

Connectivity is not enough: Digital Infrastructure, the 2022 Relocation Shock and ICT Services Exports in Central Asia and the South Caucasus, with Implications for Uzbekistan

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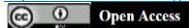
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ABSTRACT

Uzbekistan has expanded digital connectivity faster than almost any economy in the post-Soviet space: internet use rose from 15.9% of the population in 2010 to 89.0% in 2023 and fixed broadband from 0.4 to 30.3 subscriptions per 100 people. Yet ICT services exports amounted to only 0.41% of GDP in 2023, an order of magnitude below Armenia (4.44%), Moldova (3.80%) or Georgia (2.90%). This paper asks whether digital infrastructure explains cross-country differences in ICT services exports and how economies absorbed the 2022 relocation shock in the regional technology labour market. Using a balanced-design panel of ten Central Asian, South Caucasus and Eastern European economies over 2010–2023 (137 observations) and two-way fixed-effects estimators with Driscoll–Kraay standard errors, we find that, once common time shocks and country heterogeneity are controlled for, within-country increases in internet penetration and broadband density are not systematically associated with higher ICT services exports. Trade openness is the most consistent, though sample-sensitive, correlate (elasticity 0.74–0.93). The post-2021 period is associated with ICT exports about 62% higher than the pre-existing trend would imply. Interaction models suggest that economies with stronger pre-shock broadband capacity captured more of this shock, but the result rests on the low-connectivity tail of the sample and is not robust to wild cluster bootstrap inference. We interpret connectivity as a participation threshold rather than a marginal export driver. For Uzbekistan, the binding constraints lie in human capital depth, regulatory openness of digital trade and integration into international value chains. We discuss the 2026 liberalisation of data-localisation rules and WTO accession as complementary levers.

Introduction

Digitally deliverable services have become the most dynamic segment of world trade, and for landlocked economies they offer a route around the high transport costs that constrain merchandise exports. Central Asia illustrates both the promise and the constraints. Since 2017, Uzbekistan has pursued an ambitious digital agenda that includes the *Digital Uzbekistan – 2030* strategy adopted by Presidential Decree PF-6079 of 5 October 2020, a special tax and visa regime for residents of the IT Park, and a stated target of US\$5 billion in IT services exports by 2030 (Kun.uz, 2025). According to IT Park, exports by its residents rose from US\$140 million in 2022 to US\$344 million in 2023 (IT Park, 2024). The President reported that IT services exports reached US\$1 billion for the first time in 2025 (Kun.uz, 2025). In January–June 2026, IT Park residents exported services worth US\$392.5 million, US\$90.3 million more than a year earlier (Dunyo, 2026).

Behind this policy narrative lies an under-examined empirical question. The dominant assumption in national strategies is that investment in connectivity (fibre, mobile broadband, data centres) translates into tradable digital output. Uzbekistan's own trajectory challenges this assumption. Between 2010 and 2023 its internet penetration rose by 73 percentage points and its fixed broadband density increased more than seventy-fold, reaching the second-highest level in our sample. Yet the ratio of ICT services exports

to GDP, as recorded in balance-of-payments statistics, barely moved from 0.13% to 0.41%. We call this mismatch the *connectivity–export gap*.

A second motivation is the regional shock of 2022, when a large number of technology firms and specialists relocated from Russia, and to a lesser extent from Belarus and Ukraine, to Armenia, Georgia, Kazakhstan, Kyrgyzstan and Uzbekistan. Uzbekistan introduced simplified residence and visa procedures for IT specialists (Eurasianet, 2022), while recorded ICT exports in Armenia and Georgia roughly doubled within a year. The shock offers a natural lens on *absorptive capacity*: which economies were positioned to convert an exogenous inflow of digital labour and firms into exports?

