Abstract

Purpose – The purpose of this paper is to examine how the Chinese Central Government’s plan to alleviate brain drain, called the Thousand Talents Plan, has been glocalized by three major local governments: Shanghai, Tianjin, and Guangdong.

Design/methodology/approach – The lens of glocalization pays special attention to the impact of local reactions to global forces. Materials from the Recruitment Program of Global Experts for three major cases were examined for glocal characteristics. An analysis of each case was carried out to compare the strategies and implementations to explore the individual glocalizations and larger national similarities.

Findings – The findings show that each of the localities has distinct regional variations in their strategies: Shanghai utilized its economic prowess, Tianjin focused on clustering experts, and Guangdong maximized its geographic proximity to Hong Kong. At the same time, all three policies were still rooted in human capital development theory, with a keen emphasis to attracting migrants with greater propensity for staying long term in China.

Originality/value – The study of brain drain is important because it is a problem that plagues communities around the world, especially non-western societies. While China’s tactics to combat brain drain have been examined, the consideration of glocalization in the cases of Shanghai, Tianjin, and Guangdong have not been carried out.

Keywords China, Comparative education, Glocalization, Human capital, Brain drain

Paper type Research paper

1. Introduction

The exodus of talented and educated people out of a given society is referred to as brain drain (Baldwin, 1970). This phenomenon has negatively impacted a diverse range of communities across the world, but has been especially detrimental to non-western nations since the end of the Second World War. These areas have often sent students abroad to learn from more technologically advanced nations, leading to permanent migration of many top minds. Since the opening up and reforms of the late 1970s, the educational sector in the People’s Republic of China (PRC or China) has heavily focused on this kind of migration outflow (Hayhoe and Zha, 2004). There has been a guiding principal that the nation needed to better develop human capital to properly modernize and grow the economy, despite the risks of losing the best and brightest to brain drain (Hou, 2001).

China’s 30-year narrative of brain drain began to change in the late 2000s. With decades of unprecedented economic growth, the PRC began seriously pushing forward grand aspirations for true global power status (Zweig and Wang, 2013). In 2008, the Chinese leadership unveiled an ambitious plan that would bring 2,000 highly trained experts and scholars to China to work, research, and teach, called the “Recruitment Program of Global Experts,” also referred to as the “Thousand Talents Plan” (Central Organization Department of The People’s Republic of China, 2008). This program looked to reverse 30 years of brain drain, dramatically boosting the human capital of the nation through inbound migration.
The Recruitment Program of Global Experts plan specifically targeted science, technology, engineering, and mathematics (STEM) experts over a five- and ten-year period (Yang, 2015). China’s policymakers have long focused on the STEM subjects in order to help develop and modernize various sectors and industries through boosts in human capital (Wang and Yao, 2003). Many of the Chinese students going abroad during this era chose to focus on these technical disciplines, making them perfect targets for the recruitment plan. While these haiguipai, or returning Chinese, had already long played an important role in China since the early days of the opening, oftentimes the most talented of this group elected to stay in their host nations (Li, 2004a). In 2008, the Chinese Government attempted to reverse the ills of brain drain by bringing back this highly skilled group, along with other peer scholars, researchers, and entrepreneurs.

While the central government developed this strategy as a national plan, localities and provinces were allowed to localize their own version of the project to suit their specific needs. These local variations can be seen as types of “glocalization,” a term coined to emphasize how local transformation of global issues can lead to important variations (Robertson, 1995; Reisinger and Turner, 2003). Yet, these different variations in the national policies to reverse brain drain have not been extensively researched. To address these gaps, an analysis has been carried out of the Recruitment Program of Global Experts in three Chinese cases: Shanghai, Tianjin, and Guangdong[1]; and the following research questions were explored:

**RQ1.** How has each case glocalized their plan with adaptation of specific needs?

**RQ2.** What are the national aspects that have not been glocalized in the individual plans?

Section 2 first explores the literature of human capital theory, its general connections to brain drain, and Chinese policies related to both concepts. Next, the lens of glocalization is considered along with examples of policies to deter brain drain from around the world and in China. Section 3 contains the original analysis and comparison of the strategies and implementations in the case localities to show glocalization in practice: Shanghai utilizing its established economic prowess, Tianjin focusing on clustered expert centers, and Guangdong maximizing its geographic proximity to Hong Kong. Next, the findings illustrate how all of the localities implicitly aligned the decades-long brain drain cure by bolstering recruits who would more likely be able to both migrate and integrate into China in the long term, from returning Chinese and also from the larger Chinese diaspora. Section 4 provides the conclusion and discussion of the study.

