Macro talent management in Finland : contributing to a rapidly evolving knowledge economy

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MACRO TALENT MANAGEMENT IN FINLAND: CONTRIBUTING TO A RAPIDLY EVOLVING KNOWLEDGE ECONOMY

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ABSTRACT

This chapter analyzes Finland's rapid transition to a knowledge economy and the challenges that the country is facing today from a macro talent management (TM) perspective. The Global Talent Competitiveness Index (Lanvin & Evans, 2017) is used to analyze Finland's ability to attract, develop and retain human capital. Positive features that differentiate TM in Finland from other countries are discussed—the emphasis on social mobility and egalitarian development as well as the close collaboration around TM between key stakeholders. The country's drawbacks at a time when technology (digitalization, automation, robotics and artificial intelligence) is changing the talent scene are explored, notably the constraints of Finland's relatively rigid labor market and its challenges in external talent attraction.

1. INTRODUCTION

Finland? Why study how talent management (TM) has contributed to the development of a country that few people visit, that has only 5.5 million people, that lies near and within the arctic circle, and where they speak a strange language? Finland was a largely agrarian country in 1950—and within those seventy years it has transformed itself into a prosperous service economy with a

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burgeoning high tech sector, and a degree of prosperity that equals the UK and approaches that of the United States.

Today, Finland is ranked as the world's number 8 out of 140 countries in the World Economic Forum Global Competitiveness Index, #3 after Denmark and New Zealand on Transparency International's Corruption Index, and #4 in terms of freedom of speech as measured by the World Press Freedom Index.[1] Closer to our talent focus, Finland is #9 on the Global Talent Competitiveness Index (GTCI) out of 118 countries, and it is the top country on World Economic Forum (WEF) survey measures of how easy it is for companies to find skilled employees.[2] Indeed, in terms of talent competitiveness, defined as a country's ability to attract, develop and retain the human capital that contributes to its productivity (Lanvin & Evans, 2017; Khilji, Tarique & Schuler, 2015), four Nordic countries are in the top ten (see Table 7-1). There are thus important learning points to draw from the Nordic region where the similarities between Finland and the Scandinavia countries of Sweden, Denmark and Norway outnumber the differences. Although our focus in this chapter is on Finland, we will draw relevant comparisons underway.

What are some of the key learning points from Finland's rapid evolution from an agrarian to a knowledge economy that today is being transformed by digitalization and rapid technological change? Based on data presented in this chapter, Finland appears to be well positioned in this societal transformation, and our analysis explores some of the talent aspects of this disruptive transformation. Focusing on the role of TM, we start by outlining the historical background, which leads us then to an assessment of the pillars of TM at the societal level. To frame this, we use the six-pillar model of the GTCI (Lanvin & Evans, 2017; Evans, Rodriguez-Montemayor & Lanvin, forthcoming)—four input pillars (Enable, Attract, Grow, Retain) and two output pillars (Vocational and Technical skills based on expertise, and Global Knowledge skills that underlie leadership, entrepreneurship and innovation/creativity).

- INSERT TABLE 7-1 ABOUT HERE -

Using these pillars we identify the positive features that differentiate TM in Finland from other countries—the emphasis on social mobility and egalitarian development as well as the close collaboration around TM between key stakeholders. We will also discuss some of the country's main drawbacks, notably the constraints of Finland's relatively rigid labor market and its challenges in external talent attraction. We conclude by examining Finland's future TM prospects through the lens of Industry 4.0. Throughout the chapter we highlight the educational and development dimension as being critical to understanding Finland's impressive evolution towards a knowledge economy.

2. BUILDING THE MODERN FINLAND

Finland celebrated its 100 years of independence in 2017. Since the Napoleonic era, it had been a Grand Duchy in the Tsarist Russian Empire that collapsed in 1917. Upon becoming independent, Finland remained a relatively poor, largely agrarian society until well after WW2. In 1950, 46% of Finnish workers worked in agriculture and only a third of the population lived in urban areas. During the 1960s, some 200,000 Finns fled the country in search of blue-collar jobs in neighboring Sweden—a country that had already successfully built a modern industrial economy and was in search of labor.

However, during the latter half of the 20th century the economy developed rapidly as the country built a strong manufacturing sector and expanded into services. In a 2004 comparison, with its star company Nokia attracting worldwide attention, high-technology manufacturing in Finland ranked second largest after Ireland among OECD countries (OECD, 2004). The industrial sector was export oriented, dominated by large companies such as forest industry companies Stora

Enso, UPM and the Metsä Group, elevator and escalator giant Kone, and diesel engine producer Wärtsilä. Like other OECD countries, the service sector had become by far the biggest part of the economy, with the new jobs in manufacturing and services quickly attracting people to the cities.

In what follows, we briefly paint a history of Finland's development into a knowledge economy, drawing on indicators relating to the two output pillars of GTCI—Vocational and Technical skills, and Global Knowledge skills.

2.1. Education as the Talent Motor

From the perspective of human capital, the most important driver of this growth was education, with the emergence of the modern system in the 1970s. In the new educational system that was put in place in 1972-77, there was no kindergarten pre-school—formal schooling started at age 7 and still does. One of the features of striking relevance to today's debates on how to prepare children for our rapidly changing society is that almost all young children went to the new playschools that were available in all urban areas, seen as being the subjective right of the child rather than as a place to park the kids on the way to work. The philosophy of playschools was that you were not taught—you learnt how to play with others. This quickly evolved into a **learning-how-to-learn** orientation that child psychologists claim is instilled at this age (Hautamäki et al., 2002). The aim of pre-school education was not "school readiness" but rather the development of thinking, and to promote children's growth into responsible members of society with an appreciation for other people (Sahlberg, 2015). Early childhood education became a formal part of the Finnish education system in 2013.

Other features of the evolving educational system to be highlighted are the emphasis on **egalitarianism** and the importance of **vocational education**. As from age 7, formal schooling from grades 1-9 became mandatory. But there was no streaming of students and standardized testing was absent, reflecting egalitarian Nordic values—the strong students were expected to help

out the weak. After the age of 15, the system bifurcates into academic (*lukio*) and vocational tracks (*ammattikoulu*). About 40% of the students continue on the vocational track (c.f. Switzerland, the GTCI world talent leader, where the figure is 70%), and such technically trained people fuel the demands of industry. In the mid-2000's the Finnish education system suddenly attracted worldwide attention when the OECD's PISA ranking of student skills in maths, reading and problem solving put Finland at #1 in the world (#4 in 2015).