This paper makes three contributions. First, it assembles a harmonised panel of ten post-Soviet and neighbouring economies for 2010–2023 from World Bank World Development Indicators and estimates the association between digital infrastructure and ICT services exports with two-way fixed effects and inference that is robust to cross-sectional dependence. Second, it explicitly models the 2022 relocation shock and tests whether pre-shock connectivity conditioned its absorption. Third, it reports the fragility of these results transparently, using wild cluster bootstrap and leave-one-country-out diagnostics, which are rarely reported in the regional literature, and derives policy implications for Uzbekistan that are commensurate with the strength of the evidence.

The main finding is sobering but policy-relevant. Connectivity is necessary but not sufficient. Within countries, further gains in internet or broadband penetration are not associated with higher ICT exports once global and regional shocks are absorbed by year effects. Trade openness and the common 2022 shock dominate. The evidence is consistent with a threshold view in which a minimum level of connectivity is required to participate in digital services trade, but beyond that threshold human capital, institutional openness and integration into foreign demand networks determine export performance.

The remainder of the paper is organised as follows. Section 2 reviews the literature and develops hypotheses. Section 3 describes the data and the empirical strategy. Section 4 presents results and robustness checks. Section 5 discusses the implications for Uzbekistan’s digital integration policy, and Section 6 concludes.

2. Literature review and hypotheses

2.1. The internet and trade in services

Early empirical work established that internet diffusion lowers fixed costs of entering foreign markets. Freund and Weinhold (2004) show that a 10 percentage point increase in the growth of web hosts was associated with about a 0.2 percentage point increase in export growth. In a companion study on services, Freund and Weinhold (2002) find that internet penetration in the partner country is positively associated with US services imports, particularly in business, professional and technical services. Choi (2010) reports, using a cross-country panel, that a 10% increase in internet users raises services trade by roughly 0.23–0.42%. Lendle et al. (2016) demonstrate that the distance elasticity of trade is around 65% smaller on an online marketplace than offline, attributing most of the gap to reduced information frictions. Abeliatsky and Hilbert (2017) refine this picture by showing that, for developing countries, the quantity of subscriptions matters more for exports than data speed, whereas for developed economies quality matters more.

2.2. Broadband, growth and the limits of infrastructure

A parallel literature examines the growth effects of broadband. Czernich et al. (2011) estimate, using an instrumental-variables strategy for OECD countries, that a 10 percentage point increase in broadband penetration raised annual per capita growth by 0.9–1.5 percentage points. Hjort and Poulsen (2019) find that the arrival of submarine cables in Africa increased employment, especially in skilled occupations, but also show that the gains depend on complementary firm capabilities. The World Bank’s *Digital Dividends* report (World Bank, 2016) argues forcefully that digital investments produce weaker-

than-expected dividends when “analog complements” (regulation, skills and accountable institutions) are missing. Goldfarb and Tucker (2019) emphasise that digital technologies reduce search, replication, transport, tracking and verification costs, but that the distribution of gains depends on market structure and policy.

2.3. Absorptive capacity and the regulation of digital trade

Cohen and Levinthal (1990) define absorptive capacity as a firm’s ability to recognise, assimilate and apply external knowledge, and argue that it is a function of prior related knowledge. At the macro level, the concept implies that the same external shock, such as an influx of skilled workers or foreign client demand, yields heterogeneous outcomes depending on pre-existing capabilities. In digital trade, these capabilities include connectivity, but also the regulatory environment for cross-border data flows and payments. López González and Jouanjean (2017) and Ferencz (2019) document that restrictions on data flows, data localisation requirements and barriers to electronic payments significantly reduce digitally deliverable services trade. Meltzer (2019) argues that the governance of cross-border data has become a central determinant of digital trade integration. Baldwin (2016) describes the current phase of globalisation as one in which falling communication costs allow the separation of labour services from physical presence, which he terms “the third unbundling”, with direct relevance for remote ICT service exporters.

