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SMALL AND MEDIUM-SIZED ENTERPRISES (SME) AND DISTRICT-LEVEL PANEL DATA ANALYSIS IN THE CONTEXT OF REGIONAL ECONOMIC DEVELOPMENT IN UZBEKISTAN

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Abstract: The study investigates the influence of small and medium-sized enterprises (SME) and human capital in regional economic development in the Republic of Uzbekistan from 2011 to 2024. By utilizing Kernel Density Estimation and regression of Fixed Effects (FE), the analysis reveals conditional beta-convergence, but exposes “SME productivity paradox”. The high concentration of employment is negatively correlated with economic growth in all development tiers, reflecting the dominance of necessity entrepreneurship. Besides, regions revealed a deficit in “absorptive capacity”. To meet “Digital Uzbekistan – 2030 strategy”, there is a necessity of improving the quality of SMEs.

Key Words: human capital, absorptive capacity, small and medium-sized enterprises (SME), economic growth, peripheral, hub, GRP, Kernel Density Estimation, Fixed Effects, beta-convergence, entrepreneurship, regional, spatial, innovation, strategy, investment.

Annotatsiya: Tadqiqotda 2011–2024-yillar davomida O‘zbekiston Respublikasida kichik va o‘rta biznes (KOB) hamda inson kapitalining hududiy iqtisodiy rivojlanishga ta’siri o‘rganilgan. Kernel zichlik baholash (Kernel Density Estimation) va qat’iy effektlar (Fixed Effects, FE) regressiyasi usullaridan foydalanilgan holda shartli beta-konvergentsiya mavjudligi aniqlangan, biroq “KOB unumdorligi paradoksi” ham namoyon bo‘lgan. Bandlikning yuqori konsentratsiyasi barcha rivojlanish darajalarida iqtisodiy o‘shish bilan salbiy bog‘liqligi kuzatilib, bu zarurat asosidagi tadbirkorlikning ustunligini aks ettiradi. Shuningdek, hududlarda “absorbsion salohiyat” yetishmasligi aniqlangan. “Raqamli O‘zbekiston – 2030” strategiyasi maqsadlariga erishish uchun KOB faoliyati sifatini oshirish zarurligi asoslab berilgan.

Kalit so‘zlar: inson kapitali, absorbsion salohiyat, kichik va o‘rta biznes (KOB), iqtisodiy o‘shish, periferik hududlar, markaziy hududlar, hududiy yalpi mahsulot (GRP), Kernel zichlik baholash, qat’iy effektlar, beta-konvergentsiya, tadbirkorlik, hududiy rivojlanish, makoniy rivojlanish, innovatsiyalar, strategiya, investitsiyalar.

Аннотация: В исследовании рассматривается влияние малого и среднего предпринимательства (МСП) и человеческого капитала на региональное экономическое развитие Республики Узбекистан в 2011–2024 годах. С использованием методов оценки плотности ядра (Kernel Density Estimation) и регрессии с фиксированными эффектами (Fixed Effects, FE) выявлено наличие условной бета-конвергенции, однако также обнаружен «парадокс производительности МСП». Высокая концентрация занятости отрицательно коррелирует с экономическим ростом во всех группах регионов, что отражает доминирование предпринимательства по необходимости. Кроме того, в регионах выявлен дефицит «абсорбционной способности». Для достижения целей стратегии «Цифровой Узбекистан – 2030» обоснована необходимость повышения качества деятельности МСП.

Ключевые слова: человеческий капитал, абсорбционная способность, малое и среднее предпринимательство (МСП), экономический рост, периферийные регионы, регионы-хабы, ВРП, оценка плотности ядра, фиксированные эффекты, бета-конвергенция, предпринимательство, региональное развитие, пространственное развитие, инновации, стратегия, инвестиции.

INTRODUCTION

For a long time, the relationship between small and medium size enterprises (SME) and economic growth has been in the spotlight of management and macroeconomic literature. Many economic theories position SMEs as driving engines of employment, entrepreneurship dynamics, and regional innovation [1, 2]. However, according to numerous empirical findings, the stable rise of the number of SMEs does not directly imply equalized economic development of regions. As Cravo Túlio showed in one of his studies, that the macroeconomic advantages of SMEs are often heterogeneous, and economic high development is due to maturity of certain economic regions and high human capital concentration [3]. This spatial heterogeneity is especially noticeable in regions with transitioning economies, where deeply rooted regional disparities are disguised by macroeconomic growth.

