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INVESTING IN HUMAN CAPITAL AS A KEY DRIVER OF ECONOMIC DEVELOPMENT: LESSONS FROM SINGAPORE FOR ALGERIA'S ECONOMIC TAKE-OFF

Karima LARABI [1*]

Faculty of Law and Political Science, Department of Political science, University of Tizi-Ouzou (Algeria)

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Abstract:

This paper addresses Singapore's experience in investing in human resources for economic development. Singapore represents one of the pioneering cases that witnessed a rapid transformation from a poor, low-income country after its independence in 1965 to a high-income country with very positive economic indicators in terms of business environment, infrastructure, education, and health.

The study concludes that when Singapore exploited and developed the only resource it possesses, it obtained significant economic returns. Algeria should follow this method by focusing on human development (education, health, training, etc.), whose value increases over time, unlike natural and material resources, to achieve a real economic take-off and move toward becoming an economic power with confident steps.

Key Words:Singapore's experience;Human capital,Algeria's economy; Economic take-off; Economic development

الاستثمار في المورد البشري كمحدد رئيسي للتنمية الاقتصادية في سنغافورة: الدروس المستفادة لإقلاع اقتصادي في الجزائر؟

ملخص: تعالج هذه الورقة تجربة سنغافورة في استثمار المورد البشري من أجل التنمية الاقتصادية، حيث تعتبر سنغافورة من التجارب الرائدة والتي شهدت تحولا سريعا من دولة فقيرة ضعيفة الدخل بعد استقلالها سنة 1965، إلى دولة مرتفعة الدخل وذات مؤشرات اقتصادية جد إيجابية على مستوى بيئة الأعمال والبنية التحتية والتعليم والصحة. وتوصلت الدراسة إلى نتيجة مفادها أن سنغافورة عندما استغلت وطورت المورد الوحيد الذي تحوز عليه تحصلت على عوائد اقتصادية مهمة، وعلى الجزائر أن تحذو حذوها بالتركيز على صناعة البشر (

* karima.larabi@ummto.dz

تعليم، صحة، تدريب..) التي تزيد قيمتها مع الوقت عكس الموارد الطبيعية والمادية، لإحداث إقلاع اقتصادي حقيقي والانتقال إلى قوة اقتصادية بخطى واثقة.

الكلمات المفتاحية:التجربةالسنغافورية، رأس المال البشري، اقتصاد الجزائر، الإقلاع الاقتصادي، التنمية الاقتصادية.

Investir dans le capital humain : une clé pour le décollage économique de l'Algérie(Enseignements de Singapour)

Résumé :

Cet article aborde l'expérience de Singapour en matière d'investissement dans les ressources humaines pour le développement économique, car Singapour est l'une des expériences pionnières qui a connu une transformation rapide d'un pays pauvre à faible revenu après son indépendance en 1965, à un pays à revenu élevé avec des indicateurs économiques très positifs en termes d'environnement des affaires, d'infrastructures, d'éducation et de santé.

L'étude conclut que lorsque Singapour exploite et développe la seule ressource qu'elle possède, elle obtient des retombées économiques importantes. L'Algérie devrait suivre cette méthode en misant sur l'industrie humaine (éducation, santé, formation…etc.) dont la valeur augmente avec le temps, contrairement aux ressources naturelles et matérielles, pour réaliser un véritable décollage économique et se diriger vers une position de puissance économique à pas assurés.

Mots Clés *:*L'expérience de Singapour ; le capital humain; l'économie algérienne ; le décollage économique ; le développement économique.

* karima.larabi@ummto.dz

Introduction:

Investing in human capital is a key requirement for economic development, particularly in the age of technology, information, and the knowledge economy. Educated, trained, and healthy human resources lead to efficient agriculture, industry, and services, and contribute to planning and implementing sound economic policies and, consequently, a prosperous economy based on innovation and competitiveness. Singapore's experience is pioneering in this area; the country has been aware of the value of this equation and has moved since its independence to develop education as the key to building a strong economy. It allocated a significant portion of its budget to this effort, despite its lack of natural resources and the difficult economic and social situation it experienced at the time of independence.

The results of investing in human capital in countries appear in the medium and long term. Hence, international organizations, led by the Organization for Economic Cooperation and Development and the World Bank, have been interested in urging governments to increase the pace of investment in people through periodic reports with the aim of achieving growth and equity. In this field, Singapore stands out as one of the world's economies most interested in developing human capital (ranking first in the World Bank's Human Capital Index for 2021), which has been clearly reflected in its economic growth.

