

Framing the Emerging Talent Crisis in India and China: A Human Capital Perspective

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Abstract

China and India have undergone significant transformation in recent years as they emerge as the drivers of the so-called “Asian Century”. Although the catalyst for this remarkable growth has been the ability of both countries to harness talent, the next two decades will require a very different dispersion of skills. India will increase its working age population by an additional 200 million, while the workforce in China will reduce by 100 million. In the next three decades, China will have more than doubled its population of those aged 65 and over resulting in a weaker dependency ratio. This article examines the multifaceted challenges that are emerging due to significant skills shortages in China and India. Through the lens of human capital theory, two new frameworks are introduced in order to analyze these factors and to suggest potential solutions.

Keywords

China, double diamond effect, employability gap, human capital theory, India, skill development, skill shortages, talent management

Introduction

China and India have re-emerged as the two most crucial economic growth engines within the much-discussed ‘Asian Century’. Between them, they account for approximately 40 per cent of the world’s population, as the second and fourth

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largest economies respectively in terms of purchasing power. An abundance of human capital has been widely attributed as one of the major reasons for the impressive re-emergence of the two economies (Chatterjee & Nankervis, 2007). However, the nature and quality of human capital in China and India has become a major challenge which is likely to detract from their transitions towards deeper and richer levels of global competition. Specifically, China faces an ageing population and a shrinking labour market compared to India's so-called "demographic dividend". It is estimated that over the next decade, India will increase its working age population by an additional 200 million, whereas in China it will be reduced by 100 million (Chatterjee & Ghosh, 2012; Nankervis & Chatterjee, 2011).

This fast-changing demographic structure has presented two paradoxical challenges for China and India. As Beech (2013, p. 18) points out, "in implementing the largest social engineering experiment in human history, the People's Republic has merely traded one population time bomb for another". It is estimated that by 2050, one in three Chinese will be over 60 years of age, creating a population of older people that is larger than the entire population of the United States.

In contrast to China's rapidly shrinking labour pool, it is estimated that 70 per cent of Indians will be of working age by 2025. However, this situation could easily become a disaster, if the substantial government initiatives aimed at enhancing the employability of these workers were not to succeed (Chatterjee & Ghosh, 2012).

Within this context, this article frames the emerging crises within a human capital perspective, presenting a new conceptual framework from which to approach the issues. Human capital theory has been employed by a number of researchers to date (e.g., Crook, Todd, Combs, Woehr & Ketchen, 2011; Romer, 2014) as a lens to explain how overall economic systems can be positively (or negatively) impacted by the nature and capabilities of their skills and talent pool (Ensley, Carland, Ensley & Carland, 2011). Obviously, the level of talent stock in any given societal context is generated and nurtured by the level of investment in education and training, the demographic profiles and the regulatory regimes of the government as well as the dominant work cultures and societal values.

As discussed earlier, although the Chinese workforce is relatively older than that of India, it is much better utilized. For example, China's workforce is 71 per cent female, while India has less than 40 per cent female workforce participation. Milberg and Winkler (2011) point out that considerable research has been undertaken regarding the extent to which the expansion of international trade promotes gender equality, arguing that

...globalization (trade expansion) led to a rise in female labour force participation relative to men because women are being employed in ever larger numbers by firms competing in the world market in labour-intensive, low value added goods as a means to reduce costs. (p. 13)

To date, China has been the major country utilizing Export Processing Zones (EPZs). The Chinese EPZs employ over 40 million people with a high representation

of female workers which could account for the greater feminization of China's workforce. Moreover, Milberg and Winkler (2011) cite recent evidence that, as firms shift into higher-technology sectors and higher-tech dimensions of existing sectors, the female employment intensity falls, which may explain the lower rate of female workforce participation in India. That said, half of India's workforce is employed in the agricultural sector, contrasted with only 33 per cent in China, and the services sector contribution to GDP in India is 65 per cent compared to China's 33 per cent (Chatterjee, Nankervis & Connell, 2013).

The theoretical model presented in this article explores how China's narrower dispersion of skills has provided a comparative human capital advantage for large-scale manufacturing industries, while India's wider dispersion of skills has bestowed it with comparative advantage in offshore service industries with considerably shorter production chains (Asuyama, 2012). The article attempts to make three important contributions to the challenges associated with the talent paradoxes in China and India. First, the conceptual framework helps clarify the foundations of the talent paradoxes occurring in China and India. Second, it assists in identifying the potential shifts required in both the quality of human capital and training needs. Third, it opens up new lines of debate and inquiry by drawing attention to a relevant research agenda for scholars working in or on the South Asian region.