The Uzbekistan landscape offers a unique opportunity to examine links of human capital and SMEs and whether they contributed to regional convergence. With the highest population in Central Asia, Uzbekistan abandoned the outdated planned economy model towards a free market economy, triggering substantial changes in the distribution of GRP among all administrative units of Uzbekistan. The recent political changes are reflected in the new initiative, which is the “Digital Uzbekistan – 2030” strategy [4]. It aims not just to accelerate and modernize the economies of peripheral regions, but also to bring a fully new wave of reforms, for example: decentralizing the power, empowering emerging startups. The strategic purpose of the new initiative is to foster economic development based on knowledge, where digital landscape makes fair regional development possible.

In most cases, existing literature considers aggregate GDP in post-Soviet nations, leaving behind a vital gap, where investigation into regional level economic development is needed. When the focus lies only on aggregate GDP, nuances of peripheral regions can stay underrated, capturing the superiority of only “Growth Hubs”. There is an assumption that less developed regions will eventually catch-up to more developed economic centers, which is explained by beta-convergence [5]. This requires sophisticated analysis to the highly unique landscape of Uzbekistan. The further investigation requires an analysis in order to find out whether the quantity of SMEs is enough to drive the convergence, or if business quality has a more important role.

To eliminate this gap, this study focuses on combining regional economic analysis with Resource-Based View of the firms [6, 7]. Based on RBV logic, the businesses gain a competitive edge not only because of existence in profitable market, but also on account of using rare, valuable, and deeply integrated possibilities. Within the context of regional economy, graduates representing human capital are an important resource. However, as Cohen and Levinthal identified [8], using the concept of “absorptive capacity”, just the presence of human capital is not enough, when the SMEs do not possess sufficient innovative and organizational abilities for its application. In developing economies, the presence of small and medium-sized enterprises (SME) can signal about informal businesses, instead of innovation-oriented entrepreneurship [9]. Consequently, assessing the relationship between human capital and SMEs enables to identify whether local businesses have enough potential “absorptive capacity” that is vital for modernization.

This paper investigates systematic regional dynamics of economic growth along with the significance of SMEs across 14 administrative regions of Uzbekistan from 2011 to 2024. The purpose of the investigation branches into three parts. Firstly, the study uses Kernel Density Estimation (KDE) in order to have visual representation and statistical assessment of the changing economic concentration [10, 11], as well as trajectory of regional convergence throughout the given period. Secondly, there is the utilization of an econometric model with longitudinal Fixed Effects to verify conditional beta-convergence, which encompasses the human capital, growth of investment and territorial heterogeneity. Finally, it critically examines the hypothesis about “absorptive capacity” of the regions in terms of management, analyzing, whether the employment of human capital in SMEs is the real indicator of economic growth.

Taking into account the disaggregation of national economic statistics, and applying the fundamentals of regional management challenge the common view that the spread of SMEs drives the economy. Gaining the results makes possible to have an overview about structural constraints of transition economies, providing empirical data for governmental bodies pursuing to optimize the targets of “Digital Uzbekistan – 2030” strategies [4].

REVIEW OF LITERATURE ON THE SUBJECT

Spatial distribution of economic growth in post-socialist nations remains the matter of fierce discussion. Major macroeconomic concepts state that liberalization of the market in its natural way eliminates the spatial disproportion due to optimal reallocation of the resources [12]. Yet, spatial analysis in transition economies and the nations of Central Asia shows that dismantling the planned economies exacerbate the regional discrepancy. One of the scholars, Pomfret states that concentration of foreign direct investment along with high profitable activities in a few central hubs leads to the marginalization of peripheral regions.

In nations with developed economies, SMEs can play a role as the engines of aggregate economic growth.

