

# INNOVATIVE ENTREPRENEURSHIP AS A DRIVER OF SUSTAINABLE BUSINESS DEVELOPMENT IN THE REPUBLIC OF MOLDOVA

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**Abstract.** *The growing importance of innovative entrepreneurship as a driver of sustainable business development has become an important focus in transition economies, including the Republic of Moldova. This study explores the current state of innovative enterprises in Moldova, showing their role in economic growth while addressing environmental and social challenges. The research aims to assess the factors influencing the development of innovative entrepreneurship and identify the main barriers that hinder its progress. To achieve this, a combination of qualitative and quantitative research methods was used, including the analysis of statistical data on innovative enterprises, a review of relevant literature, and case studies of businesses implementing sustainable innovations. The findings reveal that, despite the growing interest in innovation, Moldova's entrepreneurial ecosystem faces challenges such as regulatory barriers, limited access to funding, insufficient technological infrastructure, and a weak innovation culture. However, the study also identifies opportunities for fostering sustainable entrepreneurship, emphasizing the need for policy support, financial incentives, and increased collaboration between the government, businesses, and research institutions. Strengthening the innovation ecosystem can contribute to greater competitiveness, economic resilience, but also long-term sustainability. The results underline the necessity of strategic interventions to support the growth of innovative enterprises and create a favorable environment for sustainable business development in Moldova.*

**Keywords:** *Innovative entrepreneurship, sustainable business development, economic growth, policy support, financial accessibility, entrepreneurial ecosystem, technology.*

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**Classification JEL:** L26, M13, O31.

## 1. Introduction

The importance of studying innovative entrepreneurship as a driver of sustainable business development has grown significantly in recent years, especially in transition economies like the Republic of Moldova. In a world characterized by rapid technological advancements and changing market dynamics, the ability to innovate is vital for businesses seeking to remain competitive and contribute in a positive way to society. Sustainable entrepreneurship, which focuses on economic growth while minimizing environmental impact and fostering social responsibility, may become a key solution to these challenges.

In Moldova, the potential for innovative entrepreneurship to stimulate economic development and address sustainability challenges is especially pressing. With an evolving market structure, the country faces numerous challenges in organizing a business environment that can conduct to innovation. These include limited access to regulatory barriers, financial resources but also the lack of infrastructure to support new business ventures. However, there is also untapped potential for innovation-driven growth that could not only boost Moldova's economy but also contribute to achieving broader sustainability goals in the region.

## 2. Literature review

The concept of innovative entrepreneurship has been extensively studied in the field of economics, particularly due to its important role in driving economic growth, competitiveness, and sustainability. Innovation, as proposed by Schumpeter (1934), is central to the entrepreneurial process, where entrepreneurs are seen as agents of creative destruction—introducing new products, services, and business models that replace outdated ones [1]. Schumpeter's theory has been expanded upon in modern studies, emphasizing that innovation is not only about technological breakthroughs but also about new business models and organizational processes that respond to market demands and societal challenges (Drucker, 1985).

Sustainable entrepreneurship, which integrates innovation with environmental and social responsibility, is a more recent development. According to Hall et al. (2010), sustainable entrepreneurship is about creating value that not only benefits the business but also contributes to society and the environment. In this context, sustainable entrepreneurs develop products, services, or business models that reduce negative environmental impacts while promoting long-term social and economic benefits. This approach aligns with the Triple Bottom Line (Elkington, 1997), which calls for businesses to focus not just on profits but also on people and the planet.

## 3. Methodology

The research involves a review of relevant literature to establish the theoretical foundations of innovative entrepreneurship and sustainability. Additionally, data analysis follows a thematic approach, identifying main patterns and trends within the responses to identify the factors that drive or hinder sustainable innovation in the Moldovan context. This methodology allows for a comprehensive understanding of both the theoretical concepts and real-world applications of innovative entrepreneurship.

## 4. Results and Discussion

While analyzing statistical data on innovative enterprises in the Republic of Moldova, we noticed that this is a relatively new field, as official statistics are only available starting from 2015. This indicates that innovation has only recently gained significant attention.