Even in comparison with its Scandinavian neighbors, Finland's education system provided a stable and high-quality supply of vocational and technical talent that fuelled industrial growth. The country has invested heavily in the training of engineers at universities and universities of applied sciences, contributing to Finland today being #1 in the world in terms of the availability of scientists and engineers.

Based on GTCI's assessment, Finland's education system helped propel it to #2 in the world in terms of vocational/technical skills. This should be contrasted with concerns about the skills gap and the employability of people that worry governments and corporations in many Western countries—and even more so in China, South Korea, South Africa, and Russia.[3] Whilst unemployment in Finland today is still relatively high (8.7% in September 2017), the country has risen to become one of the model nations in matching talent to work needs, ranking #1 on the GTCI measures of employability (#4 on the 'relevance of the educational system to the country', and as noted the top nation on 'ease of finding skilled employees').

2.2. The rise and fall of Nokia

After 20 years of growth, Finland entered a crisis in the early 1990s as its role in bridging the grey zone between the Soviet Union and Western nations ended with the collapse of the Soviet regime in 1991. One of the foundations supporting the Finnish economy disappeared. With an over-indebted business sector and an overvalued currency, the country went into a banking

crisis, leading to a deep recession that saw unemployment jump from 4% to 18%, with public debt mounting to become over 60% of GDP.

As discussed later in this chapter, the strength of collaboration between key stakeholders—government, municipalities, business, unions, and educational institutions—and the high levels of trust between these social partners helped significantly in developing a new vision and plans for economic recovery. Amongst other things, this involved a move away from bureaucratic central administration to a more decentralized system that empowered local authorities to make some of the difficult decisions, particularly in an educational arena that should place more emphasis on high-skilled tertiary competencies. Finland joined the European Union in 1995, following a referendum, and this opened up new markets for exports.

It was the rise of Nokia, one of the largest Finnish companies since the 1960s, which played a major role in Finland's transition towards becoming a technology-driven knowledge economy. Up until the recession of the early 90s, Nokia was a highly diversified corporation involved in businesses such as car tyres and consumer electronics, but it also had a foot in the mobile phone market that had been pioneered in Scandinavia. After a successful gamble on GSM becoming the mobile standard, Nokia grew rapidly, and by the end of the 1990's Nokia had become a pioneer in mobile telephones and the global market leader.

Finland's rise in mobile telephony was soon viewed as a success story of coevolution—sound government policy in areas such competition, deregulation and innovation working in tandem with education and government-supported research, supported by the effective development of firm-level capabilities and strategic leadership. In short Nokia became a synonym for superior management in Finland (Laamanen, Lamberg & Vaara, 2016), and a defining symbol of Finland's entry onto the world stage. To illustrate its significance, by 2000 Nokia accounted for 4% of Finnish GDP, 70% of Helsinki's stock exchange market capital, 43% of corporate R&D, 21% of total exports and 14% cent of corporate tax revenues (Kelly, 2013). Whilst Finland

invested heavily in Nokia's R&D projects, Nokia repaid this in tax revenues. This enabled developments within the Finnish education system to meet the rapidly growing demands for high-skilled workers. Nokia's success, especially overseas, provided the much-needed impetus for other ambitious Finnish companies to internationalize. It also served as a talent incubator for corporate Finland with many engineers, managers and soon-to-be top executives having spent part of their careers at Nokia.

Nokia's rapid fall from top spot began in 2007-8 when Apple launched the first iPhone, quickly followed by the first phone models using Google's Android operating software—just before the global economic crisis. Various studies have assessed the lessons of this rapid decline, pointing to the problematic implementation of a matrix structure that resulted in a lack of internal integration, and to an emotionally charged attention gap between top and middle management (Doz & Wilson, 2018; Vuori & Huy, 2015). Nokia's deteriorating financial performance led to the appointment of Stephen Elop as CEO in 2010, who oversaw the sale of Nokia's mobile phone business to Microsoft in 2013.

Since key stakeholders in Finland could see this coming, the coordinated response to job losses at Nokia came in the form of significant investments in the creation of small businesses. Tekes (The Finnish Funding Agency for Technology and Innovation) had its annual budget for funding new and innovative businesses increased to €550 million, and the Finnish Ministry of Employment and Economy launched a start-up accelerator in 2009 (Kelly, 2013). Nokia, too, created an incubator program (Nokia Bridge) that offered grants to departing employees who had a good start-up idea. At the same time, a vibrant entrepreneurial eco-system started to develop around Aalto University, which was formed in 2010 through a merger of the leading Finnish universities in the areas of technology, business, and art and design. A new start-up event embedded in the Aalto University eco-system, Slush, largely run by students, grew rapidly into a

major event that in 2016 attracted some 17,500 participants, 2,336 companies, 1,146 investors, and 610 journalists from 124 countries.

Finland was severely hit by the combination of the rapid decline of Nokia's handset business, the worldwide recession that began in 2008, and the Russian trade sanctions introduced in 2014; but by 2016 the country's economy was growing again. Over 10,000 ex-Nokia R&D experts released into a job market built around a thriving high-tech sector had provided a significant stimulus. In a similar fashion to Nokia's stardom being born out of the ashes of the recession in the early 1990's, new stars are today being born. These include unicorns in the mobile gaming applications industry — Supercell (the creator of Clash of Clans) and Rovio (the creator of Angry Birds).

3. ASSESSING MACRO TALENT MANAGEMENT IN FINLAND WITH THE GTCI FRAMEWORK

Having presented the historical backdrop to Finland's development as a knowledge economy, we now take a more systematic look at Finland today from a macro talent management (MTM) perspective. To do this, we use the model provided by the Global Talent Competitiveness Index (GTCI) that was developed for this purpose (Lanvin & Evans, 2013, 2017; Evans, Rodriguez-Montemayor & Lanvin, forthcoming).

3.1. The Global Talent Competitive Index Framework

GTCI is a composite index where six pillars are measured by 65 variables from reliable sources (World Bank, World Economic Forum, OECD, UNCTAD, etc.), covering 118 countries (a beta version of a parallel City Competitiveness Index was also pioneered in 2016, comprising 45 cities across the world) (Lanvin & Evans, 2017).[4] [5] The model goes through an annual audit by

the world's leading statistical authority on such composite indexes, the Joint Research Council of the EU, and it has been certified as being robust, parsimonious, and reliable (Saisana, Becker & Dominiquez-Torreiro, 2017).

According to the GTCI framework, Talent Competitiveness is defined as the set of policies and practices that enable a country or a city to attract, develop and retain the human capital that contributes to its productivity, where productivity is viewed as input per unit of output. Based on the assumption that there is a close relationship between talent and economic prosperity (an assumption since validated by GTCI research), the model has four input pillars or parameters of talent management, and two output pillars.