In order to achieve these aims, the article addresses four broad research questions, namely:

1. What is the nature of the talent shortages in China and India?
2. What are the antecedents of these talent shortages?
3. What are the challenges posed by these shortages?
4. What are some potential strategies to overcome them?

The Emerging Talent Crisis in China and India

The genesis of China's and India's human capital 'scarcity in plenty' paradox can be associated with the trajectory of economic reform that has taken place in the two countries and their respective human capital strategies. This has resulted in the Indian workforce ranging from a small core of highly-skilled, well-educated professionals to a massive cohort of unskilled contract workers. It has been suggested that the "trial and error" method known as *Jugaad* (Cappelli, Singh, Singh & Useem, 2010) provides the Indian workers and managers with a unique problem-solving approach, while the Chinese managers have become well known for their methodical and process-driven style.

Unlike the lifetime corporate loyalty that characterized the economic reforms of Japan in the 1960s and South Korea in the 1980s, "job-hopping" has been common in both China and India, particularly in India's tier one cities where the BPO sectors proliferate (Budhwar, Varma, Malhotra & Mukherjee, 2009; D'Cruz &

Noronha, 2012; Taylor & Bain, 2005; Thite & Russell, 2010). Therefore, recruitment and training in such disruptive contexts have been very different at the higher end of the skills pyramid. This is because elite global companies and leading domestic firms have found it difficult to integrate the Indian and Chinese graduates. Three explanations are suggested for this gap in adjustment. First, while the Indian and Chinese employees readily endorse the Western managerial practices that are widespread in multinational companies, they often find a substantial gap in the motivation systems they employ. For example, most Chinese companies take into account the cultural context of the strong family values that are evident in China, which tend to be expressed through child allowances, parental leave, payment for weddings and housing allowances amongst other traditional benefits. Fewer multinational companies accept such culturally-based motivational practices. Second, the rise of indigenous companies is increasingly becoming more attractive to the Chinese and Indian professionals. The state-owned enterprises (SOEs) in China and large business houses in India appear more adept at managing this duality of HRM strategies. Third, the multinationals tend to expect their employees to embrace learning and innovation within a team-oriented environment.

Much literature over the past several decades has suggested that economic well-being is impacted more by the quality of human capital rather than its quantity (Dewhurst, Hancock & Ellsworth, 2013; Ensley et al., 2011). Human capital, in turn, is enriched by the level of educational development, with specific emphasis on knowledge, innovation and, most importantly, the transference capability of learning (Allais, 2012; Dewhurst et al., 2013). Although there is a vast and growing body of literature in the area of talent generation and deployment at national and organizational levels, no clear theoretical framework has yet emerged. Given the complexity and diversity of the contextual variables at both levels, a variety of theoretical explanations has been proposed for organizational level challenges, but they have yet to be extended to the broader canvas. The two frameworks presented in this article encapsulate the multiple variables represented in the relevant literature.

The Nature of Talent Shortages in China and India

This section of the article addresses the first research question concerning the nature of the talent shortages in India and China. Both countries have become victims of their own economic success, and the talent shortages are both a direct result of their economic momentum and a reflection of the failure of their social and physical infrastructures that may have bridged the human capital demand–supply gap. As Mellahi and Collings (2010, p. 1) suggest, talent management is a component of human capital management which “involves the systematic identification of key positions which differentially contribute to the organization’s sustainable competitive advantage on a global scale”.

Inevitably the gap between projected labour demand and the available labour market will widen as China moves inexorably from a low-cost, low-tech manufacturing economy to one which is not only high-tech, but also more diversified. Increasingly, more globally focused on the high end of the market, China's ageing population will give way to a younger workforce with different perceptions and expectations of jobs and careers (Dowling & Donnelly, 2013). Presently, there are various estimates of the extent of this gap, in both quantitative and qualitative dimensions. For example, the Organisation for Economic Development (OECD, 2012) recently reported that labour force participation in China was moderately healthy in the prime age category (from 70 per cent in 2010 to 86 per cent in 2012), but only 60 per cent in the younger age group and 56.5 per cent amongst older workers. It has been suggested that many (if not most) Chinese employers expect that they will experience talent shortages in the foreseeable future; that 24 per cent have current recruitment difficulties; or that there will be an increase in demand for specialists and professionals from 114 million in 2010 to 180 million by 2020 (Hultin, 2011; Manpower Group, 2012). In addition, recent research suggests that even the most educated Chinese middle managers "appear to be not equipped to manage well in (such) 'soft' areas as training, career development, corporate culture and ethics, and labour relations" (Xie, Zhu & Warner, 2013, p. 15). At the lower end of the market, there are reports that 150 million migrant workers previously employed in factories in urban areas or the Special Economic Zones (SEZs) have returned to their rural villages, thus significantly depleting manufacturing workforces (Ho, 2011).