2. **Human capital theory and brain drain in Chinese development**

Human capital theory posits that a nation or society can modernize and develop through an investment in its people (Schultz, 1961). Education and training are the most important aspects to human capital development (Becker, 1994). This theory was largely tied to modernization, an umbrella theory on state development that viewed societies in certain stages, moving from traditional to modern (Rostow, 1991). These developmental theories were born out of the Cold War’s geopolitical and ideological fight between the Soviet bloc and the US western-led bloc, as each power attempted to mold still developing nations, then called the “third world,” in their own interests (Steiner-Khamsi, 2006). Human capital theory grew from this development fight, with an added theoretical framework that placed an importance on individual citizens need to be educated and trained to become modern (see Inkeles and Smith, 1974 for early theory building). The importance of education and training, combined with capacity issues in still developing nations, has created a global flow of students migrating for educational purposes, often in the direction of the so-called Global South to North (see analysis from Castles, 2009).
While modernization theory and its extension human capital theory have been heavily criticized from academics and theorists for being western-centric, imperialist, and chauvinistic (see critiques in Arnove, 1980; Little, 2000; Walker and Unterhalter, 2007), it has remained a dominant ideal in Chinese development. Early in the opening years, the government sent young scholars across the world, oftentimes to the west to learn how to modernize. These *haigupai*, or returning Chinese, played key roles in the early development of many universities and early business ventures during this era (Hou, 2001; Li, 2004a, b). In one study chronicling development in China from 1952 to 1999, Wang and Yao (2003) found that as China’s workforce gained more human capital, the GDP and efficiency made massive and rapid gains. With a base of returning Chinese leading the sector, the nation slowly moved from massification of higher education to elite-making policies in the sector (Li *et al.*, 2011).

With a keen focus on developing high-tech and scientific sectors, policymakers in the 1990s focused on creating universities that would match the world standard, and then later join the global elite. First, under the guise of Jiang Zemin, General Secretary of the CCP, the government proposed Project 211, which had a goal of moving approximately 100 Chinese universities in the so-called world standard (Ngok and Guo, 2008). From the mid-1990s to 2000, the project received around US$2.2 billion from the central government (Li, 2004a, b). Following the success of this plan, Jiang’s government later announced the 985 Project, with a massive investment to only a handful of elite institutions (Yang and Welch, 2012). These projects have created the educational backbone of Chinese human capital development.

2.1 Brain drain

One problem with development models like China has been with so-called brain drain, as many students who left for educational opportunities in the west did not return (Hayhoe and Zha, 2004); but even the USA and Europe have faced issues of brain drain, as the most educated in societies move away from stagnant rural areas for the urban and affluent areas (Carr and Kefalas, 2009; Wiest, 2016). While some research has suggested that brain drain can actually help economic growth in developing areas, policymakers in these areas remain skeptical (Mountford, 1997; Beine *et al.*, 2001). Beine *et al.* (2008) actually found that in a study of 127 countries, the economic payoffs are few and that there are more “losers” in societies heavily impacted by brain drain (p. 623).

It is no surprise that societies around the world have attempted to curb brain drain. India has relied heavily upon its English-speaking population to woo back entrepreneurial talents through lucrative investment opportunities (Saxenian, 2005). These investors are given attractive tax breaks to entice return (Chacko, 2007). A focus on business has also been a policy in the USA, as states and localities race to the bottom of tax rates (Carr and Kefalas, 2009). Though Wagner (2000) found very little tax incentive effect on individuals in the brain drain process between Canada and the USA, South Korea has had a much more state-run model; dating back to policies of President Park Chung-Hee during the key industrialization points beginning in the 1960s, scientist and engineer repatriates were offered high-paying positions in governmental research institutes or universities (Yoon, 1992). However, the problem of brain drain in Korea has been mostly removed due to improvement of the domestic economy. This economic reason is actually one explanation for why Japan never suffered heavily from brain drain during post-war reconstruction (Baldwin, 1970). Additionally, Meyer *et al.* (1997) introduced a new strategy called the “diaspora option” used in Colombia, which is the focus on business investment, exchanges, and other connections that draw upon diaspora abroad.

China has been especially attuned to issues with brain drain. Between the late 1970s and 2007, 1.21 million Chinese students left for studies in other places, but only around a quarter returned (Cao, 2008). When many of these students left, Chinese educational, research, and business sectors were still in their early phase. The government had been aware of these
migration issues since the opening of the late 1970s, and attempted to curb the problem, but it was a hard sell to the outbound Chinese students (Hou, 2001). Importantly, the elite-making higher education policies did not see full fruition, and capacity issues still dearly plagued the sector. While there was a growing spike in returning Chinese from the student populations after 2000, some of the best and brightest still remained (Zweig, 2006). In reverence to these issues, the Politburo established the Central Coordinating Group on Talent (CCGT) in 2003 to centralize the efforts to combat issues with brain drain (Yang, 2015).