2.4. Evidence on Central Asia and hypotheses

Empirical work on Central Asian digital trade remains scarce. Most existing studies on Uzbekistan are descriptive, focusing on e-government indices or the growth of the IT Park, and rarely compare performance with peer economies under a common econometric framework. Uzbekistan’s position in the United Nations E-Government Development Index improved from 87th in 2020 to 69th in 2022 and 63rd in 2024 (UN DESA, 2024), confirming rapid progress in public digital infrastructure. Whether such progress translates into tradable digital services is an open question. Based on the literature, we test three hypotheses:

- **H1 (infrastructure hypothesis).** Within-country increases in internet and broadband penetration are positively associated with ICT services exports.
- **H2 (common-shock hypothesis).** After 2021, ICT services exports in the region increased beyond their pre-existing trend, reflecting the relocation of technology firms and specialists.
- **H3 (absorptive-capacity hypothesis).** The post-2021 increase was larger in economies with stronger pre-shock digital infrastructure.

3. Data and methodology

3.1. Sample and variables

The sample comprises ten economies that share a post-Soviet institutional legacy or comparable landlocked geography: Uzbekistan, Kazakhstan, the Kyrgyz Republic, Tajikistan, Azerbaijan, Armenia, Georgia, Moldova, Belarus and Mongolia. Turkmenistan is excluded because internet indicators are unavailable after 2016. The period covers 2010–2023, the latest year for which balance-of-payments services data are available for most countries. All data were retrieved from the World Bank World Development Indicators (WDI) API in October 2026.

The dependent variable is the natural logarithm of ICT services exports (WDI code BX.GSR.CCIS.CD, current US\$), which covers computer, communication, and information services in balance-of-payments statistics. As an alternative we use ICT exports as a share of GDP. The infrastructure variables are internet users as a percentage of population (IT.NET.USER.ZS) and fixed broadband subscriptions per 100 people (IT.NET.BBND.P2). Controls include real GDP per capita in constant 2015 US\$ (NY.GDP.PCAP.KD), capturing income and the level of development, and trade openness, measured as exports plus imports of goods and services as a share of GDP

(NE.TRD.GNFS.ZS). Belarusian ICT exports for 2022–2023 and Tajik broadband for 2018 are missing, which leaves 137 usable observations. Table 1 reports descriptive statistics.

Table 1. Descriptive statistics, 10 economies, 2010–2023

Variable	Obs.	Mean	Std. dev.	Min	Max
ICT services exports, US\$ million	138	253.4	478.0	3.9	3,238.9
ICT services exports, % of GDP	138	0.84	1.09	0.04	4.65
Internet users, % of population	140	55.6	24.4	10.2	92.9
Fixed broadband per 100 people	139	13.1	9.7	0.06	35.1
GDP per capita, constant 2015 US\$	140	4,227.5	2,591.2	770.6	11,453.4
Trade, % of GDP	140	88.9	28.2	25.7	158.0

Source: author's calculations based on World Bank World Development Indicators (accessed October 2026).

Figure 1 shows the evolution of ICT services exports. Two patterns stand out. First, levels diverge sharply. Armenia, Georgia and Moldova moved onto a steep path from about 2016, while Uzbekistan's exports stagnated at US\$150–180 million between 2016 and 2021 after a volatile early decade. Second, a synchronised break occurs in 2022, when almost all economies record a jump.