However, talent shortages are most evident and most serious at the highly-skilled end of the labour market. Various reports suggest that there are significant labour demand–supply gaps in such professions as information technology, equipment manufacturing, biotechnology, aeronautics and astronautics, oceanography, finance and accounting, international business, environmental protection, energy resources, agricultural technology and modern traffic and transportation; as well as in education, law, health and medicine, research and development sectors (Gupta & Wang, 2009). Generic competency gaps exist in middle and senior management and in leadership, international business, English language, communication and interpersonal skills (Cooke, 2008, 2011; Rowley & Warner, 2010). Downing, Rouleau and Stuber (2008, p. 2) noted the irony that "the country with the biggest population is having such struggles identifying, attracting and hiring experienced executive candidates".

Joshi (2011) contends that India (like China) is a "labour surplus, talent deficient country", and other authors have suggested that the lack of quality skills is the key constraint to its future economic growth (Revill, 2011). In significant contrast to the Chinese labour force participation data, Indian prime age workers only represent 43 per cent, young workers 10 per cent and older workers 52 per cent (OECD, 2012). Overall, the conclusions of a recent study are revealing that "while India is perceived globally as a monster devouring western jobs, in reality it faces an intractable skills shortage that bedevils economic progress" (Chopra, 2011).

In comparison with China, the nature of India's talent shortages is both similar and different. There are demand–supply gaps in information technology, sales representatives and skilled trades (Manpower Group, 2012, p. 4); assurance engineers and computer-aided designers (Revill, 2011). In 2005, NASSCOM reported that only a quarter of university graduates and between 10 and 15 per cent of college graduates were suitable for employment due to “a mismatch between industry needs and university output” (NASSCOM, 2005). The Indian government sector also suffers from talent shortages (Griffin, 2010). As Banerjee and Seth (2011) suggest, there are significant shortages in supply—“most ministries and departments are understaffed...people with specialised knowledge are few, and there are many lucrative offers from the private sector”. They estimated that there were 188,000 defence, 530,000 police and nearly 180,000 medical specialist vacancies alone in the Indian civil service.

Thus, both China and India face similar difficulties with respect to the attraction and retention of adequate numbers of talented employees to meet their current and future needs, despite their diverse human capital contexts. India's ‘demographic dividend’ comprising a predominantly young and growing workforce (Guruswamy & Singh, 2010), in contrast with China's ageing population and declining workforce (Chen & Miller, 2010; Nankervis & Chatterjee, 2011; Warner & Zhu, 2010), will not of itself be sufficient to bridge its widening ‘employability’ gap.

Therefore, as Sanyal (2007), Chatterjee and Ghosh (2012) suggest, rather than being net suppliers of global human capital due to the mere size of their respective populations, the success of the Chinese and Indian economies has simultaneously increased their demand for skills while failing to provide the necessary supply. This situation has also generated significant sectoral imbalances which are further aggravated by an increased demand for education and training as the “population dependence ratio” in India reduces. As mentioned earlier, it is estimated that 70 per cent of Indians will be of working age by 2025 compared to China (Chatterjee et al., 2013).

Talent Shortage Antecedents in China and India

Turning to research question two, the discussion now considers the antecedents of the talent shortages occurring in China and India. On the demand side, it is proposed that the key reasons for the immense talent shortages discussed previously are twofold. First, the economic resurgence of both China and India, albeit to different degrees, has been extraordinarily rapid and to some extent unexpected, even for their respective governments. Their relative insulation from the most adverse effects of the global financial crisis and subsequent problems served to enhance their growth relative to their other global counterparts. These developments created an extremely positive economic environment for manufacturing and service sector development resulting in a plethora of new jobs in both China

and India. Consequently, their apparent industrial complementarity merely intensified such growth. However, the workforce and human capital planning systems of national and provincial governments and industry leaders alike have been unable to keep pace with such developments.

