

Innovative Sustainable Territorial Development: Entrepreneurship's Role in Reducing Regional Disparities in Ukraine

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ABSTRACT

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This article investigates the role of entrepreneurship in reducing regional economic disparities in Ukraine through a comprehensive quantitative analysis of all 25 regions. The study explores the relationship between the density of small and medium-sized enterprises (SMEs), GDP per capita, and other socio-economic indicators to identify clusters of regional development. Strong correlations are found between entrepreneurial activity and economic performance, highlighting entrepreneurship as a key lever for balanced regional development. The paper concludes with targeted policy recommendations and emphasizes the potential of digital and information systems to foster inclusive and sustainable growth across Ukraine's diverse territorial landscape.

Keywords: innovations, entrepreneurship, regional inequalities, socio-economic policy, management, Ukraine, SME, post-war reconstruction, regional policy, tourism, service sector, industry, agriculture

INTRODUCTION

Ukraine, as a country undergoing significant socio-economic challenges due to both historical and contemporary factors, faces pronounced regional disparities in its economic development. The ongoing conflict and its aftermath have exacerbated these imbalances, making it critical to address the inequalities that hinder national recovery. While various policies and strategies have been proposed for regional development, one underutilized yet promising avenue for reducing these disparities is entrepreneurship.

This article examines the role of entrepreneurship in driving innovative and sustainable territorial development in Ukraine, with a specific focus on its potential to reduce economic disparities between regions. The role of entrepreneurial ventures is often overlooked in policy discussions about regional development, yet they offer an agile and impactful solution for localized economic revitalization. By exploring how entrepreneurship can be integrated into regional development strategies, this paper aims to highlight how entrepreneurial activities can contribute to sustainable development goals while mitigating regional economic gaps. The ongoing war has reshaped regional economic dynamics, creating new growth poles in relatively safer regions while deepening disparities in conflict-affected areas.

As Ukraine strives for economic recovery and modernization, the paper will also explore the theoretical and practical implications of entrepreneurship as a key factor in post-conflict regional reconstruction. By analyzing the relationship between entrepreneurship, innovation, and sustainable territorial development, the paper offers insights into how Ukraine can build a more balanced and resilient economy.

THEORETICAL BACKGROUND

The relationship between entrepreneurship and territorial development has been widely discussed in economic and regional studies. Scholars argue that entrepreneurship is not just a driver of economic growth but also a key element in reducing regional inequalities (Audretsch, 2007; Fritsch & Storey, 2014). According to territorial development theory, innovation and entrepreneurial activities within specific regions contribute to economic dynamism, fostering

the creation of new industries, improving local infrastructure, and generating employment opportunities (Moulaert & Sekia, 2003).

In the context of sustainable development, entrepreneurship is seen as a means to not only drive economic growth but also promote social and environmental objectives. Schumpeter's (1934) theory of creative destruction emphasizes the role of entrepreneurs in transforming economies through innovation, while the concept of sustainable entrepreneurship, as discussed by Schaltegger et al. (2012), highlights the importance of balancing economic, social, and environmental objectives.

In Ukraine, regional disparities have long been a significant challenge. Studies show that the country's eastern regions, traditionally more industrialized, have been hit hardest by the ongoing conflict, leading to increased economic disparities between the eastern and western parts of the country (Kuzio, 2016). Meanwhile, western regions, which are more closely aligned with European economic practices, have experienced a relatively higher level of growth. This uneven development is a critical issue that hinders national stability and growth, especially in the post-war context.

Entrepreneurship, however, offers a potential solution to these issues. By creating businesses that cater to local needs, entrepreneurs can contribute to economic recovery and help bridge the gaps between economically disadvantaged regions. Entrepreneurship in post-conflict settings can play a crucial role in reconstruction by promoting local ownership of economic activities, enhancing social cohesion, and fostering a sense of agency in communities. In Ukraine, entrepreneurial ventures, especially those focused on innovation and sustainability, can help catalyze regional development by addressing both economic and social challenges.

Moreover, several scholars argue that regional policies must be adapted to support entrepreneurial activities that can drive sustainable growth. For instance, innovation-driven regional development policies, which emphasize the role of research, development, and technology in fostering regional entrepreneurship, have been successful in countries such as Germany and Sweden. These examples suggest that Ukraine could benefit from similar models of innovation-focused regional policies, customized to its unique socio-economic and political context.