Nevertheless, in developing nations, there is a tendency known as “SME paradox”. Smallbone and Welter (2001) introduced a widely accepted concept, showing that the spread of SMEs in post-soviet nations is explained through entrepreneurship by necessity, which refers to the survival mechanism instead of innovative entrepreneurship. Bruton, Ahlstrom, and Obloj (2008) also highlight that the nations with immature property rights reflect fragmented informal markets, which cannot sustain the economy through scaling.

Integration of human capital in SMEs is an important transition from existing just to survive towards transition based on innovational growth. Meanwhile, the presence of higher education graduates is a standard indicator of regional economic growth. The approach grounded in the utilization of Resource-Based View dictates that the human capital has economic benefit only in the case when businesses possess “absorptive capacity”, which refers to dynamic capabilities to assimilate and commercially use external knowledge [8, 13].

In recent times, the literature focuses more and more on the analysis of the quantity of the firms and exploration of institutional landscape of entrepreneurial diversity in developing markets. Meyer and Peng (2016) state that institutional problems in developing nations radically change the development strategies in the level of the firm, forcing the industries to survive relying on informal networks, instead of formal innovation’s path. In a similar way, Aparicio, Urbano, and Audretsch use panel data in order to prove that formal institutional factors determine whether the economy creates “opportunity entrepreneurship” or “necessity entrepreneurship”, with the first stimulating and the second slowing down the economy.

Moreover, Welter, et al. (2017) call for acknowledgment that “everyday entrepreneurship”, which means that SMEs in developing nations are the ordinary businesses with relatively low productivity rather than innovation-oriented startups. Developing this idea, Acs, et al. (2018) demonstrate that measuring only the quantity of SMEs is insufficient indicator of economic prosperity, instead, the “National Systems of Entrepreneurship” determine the economic prosperity.

Lastly, the literature of pioneering theories of transitional period and recent literature about institutional ecosystems indicate that without institutional and “absorptive capacity” maturity at the firm level, human capital and proliferation of SMEs remain as insufficient factors of regional economic equalization.

RESEARCH METHODOLOGY

With the purpose of empirical examination of beta-convergence and evaluation of regional “absorptive capacity”, this study makes use of panel data regression model. According to standard regional empirical literature on regional growth [5], the foundational specification is organized in such a way, that it reflects the relationship between regional economic growth and a vector of localized characteristics. The main economic model is given in this way:

$$\text{Growth}_{i,t} = \alpha_i + \beta_1 \text{Ln}(\text{GRP}_{i,t-1}) + \beta_2 \text{SME}_{i,t} + \beta_3 \text{Ln}(\text{Educ}_{i,t}) + \beta_4 (\text{SME} \times \text{Educ})_{i,t} + \beta_5 \text{InvGrowth}_{i,t} + \varepsilon_{i,t}$$

In this particular equation, i and t represent a certain region ($i=1, \dots, 14$) and the given period ($t=2011, \dots, 2024$), respectively. The dependent variable which represents the rate of regional economic growth is $\text{Growth}_{i,t}$. The region-specific fixed effect is illustrated with the term α_i , isolating unobserved heterogeneities that stay unchanged over the given stretch of time, for example: legacy infrastructures or geographical advantages.

When it comes to the term $\text{Ln}(\text{GRP}_{i,t-1})$, it represents the lagged natural logarithm of the Gross Regional Product, and the coefficient β_1 reflects the conditional convergence effect. Regarding statistically negative β_1 , it suggests that there is the presence of “catch-up” effect, where established economic hubs grow slower compared to peripheral regions, which depends on their conditional steady-state determinants.

The main variables of the study are $\text{SME}_{i,t}$ (regional share of SME employment) as well as $\text{Ln}(\text{Educ}_{i,t})$ (this illustrates human capital and considers the natural logarithm of higher education graduates). Not least importantly, there is an introduction of an interaction term, where $(\text{SME} \times \text{Educ})_{i,t}$ is specifically introduced to test absorptive capacity hypothesis regarding “Resource-Based View”, whether convergence of human capital into regional productivity is dependent on density of SMEs.

This particular variable $\text{InvGrowth}_{i,t}$ represents rate of regional investment growth, which helps to assess regional capital accumulation. Eventually, $\varepsilon_{i,t}$ reflects a specific term of errors. Strict application of this Fixed Effects condition is confirmed by the Hausman specification test [14].

