

# Inclusive Innovation in Tunisia Main Challenges and Policies Implemented

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## ABSTRACT

Inclusive innovation is a concept of including marginalized groups in innovation processes in order to reduce economic and social inequalities. In Tunisia, inclusive innovation is seen as a way to stimulate economic growth and create jobs. However, inclusive innovation in Tunisia faces challenges such as weak innovation capacities, lack of funding, lack of coordination between different actors and lack of data on the impact of inclusive innovation. To overcome these challenges, several measures have been put in place, including the creation of structures dedicated to inclusive innovation, the development of specific policies and programs, the involvement of local actors and international cooperation. Also, it is necessary to initiate additional measures, to further encourage inclusive innovation in Tunisia such as improving access to finance for inclusive innovation initiatives, strengthening innovation capacities, improving coordination between different actors and collecting data on the impact of inclusive innovation.

In sum, inclusive innovation can have a positive impact on the Tunisian economy by reducing inequalities and promoting economic growth.

**Keywords:** inclusive innovation, innovation process, marginalized groups, economic and social inequalities, economic growth.”

## INTRODUCTION

Inclusive innovation is an approach to innovation that aims to integrate disadvantaged populations into the innovation process, by providing them access to new opportunities and benefits of innovation. This approach aims to promote more equitable and sustainable economic growth by reducing socio-economic inequalities and promoting social and economic inclusion. Inequalities and promoting social and economic inclusion.

Inclusive innovation has become a priority for governments and organizations worldwide seeking to maximize the economic and social benefits of innovation. In Tunisia, it is particularly important due to significant socio-economic inequalities. Indeed, Tunisia has faced significant economic challenges since the 2011 revolution, including low economic growth and high unemployment rates, particularly among young people. Inclusive innovation can offer a potential solution to these challenges by involving all actors in the innovation process, including marginalized groups<sup>[1]</sup>.

By engaging marginalized groups in the innovation process, inclusive innovation can create innovative solutions that better meet the needs of Tunisian society, while stimulating entrepreneurship and job creation.

This can also improve social cohesion by strengthening the participation of all actors in the innovation process, including marginalized groups, and promoting a sense of belonging to Tunisian society[2].

The topic of inclusive innovation in Tunisia is crucial because it aims to promote more equitable and sustainable economic growth, and given that socio-economic inequalities and regional disparities persist, it is also an opportunity to reduce these gaps and promote more inclusive and sustainable development[3]. In addition, it can also stimulate social and solidarity entrepreneurship, strengthen the digital economy, promote financial inclusion, and strengthen the education and vocational training system.

Therefore, it is important to understand the challenges of inclusive innovation in Tunisia, the challenges to be addressed, the existing policies and measures to promote inclusive innovation, as well as best practices and opportunities to encourage inclusive innovation in Tunisia.

The main objective of this work is to analyze the state of inclusive innovation in Tunisia, by identifying the main challenges and evaluating the policies and measures implemented to encourage inclusive innovation[4].

This paper will explore the challenges facing Tunisia in terms of inclusive innovation, with a particular focus on financial inclusion, access to training, and professional integration of disadvantaged populations[5]. It will analyze the policies and measures implemented by the Tunisian government to encourage inclusive innovation, examining their effectiveness and impact on socio-economic inclusion[6]. In addition, it will draw on the experiences of other countries or regions that have developed successful inclusive innovation initiatives to identify best practices and opportunities to encourage innovation initiatives[7] in Tunisia. Finally, the paper will provide recommendations to improve the state of inclusive innovation in Tunisia by proposing concrete measures to strengthen socio-economic inclusion and promote more equitable and sustainable economic growth[8]. By addressing these key issues, this paper aims to contribute to the ongoing efforts to promote inclusive innovation in Tunisia and other developing countries, which can play a crucial role in reducing inequalities and promoting sustainable economic development.

## THE STAKES OF INCLUSIVE INNOVATION IN TUNISIA

Inclusive innovation can play an important role in promoting economic growth and reducing social inequalities in Tunisia. It is therefore important to establish policies and programs that encourage inclusive innovation and allow the most vulnerable populations to benefit from the economic and social advantages of innovation.

### *A. Definition of Inclusive Innovation and Its Benefits for Tunisia*

Inclusive innovation is an approach to innovation that aims to integrate disadvantaged populations into the innovation process, by providing them access to new opportunities and benefits of innovation. This approach aims to promote more equitable and sustainable economic growth by reducing socio-economic inequalities and promoting social and economic inclusion.

Inclusive innovation seeks to include a wide range of people in the innovation process, particularly those who have historically been underrepresented or excluded. This can include groups such as women, ethnic minorities, people with disabilities, youth, and people living in rural areas.

In Tunisia, inclusive innovation has the potential to offer several benefits across different sectors. Firstly, it can help reduce socio-economic inequalities by integrating disadvantaged populations into the innovation process. By providing new opportunities to marginalized populations[9], inclusive innovation can enable them to participate in the development and implementation of new ideas, products and services. This can

ultimately lead to a more equitable distribution of resources and opportunities, which can help reduce disparities in income and social status.

Secondly, inclusive innovation can stimulate social and solidarity entrepreneurship. This means that it can encourage the creation of businesses and organizations that aim to meet the needs of disadvantaged populations while generating income<sup>[10]</sup>. By promoting the principles of social and solidarity entrepreneurship, inclusive innovation can contribute to a more sustainable and inclusive economic system.

Thirdly, inclusive innovation can strengthen the digital economy by providing training and employment opportunities in the information and communication technology sector. This can help to address the digital divide, as well as to boost innovation and productivity in the economy.

Fourthly, inclusive innovation can promote financial inclusion by offering innovative solutions to facilitate access to financial services for disadvantaged populations<sup>[11]</sup>. This can include the development of mobile banking solutions, microfinance schemes, and other forms of financial technology that can help to increase access to financial services and products.

Finally, inclusive innovation can also contribute to strengthening the education and vocational training system by offering training and skills development opportunities for disadvantaged populations. This can help to address skills gaps in the economy, as well as to promote lifelong learning and ongoing skills development. Overall, inclusive innovation has the potential to offer a range of benefits in Tunisia, from reducing socio-economic inequalities to promoting sustainable economic growth and development.

In summary, inclusive innovation can offer many benefits for Tunisia, by promoting more equitable and sustainable economic growth, reducing socio-economic inequalities, and strengthening social and economic inclusion.

### ***B. Economic Context of Tunisia and Its Situation Regarding Inclusive Innovation***

Tunisia has a diversified economy that is open to the outside world. However, economic growth remains low and socio-economic inequalities persist. In addition, the country faces structural challenges, such as the weakness of the educational and vocational training system, regional disparities, high unemployment, and social exclusion<sup>[12]</sup>. Tunisia has experienced significant economic challenges since the 2011 revolution<sup>[13]</sup>. The country has recorded low economic growth in recent years, with a GDP growth rate of 1.2% in 2019, and a high unemployment rate, particularly among young people<sup>[14]</sup>. According to World Bank data, the youth unemployment rate in Tunisia was 36.5% in 2020<sup>[15]</sup>.

To encourage innovation and technological development, Tunisia has taken measures, but the country is still considered to be in an early stage of inclusive innovation. According to a report by the Organization for Economic Cooperation and Development (OECD), inclusive innovation in Tunisia is still in its early stages, with limited participation by marginalized groups such as women, youth, and people living in poverty<sup>[16]</sup>.

It is important to note that the development of inclusive innovation requires continuous efforts in various areas such as education, research and development, access to finance, collaboration between the public and private sectors, as well as the promotion of entrepreneurship and innovation within the population.

A first specific example illustrating the lack of data on inclusive innovation in Tunisia could concern the education and vocational training sector. In the Tunisian context, there is a growing interest in developing skills and vocational training to enhance youth employability and meet the needs of the labor market. However, the lack of precise data on the effectiveness of vocational training programs and the alignment between acquired skills and labor market requirements poses a major challenge.