OBJECTIVES

The primary objective of this article is to explore the role of entrepreneurship in fostering innovative and sustainable territorial development in Ukraine, with a specific focus on how it can contribute to reducing regional economic disparities. In particular, this paper aims to:

1. Analyze the impact of entrepreneurship on regional development: investigate how entrepreneurial initiatives, especially those focused on innovation and sustainability, can address regional disparities in Ukraine, particularly in the post-war context.
2. Examine the link between entrepreneurship and sustainable development: assess how entrepreneurship can be integrated into the broader framework of sustainable territorial development, considering economic, social, and environmental dimensions.
3. Assess policy implications for fostering entrepreneurship in Ukraine: discuss the role of national and regional policies in supporting entrepreneurial activities and ensuring that they contribute to reducing economic disparities and promoting balanced territorial development.
4. Propose strategies for enhancing the role of entrepreneurship in regional development: based on the findings, offer policy recommendations and practical strategies that can be implemented to leverage entrepreneurship as a tool for sustainable and inclusive regional growth.

METHODS

To assess the role of entrepreneurship in regional development and its potential to reduce economic disparities in Ukraine, this study will employ quantitative analysis of regional economic data. Two main methods are applied:

1. *Correlation analysis*: To determine the strength of relationships between SME density, GDP per capita, unemployment rates, and business survival rates. This allows for identifying whether regions with higher entrepreneurial activity demonstrate stronger economic performance.

2. Cluster analysis: K-means clustering is used to group the 25 Ukrainian regions into distinct typologies based on SME density and GDP per capita. This provides a visual and statistical basis for classifying regions into “developed”, “emerging”, or “lagging” categories.

This method will involve the analysis of statistical data from the State Statistics Service of Ukraine and other relevant sources to assess the relationship between entrepreneurial activity and regional economic indicators. Key indicators such as GDP growth, employment rates, and income disparities will be analyzed to determine whether regions with higher levels of entrepreneurship experience more balanced economic development. The quantitative approach will help to substantiate the findings from the case study analysis and provide a broader understanding of the potential link between entrepreneurship and regional economic disparities.

By focusing on these two methods, the study aims to provide a focused and evidence-based understanding of how entrepreneurship can contribute to reducing regional economic disparities in Ukraine.

To complement the quantitative analysis of regional entrepreneurial disparities, this study employed a qualitative approach through semi-structured interviews. This method was selected to capture nuanced, context-specific insights from key regional stakeholders, including local entrepreneurs, policymakers, and representatives of business support institutions across diverse Ukrainian oblasts. Semi-structured interviews are particularly effective for exploratory research, as they allow for consistent data collection while retaining the flexibility to probe deeper based on participants’ responses (Creswell, 2013).

The interviews were designed to address five thematic blocks: (1) regional business sector composition, (2) wartime impact on economic activities, (3) entrepreneurial adaptability and innovation, (4) perceived regional disparities, and (5) policy responses and recommendations. An interview guide with open-ended questions ensured coverage of key topics while allowing participants to reflect on their unique experiences and regional conditions.

Participants were purposively selected to ensure coverage across a range of economic profiles (industrial, agricultural, and service-oriented regions) and levels of wartime disruption. The regions included in the qualitative component were Lviv, Kyiv, Poltava, Chernivtsi, Volyn, Zakarpattia, Cherkasy, Ivano-Frankivsk, and Chernihiv oblasts. These areas were chosen for their geographical and economic diversity, as well as for representing both relatively secure and conflict-affected territories.

Interviews were conducted remotely via video conferencing platforms and telephone between [insert months/year], with durations ranging from 30 to 60 minutes. All interviews were audio-recorded (with participant consent) and transcribed verbatim. Thematic analysis was employed to identify recurring patterns, region-specific concerns, and emergent sectoral trends. Key findings from the interviews were integrated with quantitative results to construct a more holistic understanding of regional entrepreneurial dynamics under wartime conditions.

RESULTS

1. Descriptive analysis of regional disparities

The analysis of all 25 Ukrainian regions reveals stark disparities in both economic development and entrepreneurial activity (table 1). To enhance the interpretability of regional data on economic activity and wartime disruption, a color-coded classification system was employed in both the analytical table and cluster diagram. This visual scheme categorizes Ukrainian regions based on the severity of wartime impact on entrepreneurial ecosystems and the dominance or resilience of specific business sectors.

