

# STATE POLICY, HUMAN CAPITAL AND INTERNATIONAL ECONOMIC RELATIONS IN THE CONTEXT OF REFORMING LOCAL SELF-GOVERNMENT BODIES THROUGH DIGITALIZATION, ARTIFICIAL INTELLIGENCE AND SOCIO-ECONOMIC TRANSFORMATIONS

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**Abstract:** The study examines human capital as a set of socio-economic relations and as one of the determining factors of economic growth. The main attention is paid to the analysis of opportunities to improve the quality of human capital at the local level, based on mechanisms of cooperation among stakeholders and reforming the landscape of local self-government - in particular, through the creation of innovation hubs, the implementation of digitalization projects, and the expansion of the use of artificial intelligence technologies. The opportunities and benefits of direct participation of local communities in international economic relations and global supply chains are demonstrated.

**Keywords:** local democracy; social interaction; human capital, international economic relations; transformation; artificial intelligence.

## 1 Introduction

The scholarly research is generally in agreement that human capital plays a critical role in today's knowledge-driven economy and is a significant predictor of productivity and other economic outcomes, both at the individual and aggregate levels. There is evidence at the macroeconomic level that human capital plays a significant role in the increase of aggregate productivity, but there is still a great deal of doubt regarding the precise amount of this contribution due to a number of econometric issues that make it difficult to interpret the empirical data. According to the most reliable estimates in the literature, one extra year of average schooling raises aggregate production by around 5% immediately and by an additional 5% over time, assuming all other factors remain constant [58]. The invention and acceptance of new technologies as well as the ongoing enhancement of current production methods are examples of how human capital contributes to technical advancement, and this is reflected in the second effect. Recent studies also point to the possibility that the quality of education may have an equal impact on productivity as its quantity, but more research is required before we can determine the precise magnitude of the relevant effects.

Numerous studies have demonstrated that human capital plays a critical role in economic growth, both in terms of the level effect (also known as the "level effect"), which has a significant impact on production through labor productivity, and the rate effect (which increases competitive advantage through innovation and technology diffusion) [17].

Thus, human capital is extremely important element determining the place of country in the system of international economic relations [5].

The traditional theory of economic growth views labor productivity as an exogenous variable that depends on the workforce-to-physical capital ratio as well as other variables

(technical advancement). However, the positive impact of education on potential productivity growth is not factored in. This flaw in the traditional theory of economic growth - which stressed the role of creativity and education as components of human capital - was addressed by the new theory of economic growth that emerged in the early 1980s. On the other hand, as the new growth theory demonstrates [48], research has indicated the impact of intangible assets like R&D, patents, and intellectual capital on the market value of businesses and their growth, which in turn leads to overall economic growth at the national, regional, or global levels. This is in contrast to the theory of market value.

Europe has experienced sluggish growth ever since the 2008 financial crisis, and the COVID-19 pandemic is making matters worse. In the upcoming decades, fostering economic expansion and shifting toward an industrial structure that is more knowledge-based will be top priorities. Using Norway as a numerical instance, Bye and Faehn [14] investigate how increasing and improving human capital might support knowledge accumulation and structural change using a dynamic endogenous growth model. The authors stress that human capital plays two primary roles in the expansion of productivity: first, it can foster innovation by engaging in research and development (R&D); second, it can enhance absorptive capacity in industries that trade and can benefit from global knowledge. Bye and Faehn's research indicates that in a small, open economy, the fastest-growing industries are typically those where trade, R&D, and human capital interact to facilitate absorption.

In keeping with the Romer tradition, the innovation channel is modeled as R&D-based [52]. The empirical significance of human capital input in this process has been extensively shown in the literature [49]. R&D is demonstrated to have a second effect, or a second face, in addition to domestic innovation by boosting the economy's ability to absorb new information. Because R&D activities are crucial for absorption, the economy's ability to absorb resources is indirectly impacted by the human capital invested in R&D. Furthermore, absorptive capacity may be directly impacted by the degree of human capital [61]. To be more precise, while businesses may be able to access the global technological frontier through their international interactions through networking, importing, exporting, and investing, the capacity to leverage this global knowledge pool hinges directly on the R&D and human capital of the home country. This theory has received strong support from empirical studies [45].