Zweig et al. (2004) found that those with foreign PhDs led to greater chances of technology transfer and were more beneficial to local universities when compared to their Chinese trained counterparts. Recognizing that the many of these Chinese abroad were an untapped resource of human capital, the government seriously began to look into the diaspora option for fostering relationships with these groups abroad (Li, 2004a, b). These loose connections with the motherland are sometimes dubbed brain circulation, and the strategy have been of particular importance to the region (see analysis of brain drain in Zweig et al., 2008; Castles, 2009; Yoon et al., 2013). One example of Chinese attempted brain circulation strategy can be seen through the creation of branch campuses, twinning programs at universities, and even online learning cooperatives (Huang, 2003). Yet, Zweig and Wang (2013) argued that brain circulation specifically allows for one foot to remain in the other country, rather than permanent moves back, and these programs have not concretely or centrally remedied the problem of brain drain.

2.2 Thousand Talents Plan

By 2008, China was already a world power and had been developing its university and high-tech sectors for decades. With its rapid growth, the central government’s CCGT launched an ambitious plan for attracting highly skilled talents and to directly counter long-term brain drain, entitled the Recruitment Program of Global Experts, or the Thousand Talents Plan (Zweig and Wang, 2013; Yang, 2015). This initiative focused on recruiting thousands of Chinese who had left at some point in the recent decades or other highly skilled individuals willing to work in China (Zweig and Wang, 2013). Facilitated at the national level, the large-scale goal for the plan was to attract 1,000 world-class scholars and professors, with a heavy focus on technological fields. The CCGT scheduled the plan for up to ten years and budgeted millions of RMB per recruit, including a relocation subsidy of one million RMB, salary competitive on the global level, housing stipend, and generous medical benefits (Zweig and Wang, 2013).

The government had incredibly high goals for the recruits, and Yang (2015) claimed, “It is widely believed that China wishes to groom its own Nobel Prize winner through this program” (p. 2). These Thousand Talents Plan applicants with elite business, technical, and research backgrounds, including executives and proven startup entrepreneurs, could choose any city in China, but would be embedded within National Key Innovation Projects, National Key Disciplines, National Key Laboratories and state-owned enterprises, according to the CCGT. The explicit purpose of the plan centered on economic growth and the promotion of industrialization in China, meaning these individuals were sought to promote technology transfer or industrial development projects, and to lead emerging academic areas for Chinese universities (Ryu et al., 2011). But, as seen from the list below, the criteria for the recruits were wide and somewhat haphazard in this initiative from the central government (Zweig and Wang, 2013, p. 602):

- must not exceed the age of 55;
- must work in China longer than six months for the duration of the contract;
- should have doctoral or advanced degree from a credible university abroad;
- should have relevant experience in a research capacity at a major university abroad;
should have over three years in advanced technical or executive experience at a renowned financial or business institution abroad;
should hold unique intellectual or business property set for expansion; and
should have potential startup with focus on national needs.

It is not surprising that the plan emphasized STEM-related recruits to work in the burgeoning Chinese high-tech or university. This preference for high-tech “skills” has been especially prevalent in Chinese recruitment of foreign experts (Farrer, 2014, p. 404). But through in-depth interviews, Farrer (2014) found considerable integration issues faced by these skilled migrants, such as linguistic, cultural, or other barriers. Hence, the larger Chinese diaspora would seemingly be a natural recruitment fit. However, Zweig and Wang (2013) contended that the central government’s “plan remains somewhat secretive” because of the sensitive nature in poaching talent from abroad, especially in high-tech areas. It is, then, difficult to fully examine the extent of the project, but it has been criticized as more “brain circulation” rather than “reverse brain drain” (Zweig and Wang, 2013, p. 613). This means that policies focusing on long-term or permanent moves could be more beneficial, which is further explored in the analysis section.

2.3 Glocalization
Brain drain has been accumulating in seriousness for nations around the world because of the increasing levels of globalization, especially related to higher education. Altbach and Knight (2007) described globalization as “economic, political, and societal forces pushing” sectors closer “toward greater international involvement” (p. 290). These forces can lead to isomorphic patterns in which state institutions and policies become gradually similar through established standards and organizational membership. While some scholars have placed more emphasis on global similarities (see work by Boli and Thomas, 1997; Ramirez and Meyer, 2013), other scholars studying the phenomenon favor a more level approach with local adaptation (see work from Reisinger and Turner, 2003; Giulianotti and Robertson, 2007). Reisinger and Turner (2003) contend that this balance perspective, called transformationalist, removes a false linear notion of a globalized world, allowing for perspectives that allow for hybridity between the global and local.

The split bureaucracy of the Thousand Talents Plan, between provincial and national, is better understood as a localization of a global process. Glocalization, a lens often related to transformationalist, offers a framework for viewing policies and institutions as simultaneously “international, national, and possibly local” (Teichler, 2004, p. 9). Robertson (1995) coined this term to counter the conception that the studies related to globalization were “bigger the better” and that localities still mattered deeply. Policies are not simply implemented by the national government, lower level policymakers are often the ones tasked with administering these large-scale global plans. Considering glocalization allows for a more transformationalist understanding of the diversity within policies for a nation-state: even if the directive remains a national plan or goal, the traditional power structures of the state have eroded to a degree through globalization and, hence, local variations arise (Braslavsky, 2005; Reisinger and Turner, 2003). There are clear relations to this concept and decentralization, but the former puts an even greater emphasis on global forces, while the latter on the domestic (Sharma, 2008).