Second, there is growing evidence that both China and India have begun to move away from low technology manufacturing and business process outsourcing (BPO) respectively towards higher end production and professional services, as well as achieving greater penetration of global markets in all continents. These developments require employees with higher level skills, well-developed managerial and leadership capacities, significant work experience, international knowledge and global mindsets (Nankervis, Cooke, Chatterjee & Warner, 2012; Rowley & Cooke, 2011; Rowley & Warner, 2010) and this combination of talents is in increasingly short supply in both countries.

On the talent supply side, there are both similarities and differences between China and India. Apart from the obvious quantitative gaps, demographic factors and the personal qualities of job applicants, and infrastructural and systemic issues together with government and industry responses are significant. With respect to the effects of demographic factors in the Chinese labour market, the key issues are the ageing of the population and declining birth rates (Chen & Miller, 2010; Warner & Zhu, 2010), coupled with the unintended consequences of the 'one child' policy. As Ganapathy (2011, p. C1) explains, the median age of the Chinese population will be 37 in 2020, in contrast with 29 in India; and the Chinese fertility rates have declined from 3.0 (1980) to 1.65 (2009) (Ho, 2011, p. C2). The one child policy has not only reduced the potential labour market overall, but also contributed to the raising of employee expectations (Cooke, 2008; Rowley & Cooke, 2011, p. 256; Rowley & Warner, 2010), which has only been exacerbated by the professed attitudes of Generation Y towards work, careers and rewards.

Associated problems have been summarized as deficiencies in applicants' technical expertise; insufficient work experience; lack of competence in leadership, managerial and "soft" skills such as interpersonal communication or customer service; inadequate international knowledge and linguistic skills (Manpower Group, 2012; Martinez-Fernandez & Powell, 2009; Nankervis & Chatterjee, 2011; Nankervis et al., 2012; Revill, 2011; Xie et al., 2013). Other issues include the candidate inflexibility to relocate from province to province in search of employment, the frequent "job hopping" of highly talented employees, serious competition between indigenous and foreign multinational enterprises, and at the lower end of the labour market, the reluctance of rural workers to return to urban factories as wage margins amongst coastal, central and western regions of China narrow (Thornton, 2011).

In India, the authors have suggested that, in addition to the similar quality issues to those found in China, there is a hiatus between the skills required by the "old" and "new" industry sectors (Kuruvilla & Ranganathan, 2010). The (Indian job market) is "starkly divided between those with the skills sought by the new economy of call centres and software houses, and those ensnared in the old

economy by a lack of skills” (Gupta & Wang, 2009, p. 185). In addition, whilst the Indian colleges produce 750,000 science and engineering graduates annually, “only 26% are fit for employment” (Chopra, 2011). Similarly, whilst the Indian graduates and professionals generally possess greater international exposure and English language skills than their Chinese counterparts, their associated experience is not necessarily any greater. This situation is exacerbated in both India and China by fierce competition between indigenous and foreign MNCs seeking talented and experienced applicants. In India, it also appears that, for cultural reasons, many parents and their children value the prestige rather than the outcomes associated with higher education (Mukherjee, 2011), perceptions which are compounded by systemic problems such as “a flawed, degree-obsessed education system” (Joshi, 2011).

Cappelli et al. (2010) explain that a mix of organizational capabilities, managerial practices and distinctive aspects of company cultures set the Indian enterprises apart from firms in other countries (p. 5). The idea that the Indian traditional values can coexist with the modern organizational context has garnered convincing evidence in recent years (Satyawadi & Ghosh, 2012).

Infrastructural and systemic issues which characterize talent supply are relatively similar in both countries. They are fundamentally associated with the quality of secondary, vocational and higher education institutions, the lack of articulation between graduate skills and employers’ requirements, and the capacity of HRM systems to attract and retain talented and motivated employees. In both countries, the supply of adequate cohorts and competencies of employees to meet the growing needs of local and foreign employers is hampered by an insufficient number of vocational institutions, inappropriate curricula and pedagogical techniques. The Chinese secondary and higher education system has been criticized for its overly theoretical emphasis, didactic pedagogy and absence of practical or analytical application. Its vocational education infrastructure has recently been significantly overhauled, in collaboration with some employers, in order to place more emphasis on the links amongst pre-employment, on-the-job, re-employment and entrepreneurial training and development, but there are still concerns about the reluctance of many employers to work with vocational institutions or to undertake their own articulated in-house employee development programmes. A recent OECD report recognized these remedial attempts, but reported continuing issues such as variable school-based resources, relatively few training quality standards and “insufficient” workforce planning systems (Kuczera & Field, 2010, p. 5), especially concerning the articulation of competencies amongst schools, vocational colleges, universities and industry.

