skilled workers" (Fachkräfte), encompassing not only those with higher education qualifications but also those with formal vocational training and corresponding professional certifications.[18]This means that a formally trained welder legally attains the same status as a university professor as a "skilled worker," significantly broadening the talent base. The 2023 Act on Further Development of Skilled Worker Migration further expands Germany's talent recruitment scope. Germany introduced the points-based "Opportunity Card," which does not require applicants to already hold an employment contract with a German company. Instead, it uses a points system to standardize the evaluation of criteria such as educational qualifications, language proficiency, age, and work experience, granting successful applicants a one-year legal residence status. This shifts the talent screening point to after entry, thereby reducing the information asymmetry risks associated with cross-border migration. Applicants only need to possess pre-qualifications (a two-year training and a foreign professional qualification officially recognized in the country of origin), along with basic German language skills or English proficiency at B2 level.[19]The points system includes criteria such as qualifications, German language ability, work experience, and personal ties to Germany, allowing talents to accumulate points across different dimensions. Even if they fall slightly short in one dimension, they can compensate through others. The introduction of the points system makes the talent recruitment process more transparent and standardized, thereby reducing the uncertainty associated with discretionary decisions by visa officers. The Skilled Labour Strategy: India reflects the influence of geopolitics on German policy, which has chosen to anchor its efforts on India and strengthen bilateral cooperation. Thus, the pull factors constructed by Germany's talent recruitment policies have expanded from the EU to the global stage, and then to targeted countries, progressively widening the recruitment scope and enhancing the precision of pull factors.

1.2 Practice Level

At the practical operational level, the policies of both China and Germany tend to lower the entry barriers for talents and simplify application procedures.

China's Z visa (Work Visa) or R visa (Talent Visa) requires prior employment by a domestic employer. By contrast, the newly introduced K visa does not require applicants to have obtained employment or an invitation from a Chinese entity before entry. Instead, it adopts a "talent declaration + proof of education/employment + certificate of no criminal record" model for visa application. Talents may enter China to explore career opportunities without a specific job commitment, thereby significantly reducing the cost of cross-border migration and lowering the psychological threshold for coming to China. After entering with a K visa, if relevant conditions are met, they can directly apply for a five-year work permit or permanent residence without leaving the country to change their status. Moreover, compared with the existing 12 ordinary visa categories, the K visa offers holders greater convenience in terms of the number of entries, validity period, and length of stay, thereby effectively reducing the cost of trial and error.

Germany, through its Act on Further Developing the Immigration of Skilled Workers, has introduced several amendments to the EU Blue Card. Under the 2019 framework, the EU Blue Card was aimed at professionals with a higher education background and had a relatively high salary threshold (approximately two-thirds of the contribution assessment ceiling for pension insurance).[18]After the amendment, the salary threshold was reduced from 66.6% to 50% of the annual contribution assessment ceiling; for certain shortage occupations, it was reduced to 45.3%.[19]This adjustment responds to the reality that young scientific and technological talents tend to have low starting salaries but high potential, thereby lowering the initial threshold for young talents to enter Germany. Germany has also opened new pathways for recent graduates with limited work experience: university graduates within three years of graduation can apply as long as they obtain a job that meets the salary threshold for shortage occupations.[19]Family reunification for recruited talents has also been simplified and facilitated. If family reunification conditions are met and a complete application is submitted, the decision on and

notification of family members' applications will be processed simultaneously with the decision on the EU Blue Card application.[19]Family factors significantly influence talents' long-term retention intentions. By processing applications in parallel, Germany simplifies the family reunification process, thereby reducing the difficulty for talents in balancing personal career development and family life.

1.3 Socio-Cultural Level

The socio-cultural level not only concerns whether talents can enter a country, but also focuses on the deeper issue of whether they can remain and integrate. Talents' long-term retention intentions depend not only on economic factors such as compensation, but also on their ability to establish social networks, gain cultural recognition, and achieve social integration in the destination country.