Glocalization is especially interesting in the case of China; as the most populous nation on Earth, it is also one of the most top-down societies, especially with education policy (Marginson, 2016). The central government and its bodies usually direct national policy down hierarchically to the provinces, and then further down to the municipalities. While the PRC does not have federalist system, studies have still nonetheless used this lens, or ones similar, on education research in China. Studies have considered the difficulties Chinese
universities, both domestic and transnational, face with alternating governmental policies in an environment of countervailing changes in local demand for massification along with national pressures for globalization (see Ross and Lou, 2005; Mok and Han, 2016, 2017). Similarly, Kim et al. (2017) looked at how Chinese professors struggled with the interpretation of the world-class university concept, as the central government focused on international outlook in lieu of the national and local characteristics. A recent framework was even recently established to help examine the pushes and pulls of glocalization on educational changes in China (Huang et al., 2015).

Policies can and do take on the characteristics of the local economy, geography, or region, even those that are specifically global in nature and dedicated to national development, such as the Recruitment Program of Global Experts. In this plan, the central government specifically allowed for this kind of glocalization. Localities were allowed to recognize their own needs in terms of human capital, making adjustments accordingly (Yang, 2015). Because the PRC is more top-down, it is an important opportunity to gain insight into glocalization. This is especially interesting because brain drain and human capital are often issues centered at the nation-state development level, and this study can explore the intersection of these issues in a highly centralized society.

3. Case study cities and policies
While the central government unveiled its own national recruitment policy, municipalities were able to glocalize their own approaches to their plans, pinpointing narrower needs and using local characteristics as an advantage. The chosen metropolises and geographic areas are critical to Chinese economic development— all located on China’s affluent eastern coast, which accounts for a lion’s share of GDP growth and development for the Chinese economy. The regions also contain the top three special economic zones (SEZs): Bohai Bay, Yangtze River Delta, and the Pearl River Delta. These areas are ripe with international expansion and hotbeds of innovation in the research and development sectors. Often they have been the epicenters for the so-called floating population of migrants (Zhang et al., 2017). But, with the economy slowing in recent years and factory labor needs cooling, high-level human capital endeavors may only become more important, as the nation hopes that innovation from human capital will continue the growth. This competitive aspect is important because the national plan allowed talents to choose any city, meaning the glocal versions should highlight parochial characteristics. The following analysis has been dichotomized from each of the localities’ individual plans, explaining how each looked to glocalize their recruitment of global human capital.

3.1 Shanghai
Shanghai is arguably China’s most important city, as it is a focal point in the Yangtze River Delta region and is one of the most affluent cities in the nation. The metropolis is also China’s biggest city, with over 24 million people, according to the Shanghai Bureau of Statistics. Administratively, Shanghai is one of China’s only four direct-controlled municipalities, giving it provincial-level status. Because it boasts the largest and busiest port and industrial bases in China, the city is the center of Chinese finance and trade, connecting with economies from across the world. In 2010, the Chinese Communist Party Shanghai Municipal Committee and the Shanghai City Government published “Opinion on the Execution of Overseas Talents Attraction Plan in Shanghai.” This is the localized Recruitment Program of Global Experts plan for the Shanghai metropolitan area. Because the city had already been attracting many international and Chinese experts, researchers, and business people, the glocalized plan for Shanghai centered on reinforcing national and international competitiveness through the area’s economic prowess.
To streamline local recruitment, the city government created an overseas talent database and information announcing service known as the Demands List of Excellent Overseas Talents in Shanghai (Chinese Communist Party Shanghai Provincial Committee, 2010). This provided a mechanism for local industries to access and share foreign networks to hire and recruit. The list was updated on a regular basis on ways to improve efficiency for the project and its outcomes. The city also maximized the role of the market by utilizing cooperation between recruitment agencies, employment agencies, and the experts themselves, which encouraged companies to attract experts in an independent way. They also used social groups, associations, and overseas meet-up functions in various fields to publicize the recruitment policy, highlighting the benefits for potential recruits.

By the early 2010s, Shanghai already had plenty to offer for international expatriates and returnee Chinese (Simon and Cao, 2009). The municipal government[2] attempted to capitalize on these advantages by promoting the city’s industrial structure and its development of high-tech research areas. The recruitment packages were not standard in Shanghai, but, as seen in Table I, still provided quite competitive benefits. The city mandated that any employing agency must provide commercial medical insurance, instead of the recruited employee paying the expense out of pocket. There were also huge tax breaks for the received benefits from the recruitment program. The recruits could also apply for extra research support, but the grant was not guaranteed.