What Challenges are Posed by the Talent Shortages?

With regard to research question three, India’s challenges in this area are similar to those of China in both quantity and quality terms, but are complicated by its

considerably lower literacy rate (126 million people between 13 and 35 are functionally illiterate), thus:

India will have the advantage of human capital, but the quality of human capital is a problem. Progress in literacy and education is good, but a little under half of the Indian states in the north are still lagging behind and that is a concern for effective economic output. (Ganapathy, 2011)

In common with China, higher education in India emphasizes theory over practice, there is little coordination between education providers and industry leaders and there is an absence of “a sustainable employability model” (Mukherjee, 2011) at either state or national levels. As noted earlier, in the important Indian civil service which suffers from significant talent shortages, the particular supply issues relate to the less competitive salaries and benefits compared with the private sector, “unnecessarily high eligibility criteria”, rigid hierarchies and mismatched selection processes (Banerji & Seth, 2011).

With respect to the contributions of HRM strategies and processes to bridging the gaps between talent demand and supply in both countries, most authors agree that the key issues relate to sourcing, selection, motivation and reward systems (Cooke, 2008; Nankervis et al., 2012; Warner & Zhu, 2010). Holland, Sheehan and DeCieri (2007, p. 261), for example, suggest that “in an environment characterized by increasing levels of skilled labour shortages, organizations need to design employment systems that prioritize human resource development to enable competitive advantage”. Thus, narrow or traditional recruitment paths, the lack of effective partnerships amongst industry, education and training institutions, inappropriate or outdated selection criteria and/or inefficient applicant processing, a lack of ongoing learning systems or career opportunities, and uncompetitive reward programmes are evident in many organizations in both countries, leading to talent spillages benefitting multinational enterprises (Cappelli et al., 2010; Gupta & Wang, 2009; Nankervis et al., 2012). All these issues are associated with a myriad of contemporary and future challenges for government, industry and educational institutions in China and India. The key factors are encapsulated in the following frameworks (Figures 1 and 2).

Two Explanatory Talent Management Frameworks

As pointed out previously, China and India have evolved significantly with regard to the generation of talent management policies and strategies. However, we contend that there are four key components which are critical in shaping “human capital integrity”, the foundation of effective talent management into the future (see Figure 1). These components are the global imperatives, national uniqueness, strategic options and human resource (HR) policies and practices. It is proposed that each of these four components is impacted by five forces creating synergistic

Challenges	Global Imperative and National Uniqueness	
	Global Imperative Rise in economic power but mismatch between talent pool and economic activity Knowledge-based work and severe human capital deficit Skill as a critical factor condition: beyond Porter's Diamond Weak policy and political systems Lack of R & D investment in educational technology and infrastructure	National Uniqueness Demographic challenges: China's aging versus India's youth Educational infrastructure: quality, scale & reach Double Diamond effect of global companies from within & outside the country Disappearing 200 million migrant workers in China & structural changes altering skill requirements versus 85% of Indian workers still employed in the 'informal sector'
Opportunities	Strategic Opportunities/possibilities for adoption of HR Policies and Practices	
	Strategic Opportunities Boost education and training Focus on 'career ready' pedagogy and internships Private-public partnerships for education and training (i.e. staff training colleges provided by employers) Address sectoral imbalances in talent supply and demand Increasing the attractiveness of vocational education pathways compared to university (especially in the case of India)	Adoption of HR Policies and Practices Use of merit-based practices in attraction, retention, rewards etc.- strengthen employee value proposition From 'talent management' to 'talent creation' - analysing how skills are utilized in the workplace Enterprise education (encouraging the development of skills, attributes and behaviours that employers are looking for) Restructure the current talent pool (e.g., extend retirement age)

Figure 1. India and China—Human Capital Challenges and Opportunities

impacts. In the area of “global competitiveness”, for example, there has been a rethinking of the relationship amongst skills development policies around the world, triggered by China’s and India’s increasing inability to match talent demand and supply, human capital deficits in knowledge-based work and research and development investments in technology. As discussed previously, there is an economy-wide demand in both China and India for more well-educated and career-ready employees.