Germany has established a multi-layered and multi-dimensional system of immigrant integration policies, encompassing legal integration, structural integration, cultural integration, social integration, as well as the monitoring and evaluation of immigrant integration.[20]This system also shapes the policy attractiveness of Germany in recruiting overseas scientific and technological talents. The Skilled Labour Strategy: India is a concrete manifestation of this approach. Through the Goethe-Institut in India, Germany provides German language courses, examinations, and certificates, and expands German language courses targeting professional groups, enabling Indian skilled workers to prepare for their move to Germany. At the same time, Germany actively promotes the training of German language teachers, thereby accomplishing pre-integration preparation for skilled workers locally in India. Germany has created an online platform featuring real-time language training, allowing skilled workers and their family members to prepare linguistically and culturally for Germany while still in their country of origin, and offers a wide range of online German courses through the Adult Education Centre (Volkshochschule, VHS) learning portal.[21]These measures enable talents to begin developing basic German socio-cultural knowledge and foundational language skills before leaving their home country, thereby reducing culture shock and adaptation costs after entry. During the integration process, Germany adopts more comprehensive measures. First, through "Fair Integration" counselling, it provides advice on social and labour law issues to third-country nationals, helping them avoid exploitation and discrimination in employment relationships. Second, it offers low-threshold, legally reviewed initial counselling for women from India and other third countries via social media. Third, it implements diverse cultural projects. Indian and German artists co-create animated graphic novels and comic books depicting the experiences of Indian professionals in Germany, thereby deepening mutual understanding of differences between India and Germany and sparking interest in residing in Germany. Fourth, it supports diaspora development and promotes two-way exchanges. Furthermore, Germany organizes cultural exchange activities, such as the India Week Hamburg, which promotes economic, cultural, and academic exchanges between the Indian community and German society through various events.[21]

The above demonstrates that Germany's pull factors at the socio-cultural level are also full-chain and multi-dimensional, encompassing talent preparation in the country of origin, adaptation upon initial entry to Germany, and the protection of rights, interests, and emotional well-being for long-term residence. China has not yet formed a systematic integration framework in this regard.

2. Push-factor Transformation

2.1 Policy Level

At the policy level, this subsection focuses on analyzing the impact of geopolitics on both countries and elaborates on their approaches to push-factor transformation, as well as the main reasons underlying these approaches.

Currently, the increasingly stringent visa policies for skilled professionals in some Western countries constitute a common challenge faced by both China and Germany. The most notable case is the United States, where the Trump administration tightened the H-1B work visa and weaponized it as a tool for great power competition. In response, both China and Germany have precisely seized this opportunity, transforming

international push factors into their own pull factors through different means. China has adopted a more open K visa to attract international talents who originally intended to move to the United States, thereby participating in global talent competition with a more open and inclusive stance. Germany, through its EU Blue Card amendments, has lowered the threshold for non-EU talents to enter the German labor market, providing them with an exploration period, which stands in contrast to the more restrictive approach of the United States.

Furthermore, the Skilled Labour Strategy: India represents one of Germany's proactive efforts to mitigate potential push factors when it recognized that geopolitical influences might generate adverse effects. Specifically, the potential push factors faced by Germany mainly stem from three dimensions: first, the exposure of long-term dependence on the Chinese market; second, the uncertainty of US policies; and third, the practical demands of the Indo-Pacific strategy. Since 2015, China has been Germany's most important import supplier. In 2025, the value of German imports from China reached €170.6 billion, an increase of 8.8% from the previous year, while German exports to China amounted to €81.3 billion, a decrease of 9.7% from the previous year.[22]The German economy has long relied on the Chinese market, and as the international political landscape shifts, this deep dependence has become a potential risk. Consequently, Germany needs to seek a cooperation partner that can partially substitute China's role without conflicting with the Western system. Meanwhile, according to data from the Federal Statistical Office of Germany, Germany has maintained a trade surplus with the United States for 33 consecutive years since 1992, with exports to the US supporting 1.2 million jobs in Germany, accounting for 10% of export-related employment.[23]The uncertainty of US trade policy has thus become another issue that Germany must consider. Germany's choice of India as a target has been influenced, to a certain extent, by the Indo-Pacific strategy. In September 2020, the German government issued the policy paper Germany – Europe – Asia: Shaping the 21st Century Together, explicitly articulating the importance of cooperation with countries in the Indo-Pacific region.[24]The Global Public Policy Institute (GPPi) has pointed out that "Germany and India share an interest in securing a free, open, and stable Indo-Pacific region. They have deep economic and security interests in the region. 20 percent of German trade is conducted in the Indo-Pacific, and half of Germany's sea-borne supply traverses the Indian Ocean along with a majority of European sea trade"[25].India itself also exhibits push factors. On the one hand, India cannot provide a sufficient number of job opportunities commensurate with its talent pool, nor can it offer the same standard of living and salary levels as developed countries; on the other hand, the Indian government suffers from severe bureaucracy.[26]Under the combined influence of these factors, Germany has strengthened its cooperation with India, thereby transforming push factors into its own pull factors for talent, and using India as an anchor point to enhance its competitiveness in the global talent market.