Research Question: How did human capital contribute to the development of Singapore's economy? And how can Algeria benefit from this experience to achieve economic take-off?

Methodology of the study: this study adopts a descriptive-analytical approach that describes the phenomenon broadly and seeks to further analyze it with the aim of addressing the research problem.

Objectives of the study:this study aims to present Singapore's pioneering experience in investing in people for development and to identify the most significant lessons for Algeria to achieve real and sustainable economic take-off.

THE FIRST TOPIC:

Human Capital and Economic Development: What is the Relationship?

This section addresses the definition of human capital and the importance of investing in it to meet the economic development challenges facing countries.

First requirement: Human capital concept.

The concept of "human capital" is widely used in economics as a factor of production alongside physical capital.Some trace its history back to the work of Adam Smith in the eighteenth century.[1]As for contemporary works[2], it returns to the analyses of development economist Theodore Schultz (1961) and Gary Becker (1964) in his book "Human Capital".[3]

After the theories that focused on material factors as a driver of economic development became widespread in the 1940s and early 1950s, attention gradually shifted to focusing on non-material factors such as education, knowledge and health, and the ideas of Schultz and his colleagues emerged, which developed into the "Human Capital Theory" revolutionizing the economic thought. This does not negate the fact that the importance of human resources in the production process had been reached by socialists before, such as Harbison (the human element is the active factor of production that creates material capital and exploits natural resources).[4] Then, what is meant by this term?

Fitz-enz defines human capital as "*the experiences, knowledge, skills and abilities that individuals possess and use in production processes, which can be measured through training, development and incentive systems*."[5]A definition links human capital to work and production within the organization.

Schultz provides a more comprehensive definition:

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[1]OCDE, **l'investissement dans le capital humain, une comparaison internationale**, centre pour la recherche et l'innovation dans l'enseignement, 1998, p. 09.

[2] The term "human capital" was first used by Jacob Mincer in an article published in 1958, and has since reappeared strongly with the work of Schultz, Becker and others in the 1960s.

[3]Benjamin Vignolles, « Le capital humain: du concept aux théories », **Regards croisés sur l'économie**, n°12, 2012, p. 37.

[4]Amira Touati, "Human Capital: Its Concept, Theories, Problems and Methods of Preparation", **Review of Applied Economics and Statistics**, No. 22, December 2014, pp. 185-187.

[5]Ahmed Al-Maaniet al, **Contemporary Administrative Issues**, 2nded, Amman: Wael Publishing House, 2016, p. 245.

"Human capital is the sum of human energies that can be used to exploit all economic resources, and represents the total, quantitative and qualitative sum of human forces available in society. If it represents the mental competencies and scientific levels of the population, it is determined by the educational level associated with experience and knowledge, but if it is total, it is calculated by the total society of the population."[1]

For its part, the Organization for Economic Cooperation and Development (OECD) defines human capital as "the individual's total knowledge, skills, competencies, and characteristics that help to achieve personal, social, and economic prosperity." It also describes it as "an intangible asset that strengthens or maintains productivity, innovation, and employability"[2].

These definitions confirm the importance of intangible assets—the knowledge, capabilities, and skills individuals possess—that can contribute to increasing the productivity and competitiveness of countries. They also indicate that the educational capabilities of individuals can be measured, developed, and compared with other organizational resources.

Second requirement: Investing in human capital to achieve economic development.

Economic studies consider spending on education and skill development as an investment, regardless of its costs, given the expected returns in the medium and long term. This is consistent with multidisciplinary studies on the pivotal role that children's early years play in shaping productive and innovative workers. On this basis, investing in people has become one of the most significant topics in contemporary public policy. International organizations such as the World Bank and the Organization for Economic Cooperation and Development have urged governments to invest in human resources.

The World Bank defines investmentin**Human Capital**as "the empowerment of people to enjoy good health and acquireknowledge and skills that they need to do with nowadays and future jobs, i.e. building a robust workforce able to develop and

[1]Hala Tariq Salah El-Din, "The Impact of Investment in Human Capital on the Optimal Exploitation of Natural Resources, an Applied Study on Egypt in the Period 2000-2018," **Journal of Political and Economic Studies**, Faculty of Politics and Economics, Suez University, Issue 04, Year 2, October 2022, p. 175.

