

# Innovation in the Public Sector in the Start-up Nation: Challenges of Technology, Bureaucracy, and Digital Divide

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Innovation provides opportunities to all countries, as advancement in technology and globalization of economic markets encourage global competition and increase the role of governments in gaining a strategic competitive advantage while boosting economic growth and productivity. According to the OECD, innovation can make a difference in addressing developmental challenges and providing catalyst for countries to accelerate business processes and practices that improve public service efficiency. The public sector plays a significant role in modern economies and innovation is a necessary condition for improving government services to the public and creating a competitive economy. Israel is known as the “start-up nation”, but innovation policies and strategies relating to the public sector are less developed than those of business innovation due to lack of innovation culture, digital divide, and bureaucracy. The research examines innovation in the public sector in Israel compared to other OECD countries. It is argued that despite the enormous influence of high-tech and start-ups on the economy and gross of national product, the flourishing technology sector has not contributed to other sectors of the economy and the performance of the public service lags behind the private sector in terms of innovation and efficiency. The research concludes that implementing Israel’s success in business innovation into the public sector requires long-run strategic investments and public policies to increase the supply and quality of human capital and infrastructure. The goal should be to narrow digital divide with other developed countries and advance the technological capabilities and productivity of the public service.

*Keywords:* innovation, technology, bureaucracy, digital divide, Israel

## Introduction

There has been a continuance growing attention to the importance of business innovation, allowing significant changes and improvements to the society we live in. Cainelli, Evangelista, and Savona (2010) found that innovating firms outperform non-innovating firms in terms of productivity levels and economic growth. Yun (2018) explains that in the globally competitive environment, business innovations have become essential strategies for enterprises to develop competitiveness and market potential. But in contrast to the tremendous impact of innovation in changing business models and industries, the concept of innovation in the public sector and its impact on political, social, and cultural systems has not been properly developed despite the need to improve services and enhance value in terms of the public benefit. The practice of different countries demonstrates the complexity of implementing innovation in public systems which operate without practical competition and in an environment which is considered safe for their existence and political survival. In all

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developed and developing countries, digital divide and bureaucratic processes are major obstacles for improvement and hinder motivation for innovative processes connected to the central government and its public branches (for example: Albury, 2005; Lee, Olson, & Trimi, 2012; Tucker, 2014; Agrawal, Galasso, & Oettl, 2017; Seeck & Diehl, 2017).

Innovation is defined as a practice that transforms a new idea into a product, process, or organizational structure and is aimed at improving and streamlining performance and boosting organizational productivity, allowing private and public organizations to adapt to a changing environment. The concept of innovation is a new phenomenon, which started to focus on private organizations and is tied to globalization and technology advancement. Stronger interest in creating innovation in the public sector has developed due to the importance of the adaptation of public organizations to global and technological changes and achieving strategic advantages which are considered critical for their survival. Innovation in the public sector refers to significant improvements to public administration and services that governments provide, directly through public service employees or indirectly by the private sector with the supervision of state and public authorities. Such policies support management strategies, services, processes, products, and technologies to develop administrative systems and encourage regulation and legislation to allow public organizations to innovate (for example: Salge & Vera, 2012; Shmueli, Feitelson, Furst, & Hann, 2015; Shearmur & Poirier, 2017).

The purpose of this research is to examine the state of innovation in the public sector in Israel compared to other OECD countries. The need to explore this issue is because despite being an advanced start-up nation with a great innovative private sector, most of its innovation in the high-tech industry is directed globally and not toward promoting the local economy and its public service. According to UNESCO Science Report (2015), the economic contribution of the high-tech sector has not benefited other sectors of the economy with the result of a growing socio-economic gap. The growth of the technology sector has been counter to the social difficulties, which makes Israel a country that is characterized by high levels of economic inequality, poverty, and social diversity (for example: Flug, 2014; Poch, 2016; Ganan & Yaniv, 2021; Luzzatto, 2021).

### **Innovative Culture**

The public sector is essential to create and adopt innovations (Dalziel, 2020) and achieve higher levels of trust and satisfaction with the operations of governments (Beerli, Uster, & Vigoda-Gadot, 2018). Innovation processes in the public sector focus on implementation of new ideas for creating public value while utilizing technology to solve public problems and apply government policy. They involve policies to maintain economic progress and development and supporting management strategies, services, processes, and technologies across public organizations, in all that relates to changing policy, revising the policy-setting process and initiating policies for fostering and disseminating innovation. Such new ideas may change significantly and develop further, but ideally they will remain resilient over time (for example: Dorsman, Tummers, & Thaens, 2015; Shmueli et al., 2015; Haley, 2016, Shearmur & Poirier, 2017, Wouter & Bouckaert, 2018).