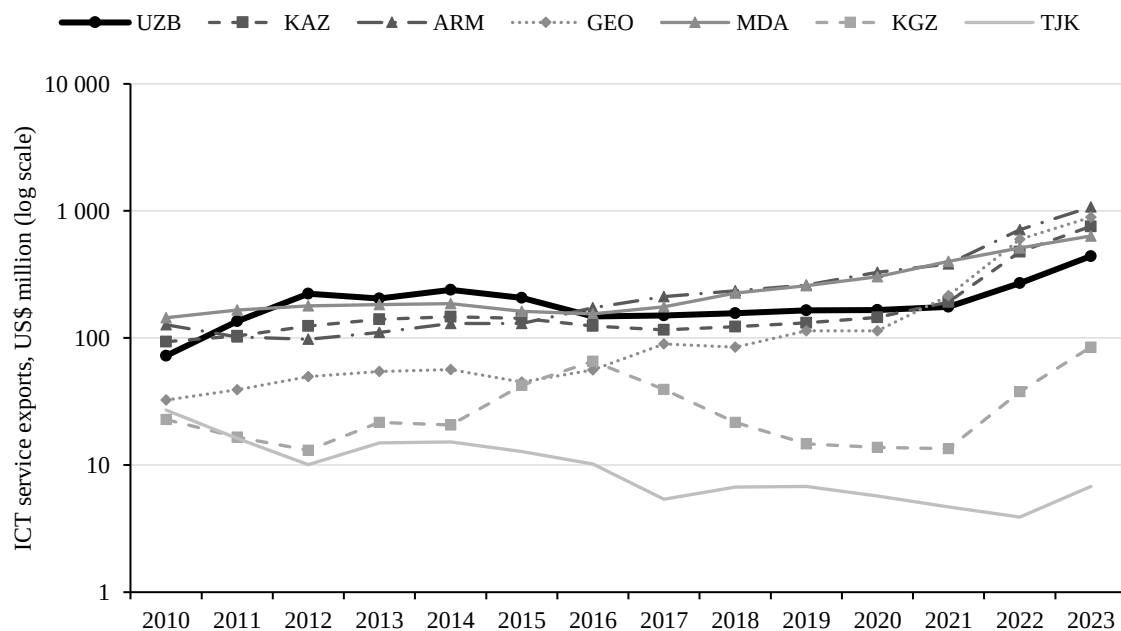


Figure 1. ICT services exports in selected economies, 2010–2023 (US\$ million, log scale)

Source: World Bank WDI (BX.GSR.CCIS.CD). Belarus, Azerbaijan and Mongolia omitted for readability.

Figure 2 illustrates the connectivity–export gap for Uzbekistan. Internet penetration and broadband density grew almost linearly over the period, whereas ICT exports remained flat for six years and accelerated only after 2021.

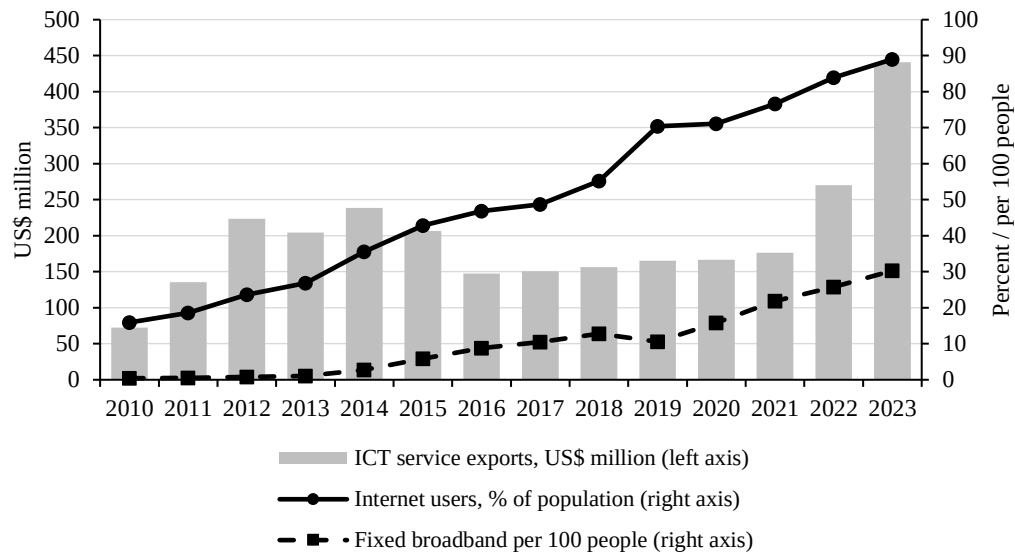


Figure 2. Uzbekistan: digital connectivity and ICT services exports, 2010–2023

Source: World Bank WDI.