2.2 Practicfe Level

At the practical operational level, this subsection focuses on factors such as Germany's administrative barriers and procedural complexity, as well as how China transforms Germany's push factors into its own pull factors through policy optimization.

A large-scale survey of 50,000 migrants conducted in 2025 by the Institute for Employment Research (IAB) in Germany showed that 26% of immigrants in Germany are considering leaving the country, equivalent to 2.6 million people. The study identified the core factors driving migrants' departure intentions as heavy tax burdens, cumbersome administrative procedures, and discriminatory experiences in the workplace and when dealing with official authorities.[27]This indicates that, although Germany has adopted a more open stance to attract global talent, in practice, the redundancy of its bureaucratic system, complex and lengthy procedures, and barriers to professional qualification recognition constitute push factors that hinder talent inflow. First, Germany's talent attraction practices face problems of bureaucratic redundancy and low administrative efficiency. On July 30, 2025, the German Federal Cabinet established the State Secretaries' Committee for Better Regulation and Bureaucracy Reduction, explicitly setting the goal of "reducing bureaucracy by at least 25%".[28]In terms of visa processing, a large-scale quantitative study by Deutschmann et al. on the German global consular visa appointment system revealed that, during the ten-month study period, nearly half (44.1%) of visa appointment requests at German consulates worldwide could not find any available appointment dates in the system, forcing a large

number of applicants into an “indefinite waiting” state. Moreover, compared with the transparent and open system of the United States, Germany’s visa appointment system is “rather non-transparent”.[29]This long waiting period and uncertainty constitute a powerful “time-cost push factor” for talents who value efficiency and development opportunities, thereby redirecting their attention to countries with more efficient procedures. Second, barriers to professional qualification recognition further reinforce this push factor. In Germany’s professional qualification recognition system, the law distinguishes between “regulated professions” (reglementierte Berufe) and “non-regulated professions” (nicht reglementierte Berufe).[30]In regulated professions, practitioners must obtain official recognition of their foreign professional qualifications. Crucially, regulatory authority is distributed across the federal states, and admission requirements and recognition procedures vary from state to state for different professions. Taking Bavaria as an example, the professional title of engineer is specially protected; to practice this profession, one must submit a recognition application to the competent state authority, which assesses whether foreign educational qualifications are equivalent to local qualifications.[31]This localized barrier of “one state, one policy” exposes a large number of skilled professionals to highly uncertain recognition prospects. Even if they obtain recognition in one state, they may need to undergo re-evaluation when moving across state lines.

Faced with these multiple obstacles in Germany’s talent attraction practices, China’s policies have transformed these “push factors” into their own strong “pull factors” by directly addressing them. In response to the push factor of Germany’s cumbersome bureaucracy and long approval cycles, China has introduced the new K visa, which only has specific requirements regarding age, educational background, or work experience, without requiring employment or an invitation from a domestic entity, thereby making the application process more convenient. At the same time, China has established a mechanism of “approved in one place and recognized nationwide.” For foreign high-end talents meeting national uniform standards, when their employer changes, they can directly apply for the same category of work permit in the new work location based on their labor contract, without having to resubmit relevant certification materials, and localities are allowed to formulate differentiated standards based on industrial needs.[32]In Shanghai’s Jing’an District, a model of “accompanied by specialists and processed across provinces” has been implemented, whereby the filing process for cross-regional mobility of foreign talents takes less than two hours from submission to completion, thereby truly achieving “filed in one place and mutually recognized in both places.”[33]In response to the push factor of Germany’s professional qualification recognition barriers, China is vigorously promoting a professional and technical talent evaluation system that aligns with international standards. Shanghai is a pilot city for the international (overseas) professional qualification recognition mechanism. In 2025, the Shanghai Municipal Human Resources and Social Security Bureau issued the Shanghai List of Recognized Overseas Occupational Qualifications (Version 3.0), which includes 139 items on the Recognition List (Category A), 24 items on the Urgently Needed List (Category B), 41 items on the Title Comparison List (Category C), and 12 items on the Mutual Recognition List (Category D).[34]This open, flexible, and pragmatic evaluation system effectively counteracts the closed and rigid nature of Germany’s certification system.