The Organization for Economic Co-operation and Development (OECD) defines innovation as the implementation of a new or significantly improved product or process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations. The goal of OECD countries is to provide services which are user-focused, better defined, and better target user demand. Improvement of the supply of services or providing new services to the public are the responsibility of public service employees. Technology allows citizens to be more informed and aware of the services provided by

governments and requires more innovative approaches in the public sector. However, knowledge and application of public sector innovation and its results, costs, and enabling environment, is still fragmented. Public sector innovation is only occasionally institutionalized in government budgets, roles, and processes, and the full range of tools available to policy makers for accelerating innovation is applied inconsistently. To help governments in their pursuit of enabling more innovative practices, the OECD developed an integrated framework for mapping existing approaches and policies that support public sector innovation in human resource management, training, and regulations (OECD, 2016).

The research argues that there is a close relationship between a country's development of technological innovation and its economic performance, which could be defined as innovation culture. The experiences of different countries show that the role of governments has a tremendous impact on economic growth in both developed and developing countries. In a global world, governments should encourage and support innovation and public and private investment in digital systems. Of all areas of public service, digital services are the most beneficial to economic growth, contributing to innovation in products, services, processes, business models, and organizational arrangements. The relevance of innovation culture to global competition shows that government policies and regulations can promote or hinder innovation, since access to technology and its benefits is not equally distributed between or within nations. According to the Global Risks Report (2022), governments, businesses, and individuals in developing economies seek to digitalize rapidly but their limited technical and financial resources could deepen digital divides. According to the World Bank report on Israel (2022), with Israel's leadership in business innovation, adoption of innovation culture in the public sector is crucial to take full potential of the digital age. The report recommends establishing an inter-ministerial committee on digital development, to ensure institutional coordination and resource mobilization for both private and public sectors.

The innovation culture that identifies Israel's hi-tech industry is the incentive for the characterization of the country as the "start-up nation"—a small country that produces more start-up companies than large, peaceful, and stable nations like Japan, China, India, Korea, Canada, and the UK (Senor & Singer, 2009). According to the Israeli Global Impact 2030, Israel is a "development miracle"—an island economy with desert covering more than half of its territory which underwent rapid industrialization, established a service-based economy, and became a global leader in areas such as cyber, water, health, agriculture, energy, and more. According to the World Economic Forum for competitiveness (2021-2022), Israel is one of the most innovative economies in the world, since digital industries grew the economy. The Digital Quality of Life Index (2021) ranked Israel at the top of its list out of 110 countries totaling 90% of the global population. Technological innovation is Israel's leading industry and the primary engine of growth of the economy. As explained by former Economic Minister, Eli Cohen (2017), Israel has managed to maintain its reputation as an exceptionally prolific country in terms of nurturing an innovation-based ecosystem. He argues that Israel has long understood the importance of research and development and innovation and how these concepts are an essential element for the prosperity of the country, and with this long-term strategy, the policy of investing in innovation led to the creation of sustainable economic prosperity, subsequently leading to tremendous economic productivity and value. According to former Minister for Social Equality, Gila Gamliel (2017), Israel is ranked high compared to other developed countries for innovation and technological readiness and Israeli consumers are perceived as "early adopters" of innovative technologies and services—and this environment can provide a qualitative basis for innovation culture and integration of digital services. However, in contrast to the success of business innovation, the report by the

Ministry for Social Equality stipulates that the innovation culture that developed in the business sector has yet to permeate the public sector.