Nonetheless, local territories now play a major role in this "small economy", as they participate in international economic relations, digitalization, effective self-government, the application of artificial intelligence (AI) technologies, sustainable socioeconomic transformation, and the creation of favorable conditions for the intensive development of human capital, all of which have an impact at the national level [62]. Within the context of international economic relations, systematic research into all of the aforementioned components of state policy and the environment for the development of human capital is an extremely pertinent scientific undertaking.

## 2 Materials and Methods

The methodological paradigm of the study is the dialectical method of cognition, theoretical provisions and conclusions on the problems of transformation of economic systems and the formation of human capital. The theoretical and methodological basis of the work was the results of fundamental and applied research developed by representatives of various areas of economic theory and knowledge economics, as well as the theory of human capital and innovation. The work uses a variety

of methods of scientific knowledge at different levels: comparison, analysis and synthesis, logical method, abstraction, formalization, generalization, system analysis, complex method.

### 3 Results and Discussion

Modern international economic relations cover unconventional topics like smart cities, global cities, and even rural communities. All levels, including municipal ones, are impacted by digitalization, the introduction of cutting-edge AI technology, and the growth of human capital. Furthermore, it appears that the local level is the most productive arena for these operations.

According to Atamanchuk and Syrotin [3], research and innovation are concentrated in so-called global cities. They draw bright scientists, researchers, and businesspeople, promoting scientific inquiry, the creation of novel technology, and startup ventures. Global cities' creative ecosystems draw high-tech investments and help to establish new markets. Global cities have an impact on international trade through serving as hubs for global supply chains and logistics, promoting trade in goods and services between nations, and supplying the infrastructure - such as international airports, seaports, and air ports - necessary for the effective movement of goods [4; 6]. Thus, global cities are essential to fostering better relationships between nations in the economy. They enhance trade between countries, encourage innovation, foster the growth of international industry, and create favorable conditions for the influx of foreign investment.

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Global cities do not ratify international agreements or maintain embassies abroad. Cities, however, have the power to affect international economic connections, take part in many types of discussions, and strike agreements [7; 54]. Global cities are crucial in tackling many of the issues that face different nations on a worldwide scale, such as pandemics, terrorism, and cybersecurity issues as well as climate change.

These cities usually have a mature workforce, well-built infrastructure, easy access to markets, and a welcoming atmosphere for businesses. These elements draw in foreign businesses looking to increase their market share internationally.

This, however, concerns not only cities but actually any local communities.

Innovation hubs are increasingly becoming an integral part of urban planning as planners seek to revitalize economic and employment opportunities by creating an environment conducive to innovation [9-11]. The scale of such environments can range from departments of companies or individual multi-tenant buildings (often called incubators) to entire geographic regions called clusters. For the most part, as defined by the Massachusetts Institute of Technology, these are "dense networks of interconnected technology companies, customers and suppliers" [19].

Innovation hubs or innovation centers are organizational structures created to support and stimulate innovation, start-up development, technology entrepreneurship and collaboration between various participants in the innovation ecosystem [13; 16]. Innovation hubs typically bring together a variety of resources, such as coworking spaces, collaborative labs, educational programs, investment funds, consulting services, and industry connections. They provide conditions for interaction between startups, investors, entrepreneurs, researchers, government officials and other interested parties [35].

Community innovation hubs have gained popularity as a means of addressing the issue of resource scarcity, demonstrating the value of decentralizing possibilities and influence in marginalized groups [20-22]. These hubs give people -

especially young people - a place to gather and work together on projects that either address the unique needs and difficulties of their community or correspond with a trend in education for the workforce of the future.