Shanghai officials established a goal of building a truly internationalized city, and their measurement for this achievement was centered on attracting experts in broad high-tech industrial development areas. There was a sense in the plan that the city needed innovative and business startup experts in order to supplement the local emerging academic disciplines, cutting-edge technology, international financing, transportation service, trade, and the economy. The specific target for policymakers was to attract approximately 148 experts per 10,000 people, in order to help acquire 50,000 additional patents, which would trickle to improvements in housing, medicine, education, and the environment.

### 3.2 Tianjin

The next case study city is Tianjin, located in Bohai Bay, sometimes overshadowed by its municipal neighbor to the northwest, Beijing, the capital of China. Tianjin actually has one of the highest GDPs per capita in China, on par with the capital. Yet, while Beijing’s economic growth has slowed to among the slowest of any city nationally, Tianjin in recent years has had one of the highest levels of economic growth. This amazing economic leap has

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<th>Wages</th>
<th>Medical/social security</th>
<th>Research support</th>
<th>Tax re-deduction</th>
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<tbody>
<tr>
<td>Determine the level of wage with reference to the wage received overseas</td>
<td>Cover commercial medical insurance for family</td>
<td>Eligible to apply for governmental science and technology funds</td>
<td>Exempt from individual income tax regarding all subsidies</td>
</tr>
<tr>
<td>Provide long-term benefits including future option, stock, and corporate pension according to the performance of overseas excellent experts</td>
<td>Establish exclusive medical institution specialized for overseas</td>
<td></td>
<td>Exempt from import duty for scientific research goods or imported class goods</td>
</tr>
<tr>
<td>Provide a reward when international students attracted receive an order from overseas projects personally</td>
<td></td>
<td></td>
<td>Return 50% of income tax to individuals whose annual income and earned income are more than 200,000 RMB after taxes among those who are working in the startup complex</td>
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Table I. Shanghai expert recruitment package basic characteristics

Source: Compiled from government documents and media reports for this research
put pressure on the local government to attract overseas talents, similar to other peer cities in Asia. Accordingly, in 2009, the Tianjin Government established “The Recruitment Program of Global Experts in Tianjin” in order to promote economic development in the city (Tianjin Municipal Bureau of Financial Affairs, 2010). Their glocalized plan looked to enhance the city’s competitiveness through external openings and opportunities by aggressively attracting overseas talent in newly created high-density areas around the city.

Tianjin designed its plan specifically under the guise of then Communist Party Secretary of Tianjin, Zhang Gaoli, who is now a high-ranking official on the Party’s Politburo Standing Committee, according to China Vitae. The policy shared the general aim of the national policy to increase international competitiveness by attracting overseas experts, bolstering the city’s human capital resources. But, through Zhang’s directive, they also focused on the construction of special talents zone with a distribution of high-quality experts focused within the zone. There is a common belief that innovation likely occurs through crossing of various types of experts, with a greater chance of interaction if they are located in smaller areas (Penn et al., 1999). A reading of Tianjin’s policy suggests that the plan held this logic.

Similar to the other two cases, Tianjin officials wanted high-ranking leaders, innovative business startup-types, high-ranking officials, high-ranking professional technicians, and high-quality technicians in the fields of strategic emerging industry, concentrated industry, or the high-tech service industry. Differing from the other cities, though, Tianjin constructed a state-of-the-art economic development zone that was regarded as a recruited expert central base. Through this strategy, they attempted to streamline communication and connections between the overseas experts, hoping for increased efficiency of operations and management environments. Simply put, these experts in Tianjin could go to one location to handle all of their business.

The city made sure that the transition for their recruited overseas experts was especially smooth by establishing this one-stop center to provide 16 administrative services. In every aspect of immigration, applications for family registries, social insurance, housing, medical insurance, entrance of children, and resettlement of spouses, the Tianjin municipal government handled every item in order to make the process as smooth as possible. These services were managed through the established clustered centers. The hope was that the ease of transition would provide a foundation for the overseas experts to stay long term in the city, easing the sometimes confusing and daunting Chinese bureaucratic system for the newcomers.

Tianjin’s plan had very generous packages for the recruited experts, as seen in Table II. The city paid higher wages by around two to three times more than their average Chinese counterpart, including university or research centers, banking, insurance, and security positions. These experts were exempted from all individual income taxes, covered by the subsidy. The package covered medical costs for the overseas experts through the city’s

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<tbody>
<tr>
<td>Based on previous working experience/wage</td>
<td>The sanitation department issues health certificate and resolves any necessary medical costs through the city’s medical social security</td>
<td>Created national science and technology areas Supported research costs to various municipal science and technology projects</td>
<td>Exempt from individual income taxes for the recruitment subsidy obtained</td>
</tr>
<tr>
<td>University staff, researchers, banker, and insurance and securities professionals are paid two to three times higher compared to their previous positions</td>
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Source: Compiled from government documents and media reports for this research
medical social security system. They were also exempt from taxes on the perks from the recruitment package.