3.2. Empirical strategy

The baseline specification is a two-way fixed-effects (TWFE) model:

$$\ln ICT_{it} = \beta_1 \ln NET_{it} + \beta_2 \ln BB_{it} + \beta_3 \ln GDP_{pcit} + \beta_4 \ln TRADE_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

where i indexes countries and t years, μ_i are country fixed effects that absorb time-invariant determinants (geography, language, legacy institutions) and λ_t are year fixed effects that absorb common shocks such as the COVID-19 pandemic, the 2022 relocation wave and commodity price cycles. The coefficients are therefore identified from within-country deviations from country means, net of common year shocks.

To test H2, we replace year effects with a linear trend and a dummy POST22 equal to one for 2022–2023:

$$\ln ICT_{it} = X_{it}'\beta + \delta \cdot trend_t + \gamma \cdot POST22_t + \theta \cdot (POST22_t \times \ln BB_{it}) + \mu_i + \varepsilon_{it} \quad (2)$$

where θ captures H3, with broadband centred at its sample mean. Because current broadband may itself respond to the shock, we also estimate a version that interacts POST22 with each country's pre-shock (2021) broadband level, a time-invariant measure of absorptive capacity, while retaining full year effects.

Inference requires care. With ten countries and fourteen years, cross-sectional dependence is likely and conventional cluster-robust standard errors are biased downwards when the number of clusters is small (Cameron et al., 2008). Our preferred standard errors are Driscoll and Kraay (1998), which are robust to heteroskedasticity, serial correlation and cross-sectional dependence (Hoechle, 2007). As a stringent check we compute wild cluster bootstrap p-values with six-point Webb weights and 9,999 replications, and we re-estimate key models leaving out one country at a time.

We emphasise that the estimates should be interpreted as conditional associations rather than causal effects. Reverse causality is plausible, since a growing ICT sector raises demand for broadband. We partially address it by lagging all regressors by one year (column 3) and by using pre-determined 2021 broadband in the interaction model.

4. Results

4.1. Baseline estimates

Table 2 reports the main results. In the baseline TWFE model (column 1) neither internet penetration nor broadband density is positively associated with ICT exports. The internet coefficient is small (0.089) and statistically insignificant, and the broadband coefficient is negative and significant

only at the 10% level. Trade openness has a positive elasticity of 0.744 ($p < 0.10$). Clustering by country (column 2) leaves the point estimates unchanged and shows how sensitive inference is to the variance estimator: the broadband coefficient becomes highly significant while trade openness loses significance. With one-year lags (column 3), trade openness becomes the only robust correlate (0.932, $p < 0.01$), and infrastructure remains insignificant.

The contrast with column 4, which omits year effects, is instructive. Without year effects, internet penetration appears strongly significant (elasticity 0.483, $p < 0.01$), as do income and openness. This is the specification implicitly used in much descriptive policy analysis. The difference between columns 1 and 4 shows that the apparent infrastructure effect largely reflects common trends: connectivity and ICT exports both rose across the region over time, but countries that raised connectivity faster did not systematically raise exports faster. H1 is therefore not supported once common shocks are controlled for.

The negative broadband coefficient should not be read as a harmful effect. It most plausibly reflects compositional dynamics. Countries such as Azerbaijan and Belarus expanded broadband early, largely for domestic consumption, while others with modest broadband (Armenia, the Kyrgyz Republic) saw export spurts driven by firm-specific or diaspora-linked demand. The correlation between log broadband and log GDP per capita (0.76) also signals collinearity that inflates the variance of individual coefficients.

