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Government's Role in Advancing Innovation

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| Yaron Katz |

[1] *Holon Institute of Technology, Israel*

yaron@ykatz.com

ABSTRACT

The paper examines the way that policy of governmental intervention can promote innovation and achieve a leading role in global markets. Innovation is a major driver of economic development and what drives competition in modern age, allowing nations a competitive position through investments in technology. The nature of innovation changed significantly in the last decades, and it is today based on technological advancement and openness to global developments. As the world is changing, competition between countries accelerates, and the role of governments in technology development is critical. The paper argues that the most significant role in innovation is provided by governments, which need to create new markets rather than just supervise them. Israel is a leader in innovation, providing the perfect example for the success of governmental policy to encourages innovation. The country is known as the "Start-up Nation", which means that its economic growth is linked to technology and innovation. This policy promotes innovation by the government, which is deeply involved in the market and dictates the scope of technological advancement.

KEYWORDS

innovation; technology; government; competition; Israel

INTRODUCTION

The research aims to show the role of innovation policy in a modern society, with the aim of directing advances in productivity and economic growth. In a globalized world with competition between countries, innovation policy is essential to competitive advantage of countries, and governments should promote innovation based on technological advancement and openness to global developments. As the world and global markets change, competition between countries accelerates, and the role of governments in technology development is critical. With advancement in technology and globalization of economic markets, the role of innovation in global competition has become crucial for countries. No county can survive in a global economy without participating in the competition with other countries and in global markets. In terms of technological advancement and competition between countries, the importance of governments' innovation policy requires support in providing the internal sources of funding for innovation. Understanding the role of governments in advancing technology is important since the most distinctive factor that differs between countries in modern times is their technological status.

There are different definitions of innovation, which is a term derived from the Latin word 'innovatus'. The meaning of the word innovation is the appearance of "something new", different from the usual and traditional (Akis, 2015). Innovation is about successful implementing creative ideas (Anderson, Potočnik and Zhou, 2014). Drucker (1985) defines innovation as the conversion of a new idea to a new marketable, or an improved, product and service. European Central Bank describes innovation as the development and

application of ideas and technologies that improve goods and services or make their production more efficient. According to the European Commission (1995), innovation transforms an idea into a marketable product or service, a new or improved method of manufacturing or distribution, or into a new social service method. In Oslo Manual (2005), innovation is defined as the implementation of a new or improved product or process and of the development of new marketing or organizational methods at intercompany operations, workplace organizations and business relations, and in order to speak of innovation a new or highly improved product, process managing method should be put forward. The OECD (2005) defines innovation as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. The report published by OECD (2018) - Embracing Innovation in Government: Global Trends 2018 – argues that governments are transforming their operations and improving the lives of their citizens though innovation and calls for a global call for innovation.

The research examines the role of governments in encouraging and facilitating innovation, while exploring the nature of Israel's innovation policy. The paper shows that the way Israel is implementing its innovation policy has successfully placed the country as a world leader in innovation. It is a leading example of the policy that promotes innovation by the government, which is deeply involved in the market and dictates the scope of technological advancement. With the success of Israel's innovation policy, it is known as a "Start-up Nation", which means that its economic growth is linked to innovation. Israel has a technologically advanced market economy with high-technology, and it is very highly developed in terms of life expectancy, education, per capita income and other human development indicators (US News and World Report, 2018). As a result, Israel was ranked third place in most innovative countries in the world, after Switzerland and the US, according to the World Economic Forum, because it has a good capacity for innovation, high quality scientific research institutions and strong private sector spending and collaboration on research and development (R&D) (Gray, 2017). Israel was also ranked 5th in most innovative countries, ahead of US and UK, according to the Bloomberg Innovation Index - an annual ranking of countries that measures performance in research and development, tech education, patents, and other marks of technology prowess (Jamrisko, Miller and Lu, 2019). Israel's Prime Minister Benjamin Netanyahu explains the role of innovation policy in global competition: "The countries that will lead the future, the countries who will seize the future, are those who will innovate. The future belongs to those who innovate" (Netanyahu, 2017).