#### Implications :

1. **Policy Formulation:** The lack of reliable data on the outcomes of vocational training programs makes it difficult to formulate effective policies aimed at improving the quality of education and training. Without this data, it is difficult to identify gaps and specific labor market needs.
2. **Investment Guidance:** Governments and development partners require accurate data to guide investments towards areas where they will have the greatest impact in terms of inclusive innovation. The absence of data can lead to inefficient resource allocation and underutilization of funds allocated to development programs.
3. **Monitoring and Evaluation:** Without adequate data, it is difficult to measure the effectiveness of interventions and determine whether the set goals for inclusive innovation are being achieved. Monitoring and evaluating programs thus become more complex, compromising the ability to make necessary adjustments and improvements.
4. **Collaboration with the Private Sector:** Businesses play a crucial role in promoting inclusive innovation by providing employment opportunities and contributing to economic development. However, the lack of data on the skills demanded by employers hinders governments and development agencies' ability to collaborate effectively with the private sector in designing relevant training programs.

A second example could focus on access to financial services for marginalized populations, particularly women and young entrepreneurs. In Tunisia, equitable access to financial services is essential to foster financial inclusion and stimulate economic development. However, there is often a lack of precise data on how women and young entrepreneurs access traditional financial services such as bank loans, savings accounts, and insurance services.

#### Implications :

1. **Identifying Barriers:** The lack of data on financial access for women and young entrepreneurs makes it difficult to identify the specific obstacles they face. Without this information, it is challenging to design policies and programs aimed at overcoming these obstacles and promoting genuine financial inclusion.
2. **Designing Tailored Financial Products:** Financial institutions need accurate data on the financial needs and behaviors of women and young entrepreneurs to design products and services tailored to their needs. The lack of data can result in the inappropriate design of financial products that do not effectively meet the needs of these populations.
3. **Monitoring the Impact of Interventions:** To assess the effectiveness of initiatives aimed at promoting financial inclusion, robust monitoring and evaluation data are necessary. The lack of data can make it difficult to measure the actual impact of programs and policies on access to financial services for marginalized populations.
4. **Sharing Best Practices:** Data on successful financial inclusion initiatives are essential for policymakers, financial institutions, and other stakeholders to learn from each other and share best practices. The lack of data can limit the dissemination of knowledge and successful experiences in the field of financial inclusion.

A third example could focus on the accessibility of information and communication technologies (ICT) for people with disabilities. Despite progress in the field of ICT in Tunisia, there is a lack of precise data on the accessibility of technologies for people with disabilities. There is a lack of information on the availability of software and devices adapted to their needs, as well as on the obstacles faced by people with disabilities in using ICT to access information, education, employment, and services.

## Implications :

1. **Designing Public Policies:** The lack of data on ICT accessibility for people with disabilities makes it difficult to develop effective public policies to ensure genuine digital inclusion. Without accurate information, it is challenging to identify gaps and implement measures to improve ICT accessibility.
2. **Awareness and Training:** Data on specific needs for ICT accessibility can help raise awareness among software designers, application developers, and service providers about the importance of making their products accessible to all. In addition, this information can inform training programs aimed at educating ICT sector workers about best practices in accessibility.
3. **Improving Accessibility:** Data on barriers to ICT accessibility can guide efforts to improve standards and regulations regarding accessibility. This information can also help organizations design and implement initiatives to make websites, applications, and other digital tools more accessible to people with disabilities.
4. **Monitoring Progress:** Regular data collection on ICT accessibility allows for tracking progress in this area over time. This enables the measurement of the effectiveness of implemented policies and programs and identifies areas requiring further improvements.

However, Tunisia has certain advantages in terms of innovation, including a skilled workforce, modern communication infrastructure, and a favorable regulatory environment for innovation. However, innovation is still underdeveloped in Tunisia and does not benefit all layers of society. Indeed, disadvantaged populations often have limited access to innovation opportunities, resources, and financing necessary for innovation[17]. Moreover, regional disparities limit access to innovation in certain parts of the country, exacerbating socio-economic inequalities.

In the face of these challenges, Tunisia has initiated reforms to encourage innovation and job creation. The country has a national plan for promoting innovation, which aims to improve the business environment, strengthen the educational and vocational training system, promote entrepreneurship, and develop the digital economy. However, these policies are not yet sufficient to ensure more equitable and sustainable economic growth.

### ***C. Challenges to Promoting Inclusive Innovation in Tunisia:***

Inclusive innovation is a concept that aims to develop innovations that benefit all segments of society, including those who are traditionally excluded from economic and social development. It faces certain challenges:

#### *1) Socio-economic inequalities:*

Socio-economic inequalities are one of the main challenges facing Tunisia, especially since 2011. Despite the economic progress made in recent years, social and territorial inequalities persist and tend to worsen.

Tunisia faces several challenges in terms of socio-economic inequalities, as highlighted by the United Nations Development Programme (UNDP) 2020 Human Development Report. Tunisia's Human Development Index (HDI) of 0.740 ranks it 96th globally, indicating room for improvement in terms of well-being and equality for all citizens. High unemployment rates are a major concern, particularly among young people and university graduates, with an overall unemployment rate of 15.4% and a youth unemployment rate of 36.4% in the second quarter of 2021, according to data from the National Institute of Statistics. Income inequalities are also prevalent, with the richest 10% of the population owning 29% of the national income, while the poorest 10% owns only 2.6%, as reported by a World Bank study. Furthermore, regional inequalities are significant, with the Tunis region being the most developed with an HDI of 0.847, while the

Kasserine region is the least developed with an HDI of 0.613, according to the UNDP. Additionally, gender inequalities persist in Tunisia, with women facing economic and social barriers, including lower labor force participation rates and wages compared to men, despite progress in political and legal rights. Addressing these challenges and promoting inclusive innovation can play a crucial role in reducing socio-economic inequalities and improving the well-being of all Tunisian citizens.

Socio-economic inequalities refer to disparities in living conditions, opportunities, and economic outcomes between different groups of people within a society. These inequalities can be measured in various ways, such as income, education, employment, health, and access to basic services.

Socio-economic inequalities have negative consequences for individuals and society as a whole. They can lead to a concentration of wealth and power in the hands of a few, creating social tensions and conflicts. They can also limit access to opportunities for certain individuals due to their socio-economic background, reducing their ability to realize their potential[18].

The causes of socio-economic inequalities are complex and multifactorial[19]. They can be influenced by factors such as education, employment, discrimination, fiscal policy, globalization, economic and social policies, as well as historical and cultural factors[20].

According to the latest available data, the poverty rate in Tunisia is around 15%, with higher levels in rural areas and the interior regions of the country. Unemployment is also high, especially among young graduates, which contributes to precariousness and social exclusion.

In addition, inequalities in access to basic services such as education, health, and infrastructure are also significant in Tunisia. The interior regions of the country have limited access to these services, exacerbating territorial and socio-economic inequalities.

In this context, inclusive innovation can play an important role in offering new opportunities to disadvantaged populations, particularly in terms of employment and social and solidarity-based entrepreneurship. By encouraging innovation at the local level, inclusive innovation can also contribute to strengthening regional economies and reducing territorial inequalities.

However, for inclusive innovation to contribute to reducing socio-economic inequalities in Tunisia, it is essential that the policies and measures implemented are adapted to the needs and realities of marginalized populations, taking into account the specificities of each region and social group.

## 2) *Regional disparities:*

Regional disparities are another important challenge facing Tunisia. Economic and social development is uneven across regions, with higher levels of development in urban and coastal areas and lower levels of development in interior and rural regions[21].