Fostering a sense of urgency and ownership among community members is one of the main advantages of community innovation hubs. Instead of depending on outside groups to solve their problems, community members can actively address the issues that impact them by taking part in the conception and implementation of projects. Increased communal pride and empowerment may result from this [1; 28].

The ability of community innovation hubs to promote development and economic progress is an additional benefit. These hubs can aid small firms and entrepreneurs in underprivileged communities by giving them access to resources including capital, networking opportunities, and mentorship [24; 26]. Consequently, this can result in the generation of fresh employment opportunities and an overall enhancement of the community's financial prosperity.

Community innovation hubs not only give people a location to work on initiatives, but they also frequently provide a variety of training and educational possibilities. Numerous hubs provide workshops and classes covering a wide range of subjects, including woodworking, textiles, digital marketing, data science, and programming [31; 32]. These courses can be a fantastic method for people to broaden their knowledge and acquire new skills in order to get ready for the workforce or to pursue entrepreneurship.

It follows that the state's policy of encouraging the establishment of hubs in local communities has effectively turned these towns into real players in international trade relations (particularly when it comes to IT services and innovations, engineering and other R&D, but also biotechnologies, medicine, and tourism). By acting as "plants for producing human capital", or more accurately, as producers of social capital, innovative hubs enable the revitalization of even the most marginalized communities.

Antiroiko et al. [2] suggest schematic depiction of local innovation hub in local-global dialectic (see Figure 1).

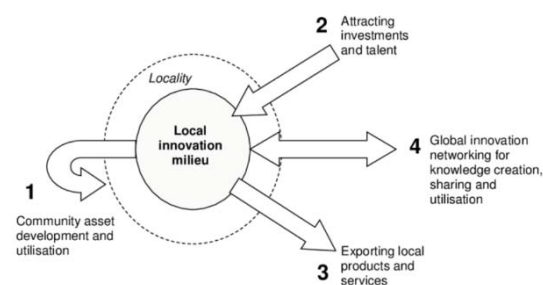


Figure 1. Local innovation hub in local-global dialectic [2]

Numerous stakeholders might benefit from community hubs in different ways. They give various industries and disciplines the chance to collaborate and share expertise, which results in more applicable and efficient research methods. Community hubs facilitate better transmission of information and produce instruments for policy assessment for scholars. More knowledgeable care and more successful treatments benefit communities [36-40]. Service providers can improve their offerings by making use of the knowledge and resources found in community hubs. These hubs create knowledge that may be used by policymakers to make well-informed decisions. Community hubs can also be warm, stimulating spaces that link and involve teachers, families, students, and the larger community. As a result, the community hubs offer a fantastic setting for ongoing human capital development.

Creation of innovative hubs lead to 'undeclared' reform of local self-government, stimulating both public-private partnership and penta-helix-like models introduction.

According to Adam Ryan [55], Living Labs are what turn cities into centers of innovation for neighborhood solutions. The amazing idea of Enter Living Labs is changing the way cities approach difficult issues [41-43]. These innovation hubs use community involvement, teamwork, and technology to create significant change.

Living Labs are dynamic, real-world settings where local communities and the public and business sectors work together to develop and test creative solutions for problems that the community has identified.

These labs are characterized by several key features [55]:

1. **Community-Centric:** Locals' needs and preferences are given first priority by Living Labs. Participation and input from the community are essential to the innovation process.
2. **Interdisciplinary Collaboration:** They promote cross-sector collaboration by bringing together a wide range of stakeholders, including corporations, non-profits, government agencies, and academic institutions.
3. **Iterative Testing:** In a real-world urban setting, solutions are tested, honed, and improved. This allows for quick revisions based on input and actual results.
4. **Technological Integration:** To create cutting-edge solutions, Living Labs makes use of cutting-edge technologies like AI, data analytics, and the Internet of Things.
5. **Access to fresh insights:** Have the ability to learn through testing in order to eventually be able to provide more focused solutions.