[2]Stéphanie Fraisse-D'Olimpio, « Les fondements théoriques du concept de capital humain », **Ressources en sciences économiques et sociales**, article publié sur le site web :

- https://www.ses.ens-lyon.fr/ (publié le 11-05- 2009, consulté le 25-12-2024 à 20h :00).

adapt with the world change, particularlytechnological transformation and climate change"[1]. This definition summarizes the main objectives of investing in human resources. Countries' economies need healthy human energies capable of work and production, combined with education and training that provide skills and abilities to innovate and create competitive advantages in the present and future.

The term economic development refers to "the qualitative and structural change in a country's economy, including social and technological progress, with one of its most important indicators being the increase in per capita share of national product, which reflects growth in productivity and welfare, while simultaneously reducing poverty and eliminating inequality"[2]. Economic studies have proven the close relationship between investment in human resources and achieving economic growth and social welfare for countries. For example, Denson's study on the U.S. economy (1910-1960) indicates that education contributed directly to increasing national income (investment in education contributed around 23% of the rate of increase in the national product). Similarly, Norman Hicks' study (1960-1977) on the relationship between economic growth rates, literacy, and life expectancy concluded that 12 out of 83 developing countries with the highest rates of economic growth had higher rates of the studied indicators (literacy and life expectancy).[3]

It is worth mentioning that there are multiple theoretical models for measuring human capital: Becker's model focuses on investment in training, Romer's model emphasizes the importance of knowledge and technological progress, and Schultz combines sustainable development and human capital development. These theoretical approaches are reflected in various measurement indicators from a practical perspective.

The UNDP Human Development Index (HDI) has reported since 1990 on three dimensions: life expectancy at birth (health index), education level (adult literacy), and GDP per capita. The Human Capital Index, developed by the World Bank in 2018, focuses on health and education variables on a scale of 0-1, measuring the extent to which these factors contribute to the expected productivity level of the next generation workforce, thus enabling countries to adjust their human resource policies before losses occur. Meanwhile, the World Economic Forum's Global Human Capital Index focuses on long-term economic employment and the development and distribution of skilled labor, providing data for governments to address perceived

[1]Banque mondiale,« Investir dans le capital humain pour booster l'emploi », sur le site web :
- https://www.banquemondiale.org/(publié le 13-10-2023, consulté le 25-12-2024 à 12h 30).

[2]Ilham Nasser, "Economic Development," **Political Encyclopedia** , on the website:
- https://www.politicalencyclopedia.org/ (published on 02-02-2023, accessed on 25-12-2024 at: 21h:00).

[3]Amira Touati, **op.cit**, pp. 191-192

gaps between education and economic development[1]. All these indicators agree that investing in human resources from the early years has a positive impact on economic growth and development.

Perhaps the most noteworthy examples of returns on investment in human resources for economic development are Germany and Japan after World War II, along with Singapore, Malaysia, Hong Kong, and South Korea. This prompted the researcher to study the Singaporean model, which has been leading the world in recent years in the human capital index.

THE SECOND TOPIC:

Investing in Human Resources as a Pivotal Pillar for Economic Development inSingapore.

This section focuses on studying human resources in Singapore through the World Bank's Human Capital Index, updated in 2018, which examines two dimensions: education and health.

Education Policies, Investment in Singaporean People, and Their Economic Returns

Singapore was founded in 1819 as a British trading post, which was used to protect Britain's presence in India and expand its trade to China. Singapore's strategic importance increased after the construction of the Suez Canal in 1869, when it became an industrial and commercial link between Europe, Southeast Asia, and India. Singapore is a city-state with a small area; it consists of 63 islands with a total area of no more than 719 square kilometers. Its population was 1.7 million in 1960, reaching 5.9 million in 2023[2],making it one of the most densely populated countries in the world.

Singapore gained independence from Great Britain in 1963 and separated from the Malaysian Federation in 1965. However, the general conditions prevailing in the country were poor, with widespread poverty, illiteracy, and ignorance, while conflicts within society increased due to ethnic and religious diversity. Faced with these conditions, then-Prime Minister Lee Kuan Yew had no choice but to think deeply and strategically about how to lift Singaporean society out of its poor situation in all areas. He turned to planning economic development without ignoring the issue of

[1]Iman Muhammad Ibrahim Ali, "The Role of Human Capital in Achieving Economic Growth: A Case Study of Some Arab Countries," **Studies**, Volume 22, Issue 01, January 2021, pp. 38-40.

[2] Population- Singapore, **Trading economics**, on the site web:
- https://www.tradingeconomics.com/ (accessed on 02-01-2025 at: 10h :00).

investing in people, who were the country's only resource and the main driver of any development.