3.1.1. Input pillars of GTCI'

The first input pillar captures the wider context of the country or city, namely the factors that **ENABLE** talent competitiveness, which are classified into three groups: ***regulatory context***—encompassing government effectiveness, anti-corruption, and the quality of business-government relations; ***market landscape***—which includes the intensity of competition, the ease of doing business, the ICT infrastructure, the strength of industrial clusters, and the investment in R&D; and ***business and labor landscape***—which has two components that are particularly relevant to MTM, namely the flexibility of the labor market and adoption of professional management practices.

The second input pillar is **ATTRACT**. A country has to attract talent from one of two pools—internal and external—that vary in terms of openness. ***Internal openness*** refers to the talent pool within a country's own borders; access to the talent pools may be restricted by factors such as gender, ethnic background, parental class or wealth. ***External openness*** refers to whether organizations in that country have an international orientation (which they do not have in North

Korea, to use an extreme example), and whether policy and practice facilitates immigration as well as the integration of migrants into society.

The third pillar is **GROW**, focused on how a country develops talent. Economists tend to focus on the ***formal educational*** system since it is measurable, but talent development does not end there. ***Lifelong learning*** throughout adulthood is also important, encompassing both the investment of companies and organizations in training and career development as well as national systems of continuous education. GTCI also tries to capture a third source of learning, learning through experience ***(access to growth opportunities)***; this is often acknowledged as being important but typically ignored this since it is more difficult to measure.

Lastly, since capable individuals will always have opportunities elsewhere, a country's ability to **RETAIN** talent is the fourth input pillar of GTCI. ***Sustainability*** is one component, encompassing pay, taxation and pensions. The other is ***lifestyle,*** which includes indicators such as environmental performance and personal safety.

While the four input pillars are conceptually distinct, they are obviously related. For instance, factors that make a country attractive to skilled immigrants are also likely to contribute to talent retention. Therefore, although personal safety and environmental attractiveness appear in the GTCI model as part of the retention dimension they are also likely to influence the perceived attractiveness of the country from the point of view of potential skilled immigrants.

3.1.2. Output pillars of GTCI

In terms of output pillars, how is "talent" conceptualized in this framework? The academic debate on this is far from over (see e.g. Lewis & Heckman, 2006; Gallardo-Gallardo, Dries & González-Cruz, 2013; Cappelli & Keller, 2014). GTCI has a broad view of talent as being skilled human capital, leaving unskilled labor out of the talent equation. With its measures, GTCI attempts to

assess the quality of those skills across countries, but its two output pillars make an important distinction between two types of talent that an economy needs.

The first is **VOCATIONAL AND TECHNICAL SKILLS**, specialized expertise in a particular domain (***mid-level skills***) that makes an individual employable, fostered by secondary education and in particular by vocational and polytechnic education, as well as by experience within a trade or function. As reliable data became available, the GTCI model was extended to include an ***employability*** component—the extent to which a country is able to match supply and demand for expertise, avoiding the skills gaps and youth unemployment problems that have captured so much attention in recent years.[6]

The second output pillar and type of talent is **GLOBAL KNOWLEDGE SKILLS.** Linked to professional knowledge, these ***high-level skills*** involve analytic capacity, social and project skills, and the ability to work across fields. They are the underpinnings of entrepreneurship and creativity, leadership, and innovation. Higher institutes of learning aim to foster these skills, even in specialized domains. Whereas technical skill/expertise helps a company, city or country to run effectively, it is global knowledge skills that help it to grow and expand.

3.2. Assessing Finland's Talent Competitiveness

We now turn to this model more analytically in order to assess Finland's current talent competitiveness against the backcloth of its rapid transformation to a diversified knowledge economy, as outlined earlier. For this we use GTCI 2017 data, typically presented as a country ranking, with raw data where that is meaningful.[7] Figure 7-1 presents the overall profile of Finland on the GTCI in comparison with the average of high income countries, showing its comparative strengths on vocational/technical skills and on growing talent. The full table with indicators for each of the six pillars is provided in Appendix 7-1.

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3.2.1. The Enabling Context

Perhaps unsurprisingly, Finland has a highly favorable enabling context for talent with an overall ranking as #6 out of 118 countries. Its *regulatory landscape* is exemplary, with an effective government (#3 out of 118 countries), close relationships between government and business (#5), and an environment that is largely free of corruption (#2).

The Finnish economy and labor markets are strengthened by relatively clear and developed clusters (concentrations of interconnected firms, suppliers and specialized institutions, #15), including the electro-mechanical industrial sector, software development, and the gaming industry that potentially act as talent magnets. But Finland struggles because the intensity of competition is much lower (#82) than in its Scandinavian neighbors—also notably less than in dynamic Estonia next door.

A major disabling factor in Finland concerns the *business and labor landscape*—in particular, a relatively rigid labor market that handicaps start-ups as well as organizational change in established companies. Business leaders and entrepreneurs grumble about the difficulties in hiring and firing staff (#70 and #46 respectively out of 118 countries in the GTCI rankings), complaining about the cumbersome procedures and consultations that they must go through. Indeed, labor legislation makes it virtually impossible to fire staff for under-performance, and unions have resisted linking pay too closely to performance, as is generally true across the Nordic countries. This is a real challenge in Finland since union membership is very high (65% overall, but is even higher among those employed in industry, where 81% of wage and salary earners belong to a union).

Further, labor-employer cooperation is relatively weak (#20), with often strained relationships between unions and employers. The Finnish government has made significant efforts

in recent years to get employers and unions to agree on measures to cut unit labor costs and strengthen the competitiveness of Finland. This has culminated in, for example, a recent 'competitiveness pact' within the public sector that includes a wage freeze, a requirement for staff to work 24 hours more each year for the same compensation, and a temporary reduction of the holiday bonus pay (a so-called 'thirteenth salary' month) for over half a million municipal and state workers.

The less flexible Finnish labor market makes adaptation to changing circumstances more difficult for organizations—notably the disruptive adaptation to digitalization and algorithms discussed later. This contrasts sharply with nearby Denmark, where employers have greater freedom to hire and fire when necessary (#1 in the world, alongside Singapore). But flexibility is only one element of a three-sided Danish policy mix that was put in place in the 1990's, known as Flexicurity, that is upheld by the European Commission as a model for employment policy in the EU. Along with labor market flexibility goes the right of people who lose their job to generous compensation for up to two years. But the third pillar is distinctive, namely the obligation of these individuals to retrain, change career, create a start-up or go freelance—or lose those benefits, replaced only by minimal financial aid. Accompanied by training, counseling and support, such "active labor market policies", as labor economists call them, are less deeply rooted in Finland. They are important at a time of deep societal transformation.