LITERATURE REVIEW

Innovation and Competition between Countries

Economists and academic studies have looked at the ties that can be deducted between competition and innovation as a method examine competition between countries (Petropoulos, 2015). In examining the impact that competition policy has on economic growth, Aghion and Griffith (2006) found a positive effect on productivity and growth on a global level. The impact of globalization comes typically with market enlargement (Vives, 2008) as technological advances cause the integration of economies into a single market. Technological advancement and open markets are necessary for countries in global competition, since in a global world, where global economy transpires - in contrast to economies that transpire their own closed market - competition between countries is based on open markets and globalization. Countries that fall behind their rivals in technological

development and secure economy became more vulnerable to exploitation (Chaudhry, 2006). Thus, the advantageous position of any country is dependent on official policy, which includes formulation of strategies for innovation policy that is based on public support for the private sector (Deleri, 2015).

In order to understand the nature of global competition between countries and the role of technology in a globalized world, the research examines the nature of government policy that can encourage competition. It is claimed that in examining the state of countries in global competition, the two things that dominate are technology and innovation. If we look at countries around the world, importance is placed on how countries have been adjusted to the information age – the way that they are involved in the global economy and how they have adapted to the technological era (OECD, 2011). Looking all over the globe in examining competition between countries, there are three categories of nations: developed countries, developing countries, and third world countries (Chaudhry and Garner, 2006). What best defines the category suited for each country is its innovation policy as a means to gain competitive advantage (Eldar and Fagerberg, 2017).

The research claims that innovation policies have changed. While policies that address market failures through indirect involvement of governments dominated in the industrial age, today advanced policies are those that lead the market through direct involvement. The change of policy is based on the reality that the world is changing with growing competition between countries, and thus the role of governments in technology development is critical. Governments today play a critical role in spurring innovation – actively creating new markets, instead of just fixing them, as public investments are critical in creating and shaping new markets. Wang (2017) claims that government intervention is vital in supporting research and development, since markets alone cannot provide adequate incentives for knowledge and production. He explains that the government is one of the determinants of innovation capacity, although its role and degree of involvement in innovation is debatable. Accordingly, degrees of government intervention vary in different economies. It can be done through direct intervention in the industrial policy or by investing in selected areas. It can also be based on creating positive environment for the private sector. As demonstrated by the experience of Israel, intervention requires strong government support, but this policy may not suit other countries that have no abilities to support innovation. There we can see differences between developed and developing countries that have or don't have these capabilities. This is the basis for the voices calling to leave resource allocation to market forces rather than building production capabilities and use public policies to address failures in achieving international competitiveness. As explained by Jack Ma, Alibaba founder, "Governments should use their power to protect innovation, not control it" (Solomon, 2018).

The role of the Israeli government in implementing its policy determines the way that innovation policy should be conducted today. The conventional view in mainstream economics is that governments have little capacity to spark innovation, and the state should play as limited a role in the economy as possible, thus the policy should be limited to intervening only in cases of market failure. However, as demonstrated by the success of the Israeli policy, this is far from the truth, since governments need to play a critical role in spurring innovation – actively creating new markets, instead of just fixing them. The active role of the Israeli government is unique in that respect, since it includes direct intervention by providing grants and loans for startup projects. It also includes indirect intervention, by providing tax incentives for companies dealing with R&D and innovation and developing supporting systems for these companies.

The role of that governments have creating and financing new fields in technology is best explained by Israel Innovation Authority (2019). According to them, high-tech projects are risky, as they involve a high level of uncertainty in the scientific and technological ability and uncertainty in demand for these developments, and without government support private investment would not be enough to guarantee a leading role of technical development. As the Israeli experience demonstrates, government policy that helps local companies to improve their innovation performance is based on intervention that leads to allocation of resources to the private sector (Wang, 2017). It is evident that regulatory framework conditions are important factors that can influence innovation activities of companies, industries and economies (Blind, 2012) and the responsibility for innovation policies needs to be broadened across different levels of the government (Eldar and Fagerberg, 2017). As can be seen in the Israeli case, regulation and standardization influence both supply and demand conditions and incentives (Blind, 2012), and the innovation policy is designed to address the problems of the innovation system (Borrás and Edquist, 2013).