Singapore's investment in human capital has been highlighted by the political leadership's emphasis on the education sector, starting with the expansion of primary education in particular. Statistics show that the average adult in Singapore in 2010 completed 10.6 years of formal education, up from just 2.1 years in 1950. This is higher than the average for adults in formal education in East Asia, which is estimated at 7.9 years. Singapore achieved the objective of "universal primary education" by the 1970s, with 44% of students continuing to high school by the 1990s[1].

Singapore has also focused on global, vocational, and technical education, ensuring that investment in the learning economy helps build a strong vocational training system and a high-quality innovation system, while making universities responsive to the labor market. With its policy of attracting foreign direct investment, the government agreed with foreign companies to train twice the number of technicians required in their factories, allowing companies to select the top graduates while other qualified workers helped attract new investments. The government then merged various training centers to create the Technical Education Institute under the Ministry of Education[2.]

Through various writings on the subject of Singapore's education system, the pillars of its superiority can be identifiedas:

- Significant coordination between the education system and the requirements of economic development (export-oriented economy and the need for skilled workers, hence the focus on vocational and technical education directly after the primary stage, and the emphasis on integrating information technology to provide self-learning and expand learners' knowledge in the age of artificial intelligence and high-tech industries).
- English is the language of instruction in Singapore, but this does not prevent the teaching of mother tongues of different ethnicities alongside English. Despite criticisms about adopting the language of the former British colonizer as the primary language of instruction, the political leadership strategically chose the language of commerce and business, science, and international communication. This decision has enabled Singaporean students to benefit from Western science and technology.

[1]World bank, Human capital project, « Comment les pays développent le capital humain, appliquer une démarche qui intègre l'ensemble de l'administration publique », avril 2019, PP 01-02.
[2]**ibid**, p02.

- Deep consideration of primary education: six years of education focusing on languages, sciences, and mathematics, ending with an examination to determine the level, skills, and interests of each student. The system emphasizes students' thinking skills, directing them to appropriate specializations in the secondary stage (4-5 years), which consists of several tracks. The fast and integrated program provides opportunities for high-achieving students to advance. The post-secondary stage then paves the way for university education.
- Adopting innovative initiatives for improving education quality, such as the "Thinking Schools, Learning Nation" initiative in 1997 to develop a culture of education and creative, deep, and critical thinking, particularly in light of the transition to a knowledge economy; the "Innovation and Entrepreneurship" initiative in 2004; and the "Teach Less, Learn More" initiative aimed at developing education quality and creative learning.
- Generous spending on education: 2005 statistics indicate that 21.61% of GDP was allocated to the education sector, and 16.39% in 2015. While the percentage has decreased in recent years (11.22% in 2020 and 13.06% in 2021), it remains significant compared to Algeria and many developing countries.
- Attention is directed to teacher quality and skill development. Applicants to teacher training institutions are carefully selected. The Ministry of Education pays all their tuition fees and provides monthly salaries during their studies. In return, they must practice teaching for at least three years. During service, novice teachers receive two years of training with reduced workloads compared to experienced teachers. They attend regular training courses in their third consecutive year.

From the above, it can be argued that the distinction of the educational system in Singapore is primarily due to the focus on ways to consolidate the values of citizenship and adaptation to others in a multi-ethnic and multi-religious society from an early age.Teaching English as a primary language with the freedom to teach Malay, Hindi or Chinese, which strengthens the element of belonging to the national identity. The educational system also focuses on how to create a worker with high capabilities and qualifications in the future, through specialization immediately after primary school, and providing special tracks for the gifted and outstanding elements.

Second requirement: Public health, quality of life in Singapore and its economic returns

Public health was not among government priorities in the early years of independence, with Prime Minister Lee Kuan Yew focusing on three priorities: restoring Singapore's international standing, strengthening the military, and developing the national economy. This led the government at that time to content itself with providing basic public health services. However, this did not prevent planning for an effective health system once the security situation stabilized and the economy began to grow, recognizing that public health and healthcare are integral parts of the country's development planning. With a small population of no more than two million at independence, the government was concerned not merely with building hospitals, centers, or clinics, but rather with establishing the foundations for quality of life[1].

Among the strengths of the Singaporean health system are investments in public hospital infrastructure and a shift away from direct management, with the government focusing on monitoring the proper implementation of health strategies. The government has encouraged partnerships and competition with the private sector and mandated disclosure of treatment costs to promote transparency and fair competition. It has also supported quality training for doctors through expanded medical missions, training courses, and partnerships with international educational institutions. Additionally, Singapore has established a solid social protection system (Medical Protection of Life: MediShield) for health savings that protects families from falling below the poverty line when medical bills are high[2].