Tunisia experiences notable regional disparities in various socio-economic indicators. According to data from the National Institute of Statistics, the unemployment rate varies significantly among regions, with the Tunis region having a rate of 10.3% in the second quarter of 2021, while the Kasserine region had a rate of 23.4%. Income inequalities are also evident, with Greater Tunis and Sousse regions having higher income levels compared to the lower income levels in Kasserine and Gafsa regions, as highlighted by a World Bank study. Disparities in infrastructure, such as access to drinking water, are also prevalent, with a 99.2% access rate in the Tunis region, but only 83.4% in the Kairouan region, according to the UNDP. Education disparities are significant as well, with the Tunis region having the highest literacy rate of 92% while the

Kasserine region has the lowest at only 73%, as reported by the UNDP. The UNDP's 2020 Human Development Report also highlights the regional differences in Human Development Index (HDI), with the Tunis region being the most developed with an HDI of 0.847, while the Kasserine region is the least developed with an HDI of 0.613. Moreover, the southern regions of Tunisia, such as Kebili, Tozeur, and Tataouine, face unique economic and social challenges due to water scarcity and geographical isolation. The Tunis region, responsible for more than half of the country's economic production, starkly contrasts with less developed regions like Kasserine that contribute significantly less to economic production, as per the World Bank study. Addressing these regional disparities in Tunisia will require targeted policies and interventions to ensure equitable development across all regions and improve the well-being of all citizens.

Regional disparities in Tunisia are one of the main challenges to promoting inclusive innovation in the country. As mentioned earlier, the central and southern regions of Tunisia are often more disadvantaged than the northern and eastern coastal regions in terms of economic and social development, making it difficult to implement inclusive innovation policies on a national scale [22].

“Inclusive innovation, which aims to involve all layers of society in the innovation process, is an important means of reducing regional disparities and promoting equitable economic development. In Tunisia, this would involve implementing innovation policies adapted to the needs of different regions of the country, based on their strengths and constraints [23].

Initiatives have been launched in Tunisia to encourage inclusive innovation, such as the Support Program for Startup Competitiveness (PACS) [24] which was launched in 2017 to support startups in disadvantaged regions. However, these initiatives need to be strengthened and expanded to cover the entire country and reach a larger number of people.

This situation is mainly due to an unequal distribution of public and private investments, as well as difficulties in accessing basic services such as education, health, and infrastructure. In addition, the unemployment rate is also higher in inland and rural areas, which exacerbates socio-economic inequalities.

Inclusive innovation can contribute to reducing regional disparities by offering opportunities for economic and social development in disadvantaged regions. By encouraging innovation at the local level, inclusive innovation can stimulate job and business creation in inland and rural regions, which helps to strengthen the local economy and reduce development gaps between regions.

However, for inclusive innovation to contribute to reducing regional disparities in Tunisia, it is essential that the policies and measures put in place are adapted to the needs and realities of each region. It is also important to strengthen local capacities in innovation and economic development, by involving local actors and encouraging active participation of disadvantaged populations in innovation processes.”

### 3) *Weaknesses of the education and vocational training system:*

The weaknesses of the education and vocational training system are also a significant obstacle to inclusive innovation in Tunisia. Despite the government's efforts to improve access to education and training, the education and vocational training system suffers from several shortcomings that limit young people's ability to adapt to the needs of the labor market and contribute to innovation and economic development [25].

In Tunisia, despite having a relatively high adult literacy rate of 81.8% according to the UNDP's 2020 Human Development Report, there are significant regional disparities in education. The net enrollment rate

in primary education is 96.6%, and in secondary education, it is 80.7%, as reported by UNESCO in 2019.

However, the quality of education remains a challenge, especially in rural areas and disadvantaged neighborhoods, leading to a high dropout rate of 13.8% in secondary education, as noted by the National Institute of Statistics. Moreover, the vocational training system in Tunisia faces challenges such as low enrollment rate of 8.5% in technical and vocational education in 2019, poor quality of education in this field, and fragmented and poorly coordinated vocational training programs that do not meet the needs of the labor market.

Additionally, ICT skills are inadequate, with only 16.5% of the population using the internet in 2019, as reported by the International Telecommunication Union. The functional illiteracy rate is also high, with around 40% of the population aged 15 and over struggling with reading, writing, and calculating accurately. The quality of education is often considered insufficient by employers, leading to difficulties for graduates in finding employment in their field of study. The unemployment rate among Tunisian higher education graduates was 30.6% in 2019, according to the National Institute of Statistics. Moreover, investments in research and development are low, limiting the ability of universities and research centers to innovate and produce relevant knowledge for the economy. The Tunisian education system is also criticized for being too theoretical and lacking focus on practical skills, which restricts graduates' ability to meet the requirements of the labor market.

Overall, Tunisia faces significant challenges in its education system, including regional disparities, quality of education, high dropout rate, inadequate vocational training, low ICT skills, functional illiteracy, unemployment among graduates, lack of investments in research and development, and a theoretical focus in education. Addressing these challenges will require coordinated efforts from various stakeholders to ensure access to quality education and relevant skills development for all Tunisians, regardless of their region or background, in order to foster inclusive and sustainable economic growth.

The weaknesses of the educational and vocational training system are one of the main challenges facing Tunisia in its quest for economic and social development. The Tunisian education system is facing several problems, including a lack of equipment, resources, and qualified teachers, as well as a mismatch between the curriculum and the needs of the labor market.

The vocational training system is also facing significant challenges, particularly in terms of accessibility and the quality of training. Many young Tunisians do not benefit from quality vocational training, which limits their employment prospects and their ability to contribute to the country's economic development.

The Tunisian government has undertaken several reforms to improve the education and vocational training system, including implementing training programs adapted to the needs of the labor market and investing in modern training infrastructure. However, challenges persist, and additional efforts are needed to improve the quality of education and vocational training in Tunisia.

Among the main gaps are the low quality of teaching, the lack of practical training and links with the world of work, and the mismatch between acquired skills and labor market needs. This situation contributes to an increase in the unemployment rate among young graduates and a shortage of skills in innovative sectors [\[26\]](#).

Inclusive innovation can help address these gaps by strengthening the links between businesses and educational and vocational training institutions, encouraging practical learning, and promoting the development of technical and entrepreneurial skills among young people.

However, for inclusive innovation to contribute to improving the education and vocational training system



in Tunisia, it is essential that policies and measures put in place are adapted to the needs and realities of the labor market and the Tunisian economy. It is also important to strengthen collaboration between system actors.

The weaknesses of the education and vocational training system are another challenge for inclusive innovation in Tunisia. The education system faces problems such as insufficient vocational training supply, poor teaching quality, and a mismatch between training provided and the needs of the labor market.

These weaknesses limit employment and entrepreneurship opportunities for young people, especially in disadvantaged regions. They also limit the capacity of the Tunisian economy to innovate and develop competitively due to a lack of skills and qualifications in strategic areas.

Inclusive innovation can contribute to strengthening the education and vocational training system by offering new learning and skills development opportunities. By encouraging innovation in vocational training and providing training programs adapted to the needs of the labor market, inclusive innovation can strengthen the skills of young people and improve their employability.

However, for inclusive innovation to contribute to strengthening the education and vocational training system in Tunisia, it is essential to put in place appropriate policies and measures.

#### ***D. Existing Policies and Measures to Promote Inclusive Innovation in Tunisia***

The promotion of inclusive innovation is a priority for Tunisia in its quest for economic and social development. The Tunisian government has implemented several policies and measures aimed at encouraging inclusive innovation in the country[27].

These policies and measures include the creation of technology hubs and business incubators in disadvantaged regions, the development of financing programs for startups and SMEs, and the implementation of training and awareness programs on innovation for youth and women[28].

The Tunisian government has also created the Agency for the Promotion of Industry and Innovation (APII), which is responsible for promoting innovation and entrepreneurship in Tunisia, as well as the National Fund for Innovation and Research (FNIR), which funds innovative projects in the country[29].

However, challenges persist in promoting inclusive innovation in Tunisia, particularly in terms of accessibility and equity in access to resources and innovation opportunities for all segments of society.