In order to investigate regional economic convergence, in this study, there was used a balanced longitudinal dataset, comprising all 14 administrative units of the Republic of Uzbekistan over the period from 2011-2024, where 12 of them are the regions, Tashkent city and the republic of Karakalpakstan. All data comprising regional and macroeconomic indicators were systematically extracted from official website of National Statistics Committee of the Republic of Uzbekistan [15]. Employment of a centralized database at the level of the state ensures persistent uniformity across heterogenous regions.

The dataset considers 4 pillar metrics:

- a) Gross Regional Product (GRP)
- b) Share of Small and Medium Size Businesses (SME) in Regional Economies
- c) The Number of Higher Education graduates
- d) Growth Rate of Investment in Regions

The methodological foundation is grounded on a 2-stage approach. Firstly, Kernel Density Estimation (KDE) is used as the nonparametric method for visual and statistical evaluation of spatial distribution and the change of region's economic well-being over the given period. Secondly, the above-mentioned panel regression with Fixed Effects (FE), which is used for assessment of human capital contribution in regional economic growth in relation with small and medium-sized enterprises.

The longitudinal dataset (from 2011 to 2024) shows that there is significant structural heterogeneity across Uzbekistan, which proves localized evaluation. The aggregate growth of the economy disguises deep hidden regional disparities, splitting into "peripheral regions" (Syrdarya, Karakalpakstan) and "growth hubs" (Tashkent, Samarkand). Meanwhile, Gross Regional Product (GRP) grew everywhere, but regional capital disparities remained. It is needless to say that the share of small and medium sized business (SME) in every region is equally high – in most cases, surpassing 70% [15], still, GRP results remain rather heterogeneous. This discrepancy means significant qualitative disparities: hub SMEs are integrated into high-value supply chains, while, peripheral SMEs exist due to necessity. Therefore, these spatial disparities dictate that econometric estimates should consider unobserved regional Fixed Effect (FE) in order to find out true convergence drivers.

ANALYSIS AND RESULTS

The study uses longitudinal data in order to examine 14 administrative units of the Republic of Uzbekistan, eliminating the factor of national gross product. To assess the concentration of economic activities in numerous regions, as one of the reliable methods, Kernel Density Estimation was used, which encompasses the period between 2011-2024 [10, 11]. Looking at first what KDE suggests, economic discrepancy remains even after the regions demonstrated the average level of economic growth. Started at 0.291 in 2011, the log-difference in Gross Regional Product then dropped substantially reaching 0.176 at the end of the period. The visual assessment represented by KDE states clearly, that regional GRP became lower over time, which is typical for economically mature regions that undergo intense economic development period (Figure 1).