The interests of "elite" economic actors, such as multinational corporations, industry associations, banks, hedge funds, and billionaires who can effectively influence the negotiating position of the most powerful governments, greatly influence the terms that governments create in international trade and investment agreements [25; 59]. These partnerships frequently result in business policies and practices that hurt Native Americans and other economically disadvantaged groups. John Borrows [12] contends, however, that the revival of Indigenous peoples' law implies that agreements are assessed using standards that are not limited to those established by international accords or nation states. Communities and investors must thus navigate this unfamiliar territory as a result of the growth of Indigenous normativity as a component of international investment and trade. In presenting these arguments, Professor Borrows looks at how domestic law recognizes and upholds Indigenous constitutional and statutory safeguards as well as the function of Indigenous peoples' law in implementing foreign investment and commerce.

The OECD stressed the need to align implementation and improve coordination between levels of government, across different sectoral policies, and with Indigenous communities in order to facilitate policy coherence. This can be achieved by creating (or improving) national strategic policy frameworks for Indigenous economic development. It is also said that resources and mechanisms must be made available to develop the capacity of Indigenous-led organizations and to promote opportunities for meaningful engagement of Indigenous peoples in government decision-making [47].

The process is just getting started for indigenous groups who decide to "opt in" to the global economy. They must find commercial possibilities, gather resources, and create organizations to take advantage of these chances in order to effectively "opt in", whether on their own terms or not, in order to meet their other development goals in addition to economic ones [8; 63]. This is how entrepreneurship works. Schumpeterian entrepreneurship is more broadly understood as an economy-building process than the restricted definition of

entrepreneurship, which is limited to small businesses owned and/or newly founded businesses by entrepreneurs.

The Aboriginal Peoples of Canada, the First Nations, Métis, and Inuit; the Maori in New Zealand; the Quechuas and Aymaras in Perú; and many other indigenous tribes have undoubtedly made efforts to harness entrepreneurship toward both social and economic purposes. These peoples generally agree that the way to create a more dynamic economy and rebuild the country is through entrepreneurship and company growth [30; 53]. The "second wave" of indigenous economic growth has been referred to as their entrepreneurial involvement in the global economy; the "first wave" was their direct economic aid.

The noticeable shift away from import substitution and inward-focused cultures and toward integration with the global economy - including outsourcing, strategic alliances, regional trade blocs, and the rise of small, international businesses - is a component of this trend [46; 51; 56; 57]. From this angle, entrepreneurship is viewed as a means of achieving equality in a meritocratic society. Private sector company creation, support, and development are perceived as sources of wealth that will inevitably "trickle down" to benefit everyone. Respect for the meritocracy concept is a major factor in the development of human capital.

Experts now stress that the Indigenous economy has enormous growth potential on a global scale [50; 65]. A greater involvement of Indigenous businesses in trade and policy development could lead to actual economic prosperity while also assisting in the reform of local self-governments and socioeconomic transformation by removing bureaucratic red tape and replacing it with agile governance that can better withstand the challenges of a dynamic and non-linear reality.

Gaining access to prospects and expanding a firm require finding the correct suppliers, buyers, and partners. Specifically, the industry-based and Indigenous-led Indigenous Network for Investment, Trade and Export (IgNITE) in Australia is supporting inclusive trade policies and Indigenous inclusions, fostering export prospects, and enhancing Indigenous capability. In order to encourage Indigenous participation in supply chains, the Australian government also established the Indigenous Procurement Policy. As a result, 2,604 Indigenous enterprises were given contracts worth an estimated \$3.6 billion as of 2021. In addition to serving as a platform for connecting Indigenous and non-Indigenous companies, Supply Nation was founded to promote and assist this government initiative [64].