3.2.2. Attracting Talent Externally

With its small population of 5.5 million and location far from big global hubs, Finland is not a leading magnet for direct foreign investment (FDI). The value of FDI to Finland has been stable at around EUR 70 billion over the last ten years, most of this originating from neighboring Scandinavian countries, the UK and the US. Whilst this has lagged behind outward FDI (averaging

around EUR 100 billion), the gap is closing and the number of new foreign-owned firms in Finland has been growing year on year.

However, Finland cannot hope to supply all the specialized talent that its now diversified and globalized economy requires. Moreover, as in many other developed countries, Finland's population is aging—all age groups of the population are declining except for the 65+ age group (Heikkilä, 2012). Finland until the 1980's was traditionally a land of emigration, but the tide has turned; its multinational companies are strong advocates for importing talent, especially in the technology-driven domain. There is evidence to suggest that immigrants are more likely than locals to be innovative and entrepreneurial, and that migrants bring new perspectives and thereby creativity to teams (Litan, 2015; see Evans & Rodiguez-Montemayor, 2016 for a review of such research).

Attracting skilled immigrants has become a concern across Europe, particularly in the Nordic region (see European Migration Network, 2013; 2017). However, external attraction is a problematic area of MTM for Finland. While 5% of the population is Swedish speaking (Finland was part of Sweden for 600 years and the constitution anchors Swedish as an official language alongside Finnish), only 6% of its citizens are foreign-born (compared to 9% in Denmark and 16% in Sweden). To take other small countries that are high in the GTCI talent league, 43% of the population of Singapore were born abroad, as were 27% in Switzerland.

Finland is not a particularly attractive country to talent from abroad, captured by a brain gain ranking of #52 out of 118 countries. Lanvin, Evans and Rodriguez-Montemayor (2016) assess the factors associated with country attractiveness. At the head of the list is language. Finnish is very different from all other languages except Estonian, and also difficult to learn. That Finns are generally fluent in English partly compensates for this, although the fact remains that fluency in Finnish is often a pre-requisite for employment. For young talent, opportunity comes next while lifestyle also counts, particularly for those with families. As any recent visitor to Helsinki knows,

the Finns take city design and architecture seriously, trying to compensate for the long arctic winter in making the venue more seductive. Indeed, Helsinki ranks #3 out of 45 global cities, including London, Paris, Singapore and Shanghai, on INSEAD's new City Talent Competitiveness index.[8] The introduction of a flat 35 percent tax rate for foreign "key employees" during their first four years in the country has been one measure to make Finland more attractive to international talent. Further, a number of English-speaking schools have been established, and public services are offered in English. Nonetheless, its remote location and the dark, harsh winters are additional factors that make attracting talent to Finland a challenging endeavor.

Countries such as the US with world-class institutes of higher education are at an advantage in attracting creative talent, and here Finland also tries hard to capitalize on the solid quality of its universities (#17 in its university ranking and #23 in the world on the number of international students), where an increasing share of the programs are taught in English. The quality of management practices is a less widely recognized factor of attraction and retention, sharply acting in favor of Finland (and indeed other Nordic countries), because of their merit-based professionalism in management and their attention to employee development. As described in the next sub-section, our blurb for capturing this is that "if you want to live the American dream of rags to prosperity, then go Nordic".

3.2.3. Attracting Talent Internally

An essential dimension of MTM is the openness of the talent pool in terms of gender, ethnic background or religion, and social mobility. In some countries, if one is born female or from a poor family within an ethnic minority, there is a very low probability of ever receiving an education that will permit entry in the talent pool. The inclusive-exclusive dimension of TM (Collings & Mellahi, 2009) is particularly salient at the country level of analysis.

Like other Scandinavian countries, Finland upholds strong egalitarian values. One of the Nordic hallmarks is an explicit value attached to *social mobility and equal opportunity*. People should be able to enter the talent pool, to go from rags to prosperity (if not riches) regardless of their birth, social origins, gender or ethnic background. This lies deeply engrained in the design of the Finnish educational system (which is free from first grade through to a university Master's degree), and in other artifacts of Finnish culture. Indeed, Finland is the top country in the world on World Economic Forum measures of social mobility. This is a salient issue for analysis at a time when deep divisions between the haves and have-nots exist, which reflect widening inequalities in wealth and opportunity in virtually all countries of the world (Piketty, 2014).[9]

Finland has for a long time done well in various aspects of gender equality. It was the first country in Europe to give women universal voting rights and today ranks #4 on business opportunities for women in the GTCI. Finland is closing the difference in earnings between men and women, moving from #20 to #8 in a recent 2017 WEF Report.

3.2.4. The Three Elements of Growing Talent

As mentioned above, developing talent has three dimensions: *formal education* (which receives a lot of attention since it is most easily measurable in ways that facilitate comparison and analysis), *lifelong learning* (that becomes important in a rapidly changing world of innovation), and *learning through experience* (often ignored since it is difficult to measure).

Formal education. We discussed earlier some of the features of the formal educational system in Finland—#1 in the world on the GTCI (though the Netherlands excels more on overall talent development). Its performance on the OECD's PISA assessment positions Finland's approach to education as one of the world's benchmark models. In a comprehensive review of the Finnish education system and why it has become so successful, Sahlberg (2015) identifies a number of

areas where Finnish education reform has taken a different direction from mainstream global trends. The main differences are collaboration rather than competition between schools, personalized as opposed to standardized learning, a focus on the whole child instead of on literacy and numeracy, trust-based responsibility not test-based accountability, and equity of outcomes over school choice. We extract from this three distinguishing features that we believe hold important lessons for MTM.

The first, as discussed earlier, is the **education system's inclusive emphasis on opportunity for all**, in a country where equity and egalitarianism has been a cornerstone of education policy since the early 1970's. Equity in education is reflected in the high degree of individual guidance, personalized help, and teaching support for all students (particularly those who struggle and those who have learning disabilities), facilitated by small class sizes of 20-30. Further, performance differences between schools in Finland are among the smallest in the world (Sahlberg, 2007).