Table 1. provides an overview of the distribution of enterprises in the Republic of Moldova based on their types of innovations for the years 2021-2022 and 2019-2020. It shows a slight decrease in the proportion of innovative enterprises, which dropped from 12.6% in 2019-2020 to 11.4% in 2021-2022. Among these innovative enterprises, those that implemented multiple types of innovations (product, process, organizational methods, and marketing) accounted for 5.0% in 2021-2022, a decline from 6.3% in the previous period.

The percentage of enterprises innovating in products and/or processes also decreased from 2.1% to 1.7%, with product-only innovation dropping from 0.9% to 0.5%. In contrast, the share of enterprises innovating only in processes increased slightly from 0.7% to 0.9%.

Regarding organizational methods and marketing, the proportion of enterprises innovating in these areas rose marginally from 4.2% to 4.6%. Within this category, the number of enterprises innovating solely in organizational methods rose from 0.9% to 1.1%, and those focused on marketing methods remained stable at 1.6%. Moreover, the share of businesses innovating in both organizational methods and marketing slightly increased from 1.7% to 1.8%.

Meanwhile, the percentage of non-innovative enterprises saw a slight increase, rising from 87.4% to 88.6%.

**Table 1. The number of enterprises by types of innovations, 2019-2022, Republic of Moldova**

Indicators	Weight in the total number of enterprises (%)	
	2021-2022	2019-2020
<b>Total enterprises</b>	<b>100.0</b>	<b>100.0</b>
Innovative enterprises - total, of which:	11.4	12.6
Enterprises that have achieved multiple types of innovations (product, process, organizational methods, and marketing)	5.0	6.3
Enterprises innovative in products and/or processes	1.7	2.1
Of which:	0.0	0.0
Enterprises innovative only in products	0.5	0.9
Enterprises innovative only in processes	0.9	0.7
Enterprises innovative products and processes	0.3	0.5
Enterprises innovative in organizational methods and/or marketing	4.6	4.2
of which:	0.0	0.0
Enterprises innovative only in organizational methods	1.1	0.9
Enterprises innovative only in marketing methods	1.7	1.6
Enterprises innovative in organizational methods and marketing methods	1.8	1.7
Non-innovative enterprises	88.6	87.4

Source: National Bureau of Statistics, [https://statistica.gov.md/ro/rezultatele-activitatii-de-inovare-a-intreprinderilor-in-republica-moldova-in-an-9794\\_60858.html](https://statistica.gov.md/ro/rezultatele-activitatii-de-inovare-a-intreprinderilor-in-republica-moldova-in-an-9794_60858.html)

These changes may be attributed to several factors. The decrease in overall innovation could reflect economic challenges faced by Moldovan enterprises, such as limited access to funding or lack of incentives for research and development. The global economic context, including the impact of the COVID-19 pandemic, might have led to reduced investments in innovation as businesses focused on survival and short-term recovery. Additionally, the shift toward innovations in organizational methods and marketing could indicate a growing recognition of the importance of non-technical innovations for enhancing business operations and competitiveness in challenging times. The rise in non-innovative enterprises may also suggest that some businesses are struggling to adapt to changing market conditions or lack the resources to implement significant innovations. Overall, the data highlights the impact of both external economic pressures and internal business challenges on innovation activities in Moldova.

Table 2 presents the structure of innovative enterprises in the Republic of Moldova, categorized by economic activity for the years 2021-2022 and 2019-2020. It highlights the share of innovative enterprises across industry and services sectors, revealing some shifts in the distribution of innovation activities over the two periods.

In 2021-2022, the industrial sector accounted for 50.0% of innovative enterprises, which is a slight increase from 48.9% in 2019-2020. This indicates a stable role for industry in innovation, with manufacturing being the primary contributor. The manufacturing industry rose from 44.6% in 2019-2020 to 46.2% in 2021-2022, suggesting that manufacturing enterprises are still the driving force behind innovation in the industrial sector. However, the extractive industry saw a significant decrease, from 0.7% to 0.2%, which could be attributed to declining investments in resource extraction and the growing importance of more sustainable industries. The production and supply of electricity, thermal energy, gas, hot water, and air conditioning remained stable at 1.9% in 2021-2022, while water distribution,

sanitation, waste management, and decontamination activities increased slightly from 1.3% to 1.7%, reflecting the growing importance of environmental and infrastructure innovations in the country.