2.3 Socio-Cultural Level

At this dimension, both countries share common push factors, namely language barriers and obstacles to intercultural communication. Language barriers constitute an invisible threshold for talent development in both countries. For Chinese talents going to Germany, a lack of German language proficiency makes it difficult to access core positions. Similarly, China also faces push factors at the linguistic level. A 2018 report by China News Service cited the views of multiple international students, pointing out that Chinese language ability is a core form of competitiveness for job seeking and career development.[35]This means that although English is relatively common in Chinese work environments, truly integrating into local workplaces and social circles generally requires the ability to communicate in Chinese. Second, significant differences exist in social culture and values between China and Germany. Influenced by Confucianism, traditional Chinese society is characterized by collectivism, hierarchy, and rule by etiquette; by contrast, Western society, in which Germany is situated, emphasizes the individual, with individuality, equality, and the rule of law constituting its core values.[36]These

differences create objective difficulties for intercultural communication and mutual understanding between the two countries.

In response to the above issues, the German Federal Office for Migration and Refugees (BAMF) has established an integration course (Integrationskurs) system based on the Residence Act, which provides instruction in German language skills as well as knowledge about the German legal system, culture, and history.[17]The German official platform “Make it in Germany” explicitly identifies “diversity management” as an important tool for companies to attract and retain international talent, recommending that enterprises adopt various measures, such as establishing language partnerships and workplace language courses to help talents overcome language barriers, as well as providing intercultural competency training for employees.[37]China is vigorously promoting international Chinese language education. In relevant policy opinions, the Ministry of Education has explicitly called for strengthening international Chinese language education, continuously holding the World Chinese Language Conference, and expanding the influence of brand projects such as “Chinese Bridge,” “International Chinese Language Day,” “New Sinology Program,” and the “Chinese Proficiency Test (HSK).”[38]

China and Germany are important partner countries for each other in the field of education, engaging in various forms of exchange to deepen their peoples’ understanding of different cultures. On February 25, 2026, Chinese President Xi Jinping proposed during talks with German Chancellor Mertz that “China and Germany, as major countries with profound cultural heritage, should strengthen mutual learning in culture and boost people-to-people exchanges, so as to cement the popular foundation for China-Germany friendship.”[39]This consensus provides policy endorsement for the two countries to transform each other's socio-cultural push factors into their own pull factors.

V. DISCUSSION AND CONCLUSION

This chapter begins with an overall summary of the performance of China and Germany in their youth science and technology talent introduction policies. Based on the preceding comparative analysis across two dimensions and three analytical levels, the two countries exhibit distinct strengths and weaknesses, as shown in the table below.

Table 1: A Dimensional Comparison of Strengths and Weaknesses

| Core Dimension | Analytical Level | China | Germany |
|----------------------------|----------------------|--|---|
| Pull-factor Construction | Policy Level | Expanding the target groups of talent attraction policies | Enhancing attractiveness to non-EU talents |
| | Practice Level | Simplified procedures; cross-regional mutual recognition mechanism improving administrative efficiency | Lowered EU Blue Card thresholds; parallel processing of family reunification |
| | Socio-cultural Level | Systematic integration support system still lacking | Established full-chain integration support system |
| Push-factor Transformation | Policy Level | Leveraging tightening policies of other countries to reverse-enhance own pull factors | Proactively mitigating risks of over-reliance on a single market; transforming geopolitical push factors using India as an anchor |
| | Practice Level | Approval in one locality, mutual recognition nationwide; overseas professional qualification recognition lists lowering certification barriers | Cumbersome bureaucracy; low visa appointment efficiency; high professional qualification recognition barriers |

| | | | |
|--|----------------------|--|--|
| | Socio-cultural Level | Promoting international Chinese language education | Conducting diverse cultural activities |
|--|----------------------|--|--|

China's strengths are reflected in the following aspects. First, by using national-level programs as key policy instruments, China closely aligns the career development of recruited talents with the needs of key national technological fields, thereby providing them with research platforms, team support, and long-term career development pathways. Second, China demonstrates innovation in administrative procedures and a high level of implementation efficiency. Through the introduction of the new K visa, China has achieved a transformation in the talent entry model, significantly reducing cross-border migration costs and trial-and-error risks. Moreover, by establishing a mechanism of "approved in one place and recognized nationwide" and supporting localities in formulating differentiated talent certification standards, China has effectively mitigated administrative barriers to cross-regional mobility. Third, China effectively capitalizes on changes in the external policy environment to achieve "push-factor transformation." Faced with the tightening of talent visa policies in some Western countries, China has introduced more open policy instruments such as the K visa, thereby offering an alternative pathway for international talents constrained by other countries' visa restrictions.