As earlier mentioned, the “double diamond” effect (Rugman & D’Cruz, 1993) of the talent paradox has not received the scholarly attention to date, especially at the institutional level in China and India. In his early ‘single diamond’ model Porter (1985) emphasized the physical endowments within a domestic context. In subsequent revisions, human factors (the nine factor model), international contexts (the double diamond) and finally the interactions between both were incorporated in the “dual double diamond model” which conceptualized the relationships amongst domestic physical factors, domestic human resources, international physical and human factors. The authors of this dual double diamond model claim

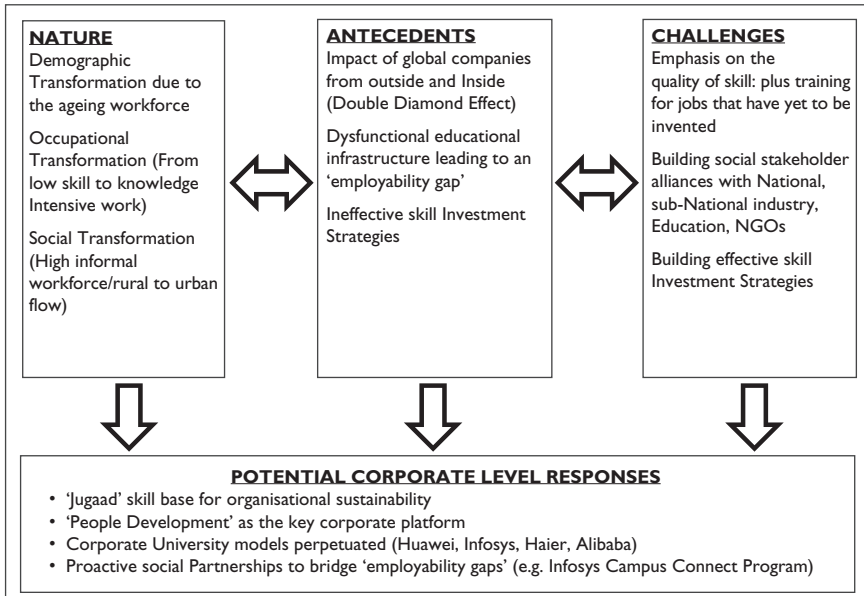


Figure 2. The Nature, Antecedents, Challenges and Potential Corporate Level Responses to the Talent Shortages in India and China

that it has special relevance for China and India due to their heterogeneous attributes (Cho, Moon & Kim, 2009).

Significant changes need to be incorporated in the managerial approaches with regard to talent acquisition, deployment, nurturing and positioning. These changes include (i) increasing diversity of quality, gender, competence and other demographic attributes of the workforce; (ii) a dramatic shift in the scope of “work” itself in terms of global–local imperatives, technological changes and dynamic populations; and (iii) the presence of global companies, as well as mergers and joint ventures. Each of these changes impact profoundly on managerial perspectives, as such shifts are no longer of an incremental quantitative nature but in the qualitative domain.

New global imperatives are also affecting “national uniqueness”. These include the demographic changes in China brought about by three decades of the “one child” policy, inadequate vocational training, urban–rural worker migratory patterns and structural changes associated with a significant increase in foreign-owned and joint ventures as well as a rise in indigenous global corporations. The third component of the framework, “strategic options”, emphasizes the five critical areas of talent management, namely boosting education and training, micro-level interactions in learning pedagogy, the use of private–public partnerships, establishing talent-innovation networks and addressing sectoral imbalances in talent supply.

The final component of the framework illustrated in Figure 1, “HR policies and practices”, focuses on the micro-level applications of the other three components. Thus, it encompasses the pressures on HRM professionals to develop proactive and responsive solutions which will deliver results in talent attraction, reward and retention strategies. Many organizations in China and India are consequently rethinking their HR policies in order to overcome some of the cultural barriers to talent attraction and retention. As an example, an extension of the retirement age is being considered by many leading Chinese and Indian corporations, government agencies and universities as a means of retaining specialist talent.

The second framework (see Figure 2) addresses the research questions expressed earlier, focusing on the nature, antecedents, challenges and potential corporate level responses to the talent shortages in India and China. These factors reflect the imbalance in talent demand and supply caused by the economic factors described above and the “shifting demographic profile” occurring in China and India. On the one hand, the framework suggests that regulatory reform, technological and increased research and development initiatives, and on the other hand, the emergence of global corporations provides impetus for novel approaches to talent management in both countries. A key factor here, especially for multinational enterprises, is the need to balance and integrate the relationships between their international and local labour markets (Sheldon & Li, 2013) in order to support a “global employer positioning” strategy (Baum & Kabst, 2013). The framework, thus, reinforces the “double diamond” effect (extending Porter’s “diamond” effect) given the dual development of Western MNCs in China and India, together with the Chinese and Indian MNCs globally.