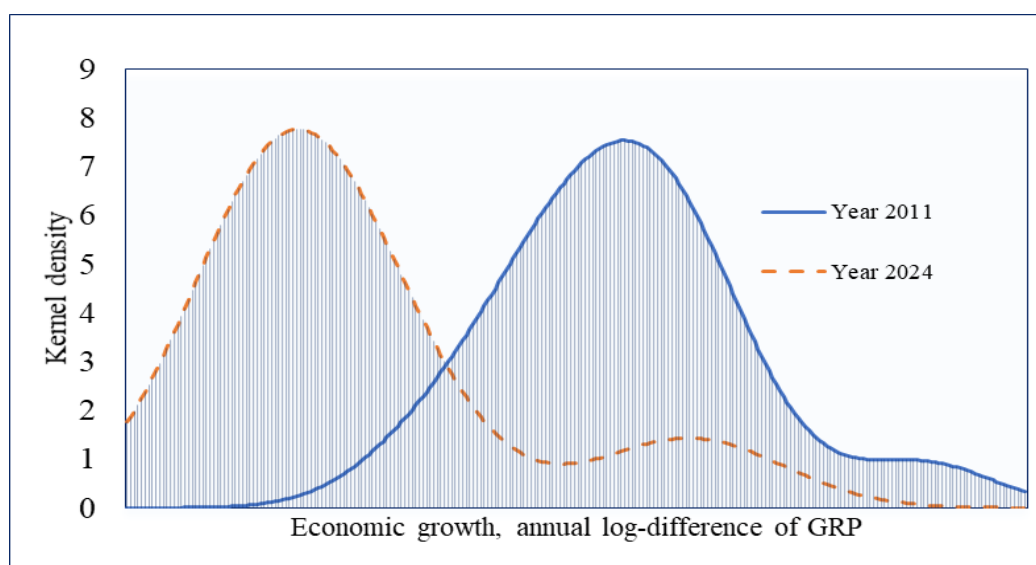


Figure 1. Uzbekistan Regional Economic Growth Distribution¹

On the other hand, however, the discrepancy of growth did not shrink over time. When it comes to standard deviation parameters, regional growth has risen from approximately 0.052 in 2011 to 0.064 in 2024. The least growth rate, at the end of the given period, was 0.121, whereas the highest parameter largely remained high at 0.331. Therefore, the average allocation became lower over the stretch of time, but in some terms considerably wider, proving that Uzbekistan's regions did not have similar patterns of economics development, following different trajectory.

¹ Source: developed by the author.

These growth patterns are of paramount importance, when it comes to relation with the “Digital Uzbekistan - 2030” strategy [4]. If the new policies along with new vision of modernization and transformation of Uzbekistan start to give their results, normal distribution of regional growth can be achieved. Conversely, KDE results show intricate process. While some regions hugely benefit from the verge of the new initiatives, resulting in modernization of infrastructure, development of private business, improved administrative capabilities, urban development, increased foreign direct investment, others, however, benefited much less due to outdated productive mechanism. In this context, there is nuanced convergence with consistent regional heterogeneity, which is the opposite sign of regional equalization.

The visible evidence confirms that there is no simple justification explaining regional convergence. But rather, the macro-regions are undergoing rigorous modernization distinctively. Additionally, the relatively more developed regions like Samarkand, Tashkent region as well as Tashkent city and the remaining regions with significantly high GRP, continue to gain superior positions compared to those regions that are peripheral. Thus, evidence provided by KDE can play a crucial role in finding new incentives from making split-sample analysis and panel regression.

Here, the main convergence test is testified by using the coefficient on Lagged natural Logarithm of Gross Regional Product (Lag Log GRP). In a normal regional framework, that coefficient shows whether more developed regions grow faster than the peripheral territories. This can be testified using various parameters: human capital, investment growth and SME employment share. Specifically, there was utilized this model:

$$Growth_{i,t} = \alpha_i + \beta_1 Ln(GRP_{i,t-1}) + \beta_2 SME_{i,t} + \beta_3 Ln(Educ_{i,t}) + \beta_4 (SME \times Educ)_{i,t} + \beta_5 InvGrowth_{i,t} + \varepsilon_{i,t}$$

This study uses Fixed Effect model as it is more suitable, which is, basically, selected by the Hausman test [14]. After using the Hausman statistics, it was 13.9191, with corresponding p-value of 0.0161, which, obviously, rejects the null hypothesis at the 95% confidence level that Random Effect specification is not the right decision for this particular data. Moreover, there are outer factors affecting the results of the calculation, as each region has its own specific characteristics. In this study, Fixed Effects model was chosen in order to get an accurate econometric outcome.

In the complete sample Fixed Effects model, the parameters of Lag Log GRP is:

Lag Log GRP=; with Standard Error= 0.0076

According to the negative statistically significant result of Lag Log GRP, there is vivid evidence that Uzbekistan's 14 administrative units have nothing but conditional beta convergence. This means “catch-up” hypothesis can be confirmed, as after taking into account investment, SME landscape, education, administrative regions with inferior GRP are likely to grow faster. Therefore, the regions which were comparatively poorer will grow faster.

On the other hand, this does not fully refer to complete regional equalization. The analysis of this study shows that convergence is not straightforward, rather conditional, meaning disparities remain. Whereas “Digital Uzbekistan -2030” strategy supports the idea of regional economic equalization, however, the success of the initiatives is dependent on business landscape, legislation quality, and human capital.