### **Digital Divide**

Another important aspect of the innovation culture is that a digital divide separates those who have access to information and communication technologies and the ability to utilize them, and those who do not. According to OECD (2021), digitalization can reduce poverty by improving the access of poor people to education, health, government, and financial services. But in the case of Israel, there is a sharp contrast between the success of the policy of the government to encourage innovation culture in the hi-tech industry and its innovation policy for the public sector. The consequence of this contrasted policy is a digital divide between the business and public sectors and between different segments of the population. Despite being one of the smallest countries in the OECD, Israel is marked by significant socio-economic disparities (OECD, 2020), and is considered as one of the most unequal economies in the Western world, with significant gaps between the rich and poor. According to the Center for Media, Data and Society (2021), the country faces a specific digital divide among the Israeli-Arab and ultra-Orthodox Jewish population with significant disparities between these communities and the rest of the population. Most ultra-Orthodox and Israeli-Arabs live separately from other parts of society, have different school systems, live mostly in different cities, and do not serve in the army. This divide contributes to deficiencies in the labor market, education system, life-style, and standard of living. Given their tendency of these segments of the population to have very large families, they have serious economic implications, resulting in significant problems of poverty and deepening increase of digital divide (OECD, 2018). According to OECD Education Report (2022), one in five young Israelis is not studying or working, practically contributing to the deepening digital divide. This conclusion is supported by a report of the Israel Divide Program (2022), which confirms that despite Israeli leadership in innovation and advanced technologies, the digital advantages and potential have yet to permeate all parts of society and the economy. According to the report, there are significant disparities and a growing digital divide between the parts of society that can take advantage of digitization and the weakened populations that frequently do not benefit from Israel's technology advancement.

The gap in labor productivity between Israel and leading countries shows the need to improve Israel's public sector digital services. The need to narrow the gap is particularly relevant since the population growth rate is significantly higher than OECD countries, although unlike other developed countries, Israel lacks a coherent government policy to improve the digital divide. As explained by Mazzucato (2016), innovation requires long-run strategic investments and public policies that aim to create and shape markets, rather than just "fixing" markets or systems. According to the OECD (2021), these policies should include increasing the supply and quality of human capital and infrastructure requires both structural reforms and additional financial resources. Paltieli (2022) suggests that a strategic effort is needed to allow Israel to share technological vision between the business and the public sectors. Luzzatto (2021) maintains that Israel must narrow its gaps with the rest of the world, mostly in terms of attracting foreign investments, its business climate, and the productivity of the public service. Such effort is provided by a joint plan of the Innovation Authority and "Digital Israel" project, that jointly operate the GovTech Incentive Program. The program is designed to promote innovative technologies for the public sector by encouraging companies and non-profit organizations to provide solutions to public sector challenges, including areas such as education, health, welfare, economics, and governance.

The research argues that in order to narrow the digital gap, promotion of digital transformation is required to increase productivity and growth that would bring the technological advancement of the public sector to the level of leading OECD countries. The goal of the government is to achieve this target by the year 2030 (Ministry of Economy and Industry, 2021). Moving Israel to digital transformation is considered by the government as a national priority that is necessary to maintain its economic competitiveness in a global world (Spigelman, 2017), but there are obstacles of understanding the digital world among government employees, which require technological training and cooperation between the public and business sectors (Axelrad, Sunkin, & Haver, 2022). According to the Government Service Improvement Bureau (2021) the Israeli employment market is not proportionally divided between the public and business sectors. While the public sector is the main source of new jobs, the business sector has difficulties to create new jobs. According to OECD report (2020), Israel suffers from large economic disparities between the richest and poorest areas and workers from the weak communities are often trapped in low-quality jobs. These deficiencies reflect persistent weaknesses in three key areas: product markets, education, and infrastructure, but increasing the supply and quality of human capital and infrastructure requires government effort for social structural reforms and financial resources. According to OECD (2018), training and education of the weak segments of society and further market reforms for the entire population are needed to keep the economy growing and allow the country to compete in the global market. OECD report (2020) concludes that without further policy action, these trends are likely to worsen and the digital divide is bound to increase, since the weakest part of the population—Israeli-Arabs and ultra-Orthodox—should according to statistics constitute half of the population by 2059.

### **Bureaucracy**

Bureaucracy is the expression of the administrative power of the state and its public institutions and exists when there is limited service to the citizens. Bureaucratic reforms seek to improve the quality of governance, although Meier, Compton, and Wimpy (2019) argue that the major governance failures in both developing and developed countries are political, not bureaucratic, since political institutions fail to provide clear policy goals, rarely allocate adequate resources to deal with the scope of the problems, and do not allow the bureaucracy sufficient autonomy in implementation. They further argue that rational bureaucratic responses to these problems create additional governance problems that could have been avoided if political institutions performed their primary functions. This policy of non-reform is defined by the OECD as a political situation in which there are no significant reform initiatives (Cema, 2013). In relation to Israel, Peled (2010) argues that politics rather than technology accounts for the inefficient technology in the public sector, which simply means preventing to use technology to improve services to citizens. He further argues that information technology systems are built and used in power struggles within ministries, among ministries, between the public sector and the public, or among the various branches of government. He explains that in Israel various ministries manipulate their bureaucratic power by building technological systems that are, sometimes, deliberately incompatible with the solutions of other ministries, which makes technology merely for governmental use more expensive and provides no improved services to citizens. The result of the supremacy of bureaucracy over technology in Israel is lack of reform or slow pace of reform and insufficient changes to the structures and processes of public organizations that hinder the improvement of their performance (Beeri, 2020). Bureaucratic politics in the public sector is the result of the vast influence of the Ministry of Finance across multiple policy domains, as the policy influence of bureaucracies is shaped by the intervention of politicians (Gilad & Cohen, 2018).