**Table 2. Innovative enterprises by economic activities, in 2019-2022, Republic of Moldova**

	Structure of innovative enterprises, %	
	2021 -2022	2019 -2020
<b>Total</b>	<b>100.0</b>	<b>100.0</b>
<b>Industry – total</b>	<b>50.0</b>	<b>48.9</b>
Extractive industry	0.2	0.7
Manufacturing industry	46.2	44.6
Production and supply of electricity and thermal energy, gas, hot water, and air conditioning	1.9	2.2
Water distribution; sanitation, waste management, decontamination activities	1.7	1.3
<b>Services – total</b>	<b>50.0</b>	<b>51.1</b>
Wholesale trade	20.2	22.3
Transport and storage	8.8	7.1
Information and communications	11.4	14.1
Financial and insurance activities	5.0	4.2
Professional, scientific, and technical activities	4.5	3.3

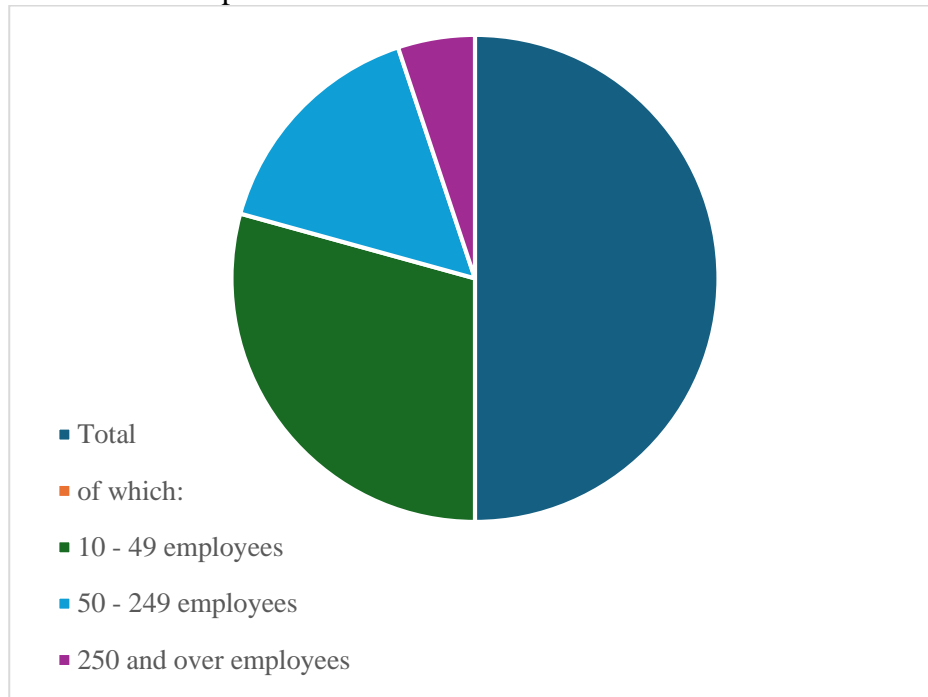
Source: National Bureau of Statistics, [https://statistica.gov.md/ro/rezultatele-activitatii-de-inovare-a-intreprinderilor-in-republica-moldova-in-an-9794\\_60858.html](https://statistica.gov.md/ro/rezultatele-activitatii-de-inovare-a-intreprinderilor-in-republica-moldova-in-an-9794_60858.html)

The services sector accounted for 50.0% of innovative enterprises in 2021-2022, a slight decrease from 51.1% in the previous period. Within this sector, wholesale trade innovation declined from 22.3% in 2019-2020 to 20.2% in 2021-2022, possibly due to the challenges faced by businesses in international trade during the pandemic and other economic disruptions. The transport and storage sector saw a notable increase from 7.1% to 8.8%, potentially driven by the growth in logistics and supply chain innovations due to changes in consumer behavior and the rise in e-commerce. The information and communications sector also experienced a decline from 14.1% to 11.4%, which may be attributed to market saturation and a slowdown in the rapid digital transformation experienced in earlier years. Financial and insurance activities saw a slight increase from 4.2% to 5.0%, reflecting innovations related to fintech and digital finance services. Professional, scientific, and technical activities saw a modest rise from 3.3% to 4.5%, suggesting that businesses in this area are becoming more innovative, likely driven by the increasing demand for advanced expertise and solutions.