Similar initiatives have been developed in Canada by the Canadian Council for Aboriginal Business (CCAB). Within APEC and the most recent free-trade discussions with the UK and the EU, the Māori-led Te Taumata in New Zealand has sought to demonstrate Māori leadership and involvement in trade affairs. An estimated 50,000 enterprises working in all areas of Canada's economy are owned and operated by Indigenous entrepreneurs, making up a sizable and varied business community [61]. Numerous of these companies currently provide goods and services that are in high demand globally.

A noteworthy result from recent research conducted by the Canadian Council for Aboriginal Business (CCAB) is that, in comparison to the Canadian SME average of 12.1%, only 7.2% of Indigenous SMEs export [60]. Indigenous communities have a great chance to flourish and be empowered as a result of this export gap. There is a lot of room here for state policy creation. Simultaneously, Indigenous SMEs exhibit a high degree of potential in a number of areas; in the manufacturing sector, this potential even outperforms that of all Canadian SMEs (refer to Figure 2).

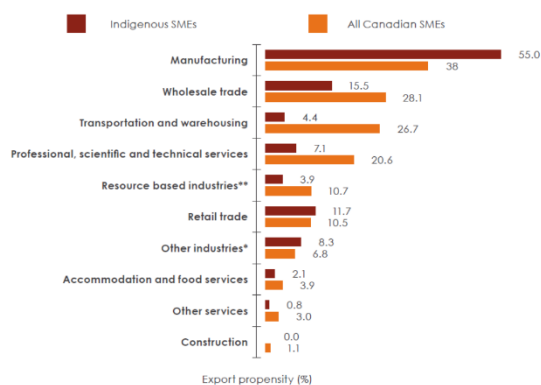


Figure 2. Export propensities of Canadian SMEs by industry [12]

The majority of Canadian exporters, both Indigenous and non-Indigenous, choose to sell their goods in the United States, although compared to the Canadian average, Indigenous exporters are typically marginally more interested in oceanic destinations like Australia and New Zealand. More than 60% of Indigenous SME exporters say they intend to grow into foreign markets, especially in the manufacturing, retail, and leisure, entertainment, and arts sectors. Compared to the average Canadian SME (3.8%), indigenous SMEs that do not already export are four times as likely to express plans to start exporting (16.3%) [15]. Top 12 destination markets for Indigenous SME exporters are presented in Figure 3.

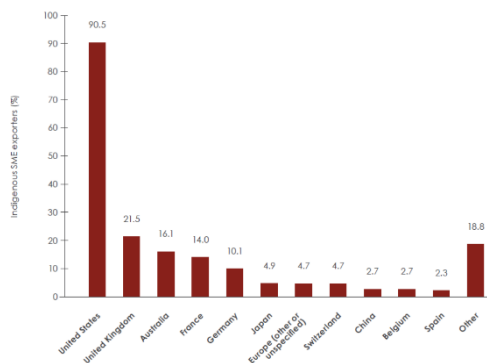


Figure 3. Top 12 destination markets for Indigenous Canadian SME exporters [28]

Digitalization is also “a game changer” for municipal governments. Local governments are about to undergo a dramatic change, fueled in part by the use of digital tools and procedures to improve their capabilities. Local governments have the power to drive and facilitate digitalization, which has enormous potential. It can promote environmental sustainability, increased governance effectiveness, economic growth, and openness. This transformation is being driven by technologies like Digital Twins, Blockchain, AI, and the Internet of Things (IoT). They provide inclusive service delivery, improve governance, and provide intelligent and sustainable urban systems. Together, the revolutionary effects of digitalization strengthen community resilience, redefine local governance, and open the door to just and sustainable societies [44].

To fully utilize the potential of digitization, a multilayered governance framework is necessary. This strategy includes broad stakeholder involvement, strategic planning that is in line with national and regional policies, and a thorough review of the current operational status. Building capacity, allocating resources, and using cooperative techniques like public-private partnerships and intergovernmental collaboration are crucial to this process. To evaluate the effects of digital initiatives, local governments must create strategies for include stakeholders, encourage innovation and confidence in IT infrastructure, and

put in place systematic monitoring and evaluation processes [29].