Potential Responses to the Talent Shortages

This section of the article addresses the final research question based on the conceptual frameworks outlined in Figures 1 and 2, namely what potential strategies could help overcome the talent shortages in India and China? At the macro-level, a relatively recent OECD study of skills development strategies across Asia (Martinez-Fernandez & Powell, 2009) offers some realistic recommendations to address the talent dilemmas faced by both countries. Thus, it suggests the development of tripartite cooperation amongst governments, industry and educational institutions in order to analyze the current and necessary future linkages amongst urbanization, demographic changes and investment in skills and employment. Such collaborations can lead to productive outcomes, such as the reform of labour market institutions and their regulation; the establishment of an “enabling environment so that the provision of skills is balanced with the provision of opportunities to use these skills” (Martinez-Fernandez & Powell, 2009, p. 4); the facilitation of internal job mobility together with the control of excessive rural–urban migration; and increased skills portability achieved through national, regional and global articulation and accreditation systems. These recommended strategies

prioritize the development of human capital through talent enrichment and skill building, at both enterprise and national levels.

Whilst it is acknowledged that China is in a more favourable position than India to implement many of these recommendations, due to its more centralized political system, labour market reform, cooperative initiatives amongst government–industry–education, internal job mobility and controlled migration and skills recognition systems; they are also not beyond the remit and potential of state and national Indian governments. In China, initiatives such as those in South China which encourage vocational schools to work with business in order to train five million people over the next five years, and joint workshops to train potential employees with “hands-on” production experience and process innovation, provide examples of cooperative relationships between industry and educational institutions. Common national qualifications, skills frameworks and strong government support are key components of such relationships (Hultin, 2011; Manpower Group, 2012) which can support talent pipelines for nations and individual companies through such resourcing and operational initiatives.

With respect to sourcing human capital from less conventional labour markets, both China and India are also encouraging their respective diaspora to return home through various incentive schemes, bringing with them much-needed knowledge and experience in international business, new technologies, managerial and interpersonal competencies, together with their existing cultural acumen. Some reports suggest that more than 300,000 expatriate Indians are expected to return home from 2011 to 2015, largely for economic rather than cultural reasons (ILO, 2011).

At the micro-level, the skills development challenges faced by both China and India concern industry–government–education linkages; the reform of secondary, vocational and higher education systems; and organizational human resource management strategies and programmes. Practical suggestions raised by various Chinese and Indian observers include the establishment of Special Education Zones (Joshi, 2011), which would focus the efforts of governments and education service providers, regular industry–academic forums in order to ensure that the skill needs of business are effectively reflected in educational curricula, and of course, considerable educational funding increases from state/provincial and national governments. At the institutional level, secondary schools, vocational colleges and universities need to review all aspects of their operations, including enrolment criteria, curriculum design, recognition of prior learning systems, pedagogical approaches, academic staff qualifications and experience, career development, rewards programmes, management acumen and overall accountability techniques.

Industry has been exhorted by many authors to fulfil its skills development role through ongoing liaison with government and educational institutions, and by providing more comprehensive on-the-job and specific skills training (Skills Australia, 2010) coupled with more effective HRM practices, notably talent attraction and selection, motivation and rewards programmes (Connell & Stanton,

in press). There are already encouraging signs in both countries that some organizations are investing in non-traditional and innovative HRM techniques (Farndale, Scullion & Sparrow, 2010). Many prestigious universities and business schools in China have co-branded with foreign counterparts and hired expatriate faculty in order to internationalize their curricula.

In addition, other organizations offer “middleman’s fees”, family payments for special occasions, psychological consultations and ‘grey’ recruitment to meet their skills needs (Joshi, 2011). Similarly, some Indian organizations organize “recruitment camps” to attract and select qualified applicants, whilst others offer specialist training for unemployed youth and provide competitive employee benefits and more attractive working environments, or ‘attendance bonuses’ as incentives (FICCI, 2011).

The most common strategy in responding to the current talent crisis has been a focus on additional training and development of the existing talent pool. A Manpower survey suggests that China has adopted this strategy much more strongly than India (27 per cent of employers indicating support in China, 22 per cent in Japan, with only 5 per cent in India—Manpower Group, 2012). Education Minister Pallam Raju recently stated that India was keen to explore possibilities around mass-scale, vocational training as the country strives to train 400 million young people by 2022 (Business Standard, 2013) and to harmonize its vocational skills and qualifications.