Like Shanghai, the program put considerable pressure on the sub-administrative districts in the city. Officials established special funds for attracting experts, costing around 200 million RMB every year, with around 100 million RMB was procured by Tianjin and the other half by the district, county, or committee. Business startup experts were given preferential benefits of the funding. They also provided a subsidy of 1,000,000 RMB for innovative-type experts and 3,000,000 RMB for business startup experts.

While the Tianjin Government did not reveal its specific benchmark numbers for its targeted recruitment, there were noticeable increases in these experts and the city was able to dramatically boost its number of established patents. Through the recruitment program, the number of overseas experts attracted to Tianjin increased significantly. In particular, the number of advanced experts increased from 172 to 312. These experts who had all studied abroad participated in approximately 820 national and municipal innovative and creative business startup projects. Concurrently, through the program, 2,500 long-serving overseas experts, 4,500 talented overseas experts, and 1,940 executive or technical staff were dispatched to foreign countries for more training (Wang, 2008).

3.3 Guangdong

The final region in our study is Guangdong, which contains China’s largest metropolitan area, with both Shenzhen and Guangzhou sprawling across the Pearl River Delta SEZ. With this mega-city combining multiple metropolises, Guangdong dominates other provinces and localities in overseas trade. Also as a demonstrated reform area, the province hosts three of the five most active SEZs in China, which has given the region an early advantage in overseas investment recruitment. However, despite the trade and economic prowess, the city still has relatively few world-class universities and research centers (Di Tommaso, 2013). The province has created its own global expert recruitment plan to fit the glocalized needs of its sprawling metropolises and surrounding areas.

Similar to the other cases, Guangdong focused on high-quality science and technology researchers and experts, with clear connects to human capital conceptions. The plan looked to diversify the local economic situation, which was heavily centered on exports, by utilizing local characteristics. Specifically, the region looked to use its geographic advantage of its proximity to Hong Kong and Macau, a hotbed for overseas experts and returning Chinese, as well as a rich expatriate scene. Thus, policymakers here focused on creating a human resources exchange platform between Mainland and these two special administrative regions. The city used provincial locations to gather potential candidates, such as hosting recruitment events at Shenzhen High School, quite accessible to both Hong Kong and Macau locals.

Interestingly, during the negotiations and with the announcement of the handover of Hong Kong back to the Mainland by Britain in 1997, many local Hongkongers elected to sell their property, often moving to locations in the west. “They cannot reduce the risk to their human capital from China by investing only part of the human capital abroad; they must go where their capital goes,” wrote Becker (1994, p. 16). With the Thousand Talents Plan, Guangdong attempted to lure Hong Kong residents and the larger diaspora back with investments through human capital that was criticized during the frenzied handover period because of the unknown future status of the city. In more recent years, though, citizens of Hong Kong have increasingly pushed back against encroaching PRC involvement in local politics, most notably with the 2016 Umbrella Movement.

Aside from the geographic differences, Guangdong also had another glocalized tactic that differed from the other two case study cities. The officials created a strategy entitled “Experts Attract Experts. Experts Foster Experts” policy. Highly important to this strategy was employing those who already held leadership positions abroad, not too dissimilar from
Tianjin. But, a key difference in Guangdong’s plan, once recruited, these leaders could and were encouraged to then bring whole teams with them, or even recruit other successful candidates who they were familiar with in their field. Building small teams was seen as a way to boost productivity for the investment into the recruited experts.

The plan relied on the recruitment of these innovative leader-types, who had experience participating in important projects overseas and who had acquired so-called world-class achievements. Officials sought roughly 3,200 technical experts with backgrounds in innovation, with an additional 370,000 of other recruited experts in various fields by 2015. Additionally, the city had even longer-term goals for this recruitment project. By 2020, they expected to attract around 5,100 of these technical talents and 520,000 researchers or development experts (Chinese Communist Party Guangdong Provincial Committee, 2008).

Generous recruitment packages were especially important because the plan’s focus is on well-regarded business people and entire teams. As seen in Table III, the city did not impose any earned income taxes for the past five years on various expenses: apartments, food expenses, moving charges, family visiting costs, and educational expenses for children. The recruits were given expanded medical benefits to spouses and children. Officials provided various supplementary measures, including establishment of globally competitive compensation system for excellent teams who produced visible outcomes. In 2012, they even created special awards to recognize high levels of achievement with the establishment of the awards. In addition, the region established a state-of-the-art business startup park called “Southern Startup Center” that they hoped would entice the overseas experts to stay longer in Guangdong.

Also for the recruitment packages, Guangdong provided 1,000,000 RMB financial subsidies to experts in national long-term items and exempts individual income tax. If the establish growth rate of Guangdong continues at 8 percent from 2011 to 2015, the city’s estimated GDP will reach 6.61 trillion RMB in 2015 and 9.72 trillion RMB in 2020. The Guangdong Government is going to build China’s biggest special human resources zone by inputting massive investment to the region and plans to continue to attracting the highest level of experts (Chinese Communist Party Guangdong Provincial Committee, 2010). The region’s plan set aside an investment of around 15 percent of GDP into attracting this so-called human capital for the 2015 deadline, with another investment of around 15 percent of GDP for the 2020 mark. If the plan is actually carried out until 2020, the city will have made an investment of around 1.46 trillion RMB to the development of human capital recruitment, but it is not clear whether the plan will be continued in the current format (Science and Technology Daily, 2017).