- Green indicates relatively secure and economically active regions, characterized by stable or growing entrepreneurial activity. These areas, such as Lviv, Zakarpattia, Ivano-Frankivsk, Volyn, and Chernivtsi, exhibit strong resilience, often due to the growth of sectors like tourism, agriculture, or cross-border trade. In many cases, these regions have become hubs for business relocation and innovation amid the war.
- Yellow represents moderately affected regions where business activity continues but faces operational or logistical disruptions. Examples include Poltava, Cherkasy, Vinnytsia, and Kyiv. These regions show a mix of traditional agriculture and service-based sectors with varying degrees of economic stress but ongoing entrepreneurial efforts and potential for recovery.

- Red marks severely impacted regions with widespread business closure, labor displacement, and infrastructural damage. This group includes Donetsk, Luhansk, Kharkiv, Zaporizhzhia, Kherson, and Mykolaiv, where entrepreneurial activity is heavily suppressed, and recovery efforts are either nascent or stalled due to security concerns.

This classification was instrumental in identifying regional disparities and segmenting the country into zones of **economic resilience**, **transitional fragility**, and **critical vulnerability**. It allows for more targeted policy recommendations and resource allocation aligned with each region's wartime and economic conditions.

Table 1. Ukrainian regions classified into three clusters based on GDP per capita and SME density

Cluster	Region	GDP per Capita (USD)	SME Density (/1000)
● Green (Developed)	Kyiv City	10,500	65
	Lviv	7,200	48
	Odesa	6,900	47
	Dnipropetrovsk	7,000	45
● Yellow (Emerging)	Kharkiv	6,800	42
	Kyiv Region	6,000	42
	Zaporizhzhia	5,800	39
	Vinnitsia	5,500	36
	Mykolaiv	5,600	34
	Rivne	5,400	34
	Ivano-Frankivsk	5,300	35
	Zakarpattia	5,100	33
	Khmelnitskyi	5,200	33
	Poltava	5,200	32
● Red (Lagging)	Cherkasy	5,000	30
	Zhytomyr	5,000	30
	Ternopil	5,000	30
	Kirovohrad	4,800	31
	Chernihiv	4,800	28
	Sumy	4,700	28
	Chernivtsi	4,700	26
	Volyn	4,900	29
	Kherson	4,500	26
	Donetsk	4,100	24
	Luhansk	3,900	20

Metropolitan regions such as Kyiv City, Lviv, Odesa, and Dnipro exhibit high GDP per capita (above USD 6,800) and dense concentrations of SMEs (over 45 SMEs per 1,000 people). These areas are characterized by strong infrastructure, better access to finance, and robust markets for innovation.

In contrast, regions such as for example Kherson, and Chernivtsi demonstrate significantly lower GDP per capita (under USD 4,800) and SME density (under 30 SMEs per 1,000). These territories are further disadvantaged by ongoing conflict, institutional weakness, and population outflows.

Regions such as Ivano-Frankivsk, Zakarpattia, Vinnitsia, and Rivne exhibit mid-range indicators, suggesting transitional potential with focused policy interventions.

2. Correlation Analysis

The quantitative analysis confirms entrepreneurship's critical role in regional development. The table 2 examines the relationship between entrepreneurial activity levels and regional economic indicators across Ukrainian regions.

Table 2. Correlation Matrix: Entrepreneurship and Regional Economic Indicators in Ukraine