##### ***1) Public policies to support innovation.:***

In Tunisia, several public policies to support innovation have been implemented to encourage economic and social development. The National Plan for Scientific and Technological Research[30], launched in 2015, is focused on strengthening research and development capacities in Tunisia and encouraging collaboration between the public and private sectors. It aims to consolidate the competitiveness of the Tunisian economy through research and innovation in fields such as agriculture, energy, ICTs, and health. The plan includes measures to promote scientific research, technology transfer, and collaboration among universities, research centers, and companies. The Program to Support Research and Innovation in Enterprises (PARI)[31], launched in 2018 and funded by the European Investment Bank, offers grants and advisory services to Tunisian companies to invest in research and innovation, with the goal of increasing their competitiveness and improving their positioning in international markets.

The Fund for the Promotion of Innovation (FPI)[\[32\]](#), created in 2012, provides grants and funding for innovative projects in priority sectors for the Tunisian economy, such as agribusiness, health, and ICTs. It also collaborates with local and international partners to foster the emergence of the Tunisian ecosystem and encourages the creation of innovative startups through contests and incubation programs. The Social Entrepreneurship Program[\[33\]](#), launched in 2018 with support from the World Bank, aims to support companies that address social and environmental problems while generating economic benefits. It offers training, mentoring, and funding for businesses with a positive social and environmental impact, with the goal of encouraging social entrepreneurship in Tunisia and promoting innovative solutions to social and environmental challenges.

The National Innovation Strategy (SNI) 2019-2023[\[34\]](#), initiated by the Tunisian government, focuses on strengthening the innovation system, promoting research and development (R&D), and facilitating the dissemination and valorization of research results. The SNI includes specific measures to stimulate innovation in key sectors of the economy, such as information and communication technologies, renewable energies, health, and agribusiness. The Competitiveness and Innovation Support Program (PACI), funded by the European Union and implemented by the Ministry of Industry and SMEs, provides grants and technical support for innovative projects in Tunisian SMEs. It aims to improve the competitiveness and innovation capacity of Tunisian businesses, promote collaboration between companies, research centers, and universities, and facilitate access to financing for innovation projects[\[35\]](#).

The National Innovation and Research Fund (FNIR), established in 2010 and under the authority of the Tunisian Ministry of Higher Education and Scientific Research, finances research and development projects in the public and private sectors[\[36\]](#). It provides grants based on relevance, scientific quality, and economic and social impact to selected research and innovation projects in fields such as information and communication technology, energy, environment, health, and agri-food. The FNIR works closely with research centers, universities, innovative companies, and public institutions to identify promising projects and provide adequate funding, contributing to the advancement of research and innovation in Tunisia.

Also, the InnoVenture program for innovative startups implemented by the Agency for the Promotion of Industry and Innovation (APII)[\[37\]](#), aims to support and accompany innovative startups in Tunisia in their development and growth. The InnoVenture program is open to innovative startups in various fields such as information and communication technology, energy, environment, health, biotechnology, agri-food, and others. It is an incubation program for innovative startups in Tunisia that offers customized support to selected startups to enable them to develop their projects and grow. This program contributes to strengthening the innovation ecosystem in Tunisia and promoting innovative entrepreneurship.

However, despite these innovation support policies, Tunisia faces persistent challenges in terms of low investment in research and development, low patenting rates, and a lack of infrastructure to support innovation.

## 2) *Private initiatives in support of inclusive innovation:*

In Tunisia, several private initiatives have been launched to promote inclusive innovation and encourage economic and social development.

In Tunisia, there are several initiatives that promote inclusive innovation and provide support to entrepreneurs and startups. Social enterprises are companies that aim to create a positive social impact while generating revenue. They focus on developing products or services that meet the needs of marginalized or underrepresented people, such as people with disabilities or rural women. Innovation hubs, on the other

hand, are co-working and incubation spaces that provide a meeting place for entrepreneurs, innovators, and investors. They offer mentoring, training, and financing services to help businesses grow and succeed.

Acceleration programs are another type of initiative that provides intensive support to startups in the early stages. They offer training, mentoring, and funding to accelerate their growth. Training initiatives aim to strengthen the technical and entrepreneurial skills of young people, especially women and disadvantaged individuals, through online courses, workshops, and training programs to help them start their own businesses and innovate.

Mentorship programs also play a crucial role in supporting entrepreneurs and innovators. They connect them with experienced mentors in their field of activity to provide personalized guidance and support. Some examples of mentorship programs in Tunisia include Orange Fab Tunisia, which is a startup accelerator launched by Orange Tunisia in partnership with the global Orange Fab network, offering technical assistance, access to the Orange partner network, and funding for innovative projects. Flat6Labs Tunis, launched in 2016 with the support of the Egyptian company Flat6Labs, provides a support program for startups in the early stages, along with initial funding to help entrepreneurs launch their business. Startup Haus Tunis is a co-working and startup incubation space launched by a German company in partnership with the Friedrich Naumann Foundation for Freedom, offering workspace, training and support programs, as well as a network of mentors and investors. Tunisian Startups is an online platform that connects Tunisian entrepreneurs with investors, mentors, and other resources to help develop their projects, along with offering training programs and events for startups.

These private initiatives play a crucial role in promoting inclusive innovation in Tunisia by offering entrepreneurs and startups the resources and support they need to develop their projects. However, they often face challenges related to financing and mobilizing investors to support innovative projects. Despite these challenges, these initiatives contribute to creating a supportive ecosystem for innovation and entrepreneurship in Tunisia, fostering economic growth, and addressing social challenges through innovative solutions.

In conclusion, social enterprises, innovation hubs, acceleration programs, training initiatives, and mentorship programs are playing a vital role in promoting inclusive innovation in Tunisia. They provide startups and entrepreneurs with the necessary resources, support, and guidance to thrive and succeed, particularly those from marginalized communities. These initiatives contribute to addressing social challenges, fostering economic growth, and creating a vibrant ecosystem for entrepreneurship and innovation in Tunisia.

## **HOW TO ENCOURAGE INCLUSIVE INNOVATION IN TUNISIA?**

### ***E. Good Practices and International Experiences in Inclusive Innovation***

There are several good practices and international experiences in inclusive innovation that can serve as a model for other countries or regions. The “Innovate for Inclusion” initiative of the World Bank<sup>[38]</sup> aims to support inclusive innovation in developing countries by providing funding, training, and mentoring for entrepreneurs and innovators. The report highlights the role of frugal innovation in promoting financial and economic inclusion. It emphasizes that innovative and low-cost solutions can help address the most urgent development challenges, particularly in developing countries. The report provides concrete examples of frugal innovations implemented in different countries to promote financial inclusion, such as mobile banking services, digital payment technologies, crowdfunding platforms, etc. It also shows how frugal innovation can help strengthen the capacities of local communities and promote economic development. Finally, the report

emphasizes the importance of supporting frugal innovation through favorable public policies and effective public-private partnerships.

The “Women Entrepreneurs Finance Initiative” (We-Fi)[\[39\]](#) aims to help women entrepreneurs in developing countries by providing funding, training, and business advice. The Women Entrepreneurs Finance Initiative (We-Fi) is a World Bank initiative launched in 2017 and works with public and private sector partners to provide funding, training programs, and mentoring services to women entrepreneurs, particularly in developing countries. The program aims to strengthen the capacities of women entrepreneurs and promote their access to markets and capital. We-Fi also seeks to promote gender equality and reduce the barriers that hinder women’s participation in the economy.

The “AgriHack Talent” program aims to stimulate innovation in the agricultural sector in Africa by providing training, mentoring, and funding for startups and entrepreneurs[\[40\]](#). AgriHack Talent is a program of the Technical Center for Agricultural and Rural Cooperation (CTA) Foundation, which aims to support young entrepreneurs in the field of agriculture and rural development in Africa, the Caribbean, and the Pacific. The program includes a series of competitions, training workshops, mentoring, and funding to help young entrepreneurs develop their ideas and skills in information and communication technologies (ICT) applied to agriculture[\[41\]](#). The AgriHack Talent program also aims to promote innovation in the agricultural sector by encouraging the use of ICT to improve the productivity, quality, safety, and sustainability of agriculture in developing countries.