The second is **teacher professionalism**. The teaching profession enjoys a high status in Finnish society, and teachers are paid reasonably well at just above the national average salary. The standards are high: teachers need to hold a Master's-level degree before securing a permanent position in a Finnish school. However, the competition for places is tough and has been getting tougher. In 2014, there were 8,400 applications for schoolteacher university programs and only 800 study places on offer.[10] If accepted, the student gets to benefit from a high-quality teacher education program. Another feature that makes the teaching profession attractive (and the education system itself so effective) is that teachers in Finland are allowed—even expected—to exercise their professional judgment independently and collectively in determining the curriculum, student assessment and school improvement. There is also a strong emphasis on the continuous professional development of teachers all the way down to kindergarten level.

The third feature is the attention to **maintaining an attractive vocational educational system** in parallel with the generalist academic track. In many countries, vocational education becomes the route for those that failed. Students and families will be put off vocational education if it is seen as a cul-de-sac, a one-way street with no return (one of the keys to the success of vocational education in Switzerland is the multiple cross-over paths between vocational and generalist or higher education at different age levels (see Lanvin, Evans & Rasheed (2014)). In Finland it is formally possible to enter tertiary education with a vocational degree, although this is difficult in practice since the vocational study path does not prepare the student for the university entrance exams. It is also possible for the best graduates of the universities of applied sciences to pursue university Master's and even doctoral degrees. As in Switzerland there is close collaboration between schools, trade unions, and employees—another critical element in ensuring that formal education is turned into employability, supplying the short- and long-term job needs. Indeed, Finland ranks #4 in terms of the relevance of its education system to the needs of the economy.

When it comes to tertiary or higher education, Finland is also high on the scoreboard. In terms of tertiary enrolment Finland ranks #3 in the world on the GTCI, and in tertiary education expenditure it is #8. The country has chosen to focus heavily on engineers in its university-level training, with 21% of the total number of master's graduates majoring in engineering or technology.[11] It has also graduated a sizeable number of PhDs during recent years, considerably more per capita than its Nordic neighbors. These investments are evident in Finland's positioning in the GTCI: it is the world leader on the availability of scientists and engineers, doing very well in terms of the number of researchers (#3) as well as on the quality of its scientific institutions (#10). Finland also ranks well on its universities (#17). Overall, public investments in the university system increased until 2015 when, in the light of a weakened economy and amidst other

austerity measures, the Finnish government announced that basic funding to the country's 15 universities and 25 universities of applied sciences would be reduced and research funding cut.

The establishment of Aalto University in 2010 through a merger of the Helsinki University of Technology, the Helsinki School of Economics, and Helsinki's University of Art and Design is an example of public-private initiative to strengthen the innovation ecosystem in Finland, along with its competitiveness. Established with generous financial support from both public and private funds, the vision of the University is "*an innovative society*", while its mission is "*shaping the future: science and art together with technology and business*." Multidisciplinarity in both research and teaching is at the core of the university's strategy, with experiential challenge-based learning being key to how Aalto University strives to develop 'game changers' for the future.

The eco-system of entrepreneurial activities in and around Aalto University—exemplified by the start-up event Slush, the Aalto student entrepreneurship society, and the Aalto Start-up Sauna accelerator program—has recently spread to other universities and universities of applied sciences in Finland. These changes have led to a gradual increase in Finnish entrepreneurial intentions and greater start-up activity, as measured by Total Early-stage Entrepreneurial Activity (TEA).[12]

<u>*Continuous education and development*</u> In the 20th century factory age, one could learn a trade or domain of expertise at school, along with the basics literacies, that would then serve for progression through a lifelong career; but no longer. In our fast-moving age of knowledge-based innovation, people can be expected to change careers many times during their adult lives (emerging spiral careers are described by Gratton (2011); see Evans & Rodriguez-Montemayor (2017) for a review). For example, the German apprenticeship system has come under critique because skilled technicians are not adequately equipped to adapt and reskill themselves when

technologies change (Hanushek, Woessman & Zhang, 2011). Continuous adult development becomes critically important.

Finland performs reasonably well when it comes to continuing education, adult learning and development, and learning through experience, although by Scandinavian norms it is the follower and not the leader. It ranks #11 on continuous education, albeit some distance behind Switzerland—the model in this arena of MTM. When it comes to learning through experience (what the GTCI calls *access to growth opportunities*), the Nordics are the clear global benchmark, with Denmark as the exemplar—but Finland trailing at #16. Learning through experience is measured indirectly with indicators of delegation of authority,[13] use of networks (learning from each other), and voice or freedom of expression.

3.2.5. Retaining talent

Finland is doing reasonably well in terms of talent retention, judging by its GTCI scores. Its environmental performance is stellar by international comparisons, and it does well in terms of sustainability (#10) and personal safety (#12), having recently come out as the safest country in the world according to the 2017 Travel and Tourism Competitiveness Report. While it does very poorly when it comes to taxation (#88 out of 118 countries), this is an integral element of the welfare model that characterizes the Nordic countries. Nonetheless, the comparatively small salary differences in Finland and the high taxation may be viewed as potential challenges when it comes to retaining top performers with ample international opportunities. Indeed, cuts in the university sector (as well as in the partially publically funded research institutes in Finland) have triggered some scholars to relocate to universities in other countries, with their decisions being highly publicized in Finnish media.[14]

4. FINLAND THROUGH THE LENS OF INDUSTRY 4.0

The work scene is undergoing significant, potentially massive, change that may be transforming talent management. What has been happening during the last 15 years in a largely invisible way is that machines (digitalization, algorithms, robots, AI) have been replacing work, a trend headlined recently as Industry 4.0 or the fourth industrial revolution (Schwab, 2016).[15] What is clear from research is that most routine work can be better done by machines (Autor, 2015; Brynjolfsson & McAffee, 2014; Frey, Osborne & Holmes, 2016; see Evans & Rodriguez-Montemayor (2017) for a research review)—not just manual work but also work in professions such as law, accountancy, journalism and consulting (Suskind & Suskind, 2016).

This has already resulted in a hollowing out of work in the economies of developed nations (Holmes & Mayhew, 2014)—the disappearance of mid-skill jobs. Our recent research commentary comes to the conclusion that it is important to think beyond automation, to understand the way in which organizations are changing in the platform economy, and the way that free agents replace salaried employment (over 30% of the population in Europe and North America earn all or part of their income as freelancers, in a world where getting a mortgage, car loan or unemployment benefit is typically dependent on being a salaried employee) (see Evans & Rodriguez-Montemayor, 2017). Work will not disappear, contrary to some dire forecasts such as Ford (2015). While certain less skilled jobs will remain (the hairdresser is the prototypical example, as is the medical assistant), countries have to help their adult populations understand that their children will have three, four, five or more different careers during their lives (the US Department of Labor estimates that 63% of children going into high school today will graduate in 2025 into jobs like drone manager and human technology integration facilitator that do not exist today).