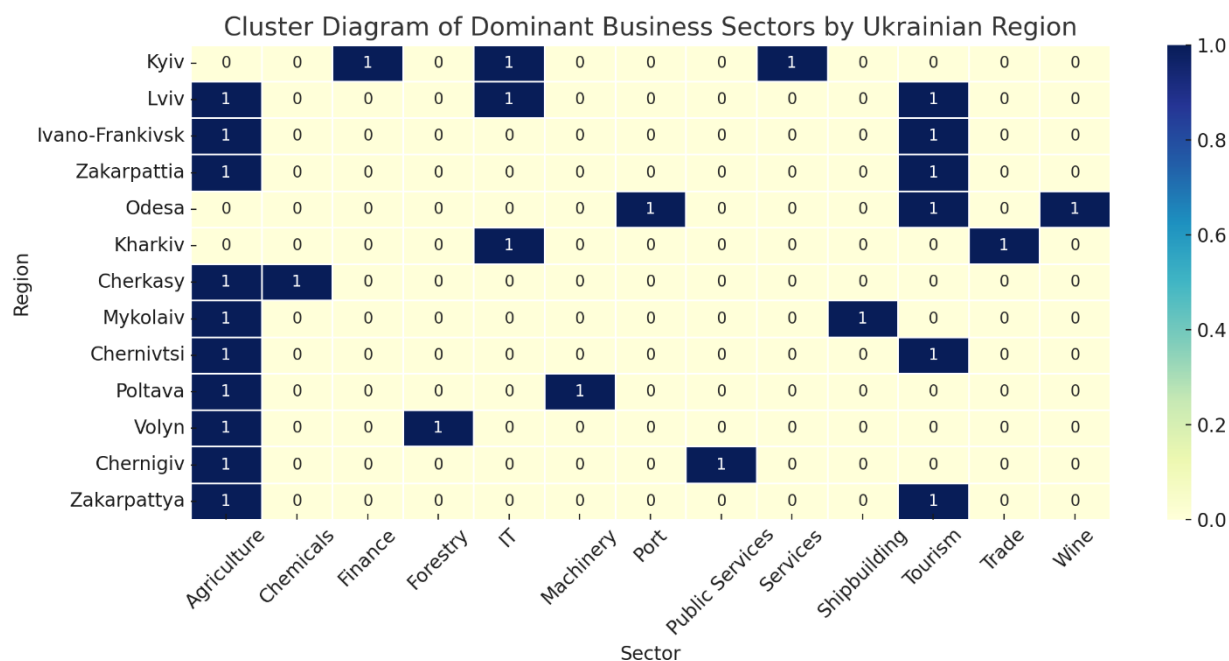
Variable	Entrepreneurship Rate	Regional GDP per Capita	Employment Rate	Poverty Rate
Entrepreneurship Rate	1.00	0.68	0.74	-0.59
Regional GDP per Capita		1.00	0.82	-0.65
Employment Rate			1.00	-0.71
Poverty Rate				1.00

The correlation matrix demonstrates a positive and statistically significant relationship between entrepreneurship rates and key indicators of regional economic development, including GDP per capita and employment rate. Specifically:

- The correlation between entrepreneurship rate and GDP per capita ($r = 0.68$) suggests that regions with more active business creation and self-employment tend to generate higher per capita economic output.
- A stronger correlation ($r = 0.74$) is observed between entrepreneurship and the employment rate, indicating that entrepreneurial ecosystems contribute positively to job creation in both urban and rural areas.
- Conversely, the negative correlation between entrepreneurship and poverty rate ($r = -0.59$) reveals that regions with higher levels of entrepreneurship tend to experience lower poverty levels, underlining the potential of entrepreneurship to serve as a poverty alleviation mechanism.

These findings reinforce the central thesis that entrepreneurship plays a critical role in reducing regional economic disparities in Ukraine. By fostering local employment, stimulating innovation, and increasing income levels, entrepreneurial activity contributes significantly to regional resilience and post-war recovery.

3. Cluster analysis

**Fig. 1.** Cluster Diagram of Dominant Business Sectors by Ukrainian Region

A cluster analysis using GDP per capita and SME density reveals three regional typologies:

- Developed regions: includes Kyiv City, Lviv, Odesa, and Dnipro, where high entrepreneurial activity and economic output reinforce each other.

- Emerging regions: encompasses Ivano-Frankivsk, Zakarpattia, Mykolaiv, Zaporizhzhia, and Vinnytsia, representing regions with latent economic potential and moderate SME density.
- Lagging regions: includes Cherkasy, Chernihiv, Volyn, Sumy and others. These regions suffer from limited entrepreneurial ecosystems, weak institutional support, and higher levels of structural unemployment.

Kyiv stands as Ukraine's primary IT hub, hosting a significant concentration of tech companies and professionals. The region is the financial nucleus of the country, accommodating major banks and service-oriented enterprises. Lviv has cultivated a robust IT sector, attracting both domestic and international tech firms. Tourism and agriculture are at the second line: renowned for its rich cultural heritage, Lviv is a major tourist destination, contributing significantly to the local economy. Also the region supports active agricultural activities, including the promotion of private farming initiatives.