A major player in technology and innovation ecosystem is the Israel Innovation Authority, a central government agency responsible for fostering innovation in various industries (Yin, 2017). The Innovation Authority works with the industry to define innovation policies and collaborates with international partners on R&D efforts. It provides a variety of practical tools and funding platforms aimed at effectively addressing the dynamic and changing needs of local and international innovation ecosystems. Startups are incubated for two years with funding of $500,000 to $800,000. The government takes no equity and provides 85% of the budget as a grant, which will only be paid back (as 3-5% royalties) when the startup generates revenues. By funding the riskiest part of the innovation process, the program helps startups survive their most vulnerable phase and scale up to the phase of being able to receive private sector capital. The success of the program shows that of over 1,500 companies graduated from the incubators: 60% have attracted private investments of $3.5 billion and 40% are still in operation (Israel Innovation Authority, 2019). Israel's innovation sector receives significant support from other government agencies too, including the Ministry of Science, Technology and Space, and the Israel Science Foundation (Canadian Trade Commissioner Service, 2019).

The major role played by the government is also provided by the Ministry of Science and Technology, which is responsible for investment in scientific research in fields which are defined as of national priority. The Ministry has a unique role of connecting between academic research and industrial development with the goal of advancing research and development. Another goal is to set scientific priorities and enhance human and physical infrastructure. This role is meant to establish international scientific relations and leverage Israel's relative advantages. The Ministry aims to bring science to the community, strengthen sectors with a minor presence in scientific fields and develop scientific studies in the periphery. According to the Ministry, it strives to improve Israel's knowledge and research infrastructure, to maximize the benefit from the knowledge amassed by researchers at Israel's research institutions in order to facilitate research for realistic application. To achieve these goals, the Ministry runs nine central divisions: the Chief Scientist Office, the Science Infrastructure Program, the Israel Space Agency, the Science and Community Department that includes regional research and development centers, International Scientific Relations, the National Council for Civil Research and Development, the National Council for the Advancement of Women in Science and Administrative Headquarters (Israel Ministry of Science and Technology, 2019).

Innovation and Technological Advancement

The research demonstrates that as competition between countries accelerates, the role of governments in technology development becomes more critical. It is argued that governments have a major role in advancing innovation and providing investments for new markets to establish technology advancement. One of the major benefits of innovation is its contribution to economic growth that can grow rhe economy and bring benefits for consumers and businesses. However, according to the European Central Bank (2019), the best results of innovation policy are achieved if it equally benefits companies in different sectors and of different sizes. To achieve this goal, the World Economic Forum explains that innovation policy should be supported by both the public and the private sector, with enough investment in research and development (Schwab, 2014). The report published by OECD (2018) - Embracing Innovation in Government: Global Trends 2018 – argues that governments must formulate national strategy for innovation policy by transforming their operations and improving the lives of their citizens though innovation and technology and calls for a global call for innovation. As explained by Klaus Schwab, Founder and Executive Chairman, World Economic Forum in Davos Switzerland, in the 2016 Forum, where the overarching theme was the disruptive nature of technology: "We must develop a comprehensive and globally shared view of how technology is affecting our lives and reshaping our economic, social, cultural, and human environments. There has never been a time of greater promise, or greater peril" (Schwab, 2016).

Innovation is firstly about technology supremacy. It revolutionized the global economy and became critical to competitive strategy (Lamba and Malhotra, 2009). In examining the impact of technology on our lives, there is no doubt that the information age led to a revolution in the way that global communications interact between countries (Castels, 2015). Technology plays a large role in globalization on a cultural, political and economic level. It has become a fundamental vehicle for the development of every country, in areas such as the economy, politics, military and education. We live in a world of technology, which is improving at such a rapid rate, that we barely have time to learn the old technology before new technology comes out. This changes the way that people interact today and leads to debate of how our culture can adapt to such change and what affect it will have on society in the future.

In the industrial age, the role of governments in technological development and economic growth varied widely based on political and economic ideology. Policies focused on determining the links between trade policy and technology policy (Siebert, 1997). In the information age policies must change to meet global competition and governments must formulate national innovation strategies (Islam, 2014). The new global environment that is dominated by a combination of technology, innovation and competition, with tremendous impact on the countries that have capitalized globalization and can benefit from investments global economy.