Educational systems must be reformed to facilitate an up-skilling of the population—mastering literacy, math and scientific understanding at primary school, and then developing the knowledge/skills that will make them employable through secondary and university education, together with project skills and the interpersonal skills for the teamwork that collaborative

innovation and entrepreneurship requires, complemented by broad interdisciplinary understanding.[16] We hear many debates on the respective virtues of a broad liberal education *versus* a specialized education that makes people employable (GK versus vocational/technical skills in GTCI terms). But the mindset required by our globalized technology-driven 21st century world is not *either/or* thinking but *both/and* duality (Evans, 2000; Pucik, Evans, Björkman & Morris, 2017)—people in the job market need both the technical skills that makes people employable AND the broad project and collaborative skills that allow them to contribute to a world of innovation and entrepreneurship.

These are immense challenges for **educational systems**. The traditional school classroom looks like a fast disappearing 20th century factory, while scholars point out that a good playschool looks more like a modern workplace. Higher education must make people employable (too many graduates in too many countries cannot find jobs), but graduates must also be equipped for cross-disciplinary and cross-functional collaboration. States need to expand and fund continuous education. Another challenge is changing **employment systems** so that they reflect the realities of a world when many people are free agents; countries have to learn how to facilitate the necessary transitions, job/career changes, and mobility of people through "active labor market policies" such as those exemplified by the Danish Flexicurity system described earlier (Kristensen, 2016).

The overall implication of all of this is that will require **strong ecosystem partnerships** between government or municipalities, business and employer federations, educational institutions, and labor as represented by social partners such as unions.

The GTCI 2017 Report assessed the Talent Readiness for Technology of its 118 nations on indicators of these three challenges, along with measures of various technological competencies such as virtual work, collaboration, and personal innovativeness (see Evans & Rodriguez-Montemayor (2017) for details). On these criteria, ten out of 118 countries are relatively well positioned in terms of talent readiness for technology—but not Finland.[17]

Finland is the world's leading country, along with Singapore, on INSEAD's sister index, the Global IT Readiness Index or GITR[18], which focuses on infrastructure and capability dimensions of the digital economy as well as talent considerations. But the glaring weakness of Finland as it faces up to the disruptive challenges of Industry 4.0 is the rigidity of its labor market, as discussed earlier, coupled with the difficulties that it faces in attracting and retaining the specialized talent that its burgeoning technology industry requires—in addition to its lag behind the other Nordic countries in continuous education and learning through experience. Consequently it trails behind Denmark on talent readiness for technology, both as measured by the GTCI and by EU comparisons (EurActiv, 2016). Consultants forecast that Finland may take a lead in the emerging technology-driven economy of the 21st century, building on its technology initiatives, the strength of its educational system, and the larger size of its firms than Denmark—but we would add only **if** it can overcome these hurdles.[19] [20]

The importance of ecosystem collaboration

Will Finland overcome these hurdles? This is not just a crystal ball question—we have substantive grounds to be cautiously optimistic. The evolution of TM in a society requires more than sound models backed up by solid research. As noted above, it requires close partnership between the different stakeholders that constitute a society—between the government and/or municipalities, business and their representatives, labor representatives such as trade unions, and educational institutions.

Consider for example the vocational educational system that is one of the powerhouses of GTCI's talent leader, Switzerland. Vocational education in Switzerland is not just a policy issue of starting to think about one's vocation at age 12, as Swiss schoolchildren are required to do. "Thinking of one's vocation" between ages 12 and 15 means carefully organized visits to factories, research labs, banks and hospitals so that "vocation" becomes tangible for school children—and

aligned with realistic industrial policy scenarios. Seventy per cent of Swiss school children choose the vocational apprenticeship track at age 15 (three days of work and two days of schooling). The vocational visits, the design of apprenticeship programs, the work and salary conditions and accompanying teaching are constantly evolving and changing, requiring close on-going collaboration between businesses, industry sectors, local schools, cantons and government, carefully steered and orchestrated by the Swiss Federal Institute for Vocational Educational and Training (SFIVET) that is chaired by a former Swiss minister of education. The devil lies in such granular details that have a 90-year history in Switzerland.

Close collaboration between stakeholders underlies the success of Swiss vocational education, resulting in high employability. Indeed such collaboration between the stakeholders in national or city ecosystems underlies most successful national policies linking talent management to short and long term prosperity (Williamson & De Meyer, 2012).[21] Finland leads the Nordic countries in terms of government-business relations (#5 out of 118 countries), and this is backed up by our experience.[22] A group encompassing government ministers, university vice chancellors, military generals, CEOs and bishops—all sectors of society—visited INSEAD and other European organizations in the mid-90s on a study tour to weld agreement on how to get Finland out of the crisis that the demise of the Soviet Union had brought on. And for many decades, an exclusive invitee-only National Defense Course has brought together leaders from different sectors of society. On the other hand, the quality of labor-employer cooperation is the lowest among the Scandinavian countries (#20), perhaps helping to account for disappointing progress in terms of employment policy in Finland.

5. CONCLUSION

With this assessment of macro talent management (MTM) in Finland, we have focused on a country that over seventy years went from being a predominantly agricultural nation to a high-tech

service economy that leads the world on many indicators of economic prosperity and civic sophistication. The Global Talent Competitiveness Index (GTCI) provides us with a useful lens for analysis of a country's ability to enable, attract, develop and retain human capital, and we have used this index to assess the lessons from Finland's evolution.

This analysis highlights three features of MTM in Finland. The first is the role of education as a talent motor—notably paying attention to the balance between technical/vocational education and the global knowledge skills associated with leadership, entrepreneurship and innovation. Second, egalitarian values permeate education and most other aspects of Finnish MTM, from social mobility to gender equality. Third, close collaboration between social partners in the state also helps explain Finland's successful development, and notably how the country surmounted various times of turmoil, from the mid-90's through to the crisis brought on by Nokia's decline at a time of global recession. Balanced education, emphasis on egalitarianism, and close ecosystem collaboration help explain why Finland is a country where companies find it easy to find skilled employees.