Table 2. Digital infrastructure and ICT services exports: panel estimates (dependent variable: ln ICT services exports)

	(1) TWFE	(2) TWFE	(3) TWFE, lags	(4) FE	(5) FE + trend	(6) FE + inter.	(7) TWFE + inter.
ln Internet users	0.089 (0.219)	0.089 (0.281)	-0.090 (0.275)	0.483*** (0.171)	0.104 (0.212)	0.302 (0.186)	0.355 (0.238)
ln Broadband	-0.444* (0.244)	-0.444*** (0.150)	-0.378 (0.235)	-0.449* (0.252)	-0.388* (0.210)	-0.308 (0.187)	-0.396* (0.230)
ln GDP per capita	1.388 (1.007)	1.388 (1.855)	0.760 (0.865)	2.650* (1.453)	1.483 (0.936)	1.315 (0.874)	0.963 (0.974)
ln Trade openness	0.744* (0.434)	0.744 (0.803)	0.932*** (0.325)	0.737** (0.337)	0.457 (0.337)	0.282 (0.297)	0.636 (0.428)
Trend					0.056** (0.025)	0.028 (0.019)	
POST22					0.480*** (0.133)	0.258** (0.114)	
POST22 × ln BB (centred)						0.502*** (0.145)	
POST22 × BB ₂₀₂₁ (per 10)							0.507** (0.212)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	No	No	No	Yes
Std. errors	DK	Cluster	DK	DK	DK	DK	DK
Observations	137	137	127	137	137	137	137
Within R ²	0.147	0.147	0.148	0.385	0.472	0.554	0.228

Notes: DK = Driscoll–Kraay standard errors; Cluster = clustered by country (10 clusters). Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Column 3 lags all regressors by one year. In column 6, broadband is centred at its sample mean before interaction. In column 7, BB_{2021} is each country's broadband density in 2021 divided by 10; its main effect is absorbed by country fixed effects. Within R^2 is the R^2 of the fixed-effects-transformed model. Source: author's estimates.

4.2. The 2022 shock and absorptive capacity

Column 5 replaces year effects with a trend and the POST22 dummy. Conditional on infrastructure, income, openness and a common trend of 5.6% per year, ICT exports in 2022–2023 were on average 0.480 log points higher, which corresponds to an increase of about 62% ($e^{0.480} - 1$). This is strong support for H2. The magnitude is economically large and is consistent with qualitative accounts of the relocation of IT firms and specialists to the region after February 2022.

Columns 6 and 7 test H3. The interaction between POST22 and centred log broadband is positive and significant (0.502, Driscoll–Kraay $p < 0.01$). Using the pre-determined 2021 broadband level with full year effects (column 7) gives a similar estimate: a 10-point higher broadband density in 2021 is associated with 0.507 log points higher ICT exports after 2021 ($p < 0.05$). Taken at face value, these results support the absorptive-capacity hypothesis.

4.3. Robustness and fragility

Two diagnostics counsel caution. First, the wild cluster bootstrap p-value for the interaction in column 6 is 0.185, compared with a conventional cluster-robust t-statistic of 5.2. With only ten clusters, asymptotic inference substantially overstates precision. Second, leave-one-country-out estimation shows that the interaction is stable at 0.44–0.57 when any of nine countries is excluded, but collapses to about 0.01 ($p = 0.95$) when Tajikistan is excluded. The same pattern holds for the 2021-level interaction (0.024, $p = 0.86$ without Tajikistan). Tajikistan combines near-zero fixed broadband (below one subscription per 100 people until 2023) with declining ICT exports, and it alone generates the identifying variation.

Figure 3 makes the point visually. Among economies above a minimal level of connectivity, there is no monotonic relationship between 2021 broadband density and ICT export growth in 2021–2023. The Kyrgyz Republic, with only 4.4 broadband subscriptions per 100 people, recorded the largest growth (184 log points), while Moldova and Azerbaijan, with more than 20, recorded among the smallest. Uzbekistan, with 21.9, grew by 92 log points, which is close to the sample median.