The role of governments in advancing technology has become crucial for the global and economic development of countries since technological advances which cause the integration of the economies into a single market have become the determinant of the process of globalization (Akis, 2015). In a globalized world, technology is increasingly becoming essential for the prosperity of countries and their ability to compete with other countries. Technological advancement provides the means for growth and competitiveness with emphasis on the role played by innovation (Fageberg, 2003) in competitiveness of nations. Both developed and developing countries rely on investments for science and technology as a key element for sustainable development, and governments are benefiting from today's interconnected world by re-thinking traditional concepts of borders and

identity. According to OECD (2018), the current global political and economic setting is complex and fast-changing, with society transforming in ways that challenge existing views about the world and how it is governed. As a result, governments must turn to innovation to build more inclusive societies, to cope with new realities and to build a better future for their people.

The examination of the role of governments in this research is based on the relationship between technology, innovation and global competition. The research is looking at the way that technology and innovation collide in a globalized world. In this junction, the role of governments is crucial, since in the era of global competition all countries are under pressure to improve public performance and at the same time contain expenditure growth (Curristine, Lonti and Joumard, 2007). The result in terms of global policy is that increasing competition and liberalization of world trade to the production of goods and services for the new needs arising in the global market (Dereli, 2015). Innovation provides similar opportunities to all countries (Neibel, 2018), but countries that lead the world in generating advanced technologies and leveraging the full productive capacity of their economies can gain a strategic competitive advantage (Schwab, 2018). With the rapid growth of technology, digital economy changed the way that governments and businesses operate. These developments also changed the way that consumers look at their governments and local business on the one hand, and on the role of different countries and multi-national corporations on the other. According to the World Economic Forum (Schwab, 2018), each additional 10% of internet penetration can lead to a 1.2% increase in per capita GDP growth in emerging economies.

Innovation should be a catalyst for progress in any society and any country that seek to advance their competitive position through investments in technology, because the promotion of innovation needs to include increasing spending on research and development and investing in education (European Central Bank, 2019). Innovation is a major driver of productivity, economic growth and provides key development to boost productivity through investments in technology (Brand, 2017). In addition, The Bank preserves macroeconomic missions (Ndarihoranye et al, 2020). Technology and globalization changed the way that the world operates in all fields - business, government, economic and social - in a way that creates global competition between countries for innovation. Advancements in information technology and the coming of competition between countries for innovation and new technology became crucial for global business strategy (Lawlor, 2007). Technology and innovation are fundamental to economic success and the struggle for markets in an increasingly competitive world. Digital technologies gained prominence as critical forces that determine economic growth, and these changes create new possibilities and raise new problems for consumers, businesses, and government agencies. It is therefore in everyone's interest that governments understand these developments in order to make sure that the marketplace continues to work competitively for businesses and consumers (Federal Trade Commission, 1996).

The research examines the way government's support of technological developments is significant to the growth and prosperity of the innovation ecosystem and economic environment. The Israeli government is promoting innovation by providing financial support for commercial R&D (Moss, 2011). As determined by this research, this success is the result of the active involvement of the government and various government agencies in directing the market and supporting technology and high-tech companies through indirect intervention. According to the Israeli Institute for Economic Planning (IEP), structural reforms and huge investments led to a high-tech boom while creating infrastructure for innovation and economic growth, improving access to education and business

opportunities and handling market failures that limit competition. According to Israel Innovation Authority (2019), innovation is the most valuable resource for Israel, serving as a national asset that is crucial to economic prosperity. At the core of Israeli innovation policy is the matching grants program: firms submit R&D proposals to the Innovation Authority and grants are awarded on a competitive basis, with between 66 and 90% of the research costs covered.

With the benefits of technology, encouraged by government policy, Israel has become a global leader in science and technology. Israel's economy continues to register remarkable macroeconomic and fiscal performance (OECD, 2018a). The country is one of the most research and development-intensive economies (Canadian Trade Commissioner Service, 2019) and a world leader in terms of research and development spending as a percentage of the economy (Israel Innovation Authority (2019). As a result of the government's innovation policy, Israel is now the world's leading innovation country with the highest number of startups in the world. Israel is a leading community for startups, entrepreneurs, investors, venture capitalists, angels, developers, researchers and recruiters. With policy of public investment in research and development, the high-tech sector is predicted to be the main potential driver of the growth of the Israeli economy the next decade, placing the country at the forefront of global technology innovation.