We have also highlighted two main challenges that Finland confronts today—that of building and consolidating the technology sector as well as the entrepreneurial ecosystem that came into being with the decline of Nokia's mobile phone business; and confronting the technology transformations in the talent and work scene that are underway today as machines take over routine work. Despite Finland's strengths, it faces three risks to its prosperity in the MTM domain. The first is the risk of slow responsiveness due to a comparatively inflexible labor market. The second is the need to direct more attention to continuing education and life-long learning, and to active labor market practices that will help people adapt to accelerating change. And the third is the difficulty that Finland faces in attracting specialized talent from abroad, at a time when many nations are waking up to the fact that the declining local populations cannot staff all the talent needs. Such talent considerations have important implications for policy makers as well as labor

economists and TM scholars interested in shedding light on factors contributing to long-term country competitiveness.

ENDNOTES

[1] The Central Statistical Office of Finland provides a comprehensive list of measures where Finland is among the best in the world (e.g. society, equality, environment, education). See: http://www.stat.fi/ajk/satavuotiassuomi/suomimaailmankarjessa_en.html

[2] Malaysia, Ireland and Norway are other countries where companies report it to be easy to find skilled employees, as evaluated by the WEF Opinion Survey.

[3] When it comes to the skills gap in the West, there were 15 million unemployed people in North America and Western Europe in 2013, including youth unemployment exceeding 25% in countries such as Spain (McKinsey Global Institute, 2012; see also Cappelli (2014)). On the other hand, there were more than 5 million vacant jobs in industry and the service sector—jobs going vacant because people did not have the required skills (Lanvin, Evans, Mettgenberg-Lemière & Merdikawati, 2013).

[4] A full account of the conceptual reasoning and empirical basis for GTCI can be found in Evans, Rodriguez-Montemayor & Lanvin (forthcoming).

[5] The conceptual framework behind the Global City Talent Competitiveness Index (GCTCI) is outlined by Lanvin (2017), along with the pilot ranking of 45 cities on four continents. While this index will be improved with better measures and broader coverage, the beta version results suggest that mid-sized well-connected cities may have advantages in terms of talent competitiveness over the metropolises that hitherto have captured attention. Copenhagen is ranked #1 out of 45 cities, and Helsinki is #3 (more or less equal to San Francisco and well above New York and London).

[6] See the discussion and references in Section 2.1 on the skills gap.

[7] The definitions of variables, sources, as well as data tables and country profiles can be found in the full GTCI report (Lanvin & Evans, 2017); also available online at: http://www.gtci2017.com

[8] Lanvin (2017). See earlier discussion on this beta index at the outset of Section 3.

[9] This was the theme of the WEF Annual Meeting in Davos in January 2018 : « Creating a shared future in a fractured world ».

[10] University of Helsinki (2014), https://www.helsinki.fi/fi/verkostot/vakava/vakava-koe/tilastoja

[11] Eurostat reports that 20.7% of Finnish students graduated in 2013 in engineering, manufacturing and construction, the highest proportion in Europe and ahead of Germany (20.1%)(http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Distribution_of_tertiary_education_graduates_by_field,_2013_%28%25%29_ET15.png

[12] Global Entrepreneurship Monitor (Global Report 2016-17), http://www.gemconsortium.org. This recent ecosystem development is not yet seen in the GTCI data on 'New product entrepreneurial activity' (Finland is #52), operationalized as the percentage of revenues coming

from products/services introduced in the last 4 years. We predict that Finland will improve on this measure in the years ahead, though the rigidity of the labor market may act as a brake.

[13] The rationale for this proxy is that with high delegation people are more likely to learn from experience, especially if it accompanied by training and coaching, which the GTCI also measures. With low delegation, people simply follow orders and rules and learn little. There is wide variation on this variable across countries.

[14] Figures from Statistics Finland show that the number of PhD-educated Finns who have moved abroad increased by 37% between 2011 and 2015 (compared to a 38% decrease in PhD-educated immigrants over the same period).

[15] The other three industrial revolutions, as viewed by Schwab (2016), were the mechanical production revolution of the late 18th century, the mass production revolution of the late 19th century, and the computer revolution of the 1960s.

[16] The OECD's PISA recently announced the extension of its student assessment on math, literacy and problem solving to include collaborative problem solving (see http://www.oecd-ilibrary.org/education/collaborative-problem-solving_cdae6d2e-en)

[17] These ten countries (listed in order of their overall GTCI ranking) are Switzerland, Singapore, the United Kingdom, Denmark, the Netherlands, Ireland, Canada, New Zealand, the United Arab Emirates, and Bahrain. The United States does not appear on this list because of the variance in this large and complex country, compromising cities that are clear technology-talent leaders and states that are ill prepared (see discussion on ecosystems in the next sub-section).

[18] For GITR, see Baller, Dutta and Lanvin (2016).

[19] See BCG (2016).

[20] It is worth drawing the parallel with another country, namely South Korea, that scores high on technological sophistication but which fails to capture the prosperity benefits because MTM, including education, lags far behind. South Korea ranks as the world leader on, for example, broadband availability but only #29 on the GTCI.

[21] The importance of ecosystem collaboration is evidenced in Asia by the success of the Indian IT/business process outsourcing industry (which built partnership with NIIT's (national institutes of information technology) across the provinces of India to supply its growing needs for skilled labor; and by the success of Singapore in building competence in aircraft engine servicing through a partnership (see Kwan & Siow, 2013).

[22] The fact that Scandinavia in general and Finland in particular is largely free of corruption is important to note in this context. Whenever business and government get together, there is a danger that money passes under the table. This fear of corruption blocked close relationships between business and government for many decades in Denmark, in the experience of one of the authors.

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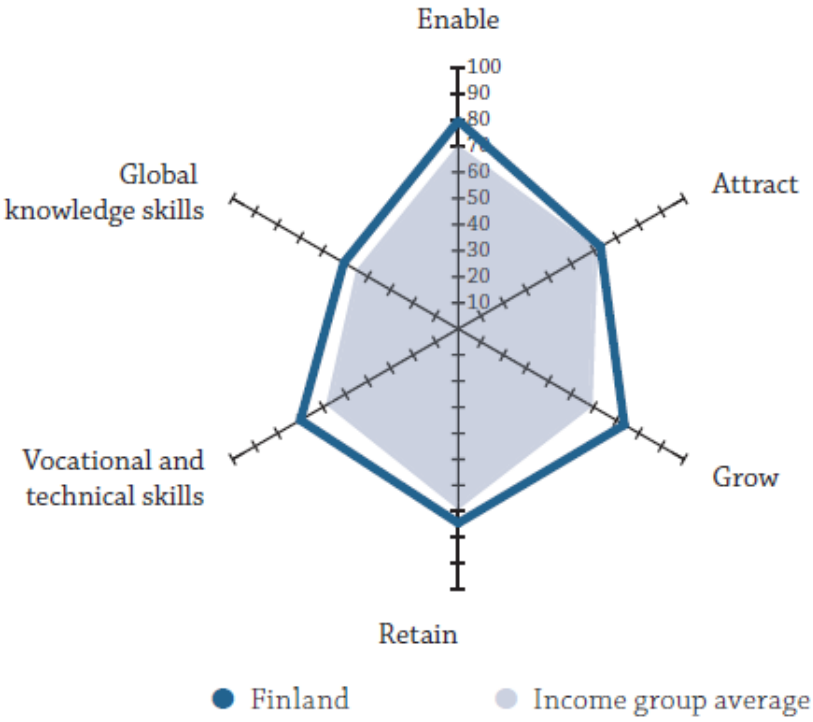
Figure 7.1. Finland's GTCI 2017 country profile by pillar*



* Income group used to compare a country with its income group peers. Income group (in this case the 'high income' category) is based on the UN classification.

