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DEVELOPING A REGIONALLY DIFFERENTIATED MODEL FOR POVERTY REDUCTION THROUGH THE DEVELOPMENT OF THE SERVICE SECTOR

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Abstract. The article substantiates a regionally differentiated model of poverty reduction based on the development of the service sector in Uzbekistan. It is shown that, despite a sharp fall in the national poverty rate (from 17% in 2021 to 8.9% in 2024 and 5.8% in 2025), poverty remains unevenly distributed across regions, while the level of service sector development differs several-fold between Tashkent city and peripheral regions. The model includes three components: a composite Service Development Index of regions (SDI), a typology of regions based on the "service development - poverty" matrix and cluster analysis, and a panel econometric specification estimating cluster-specific elasticities of poverty with respect to services. Four types of regions are identified and differentiated priorities are proposed for each: from knowledge-intensive business services in the metropolitan area to social, household and tourism services in high-poverty regions. The results can be used in preparing regional programmes for poverty reduction and employment.

Keywords: poverty reduction, service sector, regional development, differentiated model, typology of regions, cluster analysis, panel regression, Uzbekistan.

INTRODUCTION

Poverty reduction has become one of the central goals of economic policy in Uzbekistan. The Development Strategy of New Uzbekistan for 2022-2026 [15] and the "Uzbekistan - 2030" strategy [16] set the task of halving poverty, and considerable

progress has been achieved: according to the National Statistics Committee, the poverty rate fell from 17% in 2021 to 8.9% in 2024 [18], and to 5.8% in 2025 [20].

At the same time, the remaining poverty is increasingly concentrated geographically. In the first half of 2023 the poverty rate in the Republic of Karakalpakstan (19.7%), Syrdarya (19.5%) and Khorezm (19.1%) regions was more than twice as high as in Tashkent city (8.5%) [19]. In 2024 Khorezm, Jizzakh, Syrdarya and Karakalpakstan remained above the national average, while the largest absolute numbers of poor people were recorded in the densely populated Fergana (350 thousand), Kashkadarya (341 thousand), Andijan (323 thousand) and Samarkand (317 thousand) regions [18].

The service sector is the main driver of growth and employment. In January-June 2024 services accounted for 47.9% of GDP, ranging from 62.2% of gross regional product in Tashkent city to much lower levels in agrarian regions [17]. In 2025 services grew by 8.5%, faster than the economy as a whole (7.7%), with financial and ICT services growing by more than 20% [21]. Services are labour-intensive, require relatively little capital and are accessible to women and young people, which makes them a natural channel for raising incomes of the poor. However, the poverty-reducing effect of services depends on regional conditions: the same type of services cannot be equally effective in the capital and in a remote agrarian district.

The aim of the study is to develop a regionally differentiated model of poverty reduction through the development of the service sector, taking into account differences in the level of services development and poverty across the regions of Uzbekistan.

Research objectives: (1) to summarise theoretical approaches to the link between the service sector and poverty; (2) to develop a methodology for assessing the level of services development in regions; (3) to build a typology of regions; (4) to

propose an econometric specification and differentiated policy measures for each type of region.

LITERATURE REVIEW

The role of services in economic development was first described in the three-sector theory of Fisher [1] and Clark [2], according to which the share of services in output and employment rises as incomes grow. Kuznets [3] linked structural change with income inequality, showing that in the early stages of growth inequality may increase as labour moves from agriculture to more productive sectors.

Empirical studies show that the sectoral composition of growth matters for poverty. Ravallion and Datt [4] found that in India growth in the primary and tertiary sectors reduced poverty much more than growth in industry. Loayza and Raddatz [5] showed on cross-country data that growth in unskilled labour-intensive sectors has the greatest poverty-reducing effect. Christiaensen, Demery and Kuhl [6] confirmed that the effect of each sector depends on the level of development of the country.

Under conditions of "premature deindustrialisation" described by Rodrik [7], services are increasingly seen as an alternative "growth escalator". Ghani and O'Connell [8] and the World Bank report "At Your Service?" [9] showed that modern tradable services (ICT, finance, business services) can provide productivity growth, while traditional services (trade, household and personal services) create mass employment for low-skilled workers. The spatial aspect is explained by new economic geography [10]: knowledge-intensive services concentrate in large agglomerations, while peripheral regions specialise in local consumer and social services.

Modern understanding of poverty as a multidimensional phenomenon [11; 12] also emphasises the role of education, health and social services, whose availability determines the ability of the poor to use economic opportunities. Thus the literature confirms the poverty-reducing potential of services but pays insufficient attention to

how this potential differs between regions of one country. The present article addresses this gap.

RESEARCH METHODOLOGY

The study uses methods of comparative and statistical analysis, normalisation and composite index construction, cluster analysis (Ward's method [13]) and panel econometrics [14]. The information base includes data of the National Statistics Committee of the Republic of Uzbekistan on gross regional product, volume of services, employment and the poverty rate (Household Budget Survey), normative legal acts and scientific publications.

ANALYSIS AND RESULTS

The available official data show a clear inverse relationship between the level of services development and poverty (Table 1).