In 2015, the General Director of the World Health Organization described Singapore's health system as "a carefully planned system that has delivered first-class health care, with excellent health outcomes, at a lower cost than any other high-income country in the world"[3]. In terms of records, according to the World Health Organization, the coverage rate of basic health services in Singapore was 89% in 2021, an increase of 25% compared to 2020, i.e. the coverage rate reached 64%.While the global average for the aforementioned indicator was 68 % in 2021.

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[1]William A. Haseltine, **L'excellence accessible : l'histoire du système de santé de Singapour : Comment créer et administrer un système de santé soutenable,** traduction : Raphaël Cottin, 2014, pp 08-09.

[2]Khadija Isaac "The Reality of Investment in Human Capital in Algeria and Ways to Promote It with Reference to the Singaporean Experience," **Journal of Economic Analysis and Foresight**, Volume 01, Issue 01, 2020, pp. 95-96

[3]World Health Organization, "WHO Director-General at the Ministerial Meeting on Universal Health Coverage," on the WHO website:

- https://www.who.int/ (published on 10-02-2015, accessed on 20-01-2025, at: 18h:00).

These achievements are directly reflected in the life expectancy at birth index, which reached 83 years (World Bank Statistics 2022). The fundamental question arising here is: How did Singapore achieve these impressive results despite the high cost of healthcare?

The government has been able to keep its costs under control (within 4% of GDP) without declining service quality, despite rising costs due to technological advances, demographic growth, and the emergence of new diseases. While GDP per capita healthcare spending in the United States was $7,000 (2008 statistics), Singapore's GDP per capita healthcare spending was roughly $2,000 (2009 statistics).[1]

One of the strategic mechanisms used by the government to reduce its health expenditures is the commitment of the sovereign wealth fund,GICthrough health investments and advanced medical technologies, in the long term, to improve treatment outcomes and revolutionize health care, support medical research (investment in education), build world-class hospitals, and preventive care. The government has relied on international cooperation initiatives and public-private partnerships in its investments[2].

To properly analyze the elements of success, the researcher identifies other factors that have contributed significantly to the effectiveness of the Singaporean health system:

- The small size of the city (a city-state that does not exceed a quarter of the area of Tizi Ouzou). Its entirely urban character with a population of no more than 6 million people represents essential variables in the analysis. Planning health policy in Algeria (with more than 46 million people distributed over an area of more than 2 million square kilometers, including rural and urban areas, mountains, plains, and plateaus) differs significantly from Singapore; controlling financing and management is simpler and easier in a small area with higher population density.
- The culture of cooperation and great coordination between ministries made the implementation of joint policies possible and effective.
- Relying on efficiency and merit in administrative and political employment, and encouraging scientific research to develop the health sector.
- Strict hygiene laws (sewage and waste disposal), health taxes on tobacco, alcoholic beverages and sugar-sweetened drinks, fines on chewing gum, strict laws on corruption and crime.

[1]William A. Haseltine, **op.cit**, p. 43-45.
[2]Faster Capital, Investments GIC in Healthcare: Enhancing Singapore's Well-Being", online: https://www.fastercapital.com/ (published on 26 June 2024, accessed on 20-01-2025, at: 14h:00)

After this brief presentation of the reality of investment in education and health as the two most important dimensions in the human capital measurement indicators, it is reasonable to have Singapore's ranking[1], as:

- World Bank Human Capital Index: Ranked first in 2017-2020 (0.9 on a scale of 0-1).
- One of the most innovative economies in the world (ranked fifth in 2023, fourthin 2024).
- Ranked 2nd in Talent Attraction Index for the year2023, just behind Switzerland, and ahead of the United States of America, which came in third place.
- Ranked first in the indexTIMSS"Trends in International Mathematics and Science Study" published every 04 years in 2019 and2023.
- Ranked first in the indexPISA"Programme for International Student Assessment"[2] issued every03 years in 2018 and 2022.