Innovation and economic growth in global markets

The paper examines the way that a policy of governmental intervention can promote innovation and achieve a leading role in global markets. Economies score highly for innovation and should put more effort into increasing the readiness of populations and businesses to adopt new technology, says the Global Competitiveness Report 2017-2018 (Gray, 2017). In examining the role of innovation in the development of economies in modern age, the research relates to the conclusion of former Chairman of the American Federal Reserve Department, Ben Bernanke, that innovation leads to new products and more-efficient production methods, with dramatic changes in the way nations and economies are organized and managed, highlighting the connections between new ideas and methods and the organizational structure needed to implement them (Bernanke, 2011). The research also relates to the conclusion of the Global Competitiveness Report 2017-2018. According to the report, economies score highly for innovation and should put more effort into increasing the readiness of populations and businesses to adopt new technology (Gray, 2017). As explained by the World Economic Forum (2018), innovation is especially critical as a driver of productivity growth, although fostering innovation requires holistic strategies that most economies have yet to master, and governments are struggling to understand what makes a country innovative.

In a modern economy, innovation is the key for financial growth, alongside with technology is openness to the world and deregulation of financial markets (Hina, 2015). In a global world, where global economy transpires - in contrast to economies that were based on their own closed market - competition between countries is based on innovation. The result of the change in global economics is that countries that fall behind their rivals in technological development and secure economy become more vulnerable to exploitation (Chaudhry, 2006**).** Global competition demonstrates that government support in targeting companies effectively improves their innovation performance, and strong government intervention leads to the concentration of resources in selected sectors and players (Wang, 2017).

A major factor for technology advancement and global competitiveness is secured economy (OECD, 2018). This means that the economic structure must grow while

maintaining standards of living, education and consumer affairs (World Bank, 2016). Rapid technological changes and accelerating globalization are radically changing the context for economic development. These changes provide the advantages of productivity increase and access to new resources and markets. However, part of the characteristics of research and development activities result in a lower financial benefit to the investing business entity compared to the overall benefit for the market in general. As a result, private investment may be lower than what the market views as an optimal level of investment, and in order to overcome these market failures and reduce the companies' risk, a government intervention to "compensate" these companies and encourage their investments in the required R&D is required (Israel Innovation Authority, 2019). In examining the role of innovation to the Israeli economy, the research adopts the conclusion of the Israel Innovation Authority (2019) that innovation is by far the most valuable resource for the State of Israel, serving as a national asset crucial to economic prosperity, and strengthening the innovation ecosystem would further develop and support technological innovation in Israel. The policy of Israel assumes that governments must make a strategic decision to promote technology by providing financial support for commercial R&D. As the research demonstrates, the Israeli experience proves that the government has a major role in advancing innovation and providing investments for new markets. In examining the nature and outcome of Israel's innovation policy, it is evident that innovation has elevated the Israeli economy and the technological advantage promoted its economy, which has grown more rapidly than most other advanced economies (OECD, 2018).

As the research demonstrates, Israel's innovation policy represents the new role model of governments in encouraging innovation. In examining the active role of the Israeli government, the research shows that Israel`s success is based on the combination of highly developed technology sector and a successful global oriented economy. The policy is implemented through technology that is supported by secured economy alongside with openness to the world and deregulation of financial markets. The active role of the government in the economy, particularly in high-tech, is evident in that the country invests around 4.8% of its GDP in research and development, with a large majority of this investment made by business. Israel is ranked #1 globally in private R&D expenditure as percentage of GDP – the highest among OECD countries. Around 84% of these investments come from the private sector – the highest among OECD countries, reflecting the prospering private sector innovation ecosystem.

Israel was ranked #2 at the Innovation Index of the Global Financial Forum – Global Competitiveness that includes parameters such as scientific research institutions, business sector R&D expenditures, academy – industry cooperation, scientists and engineers pool and the number of patents in ratio to the size of the population (Global Competitiveness Report, 2016-2017). In 2018, Israel was ranked in 20th place out of 140 countries on the World Economic Forum's Global Competitiveness Index, published by the World Economic Forum (WEF). It was ranked 14th on the human capital skills subcategory, fifth on "business dynamism", eighth on corporate governance and second only to the U.S. on the availability of venture capital (Schwab, 2018). Israel is a world leader in terms of research and development spending as a percentage of the economy and in both the number of start-ups and engineers as a proportion of the population. Israel has almost 4,000 active technology start-ups - more than any other country outside the United States, according to Israel Venture Capital Research Centre. The Israeli economy is enjoying its 15th consecutive year of growth and remains resilient. The country's macro-financial

vulnerabilities appear low, despite the deterioration in price competitiveness since 2007 (Akerman, 2018).