Figure 1 presents the distribution of innovative enterprises in the Republic of Moldova based on the size of the enterprise, categorized by the number of employees. There are a total of 420 innovative enterprises, with their distribution varying significantly across different size classes.

The largest share, 58.6%, of innovative enterprises falls within the size category of 10-49 employees. This suggests that small and medium-sized enterprises (SMEs) play a crucial role in fostering innovation in Moldova. Smaller businesses often have greater flexibility, which allows them to adapt quickly to market changes and experiment with new ideas. They can implement innovative solutions more rapidly compared to larger firms, as they are not bound by the same bureaucratic hurdles. Additionally, SMEs tend to focus on

specific niches, which allows them to innovate in ways that cater directly to these specialized markets. However, their limited resources may restrict them from pursuing large-scale or capital-intensive innovations, which might explain why this size category has the highest proportion of innovative enterprises.



**Figure 1. Innovative enterprises, units, 2022, Republic of Moldova**

Source: National Bureau of Statistics, [https://statistica.gov.md/ro/rezultatele-activitatii-de-inovare-a-intreprinderilor-in-republica-moldova-in-an-9794\\_60858.html](https://statistica.gov.md/ro/rezultatele-activitatii-de-inovare-a-intreprinderilor-in-republica-moldova-in-an-9794_60858.html)

Enterprises with 50-249 employees account for 31.2% of innovative enterprises. Medium-sized businesses typically have more resources than smaller firms, enabling them to invest in research and development (R&D) and adopt new technologies. They are more likely to engage in innovation, as they have the capacity to scale new ideas while still maintaining the agility needed to implement changes effectively. However, these businesses may still face challenges in competing with larger corporations, which could be why their share of innovative enterprises is slightly lower than that of smaller businesses.

Finally, enterprises with 250 or more employees represent 10.2% of innovative enterprises. Large businesses generally have more established processes and focus on operational efficiency and profitability. As a result, they may not prioritize innovation in the same way that smaller or medium-sized businesses do. The complex organizational structures of large firms can slow down decision-making processes, which may hinder their ability to implement innovative ideas quickly. Nevertheless, when large enterprises do innovate, they tend to do so on a larger scale, often with significant investments in advanced technologies or new product development. The smaller share of innovative enterprises in this category may reflect the fact that large firms often focus more on incremental innovations rather than disruptive ones, which can result in fewer high-impact innovations.

Overall, the distribution of innovative enterprises by size in Moldova suggests that small and medium-sized businesses are more likely to engage in innovation due to their flexibility, market focus, and risk tolerance. In contrast, large enterprises, despite their resources, may innovate more incrementally and face challenges in maintaining the same level of agility in the innovation process.

One of the most relevant indicators that could help us in our research of innovative entrepreneurship as a driver of sustainable business development in the Republic of Moldova is the The Global Innovation Index (GII). In the 2024 GII rankings, the Republic of Moldova was placed 68<sup>th</sup> out of 133 countries, reflecting a decline of eight positions compared to 2023, when it ranked 60<sup>th</sup> (World Intellectual Property Organization, Global Innovation Index 2024). The GII serves as a key mark for assessing a country's innovation performance, evaluating approximately 80 indicators across various categories, including human capital and research. In 2024, Moldova ranked 80<sup>th</sup> in the Innovation Input Sub-Index (compared to 81<sup>st</sup> in 2023) and 57<sup>th</sup> in the Innovation Output Sub-Index (down from 50<sup>th</sup> in 2023). A more significant drop was recorded in Infrastructure, where Moldova fell to 89<sup>th</sup> place from 75<sup>th</sup> in the previous year. In Human capital and research, the country ranked 68<sup>th</sup>, slightly below its 67<sup>th</sup> position in 2023.