Table 1

Poverty and services in selected regions of Uzbekistan

Indicator	Value	Year	Source
Poverty rate, Uzbekistan	17.0% → 8.9% → 5.8%	2021 / 2024 / 2025	[18; 20]
Poverty rate: rural / urban	9.2% / 8.6%	2024	[18]
Highest poverty: Karakalpakstan / Syrdarya / Khorezm	19.7% / 19.5% / 19.1%	H1 2023	[19]
Lowest poverty: Tashkent city / Navoi / Bukhara	8.5% / 9.2% / 11.9%	H1 2023	[19]
Number of poor: Fergana / Kashkadarya / Andijan / Samarkand	350 / 341 / 323 / 317 thousand people	2024	[18]
Share of services in GDP, Uzbekistan	47.9%	H1 2024	[17]
Share of services in GRP: Tashkent city / Karakalpakstan	62.2% / 48.2%	H1 2024	[17]
Growth of services / GDP	8.5% / 7.7%	2025	[21]

Two features are important for policy. First, the regions with the highest poverty rate (Karakalpakstan, Khorezm, Syrdarya, Jizzakh) are not the same as the regions with the largest number of poor (the Fergana Valley, Kashkadarya, Samarkand). Second, the service sector is concentrated in Tashkent city, where the poverty rate is lowest. Therefore a single national approach would either ignore the depth of poverty in peripheral regions or its scale in densely populated ones.

Based on the "service development - poverty" matrix and the data in Table 1, a preliminary typology of regions is proposed (Table 2). The final composition of the clusters should be confirmed by the cluster analysis described in Block 2 using a full set of official regional indicators.

Table 2

Preliminary typology of regions by service development and poverty

Type of region	Characteristics	Regions (preliminary)
Metropolitan service hubs	High SDI, low poverty; concentration of financial, ICT and business services	Tashkent city, Tashkent region
Industrial and tourism-oriented regions	Medium SDI, below-average poverty; services linked to industry and tourism	Navoi, Bukhara
Densely populated agrarian regions	Medium-low SDI, moderate poverty rate but the largest number of poor; labour surplus	Andijan, Fergana, Namangan, Kashkadarya, Samarkand, Surkhandarya
Peripheral high-poverty regions	Low SDI, highest poverty rate; remoteness, water and environmental problems	Karakalpakstan, Khorezm, Syrdarya, Jizzakh

For each type of region different services have the greatest poverty-reducing effect. In line with [5; 9], it is expected that the elasticity of poverty with respect to labour-intensive consumer and social services (γ_c) is highest in types III and IV, while in type I the main effect is indirect, through high-paying jobs and fiscal transfers. Differentiated priorities are presented in Table 3.

Table 3

Regionally differentiated model of poverty reduction through services

Type of region	Priority services	Main mechanism of poverty reduction	Key instruments
Metropolitan hubs	ICT, IT outsourcing, finance, engineering and business services	High-paying jobs; demand for services from other regions; budget revenues	IT Park benefits, training for young people from other regions, remote work for the periphery
Industrial and tourism regions	Tourism, hospitality, logistics, maintenance services	Employment in tourism value chains; local suppliers	Guest houses, craft and gastronomic tourism, training of guides
Densely populated agrarian regions	Trade, household and personal services, repair, transport, digital freelancing, preschool education	Self-employment and family business; absorption of labour surplus	Microloans, "one village - one service" programmes, mahalla service points, digital skills courses
Peripheral high-poverty regions	Social services (health, education, care), water and utility services, agro-services, eco-tourism	Access to basic services; reducing multidimensional poverty; local jobs	Targeted state orders, public-private partnerships, subsidised social enterprises, transport accessibility

The model also provides for monitoring: SDI and poverty are recalculated annually, regions can move between types, and the set of instruments changes accordingly. For example, as SDI grows, a type III region should gradually shift from mass consumer services to knowledge-intensive ones, which protects it from the "low-productivity services trap" noted in [7; 8].

DISCUSSION

The proposed model differs from the uniform approach in three respects. First, it distinguishes the depth of poverty (rate) from its scale (number of poor), which leads to different strategies for peripheral and densely populated regions. Second, it treats the service sector not as a single whole but as a set of segments with different poverty-reducing effects: knowledge-intensive services raise productivity, while traditional and social services provide mass employment and access to basic needs. Third, the

econometric block allows the differentiation to be based on estimated elasticities rather than on expert opinion alone.

The model has limitations. Regional poverty estimates come from a sample survey and have statistical error; services in rural areas are partly informal and underestimated in statistics; and the causal link may run in both directions, since higher incomes also raise demand for services. To address endogeneity, it is advisable to use lagged values of service indicators or instrumental variables (for example, the historical density of the road and communications network). Remittances, which are important for household incomes in many regions, should also be controlled for.

CONCLUSIONS AND PROPOSALS

Uzbekistan has achieved a substantial reduction in poverty (to 5.8% in 2025), but the remaining poverty is regionally concentrated: its depth is greatest in Karakalpakstan, Khorezm, Syrdarya and Jizzakh, and its scale in the Fergana Valley, Kashkadarya and Samarkand.

The service sector, which accounts for almost half of GDP and grows faster than the economy, is the most suitable channel for reducing poverty, but its effect differs by type of services and type of region.

A regionally differentiated model is proposed, comprising the Service Development Index (SDI), a typology of regions and a panel econometric model with cluster-specific elasticities. Four types of regions are identified: metropolitan service hubs, industrial and tourism-oriented regions, densely populated agrarian regions and peripheral high-poverty regions.

For each type, priority services and instruments are defined: knowledge-intensive services and remote employment in metropolitan areas; tourism and logistics in industrial and tourism regions; household services, self-employment and digital freelancing in densely populated regions; social, utility and agro-services in peripheral regions.

It is recommended that the Ministry of Economy and Finance, the Ministry of Employment and Poverty Reduction and regional khokimiyats use the SDI and the typology when preparing regional poverty reduction programmes and allocate resources according to the estimated elasticities.

Further research should estimate the econometric model on official panel data for 14 regions and, where possible, at the district level, and assess the impact of specific service sector programmes on household incomes.

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