Domestic economic policy suffers because decision making is highly politicized. As explained by Wolfrum (2021), economic reforms are aimed at reducing the government's direct involvement in the economy and establishing a neoliberal market system, although innovation has not fully permeated the public sector, which is perceived as heavy-handed and outdated and heavily influenced by bureaucracy (Digital Israel, 2022). OECD report (2014) defines Israeli bureaucracy as the insufficient division of responsibilities between the government sectors that hinders infrastructure project development. The report found that co-ordination between different public authorities is required to ensure adequate resources and capacity to undertake investment. According to a report of Aaron Institute for Economic Policy (2022), the gaps in productivity and GDP per capita with OECD countries remained stable and even slightly increased in the last decade due to bureaucracy. OECD report (2021) found that Israel faces two main challenges: to update the relatively rigid pay system without jeopardizing trust and professionalism in the public sector and to deliver effective public services in cooperation with public sector unions. Some of the same recommendations are provided by the Bank of Israel report (2021), which include development of human capital, investment in physical and technological capital and infrastructure, development of the financial system and improving the regulation and use of technology to streamline government activity. On a positive outlook, according to the OECD (2022), improving regulation to average OECD levels would increase GDP per capita by 3.75% within five years, and by 5.75% within a decade.

The impact of bureaucracy is evident in the differences in government policy between the private and public sectors. The enormous influence of the government is reflected in the services it provides, and the Israeli high-tech sector has grown remarkably as government policies significantly contributed to its success. Wen, Debg, Zhang, and Chang (2021) found that government efficiency has a significantly positive impact on innovation output and more importantly verified the positive impact from the improvement of bureaucracy quality on innovation. In relation to Israel, the role of the government is evident in that the high-tech sector has grown remarkably through government policies and innovation policy that provides public research and development grants and venture capital policies for the private sector (Israel Innovation Authority, 2022). But the policy for the public sector lacks the same initiatives and innovation has been slow in the public sector due to government bureaucracy. This is explained in that the public service is still centralized and the government has not adopted substantial reform, often regarding public organizations as a threat to national economic stability (Helleri, 2016). According to OECD report (2020), the government should reduce barriers that prevent segments of the population from fully participating in the economic process and give everyone a similar chance to succeed, regardless of where he or she was born. This will require equal access to high-quality education, affordable housing, reasonable public transportation, and improved urban planning in every municipality to reduce spatial divides and segregation of disadvantaged households. The report concludes that local authorities can play a significant role, since good municipal government and effective policies to achieve national priorities are the best means to improve the outcomes of residents of poor areas.

### **Conclusion**

The research demonstrates that what best identifies Israel is the sharp contrast in its innovation culture. Israel is one of the largest and most innovative countries in the world, but its high-tech sector accounts for only around 10% of jobs in the country. The dark side of this innovation culture is that the "start-up nation" cannot allow innovation to be limited to only a minority of the workforce. OECD report (2021) found that Israel needs to develop a strategic approach to support an innovative culture in the public sector. This conclusion is supported

by the Government Service Improvement Bureau (2021), which found that satisfaction with government service should be improved through digital channels. Based on these conclusions, OECD report (2018), maintains that long-term digital strategic planning should be enhanced by the government.

The plan of the Israeli government is to adopt the “Citizen in the Center” principle that will place increased importance on the needs of citizens and their satisfaction and contribute to improved, personally customized, convenient, and simple services. To achieve this, the government provides its services through the Gov.il website that was designed with an emphasis on quality and reliable service. With the new policy, government services are viewed from the perspective of the citizen or the business receiving the service, rather than from the perspective of the office providing the service, in the aim of simplifying the interactions with various government offices. According to the National Digital Program (Digital Israel, 2022), improving service to citizens receiving government services and maintaining information to the public would enable convenient, unified, and protected identification in engaging with online government services and is necessary to remove barriers that currently limit innovation in the public sector.

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