Utilizing Resource-Based View logic along with management shows that small and medium-sized businesses are to bring higher contribution to the regional growth, when they are surrounded by the business landscape with sufficient human capital (Figure 2) [6, 7].

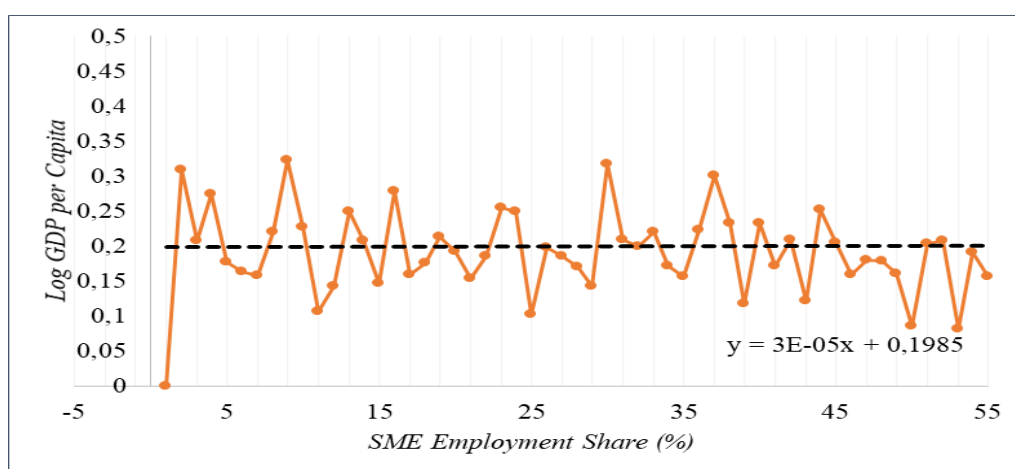


Figure 2. SME Employment share versus regional economic development²

2 Source: developed by the author.

In the complete sample Fixed Effects model, the parameters of SME Employment Share is:

SME Employment Share = -0.0099; with Standard Error = 0.0028

This outcome is statistically significant; however, it is negative, and this is of paramount importance. It shows the subject of lagged GRP growth, so there is a high number of education graduates, high quantity of investment inflow, high activity in interaction between manpower and SMEs, which is, literally, associated with marginal territorial GRP growth, and higher proportion of employed in small enterprises (SME).

According to insignificant coefficient for SME Employment Share, high concentration SME does not necessarily drive economic growth in all administrative regions of Uzbekistan. In ever-developing economies like Uzbekistan, this demonstrates nothing but informal activity or even subsistent-based entrepreneurship. Thus, this parameter reflects just fragmented sectors with low potential to grow exponentially, meaning that they are less innovative.

Focusing on the raw number of educational graduates does not simply explain regional GRP growth, as Logarithm of Higher Education Graduates is statistically insignificant ($-0.0001, p > 0.10$). Besides, the coefficients for SME and higher Education graduates are statistically insignificant ($0.0001, p > 0.10$). This clearly shows that human capital, throughout the given period, does not play a main role in stimulating the growth of small-medium size enterprises.

These findings suggest that simply using Resource-Based View model does not directly explain “absorptive capacity” of the regions. [6, 7]. The absence of significant relationships between variables refers that very presence of graduates does not solve the dilemma of transforming human capital into regional productivity.

To sum up everything, while the high number of graduates is theoretically essential, it does not directly stimulate SME-led economic growth in regions due to current business dynamics of Uzbekistan. In later studies, there should be more emphasis on more detailed institutional parameters in order to better understand this nexus (Table 1).

Table 1. Regression results³

Variables	Growth Hubs		Peripheral Regions	
	The value	Standard Error	The value	Standard Error
Lag Log GRP	-0.0408	(0.0045)	-0.0307	(0.0144)
SME Employment Share	-0.0089	(0.0028)	-0.0111	(0.0041)
Interaction Term	-0.0003	(0.0010)	0.0009	(0.0015)
Investment Growth Rate	0.0006	(0.0006) ^a	0.0006	(0.0002) ^a

The findings are vivid proof of conditional convergence, but reveal an “SME productivity paradox” across both “growth hubs” and “peripheral regions”. Constant negative impact of SME employment suggests that the Uzbekistan landscape is dominated by necessity entrepreneurship, instead of fast-growing innovations. Additionally, the term of minor interaction assumes that regional human capital has reached the “absorptive capacity” [8], which is crucial to turn SMEs into competitive advantage [6, 7]. Consequently, the “Digital Uzbekistan – 2030” strategy should move from quantity-based expansion of SMEs towards quality-based institutional transformation of the firms.