The “Social Innovation and Entrepreneurship Fund”[\[42\]](#) aims to support social innovation and entrepreneurship in the country by providing funding for innovative projects and facilitating collaboration between social innovation actors. The Social Innovation and Entrepreneurship Fund is a Singapore government initiative aimed at promoting social innovation and entrepreneurship in the country. The fund supports social innovation projects that contribute to solving social and environmental problems, such as poverty, social inclusion, environmental sustainability, etc. The fund provides grants and loans to non-profit organizations and social enterprises to develop their innovative projects. The fund also aims to encourage collaboration between the public sector, private sector, and civil society organizations to promote social innovation and entrepreneurship.

The “Impact Innovation Challenge” program aims to support social innovation worldwide, by providing funding and mentorship for social entrepreneurs[\[43\]](#). The University of Cambridge’s “Impact Innovation Challenge” program is an initiative to support social and environmental innovation projects by students, researchers, and staff at the university. The program provides funding and mentorship for projects that have the potential to have a positive impact on society and the environment. Supported projects can include innovative ideas in areas such as energy, environment, health, education, etc. The program also aims to encourage interdisciplinary collaboration among different faculties of the university to promote social and environmental innovation. Therefore, the “Impact Innovation Challenge” program provides innovators with an opportunity to develop their ideas while having a positive impact on society.

The MIT Inclusive Innovation Challenge program[\[44\]](#) is a global competition that rewards entrepreneurs who use innovation to solve major social and economic problems. Winners receive funding to develop their projects, as well as access to mentors and partners[\[45\]](#). The MIT “Inclusive Innovation Challenge” program seeks to identify and reward companies, organizations, and entrepreneurs who use technology to improve the quality of life and economic inclusion of people in need. Supported projects can include innovations in areas such as education, employment, health, finance, etc. Finalists of the program are invited to participate in a global event to present their projects and have the chance to win cash prizes. Therefore, the “Inclusive

Innovation Challenge” program provides innovators with a platform to develop their ideas and contribute to creating a more inclusive world.

The European Union’s Horizon 2020[46] Research and Innovation Program finances research and innovation projects in various fields, with a focus on inclusive innovation. It encourages the participation of all types of actors, including small and medium-sized enterprises, universities, civil society organizations, and citizens[47]. The European Union’s Horizon 2020 Research and Innovation Program is an ambitious funding program designed to stimulate innovation and competitiveness in Europe. Horizon 2020 finances research and innovation projects in areas such as information technologies, health, energy, environment, transport, etc. The program aims to encourage international and cross-sectoral cooperation among research, industry, and public sector actors to stimulate innovation and create jobs. It offers a variety of funding options, ranging from grants for research and innovation projects to loans for innovative start-up companies. The program is an opportunity for European innovators to realize their ideas and contribute to the development of a more competitive and sustainable European economy.

India’s National Inclusive Innovation Strategy[48], launched in 2018, aims to promote inclusive innovation through a series of initiatives, including the creation of rural innovation centers, training youth in innovation, and encouraging public-private partnerships. India’s National Inclusive Innovation Strategy is an ambitious roadmap to stimulate innovation and economic growth in the country. The strategy includes measures to encourage innovation in different sectors, such as agriculture, health, energy, and environment, using emerging technologies such as artificial intelligence and blockchain. The strategy also aims to encourage the participation of marginalized groups, such as women and rural populations, in the innovation ecosystem by providing them with tools and resources to develop their innovation skills. The strategy also emphasizes the importance of collaboration among the public, private, and academic sectors to support innovation. By implementing the National Inclusive Innovation Strategy, India hopes to become a global leader in innovation and become a \$5 trillion economy by 2025.

The African Development Bank’s skills development and entrepreneurship program offers training and funding to help young entrepreneurs develop[49] their skills and launch their businesses in Africa. This program is an initiative aimed at promoting skills development and entrepreneurship in Africa. It aims to strengthen the skills of youth and women, improve access to financing, and promote innovation and entrepreneurship in Africa. It also emphasizes the development of public-private partnerships to encourage entrepreneurship and economic growth in Africa. The program includes initiatives such as the African Entrepreneurship Fund, which provides financing and support to entrepreneurs, and the African Development Bank’s Scholarship Program, which offers scholarships to African students for relevant master’s and doctoral programs. By implementing this program, the African Development Bank hopes to strengthen the entrepreneurial capacities and technical skills of young people and women in Africa to support the continent’s economic and social development.

These initiatives are examples of good practices in inclusive innovation that can be adapted and implemented in other countries and regions. They demonstrate the importance of inclusive innovation in meeting the needs of marginalized or underrepresented individuals and communities, and in stimulating long-term economic growth.

#### ***F. Opportunities For Tunisia:***

Tunisia has several opportunities to promote inclusive innovation and stimulate economic growth, including:

1. A growing ICT sector: Tunisia’s information and communication technology (ICT) sector is growing,

offering many opportunities for innovation and job creation.

2. A young, educated population: Tunisia has a young and educated population that can benefit from training and mentoring programs to develop entrepreneurial and innovative skills.
3. A developing innovation ecosystem: Tunisia has a developing innovation ecosystem, with several incubators, innovation hubs, and acceleration programs, offering support for startups and entrepreneurs.
4. A strong tradition of social entrepreneurship: Tunisia has a strong tradition of social entrepreneurship that can be strengthened and developed to meet the needs of marginalized or underrepresented individuals.
5. A growing need for innovative solutions: Tunisia faces several economic and social challenges that require innovative solutions. These challenges include unemployment, poverty, limited access to basic services, etc.

By capitalizing on these opportunities, Tunisia can stimulate inclusive innovation and strengthen long-term economic growth while meeting the needs of marginalized or underrepresented individuals and communities.

### 1) *The potential of the digital economy*

The digital economy can play an important role in promoting inclusive innovation in Tunisia. The digital economy refers to the use of information and communication technologies (ICTs) to improve economic processes and create new business opportunities.

In Tunisia, the digital economy is rapidly expanding, offering numerous opportunities for inclusive innovation.

The digital economy has the potential to bring about numerous positive impacts, including stimulating economic growth, creating job opportunities, improving access to information, fostering technological innovation, and facilitating skills development.

Firstly, the digital economy can drive economic growth by creating new sectors of activity and improving the efficiency of economic processes. Through innovations in areas such as e-commerce, digital services, and online marketplaces, the digital economy can open up new opportunities for businesses and entrepreneurs to expand their reach and tap into global markets, leading to increased economic activity and growth.

Secondly, the digital economy can be a significant source of job creation, particularly in sectors such as software development, e-commerce, digital marketing, and data analytics. As the demand for digital services and products continues to grow, there is a need for skilled workers in these fields, providing employment opportunities for individuals and contributing to overall job creation in the economy.

Thirdly, information technologies can improve access to information for marginalized or underrepresented populations. The digital economy can provide access to educational resources, news, health information, and other valuable information that can empower individuals and communities to make informed decisions and participate more actively in economic and social activities, thus reducing information disparities.

Fourthly, the digital economy fosters technological innovation. The fast-paced and dynamic nature of the digital economy provides a conducive environment for entrepreneurs and innovators to develop new solutions to economic and social challenges. This can lead to the creation of disruptive technologies, products, and services that can transform industries, spur economic growth, and address societal issues.

Fifthly, the digital economy offers opportunities for skills development, particularly in the field of information and communication technology (ICT). As the digital economy continues to evolve, there is a growing demand for skilled workers who possess expertise in areas such as coding, data analysis, digital marketing, and cybersecurity. Developing skills in these areas can enhance individuals' employability and enable them to start their own businesses in the digital space, contributing to economic growth and entrepreneurship.

By capitalizing on the potential of the digital economy, Tunisia can stimulate inclusive innovation, improve the efficiency of economic processes, and create opportunities for marginalized or underrepresented people.