Returning to the topic of economic development in Singapore, it has been able to achieve a renaissance and move from the third world to the first world in half a century. This harvest certainly came after great effort in planning and implementing economic development policies and creating a healthy business environment (political stability, strong infrastructure, attracting foreign direct investment, etc.), so that ports and airports are exploited and services and trade flourish, in addition to manufacturing and export. Singapore leads 67 participating countries in the Business Competitiveness Index according to the 2024 report, with 100 points[3].It focuses on

[1] The following references were relied upon:
- "Singapore leads the world and France is at the bottom of Europe in school science and mathematics", on the website:
- https://www.aa.com.tr/ar/ (published on 05-12-2024, accessed on 24-001-2025 at: 08h:00)
- East Economy, "The best countries in the world in attracting talent2023", on line:
- https://www.asharqbusiness.com/ (published on 07-11-2023, accessed on 01-02-2025 at 09h:00).
- WIPO,"Global Innovation Index 2023: Switzerland, Sweden and the U.S. lead the Global Innovation Ranking; Innovation Robust but Startup Funding Increasingly Uncertain", online:
- https://www.wipo.int/ (published on 27-09-2023, accessed on 15-02-2025 at 11h:00).
- https://www.albankaldawli.org/ (accessed on 01-02-2025 at 19h:00)

[2] It measures the abilities of 15-year-old students in the areas of reading, mathematics and science.

[3]World Competitiveness Ranking, "Rankings out of 67 countries", 2024, online:
- https://www.imd.org/ (accessed on 20-02-2025 at 20h:00).

four indicators: economic efficiency, government effectiveness, enterprise effectiveness and infrastructure.

A quick review of economic figures demonstrates this development: export revenues increased from 197.68 million Singapore dollars in 1964 to 64,146.29 million Singapore dollars in 2022 (the highest level from 1964-2024). The gross domestic product reached 501.43 billion dollars in 2023, increasing the per capita GDP to 84,734.30 US dollars (2023), compared to 3,611.95 US dollars in 1960 according to World Bank statistics.

In parallel with economic development plans, educational decision-makers have formulated a precise educational system that focuses on technology, mathematics and science, supports talent, and encourages research and innovation at the university level. This has provided highly skilled and capable human inputs to institutions and companies, and enabled Singapore to benefit from human capital in innovation and manufacturing to achieve a quality of life and well-being that its leaders in the 1960s could not have dreamed of.

Third requirement: Lessons learned for Algeria from the Singaporean experience

Singapore is a stimulating and inspiring experience for developing and developed countries alike, because it has impressed the world in achieving its economic renaissance and occupying the first places in many fields. Its focus on investing in its human resources has had a major impact on achieving economic development. Accordingly: What lessons can Algeria learn from this experience to achieve economic take-off?

Section one: The Algerian economy and the need to move towards a productive economy

Studies have shown that gas and oil are fleeting resources, and rentier countries like Algeria must seriously plan new approaches to create wealth for current and future generations. Economic statistics indicate that the hydrocarbon sectors accounted for 78% of GDP in between 2018-2022 with hydrocarbons alone accounting for more than 92% from exports and43% from budget revenues. This confirms that the Algerian economy is actually dependent on the fluctuations of oil prices in the global market[1].

[1]Groupe de la banque mondiale, « Poursuivre l'effort de diversification : un rapport de la Banque mondiale souligne la nécessité de renforcer la résilience économique de l'Algérie dans un contexte d'incertitude mondiale croissante », Communiqué de la presse, sur le site web :

Accordingly, the World Bank's economist in charge of Algeria, Cyril Dupont, warns, following the release of the World Bank's report on the economic situation in Algeria (Fall 2024), that the impact of fuel prices on revenues, imports and public spending is the biggest risk to the macroeconomic outlook. This makes strengthening companies, improving export competitiveness and enhancing integration into global value chains an economic priority for the Algerian government[1].

Since Singapore started from scratch due to its lack of natural and material resources after its independence in 1965 and was able to move from the third world to the first world, the transformation of Algeria's economy from a rentier model to a productive one is entirely possible if planned carefully and strategically, particularly since Algeria enjoys natural and material resources as well as human capital. It is worth noting that Algerian political discourse on the need to diversify the national economy and focus on non-hydrocarbon exports has strengthened since the beginning of the third millennium. This was clearly evident in the economic recovery program (2000-2004), the growth support program (2005-2009), and the five-year plan (2010-2014), through financial allocations for agriculture, tourism, and manufacturing.

However, due to weak results compared to strategic objectives, particularly after the global economic crisis of 2014 and its effects on the national economy, the government has adopted in recent years a set of robust policies for actual economic take-off. Most notable is the enactment of a new investment law (22-18) to attract investment and enhance the business climate in Algeria, which includes a set of incentives, especially for those investing outside the hydrocarbon sector and in specific areas such as technology, innovation, and renewable energy. The government has also opened a digital portal for investors to ensure transparency and facilitate electronic public transactions to combat bureaucracy that has historically deterred investment in Algeria. In the same effort, the government has encouraged start-ups and business incubators and has focused on establishing university business incubators to foster entrepreneurial thinking among university students, enabling them to develop their own projects, establish their own companies, and employ others rather than waiting for employment. It has also created a ministry dedicated to the knowledge economy, start-ups, and micro-enterprises to support young entrepreneurs.

