Measuring value chains: Introduction of quantitative instrument based on input-output tables

Ali Yedan, Ph.D., Associate Statistician, Africa Centre for Statistics, United Nations Economic Commission for Africa

“The Gambia’s tourism sector: Measuring its value chain and exploiting its potential”

23-24 May 2019
Coco Ocean Resort, Bijilo, The Gambia
1. Context

In development studies, the **global value chain (GVC)** describes the people and activities involved in the production of a good or service and its supply, distribution, and post-sales activities (also known as the supply chain) when activities must be coordinated across geographies. GVC is similar to Industry Level Value Chain but encompasses operations at the global level.

**Objective:**
- Better assess the contribution of services to regional value chains
- Provide good indicators for Measuring value chains

**Two methodological approaches to the study of services in regional value chains:**
- **Qualitative approach**, based on firm-level interviews as the basis for case studies,
- **Quantitative approach** using multi-region input output tables (MRIOs), based on the literature on trade in value added.
1. Context

- The quantitative approach
  - based on the literature on trade in value added,
  - uses multi-region input output tables (MRIOs),
  - uses algebraic formula and computation in software like R

- In the knowledge sharing platform of the project, there is an online course which will facilitate the learning of the quantitative tool.

- Fundamentally, this approach decomposes the gross value of exports into two components: Domestic origin Value Added (DVA), and Foreign origin Value Added (FVA).
1. Context

- The **Domestic Value Added (DVA) in exports** are the value added in exports whose the outputs are produced by domestic industries.

- The **Foreign Value Added (FVA) in exports** are the value added in exports whose the outputs are produced by foreign industries.
  - Known as “VS” in the technical literature.
  - Known as backward participation in the policy literature.

- The **Indirect Domestic Value added (DVX) in exports**, i.e., Value Added that is embodied in the exports of other countries, upstream contributions of DVA of other industries.
  - Known as “VS1” in the technical literature.
  - Known as forward linkages in the policy literature.

- **GVC Participation Index** = \((FVA + DVX)/\text{Gross exports}\) that is the best indicator which shows how the sector involved in RVCs/GVCs through both backward and forward linkages.
2. Case of Tourism Value Chains in Ethiopia and Kenya?

- **Breakdown of Gross Exports by Origin**

- **GVC Participation**

The data suggest that although Kenya’s sector is much larger than Ethiopia’s, the latter is more involved in RVCs/GVCs through both backward and forward linkages.
2. Case of Tourism Value Chains in Ethiopia and Kenya?

- The origin of hotels & restaurants sector exports is mostly services in both countries.

- But there is a much higher proportion of imported services in Ethiopia.
3. Case of Domestic Value Added in tourism sectors in Canada and UK

Domestic Value Added generated by tourism sectors

- Whereas 1 CAD of exports generates 71 cents of Canadian value added, 1 CAD of non-resident expenditure generates 81 cents of Canadian value added.

- In the United Kingdom, whereas 1 GBP of exports generates 74 pence of value added, 1 GBP of non-resident expenditures generates 82 pence of value added.
3. Case of Domestic Value Added in tourism sectors in Canada and UK

- In addition to Domestic Value Added (Direct Value Added), the model allows to compile the Indirect Value Added.
- For example,
  - In Canada, in 2012, each CAD of direct value added generated by non-resident expenditure generated an additional 70 cents of upstream value added.
  - In the United Kingdom, in 2010, each GBP of direct value added generated by non-resident expenditure generated an additional 48 pence of upstream value added.
4. Some implications for policy making

- Quantifying the value generated in the tourism value chain makes it possible
  - to identify which type of tourism activities - and tourists - add more value, .. (OECD, 2017)
  - better understanding of these bilateral exchanges (the direct and indirect impacts of tourism)
  - identification of source markets which generate more value added in the domestic economy.
  - how upstream domestic industries (backward linkages) contribute to tourism exports
4. Some implications for policy making

- Quantifying the value generated in the tourism value chain makes it possible to respond to key policy/statistics questions such as:
  - How much value does tourism add to economies?
  - Does tourism create additional trade?
  - Do tourism services have ‘high or low’ domestic value added content?
  - How does tourism compare to the rest of the economy?
  - What is the upstream impact of tourism on other domestic industries?
Thank You