

A Technical Note on Measuring E-commerce Volume in the Kyrgyz Republic

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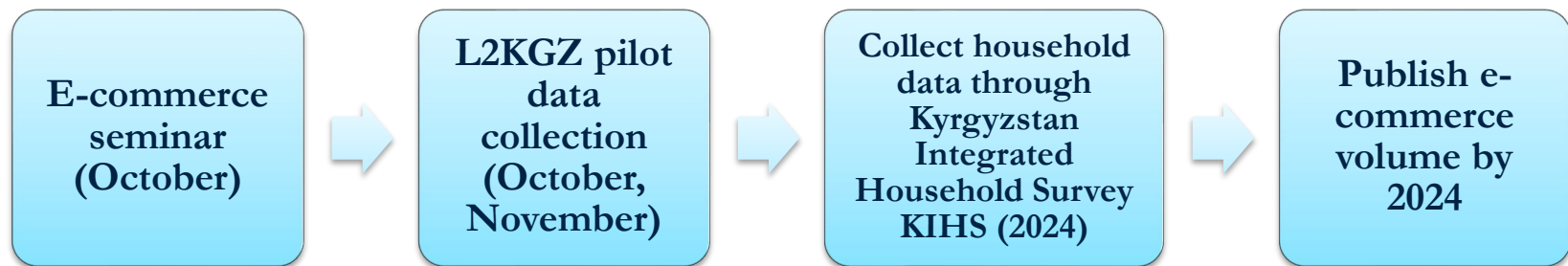


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Overview of E-GATE's Mission on Kyrgyz Republic E-commerce Measurement

The Kyrgyz Republic aspires to become a global pioneer in measuring e-commerce volume and establish robust e-commerce metrics. As one of four activities in E-GATE Central Asia, we work together with Kyrgyz Republic to develop the methodology suitable. An overview to the process:



- **We design the methodology based on the globally agreed definition but tailor to Kyrgyz context:**

“Digitally ordered goods or services regardless of the payment or delivery methods”

+

“orders placed by manually typed messages on social network and communication applications such as Telegram and Whatsapp”

■ Challenges faced by Kyrgyzstan, a lower-middle-income country:

- A tight fiscal budget in commissioning statistical instruments, data-based policymaking is a luxury.
- Prevalence of online ordering through manually typed messages, it will lead to an underestimation in a developing economy with e-commerce infancy:
 - Per L2KGZ conducted during October, 60 percent of households shopped online by placing orders through social networks.
- Small scale and informality of local businesses.

■ Proposed methodology to be suitable for Kyrgyz Republic:

- A minimally efficient and budget-friendly set of questions added to the existing surveys (KIHS).
- Include orders placed by manually typed messages as part of e-commerce transactions.
- Dual roles of household as e-buyers and e-sellers without formal business registration.

Why Kyrgyzstan Integrated Household Survey (KIHS)

■ KIHS is advantageous in

- **Representativeness:** At the national, rural/urban, and oblast levels => Captures the e-commerce habits of a diverse demographic.
- **Frequency:** In quarterly implementation => Flexible for diagnostics and offering insights into the rapidly evolving digital marketplace.
- **Readiness:** With available socio-economic indicators => Provides insight in economic-related policymaking without restructuring the survey.

■ Main Indicators for Household

- We suggest asking all individuals in a household with at least one individual member aging 15 or older:
 - Worldometer (2023) shows the median age of the countries in the EU is 41.5 years. In contrast, Kyrgyzstan, Tajikistan, and Uzbekistan have much younger median ages than countries in EU, ranging from 21.8 to 27.0 years. Therefore, instead of targeting population aging 16 to 74, as many Eurostat state members follow, we target the population of one year younger.
 - Household survey respondents may not be aware of individual household members' e-commerce behavior.