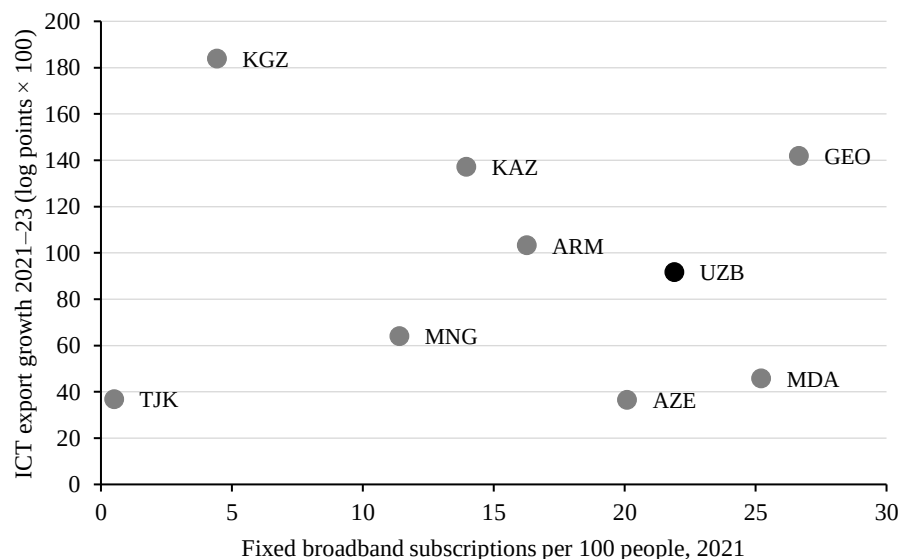


Figure 3. Pre-shock broadband density and ICT export growth, 2021–2023

Source: author's calculations based on World Bank WDI. Belarus excluded (missing 2022–2023 data).

We therefore interpret the evidence as supporting a *threshold* rather than a *gradient* version of H3. Economies with extremely low connectivity could not participate in the 2022 reallocation of digital services production, but above a modest threshold, additional connectivity did not determine who gained more. This interpretation reconciles the robust null result for within-country infrastructure changes (H1) with the strong common shock (H2), and it is consistent with the analog-complements argument of World Bank (2016).

Further checks support the main conclusions. Using ICT exports as a share of GDP as the dependent variable, infrastructure coefficients remain non-positive under TWFE (internet -0.570 , broadband -0.398 , both $p < 0.05$), and trade openness remains positive and significant (0.741 , $p < 0.05$). Excluding Belarus, whose ICT exports are affected by missing post-2021 data and sanctions, leaves the infrastructure coefficients statistically insignificant (internet 0.097 , broadband -0.410), reduces the trade-openness elasticity to 0.655 ($p = 0.12$) and makes GDP per capita significant (2.193 , $p < 0.05$). This reinforces the conclusion that infrastructure is not a robust within-country correlate of ICT exports, while also showing that the relative importance of the controls is sensitive to sample composition.

5. Discussion: implications for Uzbekistan

5.1. Interpreting the connectivity–export gap

Our results suggest that Uzbekistan has largely passed the connectivity threshold. By 2023, its internet penetration (89.0%) was comparable to Kazakhstan (92.9%) and Belarus (91.5%) and above Armenia (80.0%) and Georgia (81.9%), and its broadband density exceeded all Central Asian peers. Further infrastructure investment remains valuable for inclusion, e-government and domestic productivity, but the evidence does not support the expectation that it will by itself close the export gap with Armenia or Georgia, whose ICT export-to-GDP ratios are seven to eleven times higher.

Two measurement issues also deserve attention. First, the balance-of-payments category used here (computer, communication and information services) differs from the IT Park export statistics. In 2023, IT Park residents reported US\$344 million in exports, while the WDI figure for the broader ICT category was US\$441 million. Second, a sizeable share of freelance and platform-based exports is likely unrecorded. Harmonising IT Park, Central Bank and Statistics Agency methodologies according to the IMF *Balance of Payments Manual* (BPM6) and the OECD–WTO–IMF *Handbook on Measuring Digital Trade* would improve both policy evaluation and international comparability.