As a result of the policy initiated by the government, the high-tech industry is the economy's main engine of growth. According to the OECD (2018a), Israel has been showcasing impressive economic data for 15 years in a row. Almost no other country in the OECD has demonstrated such impressive growth over this number of consecutive years. It ranks third in the World Economic Forum's ranking of most innovative economies and its startups receive nearly 20% of global private investment in cyber-security. The country is leading in high-tech worldwide and in research and development (Senor and Singer, 2009). After the US and China, Israel has most companies listed on the NASDAQ stock exchange (McKenna, 2017).

Another way for governments to develop the economy as part of a process of technological supremacy is in building human resources. Israeli policy is based on strong entrepreneurial ecosystem, support programs, facilities, investments, knowledge and education that can facilitate entrepreneurial growth. According to the United Nations Commission on Science and Technology for Development (CSTD), science and technology, alongside trade, are the most powerful driving forces for achieving growth, poverty reduction and overall human (Baker and Sovacool, 2017). Although a debate exists on the effects of new technology on society, technology and human life cannot be separated, and society has a cyclical co-dependence on technology (Ramey, 2012). At the heart of the competitiveness agenda is the recognition that economic growth is a core driver of human development already at the core of the growth agenda of most advanced economies and a growing number of emerging economies (World Economic Forum, 2018). According to Israeli Ministry of Foreign Affairs (2019), global rankings of the top innovation ecosystems in the world consistently find Israel to be one of the world's top locations for entrepreneurs and venture capitalists, together with the Silicon Valley in California and the economic capitals of Europe.

According to the Global Competitive report published by the World Economic Forum (2019), Israel is an innovation hub thanks to a well-developed ecosystem. Israel spends the most of any country on R&D (4.3% of GDP), and as a result the entrepreneurial culture is strong while innovative companies grow the fastest. Israel can also rely on a highly educated workforce and ranks 2nd behind the United States both for its ease of finding workers with the right skills and for the availability of venture capital. Israel has a high-quality educational system and is among the most educated societies in the world. A key factor of Israel's innovation ecosystem is the strong interconnections with army experience. Many IDF units have established alumni programs that promote networking (Yin, 2017) and young people receive during the mandatory military service advanced technical training which allows them to acquire a high sense of responsibility and success orientation. Another incentive program offered by the government provides employment grants for R&D centers and large enterprises. The program offers a 4-year grant scheme covering on average 25% of the employer's cost of salaries for each new employee. As a result, Israel enjoys the highest percentage of engineers and scientists per capita in the world and has one of the highest ratios of university degrees and academic publications per capita. The country produces more startups per-capita than China, India, Canada, Japan and the UK and attracts twice as much venture-capital investment as the US and 30 times more than Europe.

RESEARCH METHODS

The research provides a descriptive analysis, using academic research on innovation and on the role of governments in traditional and modern policy making. The research is also based upon official information published by the Israeli government and public agencies. The data that the research is based on considers official information to be reliable and coherent, in a way that allows the researcher to analyze the data and draw conclusions on governmental policy to encourage innovation. Other information was published by global organizations and regulators. The research also treats this information as reliable. The study describes and analyzes situations, policies and economic development that relate to and are a result of government policy. Although the information provided in the research is reliable, the investigation is aimed at describing innovation policies of governments and drawing conclusions to the best ability of the researcher. It should be emphasized though, that these conclusions are not accurate predictions, and they do not determine cause and effect. The biggest advantage of using the Israeli experience as a guiding strategy for other countries is the leading global technological status of Israel. However, it should also be noted that although the main purposes of the research are to describe and analyze modern innovations policies used by governments, the conclusions laid out in the study should not be treated as guideless or recommendations.