The empirical finding of the study reveals structural variation between conventional understandings about regional economic development based on Resource-Based View (RBV). Meanwhile, the analysis proves that there is a catch-up dynamic of “peripheral regions”, exposing an “SME employment paradox”. In terms of regional growth, the continuing negative influence of SME employment across both lagging (-0.0111) and advanced (-0.0089) tiers points to the heavy concentration of low-productivity necessity-driven entrepreneurship rather than high-value innovation. Moreover, statistical insignificance between density of SMEs and human capital testifies a critical shortage of regional “absorptive capacity” [8]. On top of that SMEs are not using higher education graduates effectively, which could generate competitive advantage [6].

To eliminate these structural bottlenecks, the following findings-based recommendations are proposed on realization of the “Digital Uzbekistan – 2030” strategy:

a) Transitioning from quantity-based approach towards quality-based SME indicators: the constant negative metrics of SMEs dictate that policies focused on digitalization should slow down in chasing volume-based goals, instead it should set a priority on setting political incentives (targeted tax exemptions and digital grants), strictly tied to implementation of digital technologies at the firm level, technological integration and formalization, which move the sector from subsistence entrepreneurship towards value innovation.

b) Prioritizing digital capital in the peripheral territories: as regression analyses revealed, that the overall investment growth is statistically significant and positive (0.0006). especially in “peripheral regions”. The “Digital Uzbekistan – 2030” strategy should gain more advantage from this, disproportionally directing governmental

3 Source: developed by the author.

investment toward improving digital infrastructure of “peripheral regions”, making digital logistics and broadband communication modernized, which helps to overcome structural isolation.

c) Readjusting human capital with regional digital landscapes: the failure of the concept of interaction with human capital necessitates cardinal changes in educational policy. Instead of relying on the results of the graduates, the strategy should focus on connecting local SMEs with regional universities. The funding should be aimed at creating special short-term courses for upskilling in the field on digital technologies, fostering regional business to meet their immediate operational needs.

Limitations: The use of aggregate regional panel data (2011-2014) does not allow to assess micro-dynamics in a company level. Besides, metrics which are used to analyze human capital (raw graduate numbers) and SME employment cannot fully reflect the quality of education, integration of technologies, and the scope of informal shadow entrepreneurship.

Ethical considerations: The study uses only data extracted from online-available macroeconomic reports of an official governmental website, as there are no human subjects involved, it is exempted from the need for primary consent protocols. Throughout the study, transparency was maintained through clear econometric reporting. To keep the ethical integrity, the investigation is strictly avoided artificial manipulation of statistical data.

CONCLUSIONS AND SUGGESTIONS

This study verifies that there is conditional regional convergence across Uzbekistan, however, it reveals systematic “SME productivity paradox”. Against all expectations, employment in small and medium-sized businesses (SME) is negatively correlated with regional economic growth, proving the dominance of necessity business over innovation. Besides, insufficient interaction of SMEs with human capital indicates that regions have critical deficit in “absorptive capacity”. To effectively implement “Digital Uzbekistan – 2030”, there is need to shift from quantity-based expansion of SMEs towards quality-based improvements at the company level. Developing digital infrastructure and targeted upskilling are needed to transform SMEs from necessity entrepreneurship into true engines of regional economic growth.