Tunisia also has significant potential to develop its digital economy. Indeed, the World Bank's 2019 report on the digital economy in Tunisia assesses the level of development of the digital economy in Tunisia and identifies the main challenges to be addressed to stimulate its development[50]. The report highlights the benefits of the digital economy for job creation and increased productivity. The World Bank's report on the digital economy in Tunisia is a document that analyzes the issues, challenges, and opportunities of the digital transformation of the Tunisian economy. This report provides an assessment of the current situation of the digital sector in Tunisia, as well as recommendations for strengthening the country's competitiveness in this field. It highlights gaps in infrastructure and regulation, barriers to the adoption of digital technologies, as well as opportunities to stimulate innovation and job creation in the digital sector in Tunisia. The report also emphasizes the importance of training and awareness-raising to accompany the country's digital transition. Similarly, Tunisia's 2018 national digital transformation strategy[51], developed by the Ministry of Communication Technologies and the Digital Economy, is an action plan aimed at stimulating the digital transformation of the Tunisian economy. It presents the issues, opportunities, and challenges of digital transformation for the country. It defines a vision for the development of the digital economy in Tunisia, based on the modernization of infrastructure, the adoption of digital technologies, the promotion of innovation, and the development of necessary skills. The national digital transformation strategy also emphasizes the need to strengthen data security and privacy protection, as well as the establishment of a regulatory framework favorable to the development of the digital economy. Similarly, the Economic Commission for Africa's 2019 report on the digital economy in Tunisia analyzes the opportunities and challenges of the digital economy in Tunisia and proposes recommendations to stimulate its development[52]. It is an analysis of the situation of the digital sector in Tunisia, describing the progress made in the field of the digital economy, as well as the challenges to be overcome to continue this evolution. This report highlights key sectors for the development of the digital economy in Tunisia, such as information and communication technologies, cybersecurity, e-commerce, etc. It also proposes avenues for reflection on better integrating the digital economy into public policies and... It also proposes avenues for reflection to better integrate the digital economy into public policies and improve coordination among sector actors. Finally, it highlights the crucial role of education and training to support the country's digital transition.

These references show that Tunisia has significant potential to develop its digital economy, but it is necessary to implement policies and strategies to overcome obstacles and promote its development.

## 2) *The importance of social and solidarity economy (SSE):*

In Tunisia, the social and solidarity economy (SSE) is gaining momentum and presenting numerous opportunities to promote inclusive innovation. Firstly, SSE can create job opportunities in various sectors such as agriculture, tourism, culture, renewable energy, and more. By providing economic opportunities, SSE can contribute to job creation, particularly for marginalized or underrepresented individuals, helping to

address issues of unemployment and inequality.

Secondly, SSE can play a crucial role in poverty reduction. By creating economic opportunities and empowering vulnerable communities, SSE can help reduce poverty and improve livelihoods. This can be achieved through initiatives that promote fair trade, cooperatives, micro-credit, and other inclusive economic models that prioritize social impact.

Thirdly, SSE can improve the quality of life for communities by providing social and environmental services. This can include access to clean water, education, healthcare, waste management, and other essential services that contribute to improved living standards and well-being.

Fourthly, SSE fosters social innovation. As a framework that emphasizes social and environmental goals, SSE provides an environment for social entrepreneurs to develop innovative solutions to economic and social challenges. This can lead to the creation of innovative business models and approaches that address societal issues and contribute to sustainable development.

Fifthly, SSE can strengthen participatory democracy. By emphasizing citizen participation and participatory governance, SSE promotes local democracy and empowers communities to have a voice in decision-making processes. This can result in more inclusive and participatory governance structures that empower citizens and foster community ownership.

In conclusion, SSE in Tunisia presents opportunities for inclusive innovation across various aspects of society, including job creation, poverty reduction, improvement of quality of life, social innovation, and strengthening participatory democracy. Embracing SSE can contribute to more inclusive and sustainable development, empowering communities, and promoting social and environmental well-being in Tunisia.

Social and solidarity economy (SSE) is increasingly recognized as a sustainable and equitable economic alternative in many countries, including Tunisia. Indeed, the International Labour Organization (ILO) report on SSE in Tunisia in 2015[53] analyzed the characteristics and challenges of SSE in Tunisia. It examined SSE in Tunisia, looking at opportunities and challenges for creating decent jobs and reducing poverty. The report examined policies and programs on SSE in Tunisia, as well as civil society and private sector initiatives. It also highlighted opportunities to develop SSE in Tunisia, particularly in agriculture, tourism, and handicrafts, and proposed recommendations to strengthen the SSE sector and its potential for inclusive economic growth.

Similarly, the study by the Tunisian Institute of Competitiveness and Quantitative Studies on SSE in Tunisia in 2020[54] provides a detailed evaluation of SSE in Tunisia, highlighting its strengths and weaknesses, as well as opportunities and challenges for its development. It highlights the dynamism of this sector, which represents a significant share of the Tunisian economy. The study also highlights the challenges that SSE faces in Tunisia, especially in terms of financing and regulation. It also proposes ways to strengthen the role of the SSE in the country's economic and social development.

The 2017 SSE White Paper in Tunisia is a compilation[55] of contributions from SSE experts and practitioners in Tunisia, presenting their vision of the SSE as a sustainable vector for economic and social development. The White Paper on Social and Solidarity Economy in Tunisia in 2017 is a reference document that presents the challenges, opportunities, and challenges facing the SSE sector in the country. The White Paper provides an overview of the SSE in Tunisia, analyzes public policies and SSE practices in different sectors of activity, highlights obstacles faced by the sector, such as the complexity of the



regulatory framework, the lack of funding, the low level of awareness and training, and proposes solutions to strengthen the role of the SSE in the country's economic and social development.

These references emphasize the importance of SSE in Tunisia, not only as an economic alternative but also as a means of addressing the social and environmental challenges facing the country.

### 3) *The role of research and development in inclusive innovation:*

Research and development (R&D) can play a crucial role in promoting inclusive innovation in Tunisia. This is a process that allows for the development of new technologies, products, services, or methods to solve economic and social problems.

In Tunisia, the field of Research and Development (R&D) is experiencing growth, and its importance can be attributed to various reasons. Firstly, R&D stimulates innovation by fostering the development of new technologies and innovative solutions to address economic and social challenges. This offers opportunities for inclusive innovation that can benefit different sectors of society and promote sustainable development.

Secondly, R&D can create employment opportunities in sectors such as life sciences, information and communication technologies, renewable energy, and others. This can contribute to job creation, addressing issues of unemployment and providing opportunities for skill development and economic empowerment.

Thirdly, R&D can improve the competitiveness of the Tunisian economy by developing new technologies and enhancing the quality of products and services. This can help businesses and industries stay competitive in the global market and promote economic growth.

Fourthly, R&D strengthens the innovation capacity of businesses and institutions by promoting collaboration between the public and private sectors. This can foster knowledge sharing, research partnerships, and technology transfer, leading to more innovative solutions and approaches to economic and social challenges.

Fifthly, R&D facilitates technology transfer to sectors that require it, contributing to the promotion of inclusive innovation. This can help bridge the technological gap between different sectors of society, including marginalized or underrepresented groups, and promote more equitable access to technological advancements.

Research and development (R&D) plays a key role in promoting inclusive innovation in Tunisia. In fact, the UNESCO report on R&D in Tunisia in 2015[56] provides an in-depth analysis of the situation of science, technology, and innovation in Tunisia. It examines national policies, strategies, and programs in research and innovation, as well as the resources available to support R&D in Tunisia. The report also highlights the challenges and opportunities to improve Tunisia's performance in R&D and innovation, and proposes recommendations to strengthen the national innovation system in Tunisia. Similarly, Ben Rejeb, A., & Ben Youssef, A. (2017) in their article "The role of R&D in promoting innovation[57]: The case of Tunisia" examine the role of R&D in promoting innovation in Tunisia, highlighting the links between R&D, innovation, and economic growth. The results of the study indicate that R&D investments have a significant impact on innovation and the performance of Tunisian companies, underscoring the importance of R&D in promoting innovation and economic development in Tunisia. In the same vein, the OECD report on R&D and innovation in Tunisia in 2018 evaluates Tunisia's policies and strategies on R&D and innovation[58], identifying the strengths and weaknesses of the national innovation system, as well as the opportunities and challenges for its development. The report provides an in-depth analysis of the challenges and opportunities

related to innovation in Tunisia and serves as a guide for policymakers, researchers, and businesses interested in the development of innovation and R&D in Tunisia.