Conclusion

A universally acceptable framework for the talent component of human capital continues to remain elusive. From a macro-level perspective, such a framework would include improvements in productivity and competitiveness, entrepreneurial and innovative capabilities; and from a micro-level perspective, education and enhancing the potential for employees to contribute at a higher level towards the improvement of organizational capabilities. Above all, human capital development in China and India has intrinsic value in societal terms, especially with regard to poverty reduction beyond any narrow instrumental economic advantage.

Proxy measures of human capital in terms of literacy rates, school enrolment rates and years of schooling are inadequate measures of the concept. These variables rarely reflect the relevant skill levels required at various developmental stages within firms, industries and countries. This article has attempted to broaden conventional concepts related to human capital by extending them to include social capital while highlighting the relevance of national context as well. Thus, it is argued that the concept of human capital needs to go beyond pure economic terms to include organizational and societal imperatives linking micro-, meso- and macro-level parameters.

It has become evident that at the macro-level, talent management is a multi-stakeholder concern which can be addressed as an economy-wide holistic strategy.

Consequently, talent pools need to be anchored to an organization's culture and societal context as well as with global realities. All organizations are dependent on their talent, and therefore this crisis substantiates the relevance and importance of learning and skill development. The strategy of prioritizing human capital ahead of other considerations has become a critical imperative for organizations in India and China. A number of factors are worthy of note here. For example, one outcome of China's low fertility rate over the past few decades is that it is predicted to experience only 13 per cent of the world's labour market growth up to 2030, in stark contrast to the 20 per cent growth experienced between 1980 and 2010. As China moves from labour-intensive to knowledge-intensive industry sectors, this slowing of population growth will generate added talent attraction pressures. In contrast, approximately 85 per cent of Indian workers are employed in informal sectors (ILO, 2012) and have been unable to equip themselves with any training.

It has been suggested that "India could learn from the Chinese model of construction labour bases where local governments have formalized the process of training transfer from skilled workers to migrant construction workers" (Hajela, 2012, p. 22). China's institutionalization of informal training for workers from rural areas, referred to as "cradles of building craftsmen" (Hajela, 2012), concerns a master-apprentice system which has been singularly successful since 1988, involving municipal authorities as intermediaries. These authorities have taken responsibility for registering rural workers and their industry placements in conjunction with the Beijing Construction Commission. This project has been sponsored by the World Bank as a global stakeholder in migrant worker skills development in an endeavour to improve the population's "employability" (World Bank, 2010). Recently, China has also begun to adopt explicit policies to improve wages and working conditions in response to worker protests and growing uncertainty about the economic prospects for the country's huge migrant workforce (Barrientos, Gereffi & Rossi, 2011). To date, no similar programme has yet been trialled or implemented in India.

In summary, this article explores the extent of the talent shortages experienced in China and India as a consequence of their remarkable economic resurgence. It argues that these shortages are outcomes of the surging labour demand concerning both numbers and quality, and an inadequate labour supply that has arisen for a variety of reasons. In both countries, talent scarcity is due to the failure of labour market planning systems; a lack of integration amongst governments, industry and educational institutions; flawed higher education curriculum and pedagogies; and the changing competencies and attitudes of new generations of the Chinese and Indian employees.

Despite India's much vaunted "demographic dividend" compared to China's ageing population, it is evident that the quantity of the working age population does not necessarily translate to the quality required by their dynamic industry sectors. Moreover, the mismatch between industry requirements and the competencies of graduates from vocational and higher education institutions is a key

cause of the challenges facing China and India. To address this gap between talent demand and supply, the article presents two explanatory frameworks in order to underpin understanding of the nature and antecedents of the talent shortages, and to explore a range of potential solutions associated with three key components; tripartite policy coordination amongst governments, industry and educational institutions; close practical links amongst industry, vocational and higher education; and innovative organizational HRM strategies and processes.

A limitation of the article is that it is based upon an analysis of secondary data. However, it is proposed that the discussion and frameworks provide a useful foundation for future research and practical development. It is suggested that future research might be conducted using the frameworks developed in particular industries or organizations in either or both countries incorporating a series of case studies, while other research could usefully investigate the policy and strategic implications of the talent shortages taking place in China and India.

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