5.2. Policy levers beyond infrastructure

The most consistent correlate of ICT exports in our models, although sensitive to sample composition, is trade openness. This finding aligns with the literature on data-flow restrictions and digital trade (Ferencz, 2019; López González and Jouanjean, 2017) and points to the regulatory dimension of digital integration. Three recent developments in Uzbekistan are directly relevant:

1. **Liberalisation of data localisation.** Amendments to the Law “On Personal Data”, signed on 26 March 2026, limited mandatory domestic storage to biometric and genetic data and to telecom subscriber data. A Cabinet resolution of 29 July 2026 established a list of 49 jurisdictions with an “adequate level of protection” to which personal data can be transferred under a simplified regime (Kun.uz, 2026a). This removes one of the most significant barriers to cloud-based service delivery and international payment platforms.

2. **WTO accession.** By July 2026, Uzbekistan had submitted 31 of 34 bilateral market-access agreements to the WTO Secretariat and had aligned 190 legal acts with WTO rules. The accession was not completed in time for the 14th Ministerial Conference in Yaoundé in March 2026, and the government now targets completion in 2026 (Gazeta.uz, 2026). Binding commitments under the General Agreement on Trade in Services (GATS) in computer and related services would lock in openness and reduce policy uncertainty for foreign clients.

3. Global digital trade rules. At MC14, WTO members failed to extend the moratorium on customs duties on electronic transmissions, while 66 members agreed to implement the plurilateral E-Commerce Agreement (European Commission, 2026). For a services exporter such as Uzbekistan, early alignment with this agreement could signal a credible commitment to an open digital trade regime.

The absorptive-capacity framework also highlights human capital. The 2022 shock was absorbed most effectively by economies with existing pools of English- and Russian-speaking engineers, diaspora links to Western clients and flexible residence regimes. IT Park reported over 26,000 employees in early 2024, including 2,442 foreign specialists (IT Park, 2024). Retaining relocated specialists, expanding advanced (not merely entry-level) training, and linking IT Park residents to international buyers through export-promotion and certification programmes are likely to yield higher returns than incremental connectivity investment.

5.3. Limitations

This study has several limitations. The sample is small (ten countries) and inference is accordingly fragile, as the bootstrap results show. The balance-of-payments measure of ICT exports is imperfect and may understate freelance and platform-based exports. Infrastructure is measured by quantity rather than quality (speed, latency, price), and we cannot separately identify the effect of specific policies such as IT Park tax incentives. Future research could use firm-level IT Park data, bilateral services-trade gravity models or synthetic control methods to evaluate specific reforms such as the 2026 data-localisation reform.

6. Conclusion

This paper examined the relationship between digital infrastructure and ICT services exports in ten Central Asian, South Caucasus and Eastern European economies over 2010–2023. Three conclusions follow. First, once country heterogeneity and common shocks are controlled for, increases in internet and broadband penetration are not associated with higher ICT exports; the apparent positive association in simpler models reflects shared trends. Second, the region experienced a large common shock after 2021, associated with ICT exports about 62% above trend. Third, the evidence that pre-shock connectivity conditioned the absorption of this shock is suggestive but fragile, and is best understood as a participation threshold.

For Uzbekistan, which has already crossed the connectivity threshold, the policy priority should shift from building networks to building the institutional and human complements that turn connectivity into tradable services. These include an open regime for cross-border data and payments, binding international commitments through WTO accession, deeper technical skills, and better statistics. Achieving the US\$5 billion export target by 2030 will depend less on the next kilometre of fibre than on the next set of regulatory and human-capital reforms.

Data availability statement

All data are publicly available from the World Bank World Development Indicators. The dataset and estimation code (Python, *linearmodels* package) are available from the author on request.

Conflict of interest

The author declares no conflict of interest.

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