These references show that R&D plays a crucial role in promoting inclusive innovation in Tunisia. Efforts to strengthen Tunisia's national innovation system should focus on creating an environment conducive to R&D, by encouraging collaboration between universities, businesses, and research institutes, as well as providing tax and financial incentives to stimulate R&D.

In short, R&D can play an important role in promoting inclusive innovation in Tunisia, by providing opportunities for technological innovation, job creation, and improving economic competitiveness.

### ***G. Reflections on Encouraging Inclusive Innovation in Tunisia:***

#### *1) Strengthening education and vocational training:*

Strengthening education and vocational training is essential to promoting inclusive innovation in Tunisia. Technology and innovation skills are increasingly in demand in the job market, and individuals with these skills are better positioned to contribute to inclusive innovation.

To strengthen education and vocational training in Tunisia, several measures can be considered. Firstly, investing in teaching technology and innovation skills should be a priority in education programs. This can include incorporating courses on computer programming, software development, artificial intelligence, and other relevant skills to ensure that students are equipped with the necessary knowledge and skills for the digital economy.

Secondly, encouraging lifelong learning is crucial. Workers should be motivated to pursue ongoing training programs to continuously upgrade their technology and innovation skills, enabling them to remain competitive in the job market and adapt to changing industry demands.

Thirdly, establishing partnerships between educational institutions and businesses can be beneficial. Collaborations can provide opportunities for students to gain practical experience through internships, research projects, and on-the-job training, allowing them to apply their skills in real-world settings and bridge the gap between academia and industry.

Fourthly, developing vocational training programs tailored to the needs of innovation sectors such as information and communication technologies, biotechnology, and others can be effective. These programs can provide targeted training to workers, equipping them with specialized skills that are in demand in the job market.

Fifthly, promoting inclusion in education and training is crucial. Efforts should be made to ensure that marginalized or underrepresented individuals have equal access to quality education and training in technology and innovation, addressing any barriers they may face.

Strengthening education and vocational training is an important avenue to explore in order to encourage inclusive innovation in Tunisia. Several sources highlight the significance of this approach. Firstly, the World Bank report on education and training in Tunisia in 2020 sheds light on the challenges facing the education and training system in Tunisia and proposes solutions to strengthen lifelong learning, improve the quality of education, and enhance vocational training. This report provides valuable insights into the current state of education and training in Tunisia and offers recommendations for improvement.

Secondly, the research article “Education, Training, and Innovation in Developing Countries” from 2017 delves into the links between education, vocational training, and innovation in developing countries. The article emphasizes the importance of vocational training in developing the skills necessary for innovation, highlighting the need for targeted training programs that align with the demands of the job market and foster innovation-driven mindsets.

Furthermore, the European Union report on vocational training in Tunisia in 2018 evaluates the vocational training system in Tunisia and proposes recommendations to strengthen the quality of vocational training, develop the skills required for employment, and encourage cooperation between companies and training institutions. This report provides insights into the specific areas that need improvement in vocational training in Tunisia and offers strategies for enhancing the effectiveness of vocational training programs.

Strengthening education and vocational training is essential to encourage inclusive innovation in Tunisia. Efforts to improve the education and vocational training system should focus on adapting to the needs of the job market, developing innovation skills, and encouraging collaboration between companies and training institutions.

## 2) *Stimulating social and solidarity entrepreneurship:*

Stimulating social and solidarity entrepreneurship can be an effective strategy for promoting inclusive innovation in Tunisia. Social and solidarity entrepreneurship focuses on creating businesses that have both a social and economic objective by providing goods and services that meet the needs of local communities.

Stimulating social and solidarity entrepreneurship in Tunisia can be achieved through several measures. Firstly, facilitating access to financing through grant programs, low-interest loans, or investment funds can provide much-needed support to social entrepreneurs who often struggle to access funding. Secondly, encouraging public-private partnerships can offer resources, technical support, and access to markets, benefiting social enterprises. Offering technical support through mentorship programs, business incubators, and management training can help social entrepreneurs set up their businesses and develop their management skills. Promoting local initiatives of social and solidarity entrepreneurship can contribute to local economic development and should be supported. Additionally, encouraging collaboration among social enterprises, partners from the public and private sectors, civil society organizations, and universities can strengthen the social and solidarity entrepreneurship ecosystem in Tunisia.

Indeed, stimulating social and solidarity entrepreneurship is an important avenue to explore for encouraging inclusive innovation in Tunisia. The International Labour Organization (ILO) report on social entrepreneurship in Tunisia in 2016 highlights the potential of social entrepreneurship in Tunisia to promote economic growth and social inclusion, and provides recommendations to stimulate its development. Furthermore, the research article “Social entrepreneurship in Tunisia: An exploratory study” from 2021 analyzes the characteristics, opportunities, and challenges of social entrepreneurship in Tunisia, providing insights into the current landscape. Lastly, the “Moussanada” program of the Tunisian Agency for the Promotion of Industry and Innovation (APII) aims to support social entrepreneurship projects in Tunisia through training, advice, and funding, showcasing efforts to promote social and solidarity entrepreneurship in the country. These sources highlight the importance of measures to stimulate social and solidarity entrepreneurship in Tunisia as a means to encourage inclusive innovation and economic growth.

These references show that social and solidarity entrepreneurship can be an important driver for inclusive innovation in Tunisia. Public policies should focus on supporting social entrepreneurship by providing training, advice, and funding, and by encouraging cooperation between social enterprises and other actors in the innovation sector. By promoting social and solidarity entrepreneurship, Tunisia can encourage the

creation of businesses that meet the needs of local communities and contribute to inclusive innovation, while stimulating job creation and economic growth.

### 3) *Promoting financial inclusion for disadvantaged populations:*

Promoting financial inclusion for disadvantaged populations can also be an important strategy for promoting inclusive innovation in Tunisia. Financial inclusion involves providing financial services to those who do not have access to them, such as people living in poverty, women, youth, people living in rural or isolated areas, and people with disabilities.

Promoting financial inclusion for disadvantaged populations in Tunisia can be achieved through various measures. Firstly, developing access to financial services such as bank accounts, credit cards, and loans is crucial to ensure that these services are accessible to all, including disadvantaged populations. Secondly, encouraging the use of financial technologies such as e-wallets, mobile payments, and online banks can overcome barriers to access financial services, especially for those living in rural or isolated areas. Strengthening financial education can also play a pivotal role in helping disadvantaged populations understand the benefits of financial services and use them responsibly. Supporting microfinance programs that provide low-interest loans can empower people living in poverty to start their own businesses and lift themselves out of poverty. Additionally, fostering cooperation between public and private actors can promote financial innovation and contribute to improving financial inclusion for disadvantaged populations in Tunisia.

Efforts towards financial inclusion for disadvantaged populations in Tunisia are important and supported by research and reports. For instance, the World Bank has highlighted the significance of financial inclusion in Tunisia and has proposed measures to enhance access to financial services for disadvantaged populations. Additionally, research articles such as “Financial Inclusion and Poverty Reduction: Evidence from Tunisia” provide insights into the impact of financial inclusion on poverty reduction in the country. These sources emphasize the importance of taking measures to promote financial inclusion for disadvantaged populations in Tunisia to empower them economically and foster inclusive growth.