References:

1. D. Audretsch and M. Keilbach, “Entrepreneurship Capital and Economic Performance,” *Regional Studies*, vol. 38, no. 8, pp. 947-959, 2004.
2. T. Beck, A. Demirguc-Kunt and R. Levine, “SMEs, growth, and property: Cross-country evidence,” *Journal of Economic Growth*, vol. 10, no. 3, pp. 199-229, 2005.
3. T. A. Cravo, “SMEs and economic growth in the Brazil micro-regions,” *Papers in Regional Science*, vol. 89, no. 4, pp. 711-734, 2010.
4. lex.uz, “Decree of the President of the Republic of Uzbekistan,” 5 October 2020. [Online]. Available: <https://lex.uz/ru/docs/5031048>. [Accessed 24 May 2026].
5. R. J. Barro and X. Sala-i-Martin, “Convergence,” *Journal of Political Economy*, vol. 100, no. 2, pp. 233-251, 1992.
6. J. Barney, “Firm Resources and Sustained Competitive Advantage,” *Journal of Management*, vol. 17, no. 1, pp. 33-120, 1991.
7. B. Wernerfelt, “A Resource-Based View of the Firm,” *Strategic Management Journal*, vol. 5, no. 2, pp. 171-180, 1984.
8. W. M. Cohen and D. A. Levithal, “Absorptive Capacity: A New Perspective on Learning and Innovation,” *Administrative Science Quarterly*, vol. 35, no. 1, pp. 128-152, 1990.
9. Z. Acs, “How Is Entrepreneurship Good for Economic Growth?,” *Innovations: Technology, Governance, Globalization*, vol. 1, no. 1, pp. 97-107, 2006.
10. E. Parzen, “On estimation of a probability density function and mode,” *The Annals of Mathematical Statistics*, vol. 33, no. 3, pp. 1065-1076, 1962.
11. M. Rosenblatt, “Remarks on Some Nonparametric Estimates on Density Function,” *Annals of Mathematical Statistics*, vol. 27, no. 3, pp. 832-837, 1965.
12. J. McMillan and C. Woodruff, “The Central Role of Entrepreneurs in Transition Economies,” *Journal of Economic Perspectives*, vol. 16, no. 3, pp. 153-170, 2002.
13. S. A. Zahra and G. George, “Absorptive capacity: A review, reconceptualization, and extension,” *Academy of Management Review*, vol. 27, no. 2, pp. 185-203, 2002.
14. J. Hausman, “Specification test in econometrics,” *Econometrica*, vol. 46, no. 3, pp. 1251-1271, 1978.
15. Stat.uz, “NATIONAL STATISTICS COMMITTEE OF THE REPUBLIC OF UZBEKISTAN,” 2026. [Online]. Available: <https://stat.uz/en/>. [Accessed 15 May 2026].
16. G. Bruton, D. Ahlstrom and K. Obloj, “Entrepreneurship in emerging economies: Where are we today and where should the research go in the future,” *Entrepreneurship Theory and Practice*, vol. 32, no. 1, pp. 1-14, 2008.
17. Z. J. Acs, S. Estrin, T. Mickiewicz and L. & Szerb, “Entrepreneurship, institutional economics, and economic growth: an ecosystem perspective,” *Small Business Economics*, vol. 51, no. 2, pp. 501-514, 2018.
18. F. Welter, T. Baker, D. B. Audretsch and W. B. Gartner, “Everyday entrepreneurship—a call for entrepreneurship research to embrace entrepreneurial diversity,” *Entrepreneurship Theory and Practice*, vol. 41, no. 3, pp. 311-321,

- 2017.
19. S. Aparicio, D. Urbano and D. Audretsch, "Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence.," *Technological Forecasting and Social Change*, vol. 102, pp. 45-61, 2016.
 20. D. Smallbone and F. Welter, "The distinctiveness of entrepreneurship in transition economies.," *Small Business Economics*, vol. 16, no. 4, pp. 249-262, 2001.
 21. K. E. Meyer and M. W. Peng, "Theoretical foundations of emerging economy business research.," *Journal of International Business Studies*, vol. 47, no. 1, pp. 3-22, 2016.

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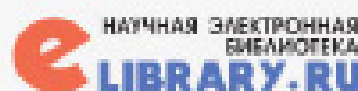
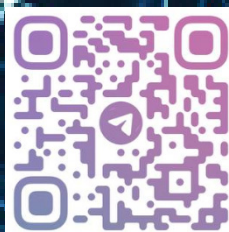
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