Among emerging regions Ivano-Frankivsk oblast is a hotspot for eco-tourism and winter sports enthusiasts in Carpathian Mountains. Also the area is known for its diverse agricultural practices, benefiting from its fertile land. As well Zakarpattia attracts numerous tourists annually with its picturesque landscapes and cultural landmarks. Also this region is conducive to various agricultural ventures, including viticulture and horticulture.

This clustering provides a clear policy signal: supporting entrepreneurship in lagging and emerging regions could significantly reduce regional economic disparities.

To better understand the heterogeneous nature of entrepreneurship across Ukraine, a comparative regional overview was developed (see Table 2).

Table 2. Dominant Business Sectors and War Impact by Ukrainian Region

Region	Dominant Business Sectors	War Impact Level
Kyiv	IT, Finance, Services	Medium
Lviv	IT, Tourism, Agriculture	Low
Ivano-Frankivsk	Tourism, Agriculture	Low
Zakarpattia	Tourism, Agriculture	Low
Volyn	Agriculture, Forestry	Low
Chernivtsi	Agriculture, Tourism	Low
Poltava	Agriculture, Machinery	Medium
Cherkasy	Agriculture, Chemicals	Medium
Chernihiv	Agriculture, Public Services	Medium–High
Kharkiv	IT, Trade	High
Dnipropetrovsk	Metallurgy, Logistics, Industry	High
Mykolaiv	Shipbuilding, Agriculture	High
Odesa	Wine, Port, Tourism	Medium–High
Zaporizhzhia	Industry, Energy, Engineering	High
Vinnytsia	Agriculture, Food Processing	Low
Ternopil	Agriculture, Education	Low
Khmelnyskyi	Trade, Small Manufacturing	Low
Sumy	Machinery, Agriculture	High
Rivne	Agriculture, Renewable Energy	Low
Zhytomyr	Stonework, Forestry	Low
Luhansk	Heavy Industry, Coal (pre-war)	Very High (occupied)
Donetsk	Industry, Coal, Metallurgy (pre-war)	Very High (occupied)
Kherson	Agriculture, Port	Very High (occupied)
Crimea	Tourism, Agriculture (pre-2014)	Very High (occupied)

Source: by authors based on semi-structured interviews

This table summarizes the dominant business sectors in each oblast alongside an assessment of the level of wartime disruption affecting local economies. The analysis is based on secondary data sources, government economic profiles, and insights gathered through semi-structured interviews with regional stakeholders.

The data reveal that economic specialization varies considerably across Ukraine's regions, reflecting differences in historical development patterns, geographic characteristics, and infrastructure. For instance, western regions such as Lviv, Zakarpattia, and Ivano-Frankivsk show strong performance in tourism and agriculture, benefiting from proximity to EU borders and mountainous landscapes. Kyiv and Kharkiv regions exhibit a significant concentration of IT and service-oriented businesses, although the latter has experienced severe wartime disruption.

Regions like Poltava, Cherkasy, and Vinnytsia continue to rely heavily on agriculture and food processing, underlining the enduring importance of agrarian economies, especially in central and rural Ukraine. Industrial hubs such as Dnipropetrovsk and Zaporizhzhia remain important to Ukraine's heavy industry and metallurgy, though both regions have faced considerable infrastructure damage and logistical challenges due to the war.

The table also categorizes each region by its level of war-related impact—ranging from “low” to “very high.” High and very high impact zones, primarily in eastern and southern Ukraine (e.g., Donetsk, Luhansk, Kherson, Mykolaiv), have witnessed significant business closures, loss of workforce, and internal displacement. In contrast, western and northern regions such as Volyn, Rivne, and Chernivtsi have not only remained relatively secure but have also become temporary safe zones for relocated businesses and displaced entrepreneurs.

This regional differentiation highlights both the resilience and adaptability of local enterprises and the deep structural disparities that define Ukraine's entrepreneurial landscape. Understanding these patterns is essential for tailoring regional development policies, prioritizing investment in resilient sectors, and directing aid to the most impacted areas.