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<tr>
<td>Living expenses aid and wages based on previous levels abroad</td>
<td>Medical insurance for family is covered by medical social security</td>
<td>Various teams established with hierarchy of funding for the teams’ research and finance needs</td>
<td>Does not impose any taxes on apartment, food expenses aid, moving expenses, relative-visiting costs, and child educational expenses for past 5 years In case of paying more than 120,000 RMB for annual income tax, individuals to be subsidized up to 300,000 RMB every year for 50% of the finances</td>
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<td>Emphasizes performance and contribution in determining wage</td>
<td>Insufficient medial funds covered by employing agency</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled from government documents and media reports for this research
3.4 Localities’ costs and focus on long-term human capital

The central government established the Recruitment Program of Global Experts at the national level and established a cooperative system between governmental departments, allowing for city-level or provincial-level glocalization. By sharing a goal toward attracting experts between the central government and the more local governments, the recruitment program became a strong example of a kind of decentralization in the often top-down Chinese society. But while each plan had specific glocalizations, the logic of human capital is still quite apparent, as well as the counter to perceived brain drain. Specifically, the plans had clear targets for the large group of Chinese who had left Mainland to take advantage of higher quality education abroad, as well as the massive Chinese diaspora across the world, who were some of the highest education populations in many regions (Kapur and McHale, 2005). This would alleviate some issues in integration reported by skilled migrants in China, though, some barriers would clearly remain, and it would also lead to a possible reversal of brain drain rather than just brain circulation (Zweig and Wang, 2013; Farrer, 2014).

For instance, as seen in Table IV, all three regions allowed children of the overseas recruits to enter local public schools regardless of nationality, parallel to the national plan. This mostly would not be enticing to many non-ethnic Chinese expatriate candidates who would look to send their children to private international schools in their mother lounges. All three of the regions issued permanent residence visas for any foreigner recruited, as well as their accompanied spouse and preadolescent children. In a homogenous society like China, integration of outsiders has been quite difficult (Pieke, 2012); thus, this perk would probably be most attractive to overseas Chinese, who would have fewer difficulties with long-term integration.

Furthermore, perhaps the most valuable perk offered through these plans came in terms of registered permanent residence, or household registry. For Chinese nationals, Shanghai and Tianjin each permitted experts to obtain a local registered permanent residence, regardless of their families’ location prior to leaving a country. The registered permanent residence system has created clear hierarchies of cities in Mainland China, with the coastal metropolises on top (Chan and Buckingham, 2008). Being able to obtain a household registration from Tianjin or Shanghai would be invaluable for many Chinese. Though, in recent years, the CCP has loosened registered permanent residence restrictions, considerable barriers and complexities remain (Chan and Buckingham, 2008; Song, 2016). Along with registered permanent residence attainment, each region permitted experts to buy houses or apartments to reside in, not for investment properties, and even provided a subsidy for the purchase. The housing market in China has been especially fierce, and it is not always easy or legal for outsiders to buy homes in certain localities (Chen, 2012; Glaeser et al., 2017).

These massive recruitment projects did not come cheap for the Chinese metropolises. Across the board, all of the recruited experts received generous recruitment packages, though Shanghai did not have a standard like its counterparts. Benefits for the recruited experts included increased wages and extra pay, research support, tax re-deductions, and other expense aid, such as finding job for the experts’ spouse. All of the localities did not rely on China’s domestic wage guideline, but rather put their basis on the applicant’s previous wage standard, often much higher than the standard in Mainland China. The plans called for these experts to be considered in global terms, rather than in the context of the Chinese market. Additionally, in terms of research costs, the cities supported the inviting agencies directly in order to maximize the use of the recruited researchers. The cases areas all also took a hit in terms of tax re-deductions for the experts, though this also varied via the localities.

4. Implications and conclusion

Brain drain continues to be an ill related to unequal social development. Around the world, societies lose their best and brightest to other more affluent areas. While this is a global problem, solutions must be adapted to fit local contexts. Each of the areas in the study had
their glocalized versions of the national human capital projection. Shanghai attempted to use its economic prowess to recruit even more talented entrepreneurs and scientists. Likewise, Tianjin aimed at attracting sophisticated experts by building high-density state-of-the-art zones for the concentrated experts. Guangdong focused on its proximity to highly skilled Chinese populations in Hong Kong and also on team recruitment efforts.