Accordingly, Algeria's political leadership has become aware of and convinced about the need to achieve economic take-off and has opened several channels for

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- https://www.banquemondiale.org/(publié le26-10-2023, consulté le 21-02-2025 à 10h : 30)

[1]World Bank Group, "Algeria: Strengthening the Economic Policy Framework to Support Export Diversification," Press Release, Available at:

- https://www.albankaldawli.org/(published on: 18-11-2024, accessed on 25-02-2025 at: 15h:00)

change to achieve this goal. However, despite numerous policies in this endeavor, Algeria still occupies weak positions in several key indices: the Business Competitiveness Index (ranked 89th out of 141 countries, with 56.3 points out of 100 in the Global Competitiveness Report issued by the World Economic Forum for 2019), the Ease of Doing Business Index issued by the World Bank (ranked 157th out of 190 economies), and the Corruption Perceptions Index (ranked 104th out of 180 countries with 36 points out of 100 on the Corruption Perceptions Scale 2023, issued by Transparency International). This situation makes focusing on human capital the most reliable alternative for building a strong economy in the long term. The real challenge today lies in preparing human resources that are well-educated, trained, specialized and, above all, imbued with work ethics and good health that enable them to produce and innovate.

Section two: Investing in people for a confident economic take-off in Algeria

On the quantitative side, most statistics indicate that Algeria has achieved positive rates in health indicators, for example:

- Life expectancy at birth has increased in an upward trend, from 71 years in 2000 to 74 years in 2010, 75 years in 2015, and stabilizing at 76 years according to 2022 statistics.
- The infant mortality rate per 1,000 live births decreased, as it was 162 children in 1962,40 Child of 1990,35 child in 2000, 20 children in 2020 and 2022.[1]
- The share of health spending in GDP has increased from 3.21% in 2000 to 4.64% in 2010, 6.33% in 2015 to decline slightly5.01 % in 2021.[2]

As for education, the percentage of spending on it from the GDP reached 5.6% in 2023, while the global average spending was4.7% in 2022 year.[3]The Algerian education system is divided into pre-university education (primary and secondary) and university education (higher); Algeria has 25,859 pre-university schools (459 primary,253147 middle schools and 147 high schools) with a budget exceeding 789 billion DA, and according to the Ministry of National Education, the school enrolment rate for children aged six years is 98.49%, and children between 6-16 years

[1] https://www.albankaldawli.org/ (accessed on 26-02-2025 at: 09h:00).

[2] World bank group, "Curent health expenditure (% of GDP) Algeria", on line: https://www.albankaldawli.org/ (accessed on 25-02-2025, at: 13h:30)

[3] World bank group, "Public expenditure on education », (% of GDP) Algeria, on line:
- https://www.albankaldawli.org/ (accessed on 26-02-2025 at: 16h:00).

95%.While the university has 115 educational institutions affiliated with the Ministry of Higher Education and Scientific Research (54 universities, 09 university centers,39National High Schools and13High schools). In addition to the educational institutions under its guardianship (pedagogical guardianship).The sector's budget for the current year (2024-2025) amounted to 664 billion dinars.[1]

However, in light of these figures that indicate the generosity of spending on health and education, the quality of health and education services is still below the level of aspirations (0.5/1 in the Human Capital Index). By studying the Singaporean model, the researcher believes that among the lessons that can be learned to advance education and health as two main requirements for a strong economy are:

In the health field:

- It is necessary to move towards rationalizing health spending and achieving quality health services at the same time, as quality is not necessarily achieved simply by increasing spending. Specialized studies agree that the real problem of the sector is primarily a management problem. While the world has moved towards implementing new public management approaches, both quantitative and qualitative, Algeria has found itself moving in the opposite direction by expanding the scope of spending without strict control over the outcomes of the health sector. Probably, the Singaporean experience is an evidence of the weakness of spending on the health sector, while achieving remarkable results in public health and health care indicators. This is because it averred that the state has to be organized and monitored, and not the direct manager of hospitals and health centres or the sole funder; as it has built health centres equipped with medical equipment to relieve the burden on hospitals. Unlike what exists in Algeria, which causes overcrowding in public hospitals that have become providing basic and specialized services.
- Singapore has opened the door wide for private investment in the health sector, with competitive prices and services, as the country has become known for medical tourism. However, the issue needs greater organization for partnership with the private sector in Algeria.
- The necessity of investing in human resources through training and development, intensifying health research, and encouraging medical missions abroad with a pledge to return and serve the country.

