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Household Income and Regional Service Development in Uzbekistan

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Abstract

This thesis examines the relationship between household income, investment activity, and regional service-sector development in Uzbekistan during 2011–2024. The study employs annual panel data for 14 regions and applies fixed-effects estimation with Driscoll–Kraay standard errors to evaluate both contemporaneous and delayed economic effects. The empirical findings indicate that disposable income growth positively and significantly affects regional market service growth, while investments in fixed assets demonstrate delayed positive effects over time. The results suggest that household income acts as an important short-run driver of service demand, whereas investment activity contributes to long-run service-sector expansion in Uzbekistan.

Keywords

market services, disposable income, investments, panel data, regional economy, Uzbekistan.

Introduction

The service sector represents an important component of regional economic development through its contribution to employment, household welfare, and business activity. In developing economies, growth in household income may increase demand for transportation, trade, communication, financial, and other market services. At the



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same time, investments in fixed assets may contribute to long-run service-sector expansion through infrastructure development and business modernization.

In recent years, economic reforms, rising incomes, and increasing business activity have strengthened the role of market services in Uzbekistan’s regional economy. However, the determinants of regional service-sector growth remain insufficiently explored in empirical research. Therefore, this thesis investigates the impact of disposable income growth and investments in fixed assets on regional market service growth across 14 regions of Uzbekistan during 2011–2024 using panel-data econometric methods.

Data and Methodology

The study uses annual regional panel data obtained from the Statistics Agency under the President of the Republic of Uzbekistan for the period 2011–2024. The balanced panel dataset consists of 14 regional units observed over time. The growth rate of market services provided was selected as the dependent variable, while real growth rates of disposable total income and investments in fixed assets were included as explanatory variables. All variables were transformed into percentage-point deviations relative to the base level for clearer coefficient interpretation. The baseline econometric specification is expressed as follows:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \gamma_t + \mu_i + \varepsilon_{it}$$

where Y denotes the growth rate of market services provided, X1 represents disposable income growth, and X2 indicates growth rates of investments in fixed assets. The model includes regional fixed effects and year effects to control for unobserved regional heterogeneity and common macroeconomic shocks. To evaluate delayed



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investment effects, an additional dynamic specification including a two-year lag of investments was estimated:

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{i,t-2} + \gamma_t + \mu_i + \varepsilon_{it}$$

Driscoll–Kraay standard errors were applied to improve estimation robustness under potential heteroskedasticity, autocorrelation, and cross-sectional dependence.

Results and Discussion

The empirical results indicate that disposable income growth positively and significantly affects regional market service growth in Uzbekistan. In the preferred fixed-effects specification with Driscoll–Kraay standard errors, a one percentage-point increase in disposable income growth increased regional market service growth by approximately 0.10 percentage points ($p=0.009$). This finding suggests that rising household income contributes positively to demand for transportation, trade, communication, financial, and other market services across regions.

In contrast, the contemporaneous effect of investments in fixed assets remained statistically insignificant in the baseline estimations. However, the dynamic specification revealed that the two-year lag of investments positively and significantly affected regional market service growth. Specifically, a one percentage-point increase in lagged investment growth increased market service growth by approximately 0.017 percentage points ($p=0.026$). This result indicates that investment effects emerge gradually over time through infrastructure expansion, business adaptation, and long-term regional development processes.

Conclusion

This thesis examined the impact of disposable income growth and investments in fixed assets on regional market service growth in Uzbekistan during 2011–2024 using



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panel-data econometric methods. The findings indicate that household income growth positively contributes to regional market service development, while investments in fixed assets exert delayed positive effects over time. The results suggest that strengthening household purchasing power and supporting long-term investment activity may contribute positively to sustainable service-sector development and regional economic growth in Uzbekistan.

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