Promoting financial inclusion for disadvantaged populations can be a crucial avenue to encourage inclusive innovation in Tunisia, as supported by various research and reports. For instance, the World Bank’s 2018 report on financial inclusion in Tunisia examines the challenges and opportunities related to financial inclusion and provides recommendations to improve access to financial services for disadvantaged populations. Similarly, a 2019 research article titled “Financial inclusion and inclusive growth in Tunisia” analyzes the impact of financial inclusion on inclusive growth in the country, using panel data to measure the effect of access to financial services on income inequality and poverty. These sources highlight the importance of promoting financial inclusion as a means to foster inclusive growth in Tunisia.

Furthermore, the “Tayssir” program of the Tunisian Agency for Technical Cooperation (ATCT) is an initiative aimed at promoting financial inclusion for disadvantaged populations in Tunisia by offering training and advice to improve financial management skills and access to financial services. Such programs demonstrate the commitment of Tunisian institutions to promote financial inclusion and empower disadvantaged populations economically. By implementing measures to promote financial inclusion, Tunisia can create an enabling environment for inclusive innovation, allowing all segments of the population to access and benefit from financial services, and contribute to sustainable and inclusive development in the country.

Public policies should focus on strengthening access to financial services for disadvantaged populations by providing training and advice to improve financial management and access to financial services. By promoting financial inclusion for disadvantaged populations, Tunisia can help reduce economic inequalities

and promote inclusive innovation by creating opportunities for all Tunisians, regardless of their economic situation.

## CONCLUSION

### *A. Summary of Key Points in the Paper*

Inclusive innovation has the potential to make a significant impact on the Tunisian economy by contributing to economic growth, job creation, social inclusion, and competitiveness. Promoting inclusive innovation can stimulate economic growth by fostering the creation of innovative businesses and industries, which can generate quality jobs and increase productivity. This can also enhance the competitiveness of Tunisia's economy globally, as innovative businesses are better positioned to compete with foreign counterparts.

Inclusive innovation can also address social and regional inequalities in Tunisia by promoting the inclusion of marginalized groups such as women, youth, persons with disabilities, and disadvantaged regions. By providing access to innovation and development opportunities, these groups can contribute to the country's economic and social development in a more equitable and sustainable manner.

Furthermore, inclusive innovation can strengthen human capital in Tunisia by promoting entrepreneurship and offering training and mentoring programs for young entrepreneurs and innovation workers. This can improve the skills and knowledge of workers, enhancing their capacity to innovate and contribute to the economy.

Inclusive innovation also encourages collaboration between public and private sector actors, leading to stronger partnerships and better utilization of resources for innovation. By promoting an integrated approach to innovation, inclusive innovation can facilitate better coordination and utilization of resources, resulting in a stronger impact on the Tunisian economy as a whole.

In summary, inclusive innovation can have a significant global impact on the Tunisian economy by promoting economic growth, social and regional inclusion, development of human capital, and collaboration between public and private sector actors. However, to fully realize this impact, additional policies and programs are needed to strengthen inclusive innovation in Tunisia and overcome challenges that hinder its implementation.

### *B. Analysis of the Global Impact of Inclusive Innovation on the Tunisian Economy*

Inclusive innovation has a profound global impact on the Tunisian economy, as it contributes to economic growth, job creation, social inclusion, and competitiveness. Firstly, promoting inclusive innovation in Tunisia can spur economic growth by fostering the creation of new innovative businesses and industries, resulting in quality job opportunities and increased productivity. This can also enhance the competitiveness of the Tunisian economy on a global scale, as innovative businesses are better positioned to compete with foreign counterparts.

Secondly, inclusive innovation can play a crucial role in reducing social and regional inequalities in Tunisia by promoting the inclusion of marginalized groups such as women, youth, persons with disabilities, and disadvantaged regions. By providing access to innovation and development opportunities, these groups can actively contribute to the economic and social development of the country in a more equitable and sustainable manner.

Thirdly, inclusive innovation can strengthen human capital in Tunisia by promoting innovation and

entrepreneurship. Through training and mentoring programs for young entrepreneurs and innovation workers, inclusive innovation can improve their skills and knowledge, thereby enhancing their capacity to innovate and contribute to the economy.

Fourthly, inclusive innovation can foster collaboration between public and private sector actors, leading to stronger partnerships and more effective utilization of resources for innovation. By promoting a more integrated approach to innovation, inclusive innovation can encourage better coordination and utilization of resources, resulting in a stronger impact on the Tunisian economy as a whole.

In summary, inclusive innovation can have a significant global impact on the Tunisian economy by promoting economic growth, social and regional inclusion, development of human capital, and collaboration between public and private sector actors. However, to fully realize this impact, additional policies and programs are needed to strengthen inclusive innovation in Tunisia and overcome the challenges that hinder its implementation.

### ***C. Suggestions to Further Encourage Inclusive Innovation in Tunisia***

To promote inclusive innovation in Tunisia, several key strategies can be implemented. Firstly, it is crucial to invest in education and training for innovation workers, young entrepreneurs, women, and disadvantaged individuals. Professional training and mentorship programs can be established to enhance the skills and knowledge necessary for innovation and the creation of innovative businesses.

Secondly, incentives such as grants, tax benefits, and financing can be introduced to encourage companies to invest in innovative projects. This can stimulate innovation in key sectors such as technology, agriculture, health, and energy, which have significant potential for economic growth.

Thirdly, innovative financing mechanisms such as venture capital funds and grants for startups and small and medium-sized enterprises (SMEs) can be established to address the challenge of lack of funding for innovation in Tunisia. Loan guarantee programs can also be implemented to facilitate access to financing.

Fourthly, closer collaboration between public and private sector actors can be promoted to strengthen inclusive innovation. This can be achieved through public-private partnerships, the creation of innovation clusters, and the establishment of networks of entrepreneurs and innovators.

Fifthly, research and development capacities in Tunisia can be strengthened by implementing training and mentorship programs for researchers and engineers, and by encouraging collaboration between universities and businesses.

Sixthly, specific mentorship and training programs can be established for women and young people in disadvantaged regions to promote their access to innovation opportunities and ensure their inclusion in the innovation ecosystem.

Seventhly, promoting a culture of innovation at all levels of society is essential. This can be achieved through awareness and innovation training programs, as well as the promotion of social entrepreneurship and citizen innovation to encourage a mindset of innovation and creativity.

In conclusion, strengthening innovation education and training, encouraging investment in innovative enterprises, improving innovation funding mechanisms, promoting collaboration between public and private sector actors, strengthening research and development capacities, promoting inclusion of women and disadvantaged regions, and fostering a culture of innovation are key strategies to promote inclusive innovation in Tunisia and unlock its potential for economic growth, social inclusion, and competitiveness.

#### ***D. Limits and Future Research Perspectives.***

Although inclusive innovation holds promise for the Tunisian economy, there are several limits and challenges that need to be considered. One challenge is the lack of data, both quantitative and qualitative, on inclusive innovation in Tunisia, which makes it difficult to evaluate its economic and social impact. Further research is needed to collect data on inclusive innovation efforts and their outcomes.

Another challenge is the low level of coordination among the various actors involved in inclusive innovation in Tunisia, which can hinder the implementation of coherent policies and programs. Research can be conducted to identify ways to improve coordination among different actors to ensure a more effective and coordinated approach.

Scaling up inclusive innovation initiatives is also a challenge in Tunisia. Despite the implementation of various inclusive innovation projects, scaling them up to achieve broader impact remains a challenge. Future research can explore strategies to foster the growth and diffusion of inclusive innovation initiatives across different sectors and regions in Tunisia.

Ensuring the sustainability of inclusive innovation initiatives is another important consideration. It is crucial to conduct research on ways to ensure that inclusive innovation initiatives in Tunisia are sustainable in the long term, both in terms of their economic viability and social impact.

In summary, further research on inclusive innovation in Tunisia is necessary to better understand the challenges and opportunities, identify best practices, and develop strategies to promote inclusive innovation in the country. This research can provide insights into key success factors, obstacles to overcome, and solutions to improve the economic and social impact of inclusive innovation in Tunisia.

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