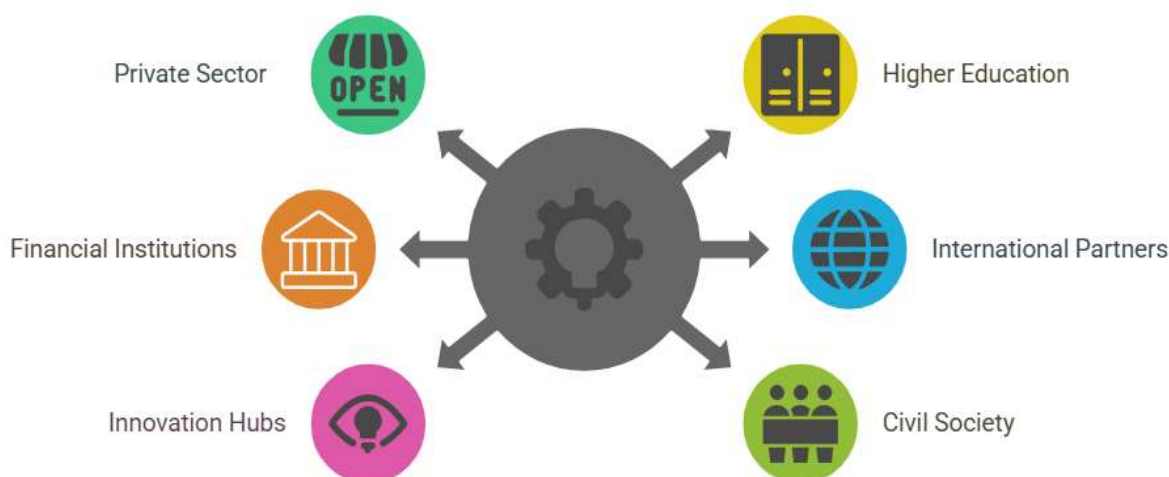
A similar downward trend is observed in Creative outputs, where Moldova placed 51<sup>st</sup>, down from 42<sup>nd</sup> in 2023. The Knowledge and technology outputs category also saw a decline, with Moldova ranking 64<sup>th</sup> (compared to 60<sup>th</sup> the previous year). Furthermore, the country placed 105<sup>th</sup> in Business sophistication and 90<sup>th</sup> in Institutions, marking a deterioration from its 96<sup>th</sup> position in 2023. However, a notable improvement was registered in Market sophistication, where Moldova moved up to 63<sup>rd</sup> from 76<sup>th</sup>, suggesting a positive trajectory in this area.

Historically, Moldova's highest position in the Global Innovation Index was 39<sup>th</sup> in 2011, reflecting its earlier efforts in fostering innovation. In the 2024 edition of the GII, Switzerland maintained its position as the world's most innovative country - a title it has held since 2011 - followed by Sweden, the United States and Singapore. Among Moldova's neighbors, Romania ranked 48<sup>th</sup>, while Ukraine secured the 60<sup>th</sup> position.

Another important influencing factor on innovation is, of course, the government expenditure for research and development. These are the kinds of public investments that prepare the soil for the future innovation and their implementation in the real economy sector. In 2022, expenditures on research and development activities amounted to 630.2 million lei, representing 0.23% of the Gross Domestic Product. Compared to 2021, research and development expenditures in 2022 increased by 69.7 million lei (or 12.4%), with public institutions seeing an increase of 74.6 million lei (or 16.4%). Out of the total expenditures on research and development activities in 2022, 84.1% were accounted for by public institutions, compared to 81.2% in 2021 (registering an increase of 2.9 percentage points) (National Bureau of Statistics, 2023).

Researching the data about European Union countries' public expenditure on research and development (R&D), we notice that the R&D intensity remained constant in 2023 at 0.7% which is three times bigger compared with the Republic of Moldova (EUROSTAT, 2023).

Taking in consideration all above, we conclude that the main actors that determine the state of innovation which influence at its turn the innovative entrepreneurship in the Republic of Moldova are diverse and interdependent, included in the Figure 2.