Germany's strengths are reflected in the following aspects. First, Germany has established a systematic social integration support framework covering the entire spectrum of talent mobility. Relying on its mature integration policy system, Germany has developed a full-chain support structure spanning from the country of origin to the host country, thereby providing a conducive cultural environment for the long-term retention of talents. Second, through specific legislative acts, Germany has clarified the evaluation criteria, application procedures, and the rights and obligations associated with talent attraction at the legal level. Represented by the points-based "Opportunity Card," Germany has rendered talent selection criteria more transparent and standardized, thereby reducing information asymmetry and subjective discretion, and providing talents with a clear and predictable institutional environment. Third, Germany has achieved strategic and targeted talent attraction based on the characteristics of source countries. In response to supply chain risks arising from geopolitical changes, Germany has deeply integrated its talent attraction policies with its national foreign strategy, precisely targeting India—a country with a vast pool of STEM talents and high English proficiency—thereby transforming the "push factor" of over-reliance on a single market into a "pull factor" for attracting Indian science and technology talents.

1. Reasons for Differences

The differences in the strengths exhibited by China and Germany in their youth science and technology talent introduction policies are rooted in their distinct administrative and historical traditions.

China has achieved a combination of the authority of central policies and the flexibility of local implementation. The central government is responsible for formulating overarching goals and core policies, while local governments are granted the autonomy to refine implementation based on local industrial needs. This arrangement enables policies to remain aligned with national strategies while facilitating rapid innovation and adjustment through local pilot programs, thereby demonstrating greater flexibility and efficiency at the policy implementation level.

Germany possesses a long-standing tradition of the rule of law and stable legislative procedures. Its rule-of-law tradition can be traced back to the establishment of the modern administrative state in the 19th century, and its legislative processes emphasize openness, professionalism, and predictability. Under this tradition, policy-making tends to prioritize amendments to existing laws rather than the issuance of executive orders. Consequently, whether in the adjustment of the EU Blue Card or the introduction of the Opportunity Card, both have undergone comprehensive legislative procedures and are reflected in specific legal provisions. In terms of social integration, Germany has accumulated substantial administrative experience. Since the 1950s, Germany has experienced multiple large-scale waves of immigration. Decades of migration management practice have enabled German administrative bodies at all levels to accumulate extensive experience in handling matters related to the residence,

employment, and integration of foreigners. When Germany shifted toward actively attracting skilled workers in the 21st century, this mature system could be directly mobilized and further extended.

2. Implications

Based on the above analysis, this section proposes corresponding implications for the specific circumstances of China and Germany.

For China, first, a systematic social integration support system should be established. China has achieved remarkable results in lowering entry barriers, but there remains room for improvement in providing social integration support for talents after their arrival. Drawing on the German experience, China could systematically develop services such as intercultural training, legal rights counseling, and community integration networks for foreign talents, and incorporate these into the institutional framework of talent introduction policies. Second, China needs to construct a more transparent legal framework. Although innovative measures such as the K visa have proven effective, China still lacks a systematic immigration law. In the long term, drawing on the German approach, China could integrate talent attraction policies currently scattered across various regulations, gradually building an open, transparent, and stable legal system, and clarifying—through legal provisions—the evaluation criteria, application procedures, and rights and obligations associated with talent introduction.

For Germany, on the one hand, it needs to improve the efficiency and flexibility of administrative procedures. Germany's talent attraction policies are highly sophisticated at the legal framework level, yet problems such as bureaucratic redundancy and low administrative efficiency constitute a powerful implicit "push factor" in practice. Germany could draw on the procedural innovations demonstrated by China's K visa and regional mutual recognition mechanisms, streamline its internal administrative procedures, and leverage digital tools to improve the efficiency of visa processing and professional qualification recognition. On the other hand, Germany should establish cross-level and cross-sectoral policy coordination mechanisms. Germany's Skilled Labour Strategy: India reflects a strategic shift in its talent attraction policy, yet policy-making remains constrained by the complexities of federal coordination. Drawing on the Chinese model of central coordination and local implementation, Germany could establish more effective coordination between federal and state governments, as well as among various administrative departments, thereby ensuring that talent attraction policies are effectively implemented across all stages—goal setting, resource allocation, and execution.

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