RESULTS AND DISCUSSION

Traditional research has shown that government policies and regulations can promote or hinder innovation, since policies and regulations that are stringent and focused can potentially stimulate significant and fundamental changes in product and process technology (Patankul and Pinto, 2014). The contribution of this paper is by demonstrating the crucial role of the Israeli government in fostering innovation and consequently transforming the economy and establishing the leading global status of Israeli high-tech industry. The importance of examining the Israeli strategy as a guiding policy for countries to encourage innovation is since Israel is considered the "Start UP Nation" and in the year 2020, 31% of all global investment in cyber was in Israeli companies.

Innovation has been recognized for providing benefits for society and an important contributor to economic growth, although the essence of governmental intervention was traditionally limited to allow private sector participants to consider their own particular benefits (Leyden and Link, 1992). World Economic Forum (2007) suggested a decade and a half ago that this approach that was adopted by many governments suffers from serious shortcomings, largely because it socializes the risks and privatizes the rewards. They explained that acknowledging the role that the state should play in shaping innovation enables to look at public investments as a vehicle that can drive innovation and economic growth. However, many governments have not changed their conventional innovation policies of having little capacity to spark innovation, claiming that the state should play as limited a role in the economy as possible and intervene only in cases of market failure.

The research shows that the recommendation of World Economic Forum should be adopted by all governments that seek to advance their competitive position in the world. As concluded, governments can and should play a critical role in spurring innovation – thus creating new markets, instead of just fixing them. Based on the Israeli experience, it is argued that governments need to play an active role in innovation, as it is clear that Israel recognized the importance of government investment in promoting innovation. Israel adopted the new role of the government in promoting private-sector innovation, with the result that technology companies are taking full advantage of a wide range of governmental support. This is achieved by public venture-capital that provides early-stage

funding and helps companies to reduce technical, commercial and financial risks associated with innovation. To reduce those risks, government funds R&D programs and demonstration projects, while the private sector gets a much better idea of potential demand for innovation products.

With the globalization of technology and the competition between countries, traditional innovation policy proved inadequate and a new innovation policy needs to be more consistent and across all aspects of market economy and new technology. As explained by XU, Wang and Lio (2020), government subsidies play a vital role in enhancing firms' investment in research and development. The Israeli government plays a central role in promoting innovation by supporting the development of innovation ecosystem and providing tools to support industry R&D. This research concludes that the direct result of governmental support creates a significant addition to the Israeli R&D where private companies do not invest. The most important lesson that should be learned from the success of the Israeli innovation policy is that administrations around the world and private industry have to accept the argument that the government is a major player in innovation and public agencies need to encourage innovation and enhance industrial competitiveness. This strategy can enhance the competitive position of countries, grow the economy and building human resources in a way that the government can protect intellectual property and helps to ensure that innovators benefit from their hard work and creativity, inducing more innovation.

CONCLUSION

The paper aims to investigate the nature of innovation policy in a globalized world while examining the way that a policy of governmental intervention can promote innovation and achieve a leading role in global markets. With the impact of technology and innovation, the world is changing, and competition between countries accelerates. The role of governments in technology development is critical in a globalized world, since economic growth is linked to innovation. As the research shows, the most significant role in innovation is provided by governments, which need to encourage the creation of new innovative products and help local companies to succeed in the global competition.

The role of government in encouraging, creating and establishing innovation has changed in modern times, and in today's global competition governments should create new markets rather than just supervise them. To succeed in global competition, policy that promotes innovation should be initiated by governments – a policy that is deeply involved in the market and dictates the scope of technological advancement. Such policy is different from previous policies which simply encouraged free trade and allowed markets to dictate developments.

As the paper demonstrates, government support for technology advancement and global competitiveness needs secured economy, deregulation of financial markets and technological supremacy in building human resources. The transfer of technology is an important channel of cooperation for businesses and nations, as competition policy allows competitors to cooperate on innovation and enables governments to contribute to private-sector investments in innovation. Open markets are necessary for countries in global competition, since in a global world competition between countries is based on open markets and globalization. The research determines, based on the need of countries to secure a leading role in innovation, that countries that fall behind in their technological development and secure economy should became more vulnerable to exploitation in a global economy and a globalized world. This is the nature of competition between

countries now a days, with technology and innovation being the grass roots for the economic survival of countries.

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