**Figure 2. Innovation ecosystem in Republic of Moldova**

*Source: author's elaboration*

The Moldovan government plays a significant role in creating the regulatory framework and policies that foster or hinder innovation. This includes setting up national strategies for research and development, providing funding for R&D, and implementing policies that support innovation in various sectors. Institutions such as the Academy of Sciences of Moldova and Ministry of Education, Culture and Research are key players in advancing scientific research, technological development, and innovation. Furthermore, government incentives for businesses that engage in innovation are critical.

The private sector, particularly small and medium-sized enterprises (SMEs), is a major driver of innovation in Moldova. These businesses contribute to the economy by developing new products, services, and processes. However, the level of innovation in the private sector is often dependent on the financial and technological resources available, as well as the willingness of companies to invest in R&D. Businesses in sectors like IT, agriculture, and manufacturing have shown growing interest in innovation, especially with the support of EU programs and international partnerships.

Universities and research centers play a determinant role in shaping the innovation landscape in Moldova. However, the connection between academia and industry still needs improvement to facilitate more applied research and technology transfer.

Access to finance is a major barrier to innovation in Moldova. Banks, venture capital funds, and other financial institutions influence the availability of funding for startups and innovative projects. Moldova has made progress with the establishment of initiatives like Innovative Moldova, which offers funding for innovative enterprises. Despite that, the investment climate still faces challenges, such as limited access to risk capital and low levels of investment in high-tech sectors.

Moldova's integration into European and international networks has helped the country gain access to innovation-focused programs, such as those offered by the European Union, Horizon Europe, and Erasmus+. These programs provide funding, training, and collaboration opportunities, enabling Moldovan businesses and researchers to collaborate on innovative projects and gain access to advanced technologies.

Innovation hubs, business incubators, and technology transfer offices play a role in fostering innovation in Moldova. Institutions like the Moldovan Innovation and Technology Transfer Agency (MITTA) and various tech parks have been established to support the commercialization of research and help startups scale their innovative ideas.

Civil society, NGOs, and the media also contribute to innovation by raising awareness, organizing events, and providing platforms for dialogue on innovation and entrepreneurship. They play an important role in advocating for policies that support innovation and educating the public on the importance of research.

Despite the positive roles these actors play, the innovation ecosystem in Moldova still faces several challenges, represented in the Figure 3.



**Figure 3. Innovation entrepreneurship barriers in Republic of Moldova**

*Source: author's elaboration*

- Both public and private sectors in Moldova allocate minimal resources to research and development, hindering innovation. Small businesses struggle to invest due to limited financial resources and a lack of venture capital.
- There is insufficient collaboration between academia, industry, and government. Research often remains disconnected from real-world applications, limiting commercialization and innovation.
- A lack of awareness and weak enforcement of intellectual property rights discourage innovation and reduce the incentive to invest in new ideas.
- Moldovan businesses are risk-averse, focusing on short-term profits. Limited access to funding, especially for startups, further slows innovation.
- Many talented professionals leave Moldova for better opportunities abroad, which limits the country's innovation capacity.
- Moldova's innovation hubs and technological infrastructure are underdeveloped, hindering the commercialization of new ideas and technological advancement.
- Complex regulations, excessive bureaucracy, and a lack of tax incentives create obstacles for innovation and slow down the commercialization of new products.
- Low public understanding of the importance of innovation limits demand and support for innovative products and services.

## 5. Conclusions

Innovative entrepreneurship plays a very important role in building sustainable businesses, especially in transition economies like Moldova. By adopting new ideas and technologies, businesses can grow while also contributing to environmental and social well-being.

However, entrepreneurs in Moldova face significant challenges, such as complicated regulations, limited financial support, and restricted access to modern technologies. Despite these difficulties, there are companies that have successfully integrated sustainable innovations, proving that progress is possible with the right approach.

To encourage more businesses to follow this path, stronger collaboration is needed between the government, educational institutions, and the private sector. More supportive policies, better funding opportunities, and investment in research and development could help create an environment where innovation thrives.

Although Moldova's entrepreneurial ecosystem has its struggles, there are also great opportunities for growth. By promoting innovation and sustainability, businesses can become more competitive, generate jobs, and contribute to a stronger economy.

Supporting innovative entrepreneurship is essential for long-term economic stability. Overcoming existing obstacles and making the most of new opportunities will help Moldova move toward a more dynamic and sustainable future.

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