Furthermore, a large number of municipal governments all over the world have already created efficient AI-powered policies and plans to address the difficulties and problems they encounter, particularly when it comes to encouraging the development of human capital.

Around the world, new applications of AI in municipal government are being discovered on a daily basis. These could range from straightforward applications of AI to a particular problem to large-scale ones powered by the latest advancements in generative AI. For instance, the Danish town of Slagelse started a ground-breaking project that uses AI to transform the way decision-makers get information. Through earlier and more regular participation in policy formation, rather than just review, this ground-breaking effort aimed to redefine citizen engagement and move it from passive observation to active participation in formulation [66-68]. The project also sought to increase involvement diversity by enticing a wider spectrum of people to provide policymakers with their distinct viewpoints and thoughts. Slagelse took inspiration from Frédéric Laloux’s book “Reinventing Organization” after realizing there was a growing divide between citizen participation and expanding responsibilities. Motivated by the fundamental idea that utilizing the knowledge and creativity of the populace would maximize results for all inhabitants, their main objective evolved into creating the most ideal living environments within the municipality [23].

In order to include local populations in creating strategies or solutions for urgent societal and environmental issues, Hsu et al. [27] investigate the use of AI-powered platforms. These local contexts frequently include a number of stakeholders with disparate, sometimes conflicting goals, which leads to misplaced assumptions regarding the actions of these systems and the desired results. The authors argue that through co-creation and field deployment, it is necessary to explore if AI models and pipelines can function as intended in various circumstances. Our explanation of the issues that need more attention and our suggestions for workable solutions to connect AI research with citizen demands are based on case studies of local people and AI-powered system co-creation. Hsu et al. promote the creation of new mindsets and collaborative strategies that are required to co-create AI-powered systems in multi-stakeholder settings in order to address regional issues.

Using a researcher-centered strategy, university academics usually take the lead in developing AI systems because they have greater influence over local populations, particularly underprivileged ones, in terms of accessible resources and scientific authority. Underprivileged groups may suffer as a result of this unequal power dynamic and a lack of trust [18]. This researcher-centered method is predicated on the idea that scientists and designers are able to put themselves in the shoes of locals and understand the viewpoints of the local population. However, due to their privileged socioeconomic status and potential cultural or geographic origins, university academics may find it difficult to fully and truly comprehend the experiences of the local population [23]. Researchers can only genuinely value community knowledge and be open to integrating local communities, particularly those most affected by the issues, in the creation of AI systems if they acknowledge this vulnerability and acknowledge the power imbalance.

The use of AI has the potential to significantly enhance the services that local governments provide. But there is danger involved, so any firm looking to participate in this market needs to strike a balance between enthusiasm and prudence. The legal foundation for AI is still developing on a global scale. To properly manage their AI-driven goods and services, organizations need proactively implement “AI Hygiene” procedures [18]. This requires a few crucial steps:

- To find out which AI-driven products the company and its clients are using, conduct an internal audit
- Learn in-depth information about the movement and use of data throughout the company. This analysis is essential for figuring out whether information barriers or organizational restraints are required to reduce privacy hazards
- Analyze the present AI-related regulatory landscape. Make use of these observations to assess and revise all pertinent policies and procedures. This entails making certain that rules pertaining to information security, privacy, and consumer interaction are appropriate and compliance with current laws
- Embrace best practices in AI development by following global guidelines established by organizations like the ISO and NIST
- Examine client contracts to make sure that, in the context of the pertinent AI goods, privacy, responsibility, indemnity, and intellectual property rights are sufficiently addressed

All the above-described vectors should be combined in agile and well thought-out state policy, with the development of appropriate incentives taking into account the current and prospective state of the art in technological, economic, and social development in a global, national, regional, and local space.

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**Primary Paper Section: A****Secondary Paper Section: AL**