Why Kyrgyzstan Integrated Household Survey (KIHS): Continued

- We constructed the following main metrics for developing economies starting to learn their household E-commerce profile:

Role	Channel			
	e-Marketplace/websites		Messaging/social network	
	Foreign Amount	Domestic Amount	Foreign Amount	Domestic Amount
Household purchase for private use	$x_{hcpn1} \cdot p_{hcpf1}$ or $B \cdot p_{hcsp1} \cdot p_{hcpf1}$	$x_{hcpn1} \cdot (1 - p_{hcpf1})$ or $B \cdot p_{hcsp1} \cdot (1 - p_{hcpf1})$	$x_{hcpn2} \cdot p_{hcpf2}$ or $B \cdot p_{hcsp2} \cdot p_{hcpf2}$	$x_{hcpn2} \cdot (1 - p_{hcpf2})$ or $B \cdot p_{hcsp2} \cdot (1 - p_{hcpf2})$
Household purchase for business (re-sale)	$x_{hcbn1} \cdot p_{hcbf1}$	$x_{hcbn1} \cdot (1 - p_{hcbf1})$	$x_{hcbn2} \cdot p_{hcbf2}$	$x_{hcbn2} \cdot (1 - p_{hcbf2})$
Household sell	$x_{hsn1} \cdot p_{hspf1}$ or $S \cdot p_{hsp1} \cdot p_{hspf1}$	$x_{hsn1} \cdot (1 - p_{hspf1})$ or $S \cdot p_{hsp1} \cdot (1 - p_{hspf1})$	$x_{hsn2} \cdot p_{hspf2}$ or $S \cdot p_{hsp2} \cdot p_{hspf2}$	$x_{hsn2} \cdot (1 - p_{hspf2})$ or $S \cdot p_{hsp2} \cdot (1 - p_{hspf2})$

Note: B and S respectively represent individual respondent's total consumption expenditure and individual respondent's total revenue. For household private purchase for private use and household sell, we collect both percentage and amount for cross validation. X with subscripts denote the absolute amounts, and P with subscripts denote the shares. Subscript "1" and "2" represent the e-Marketplace/websites and Messaging/social network respectively; the first subscript "h" represents "household"; the second position of subscript either represents "c", which is consumption or "s" which represents sales; and the fourth script "p" represents either purchase from foreign markets or sell to foreign markets.

Calculation of E-commerce Volume for Household

- We propose the following equation to calculate the E-commerce level in Kyrgyzstan:

$$X_{ecom} = X_{HH} + X_{Firm} ,$$

where $X_{HH} = X_{HH \text{ online private purchase}} + X_{HH \text{ online purchase for resale}} + X_{HH \text{ online foreign sale}}$,

and $X_{Firm} = X_{Firm \text{ online purchase}} + X_{Firm \text{ online foreign sale}}$.

- **Comprehensive Capture and Avoiding double-counting in Computing:**

- **Two economies, domestic and foreign:** In domestic economy, we calculate the aggregate e-commerce demand; for foreign economies exchange, we calculate domestic e-commerce supply.
- **Binary roles, buyer and seller; binary agents, firm and household:**
 - In domestic economy, firms can sell to firms and households, similarly, households can sell to households and firms. If we aggregate firms' sales, counting households' total purchase from firms will lead to overlapping; similarly, if we count the total purchase of firms, it will lead to double-counting if we also count the total sales of households => Count either supply or demand amount happening between firms and households.
 - We assume a household can be either a buyer or an informal seller. If this household's purchase is for re-sale, counting all households' purchase can lead to double-counting since either firms or other households may purchase this re-sale amount => Count the amount of purchase for prepare business re-sale. **(may explain why we did not develop a similar method for enterprises: 1. Did not begin for enterprises; 2. Enterprises usually have inventory information on financial statement)**

■ Our contribution:

- Due to development stage of the country:
 - A budget and capacity friendly approach for a lower-middle-income country
 - Include e-commerce on messaging/social platforms
 - Include dual roles of households as e-buyers and e-sellers

■ E-commerce policy-making related researches are in-demand

- We call for more measurement research in low- and lower-middle-income countries.
 - Developing countries lacking market access are more in need of e-commerce
- E-GATE team will post the Kyrgyzstan e-commerce volume outcome for households in January 2024. Join our future efforts on estimating e-commerce and related researches.
 - **E.g.**, Does E-commerce measurement methodology have an impact to the policy making?



Thank you!