Despite the glocalization efforts, all of the plans still had quite clear STEM conceptions of national human capital development through long-term hopes of curbing brain drain that were reflected in the central initiative. Even in the quite international city of Shanghai, there was still an awareness that the recruited experts may have difficulties staying long term. To maximize their goals, each of the localities had a considerable focus on returnee Chinese

### Table IV.
Long-term recruitment polices in the three case studies

<table>
<thead>
<tr>
<th>Category</th>
<th>Guangdong</th>
<th>Tianjin</th>
<th>Shanghai</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childcare and education</td>
<td>Children for Chinese nationals can study for free and are offered additional points when entering a high school. Authorized to participate in the Gaokao, the national college entrance exam, with the same qualification as Chinese students. Children who have a foreign nationality are allowed to enter a college in China as foreign student.</td>
<td>Can enter the local public school, regardless of nationality. Free Chinese cultural and language training programs.</td>
<td>Chinese national who have studied abroad can have a second child. Free Chinese language and culture courses in international or public schools. Provide benefits for taking the high school entrance exam to children who returned to China less than three years ago and whose parent lived overseas for studying for more than 5 years. Children who have foreign nationality when applying for a university in Shanghai are permitted to enter preferentially. Recruits already living in Shanghai can apply for overseas expert/employee visas. Foreigners and their immediate families gain permanent residency.</td>
</tr>
<tr>
<td>Visa policy</td>
<td>Foreigners and their immediate families gain permanent residency.</td>
<td>Foreigners and their immediate families gain permanent residency.</td>
<td>Recruits already living in Shanghai can apply for overseas expert/employee visas. Foreigners and their immediate families gain permanent residency.</td>
</tr>
<tr>
<td>Registered permanent residence and citizenship</td>
<td>Chinese nationals and their families will be given local registered permanent residence.</td>
<td>Chinese nationals and their families will be given local registered permanent residence.</td>
<td>Chinese nationals and their families can enroll in the Shanghai registry regardless of location of family before leaving the country. If applying for Chinese nationality by giving up a foreign nationality, the Chinese nationality will be granted.</td>
</tr>
<tr>
<td>House purchase</td>
<td>Provide 1,000,000 RMB of housing subsidy when buying a house. Provide 1,000,000 RMB to overseas excellent leaders and the employing agency support more than 500,000 RMB as housing subsidy. If the housing subsidy is less than 1,500,000 RMB as prescribed, provincial government and employing agency make up for the insufficiency.</td>
<td>The employing agency provides a certain amount of housing subsidy so that they can rent or buy a house. Provide more than 150 m² of housing and 40,000 RMB settlement costs or assists up to 350,000 RMB for overseas experts who want to buy a house.</td>
<td>The employing agency supports a certain amount of housing subsidy. The houseless people in Shanghai can live in an apartment for overseas experts for free or at a level of 60% of the market price or can buy one apartment that is less than supply area of 100 m².</td>
</tr>
</tbody>
</table>

**Source:** Compiled by the authors from government documents and media reports for this research.
and for the larger Chinese diaspora. These populations would more easily integrate into the cities and local populations. Thus, this strategy would be a more realistic remedy for long-term brain drain aliment, giving a larger boost to national human capital development through migration instead of short-term brain circulation (Zweig and Wang, 2013).

Notwithstanding the lofty goals, the implications for the umbrella Thousand Talents Plan are still unclear, as the outlook for each was quite long term. Curing the ills of brain drain and maximizing human capital cannot simply be solved in five years or even in a decade – these are generational issues. It is necessary to assess more information on the individual experts in order to establish criteria for a larger evaluation. It is unclear exactly what kind of value each of the recruited experts has brought to the regions, especially considering the monumental cost of the program. Could locally trained Chinese offer similar production? Do the returning Chinese and diaspora recruits really integrate into the system long term as expected? What are the barriers for the foreign recruits? There has already been one high-profile controversy through a report of misappropriation in funding for a German physicist recruited through the Guangdong plan (Hvistendahl, 2014). More in-depth data and access to recruits are needed in order to facilitate deeper analyses in the future.

Another issue relates to the program’s lack of diversity. Concentrations of engineering and other business sectors could be expanded for a more holistic inclusion, along with a more dynamic spread across the globe, not just those trained in elite western institutions. STEM has long dominated the conceptions of human capital development, especially with China and the other Asian Tigers. It would be interesting to see a glocalized plan that went beyond STEM and business innovation in China, accounting for arts and humanities. And considering China’s growing aging population crisis, a concerted effort on the integration of more diverse groups, not just returning and overseas Chinese, could in part help to alleviate the looming populace problem while still boosting the workforce with innovative and talented recruits.

While the nation-state of China has often relied on large-scale national plans, implementation has been burdened upon the regional and local governments. Thus, variation of these policies actually happens despite the scope of globalization and internationalization. The Recruitment Program of Global Experts has shown how human capital development is sought at the national level, but permeations of the recruitment policy takes place on a smaller scale. Each region systemized various methods that reflected the demands of their locality, refracting the central government’s aims through glocalized variations that ultimately targeted long-term brain drain.

Notes
1. Guangdong uses the name “The Recruitment Program of Global Experts in Guangdong.”

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