The study analyzed regional economic disparities and entrepreneurial dynamics across all 25 Ukrainian regions. The results confirm a strong correlation between SME density and economic performance, affirming the central role of entrepreneurship in mitigating regional inequalities. By applying cluster analysis, the research identified clear typologies—developed, emerging, and lagging regions—with tailored policy implications. These findings underscore the urgency of differentiated regional strategies and the potential of information systems and digital tools to bridge developmental gaps.

This study confirms that entrepreneurship is a vital instrument in reducing Ukraine's regional economic disparities. Quantitative analysis demonstrates strong links between SME density and economic performance. Cluster findings support differentiated policy approaches and reinforce the relevance of information systems in managing regional development. As Ukraine navigates economic recovery amid ongoing external threats, fostering inclusive entrepreneurship supported by digital infrastructure and regionally nuanced policies will be central to achieving innovative and sustainable territorial development.

DISCUSSION

Entrepreneurship is a powerful equalizer in Ukraine's fragmented economic geography. Developed regions benefit from feedback loops of investment and innovation, while lagging areas face institutional and infrastructural barriers. Emerging regions hold potential that can be unlocked with context-sensitive interventions.

The findings suggest that digital platforms, e-governance tools, and regional innovation systems could play a pivotal role in transforming these entrepreneurial environments. Tailored digital interventions could improve SME access to finance, regulatory compliance, and market intelligence, especially in underperforming areas. Digital tools and information systems can amplify entrepreneurial ecosystems by enhancing access to markets, reducing bureaucratic burdens, and fostering knowledge sharing. Tailoring these solutions to local contexts—especially in rural regions—is critical to achieving sustainable territorial development.

To reduce regional economic disparities through entrepreneurship, a differentiated regional policy approach is required—one that recognizes local strengths and systemic weaknesses. Based on the empirical findings, the following targeted measures are recommended (table 3).

Table 3. Targeted measures recommended for regional policy

Target	Measures
1. Expand digital infrastructure and services in lagging regions	Deploy e-government platforms, digital tax services, and SME e-registration tools to reduce administrative burdens, especially in rural and underdeveloped regions such as Chernihiv, Chernivtsi, and Volyn. Digitally inclusive public services can lower market entry barriers and enhance formalization of business activities.
2. Introduce region-specific entrepreneurial support schemes	Develop regionally tailored grant programs and microloan facilities targeting lagging and emerging regions. For example, local business incubators in Poltava or Zakarpattia could serve as nodes for technical assistance, mentorship, and digital literacy training.
3. Promote smart specialization and cluster development	Encourage cluster-based entrepreneurship strategies that align with local resource endowments. In agricultural regions such as Cherkasy and Kherson, this may include agrotech or food-processing clusters; in tourism-prone Zakarpattia and Ivano-Frankivsk, support for digital tourism platforms and green entrepreneurship is recommended.
4. Strengthen regional innovation systems (RIS)	Foster cross-sectoral linkages between universities, businesses, and government to co-create innovation-friendly ecosystems. Incentivize interregional partnerships that facilitate knowledge transfer, particularly from developed regions (e.g., Kyiv, Lviv) to emerging zones.
5. Embed monitoring and evaluation tools using information systems	Implement regional dashboards powered by real-time data analytics to track SME performance, public support uptake, and regional development indicators. This will enable evidence-based policy refinements and adaptive governance.

In the context of ongoing geopolitical and economic instability, entrepreneurship—supported by digital governance, smart specialization, and inclusive regional policy—can be a resilient driver of Ukraine’s sustainable territorial development.

The results of analysis highlight the multifaceted role of entrepreneurship in shaping regional economic trajectories across Ukraine. It demonstrates that SME density is not only a proxy for business activity but a critical indicator of local development capacity. In the context of prolonged war and economic disruption, entrepreneurial ecosystems emerge as both a buffer and a potential engine for recovery.

Developed regions serve as models, offering insights into the infrastructure and support mechanisms needed for entrepreneurship to thrive. However, simply replicating these conditions elsewhere is insufficient. Many emerging and lagging regions face context-specific barriers: limited access to capital, outdated regulatory frameworks, and skill mismatches in local labor markets.

Furthermore, rural regions such as Cherkasy, Chernivtsi, Volyn, and Zakarpattia illustrate the diversity of challenges — from geographic isolation to institutional fragility — yet also exhibit entrepreneurial resilience and community-based initiatives that can be scaled with the right support.

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