Source: Lanvin & Evans, 2017.

Table 7.1. GTCI Rankings of Top Ten Countries (out of 118): Overall and by pillar

Country	GTCI rank	ENABLE	ATTRACT	GROW	RETAIN	VT SKILLS*	GK SKILLS*
Switzerland	1	2	5	5	1	3	7
Singapore	2	1	1	13	7	8	1
UK	3	8	11	7	5	33	2
USA	4	11	16	2	8	20	3
Sweden	5	9	13	8	4	10	11
Australia	6	17	6	9	14	25	5
Luxembourg	7	21	2	17	3	24	12
Denmark	8	3	15	3	15	17	14
Finland	**9**	**6**	**21**	**4**	**9**	**2**	**18**
Norway	10	13	14	10	2	6	22

* VT Skills = Vocational/Technical skills; GK = Global Knowledge skills

Appendix 7.1. Finland's Profile on the GTCI 2017 (Lanvin & Evans, 2017)

Indicator (score)	**Rank**
1 ENABLE (79.76)	**6**
1.1 Regulatory Landscape (94.39)	***2***
1.1.1 Government effectiveness (94.88)	3
1.1.2 Business-government relations (91.67)	5
1.1.3 Political stability (94.68)	5
1.1.4 Regulatory quality (92.07)	3
1.1.5 Corruption (98.65)	2
1.2 Market Landscape (75.56)	***11***
1.2.1 Competition intensity (62.65)	82
1.2.2 Ease of doing business (87.86)	9
1.2.3 Cluster development (65.10)	15
1.2.4 R&D expenditure (78.57)	4
1.2.5 ICT infrastructure (78.52)	28
1.2.6 Technology utilisation (80.63)	10
1.3 Business and Labour Landscape (69.33)	***29***
Labour Market Flexibility	
1.3.1 Ease of hiring (55.67)	70
1.3.2 Ease of redundancy (80.00)	46
Management Practice	
1.3.3 Labour-employer cooperation (68.98)	20
1.3.4 Professional management (86.44)	3
1.3.5 Relationship of pay to productivity (55.58)	38
2 ATTRACT (63.05)	**21**
2.1 External Openness (42.59)	***40***
Attract Business	
2.1.1 FDI and technology transfer (56.55)	70
2.1.2 Prevalence of foreign ownership (64.86)	45
Attract People	
2.1.3 Migrant stock (12.51)	52
2.1.4 International students (36.78)	23
2.1.5 Brain gain (42.24)	52
2.2 Internal Openness (83.52)	***4***
Social Diversity	
2.2.1 Tolerance of minorities (96.67)	3
2.2.2 Tolerance of immigrants (76.76)	32
2.2.3 Social mobility (89.98)	1
Gender Equality	
2.2.4 Female graduates (78.00)	33
2.2.5 Gender earnings gap (81.27)	20

Indicator (score)	Rank
3 GROW (73.53)	**4**
3.1 Formal Education (75.59)	***1***
Enrolment	
3.1.1 Vocational enrolment (100.00)	1
3.1.2 Tertiary enrolment (82.07)	3
Quality	
3.1.3 Tertiary education expenditure (49.14)	8
3.1.4 Reading, maths, science (85.43)	4
3.1.5 University ranking (61.32)	17
3.2 Lifelong Learning (72.13)	***11***
3.2.1 Quality of management schools (74.02)	12
3.2.2 Prevalence of training in firms (n/a)	n/a
3.2.3 Employee development (70.24)	10
3.3 Access to Growth Opportunities (72.86)	***16***
Networks	
3.3.1 Use of virtual social networks (89.41)	10
3.3.2 Use of virtual professional networks (36.65)	26
Empowerment	
3.3.3 Delegation of authority (76.99)	5
3.3.4 Personal rights (88.40)	12
4 RETAIN (74.44)	**9**
4.1 Sustainability (66.80)	***10***
4.1.1 Pension system (89.90)	18
4.1.2 Taxation (38.26)	88
4.1.3 Brain retention (72.25)	7
4.2 Lifestyle (82.08)	***15***
4.2.1 Environmental performance (100)	1
4.2.2 Personal safety (93.70)	12
4.2.3 Physician density (37.36)	35
4.2.4 Sanitation (97.27)	35
5 VOCATIONAL AND TECHNICAL SKILLS (69.91)	**2**
5.1 Mid-Level Skills (59.93)	***17***
5.1.1 Workforce with secondary education (61.70)	26
5.1.2 Population with secondary education (54.35)	31
5.1.3 Technicians & associate professionals (80.20)	13
5.1.4 Labour productivity per employee (43.47)	20
5.2 Employability (79.90)	***1***
5.2.1 Ease of finding skilled employees (76.79)	1
5.2.2 Relevance of edu system to the economy (78.57)	4
5.2.3 Availability of scientists & engineers (84.33)	1
5.2.4 Skills gap as major constraint (n/a)	n/a

Indicator (score)	Rank
6 GLOBAL KNOWLEDGE SKILLS (50.69)	**18**
6.1 High-Level Skills (63.54)	***5***
6.1.1 Workforce with tertiary education (65.37)	14
6.1.2 Population with tertiary education (38.26)	25
6.1.3 Professionals (64.55)	12
6.1.4 Researchers (86.78)	3
6.1.5 Senior officials and managers (29.21)	46
6.1.6 Quality of scientific institutions (79.30)	10
6.1.7 Scientific journal articles (81.34)	7
6.2 Talent Impact (37.84)	***30***
6.2.1 Innovation output (70.20)	10
6.2.2 High-value exports (20.77)	46
Entrepreneurship	
6.2.3 New product entrepreneurial activity (40.67)	52
6.2.4 New business density (19.73)	32