

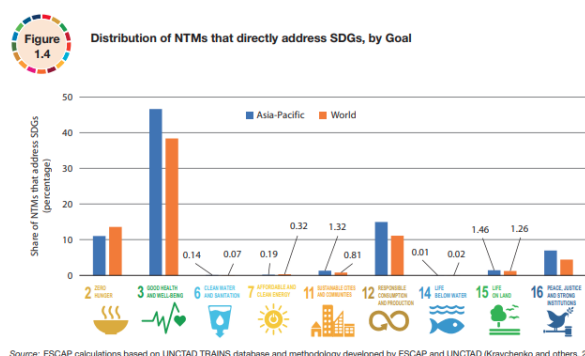
ARTNeT Workshop on Automating Text Analysis using R: Applications to Trade Agreements and Non-Tariff Measures

7-17 December 2021 (virtual)

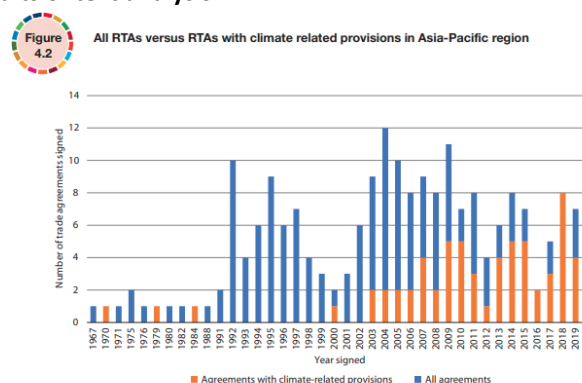
Course Description

Trade policy is increasingly becoming more than just about tariffs: trade dynamics are affected by non-tariff related provisions in trade agreements, as well as non-tariff measures. Traditional binary approaches (i.e. yes/no or 1/0) of conducting impact analysis of trade agreements and non-tariff measures face significant limitations. Increasingly, it is becoming necessary to utilize more nuanced classifications. While some databases attempt to quantify RTA provisions, they are at times outdated, and at times do not provide classification most of interest to researchers (for example – provisions to emergencies/medical equipment most recently). The only choice is often to manually examine all agreements and regulations – a painstakingly slow, expensive, error prone and exhausting task. An alternative is to automate text analysis. ESCAP has been utilizing such methods matching the intent of texts of 90,000 non-tariff regulations vis-à-vis Sustainable Development Goals and Target (figure below - left), as well identifying climate-smart provision in 10,000's pages of text of trade agreements (figure below – right).

Figure: examples of results of text analysis



Source: Asia Pacific Trade and Investment Report 2019: Navigating Non-tariff measure for sustainable development. Chapter 1



Source: Asia Pacific Trade and Investment Report 2019: Accelerating Climate-smart trade and investment for Sustainable Development. Chapter 4

This workshop seeks to equip researchers with tools and knowledge that will help them to use R to conduct automated text analysis and generate quantitative datasets based on their desired criteria. The workshop will also be used to launch and to collect feedback on a beta version of an online tool for automated mapping of provisions in trade agreements that utilizes a version of the algorithm that will be explored during the workshop. Although the focus of this course will primarily focus on text analysis of trade agreements, presented techniques can be applied to analysis of any text data. An example of non-tariff measures description analysis will also be featured to show the versatility of the algorithm's application.

Course Pre-requisite

This course is aimed at users who have prior experience with R. To be eligible to join this course, applicants must pass the ESCAP Online Training on Using R for Trade Analysis (<https://r.tiid.org/>) test and submit the certificate before the start of the course.



About the course conveyors

Maria Semenova is a consultant with Trade Policy and Facilitation Section (TIID) of the Trade, Investment and Innovation Division (TIID) of ESCAP. She developed the customizable algorithm for automated mapping of provisions in trade agreements used in generating the datasets that informed the discussion on regional trade agreements as a tool to promote climate-smart trade featured in [Asia Pacific Trade and Investment Report \(APTIR\) 2021](#), fed into the construction of the [Climate-smart Trade and Investment Index \(SMARTII\)](#) and the [interactive dashboard on digital trade provisions in trade agreements](#). Building on that algorithm, she developed an online tool to easily generate datasets to be used for further research. Earlier, she also helped to develop the methodology to map linkages between non-tariff measures and the sustainable development goals. Previously she worked with UNEP and ESCAP to research and develop an online database of national policies for sustainable energy use in countries in Central Asia.

Alexey Kravchenko is Economic Affairs Officer, TPFS, TIID, ESCAP. Dr. Kravchenko started teaching R for econometric analysis in 2009 at the University of Waikato, New Zealand, at graduate and undergraduate level. Since joining ESCAP, he's delivered multiple R-based training, as well as authored and co-authored online courses and training material on R, including the code for [The Gravity Model of International Trade: A User Guide \(R version\)](#) and ESCAP Online Training on Using R for Trade Analysis (<https://r.tiid.org/>)

Tentative Programme¹
(as of 11 November 2021, all time are in Indochina Time (UTC+7))

7-Dec-2021	Video lecture 1: Introduction to basic text analysis by mapping descriptions of non-tariff measures (NTMs) <ul style="list-style-type: none">○ Introduction and principles○ Text preparation and cleaning○ Basic functions and loops○ Keyword combinations and regular expressions for flexibility○ Homework: Quiz 1
10-Dec-2020	Video lecture 2: Text-as-data: XML files and texts of trade agreements <ul style="list-style-type: none">○ What are .xml files and what they can be used for○ ESCAP's database of trade agreement texts in XML○ The structure of XML files and what data can be extracted from that○ Example of code to extract data from XML file and to prepare it for text analysis○ Homework: Quiz 2
14-Dec-2020 14:00 – 16:30	Live session to discuss Quiz 1 and 2
14-Dec-2020	Video lecture 3: Mapping of categorized provisions in articles of trade agreements <ul style="list-style-type: none">○ Practical examples and review of the code○ Homework: Quiz 3○ Project: Extracting of trade agreement data from XML files and mapping of several topics in several XML files
17-Dec-2020 14:00 – 16:30	Live session to go through Quiz 3, to discuss potential uses of the generated datasets and to present the online tool for automated mapping of provisions in trade agreements

¹ For the version of the latest programme, please go to <https://www.unescap.org/events/2021/artnet-workshop-automating-text-analysis-using-r-applications-trade-agreements-and-ntm>