[1] **Al-Shaab Online**, "664 billion DA budget for the higher education and scientific research sector", available on the website:

- https://www.echaab.dz/ (published on09-24-2024,accessed on 27-02-2025, at: 14h:00)

- The need to find funding bodies for health, as Singapore's sovereign wealth fund has contributed significantly to health investments, building hospitals and supporting research. It has also created a mandatory health savings account. MediSave as a plan to prevent families from falling below the poverty line when medical costs increase excessively. While thousands of Algerians cannot afford expensive surgeries that require travelling abroad.
- Moving towards providing the conditions for quality of life, which can be achieved through cleanliness, preserving green spaces, healthy eating, health taxes (Singapore is pioneering in the field of cleanliness and applies strict laws on violators. Chewing gum is prohibited, throwing garbage in the street is prohibited, and it imposes health taxes and punishes those who trade or use drugs strictly, the penalty of which may reach the death penalty).

In the field of education:

Algeria ranked 119th in the Davos Education Quality Index 2019, after ranking 92nd in the 2018 ranking[1]. While jumping to rank23 globally in 2023 report. This indicates the initial fruits of recent reforms of programs and modernization of the education sector and training of trainers. Algeria was also ranked 89th in terms of the quality of scientific research institutions, which explains the recent trend of Algerian universities to open reform workshops in the field of digitization and rehabilitating scientific research.[2]Encouraging innovative projects and establishing business incubators to support students with start-up projects.

Among the lessons that can be learned in the field of education from the Singaporean experience:

- Paying more attention to primary education as it is the cornerstone of raising and educating children. Singapore has succeeded in raising children on the principles of citizenship from an early age, to respect those who do not belong to their religion or race. This has contributed to the formation of a homogeneous society despite the diversity of religions and ethnicities in it. In the fifth and sixth years, trainers also focus on discovering the skills, inclinations and tendencies of children so that they can be directed directly to the required specializations.

[1]**Al-Raed Newspaper**, "Algeria ranks 11th in the Arab world in the quality of Arab education and a noticeable decline globally," July 28, 2019, on the website: https://www.elraed.dz/ (accessed on 24-02-2025, at: 11h:00).

[2]Ilham Bouthelji, "Algeria is the fourth Arab country in the quality of the education system", **Al-Shorouk**, 11-04-2023, on the website: https://www.echoroukonline.com/ (accessed on 27-02-2025, at: 10h:00).

- Adopting English as a language of instruction is a smart idea from the political leadership so that learners can benefit from research published around the world. This is in addition to allowing the teaching of mother tongues. The opposite of what happened in Algeria, where education was politicized and the educational system experienced a real identity crisis.
- The need to focus on teaching mathematics, technology and science, and linking education to the economy and the labour market at all stages, and adopting specializations at an early age as Singapore did (immediately after primary school), while encouraging the talented and shortening their path. This explains the superiority of Singaporeans in the TIMSSandPISAindex. As the unemployment recorded in Algeria for university graduates affects the humanities and literature more.
- Paying attention to the quality of teaching, teachers and professors, as we have presented the quality of selecting professors in Singapore and their specialized university system. While Algeria does not attach great importance to specialization, especially in employing primary school teachers, as graduates of law, biology or electronics can be employed and then they will be in education and methodology.
- Opening the way for private education to be a cooperative partner, and avoiding the chaos of parallel education that the national education sector is currently witnessing.
- Linking the university to the labour market, and creating students with innovative projects and ideas.

Conclusion:

The Singaporean experience has proven the importance of investment spending in people as a key requirement for achieving economic development, as they are the pivotal factor that ensures sustainability in development, efficiency and economic effectiveness. Singapore was able to move to an advanced country within 50 years when it exploited the only resource it possesses, "people", and focused on educating, training and qualifying them, in addition to providing an effective health system that ensures their strength and productive capacity.

Algeria can benefit from this pioneering experience, which was able to achieve excellent results without expanding the scope of public spending, by providing an efficient health system and linking education to the economy, with the necessity of reforming curricula and content, especially in the early stages of education, to benefit from the efficiency of the workforce in the future.

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