Localized Big Data Applications for supporting decision-making
18 December 2020

Key Messages: Derived from 3 presentations covering cases of applying Big Data on Refugees, Covid19 policies and vessels traffic.

1. Almost 80% of Syrian refugees in Lebanon over 13 years old have FB accounts.
2. Syrian Refugees in Lebanon FB accounts are dominated by Male registration 2 to 1.
3. Syrian refugees and Lebanese Hosts attend equally schooling through Grade 12.
4. 15% of male Syrian Refugees FB users are above 55.
5. Governmental Darsak education platform during Covid19 lockdown in Jordan is twice as popular as other e-learning tools.
6. Two to threefold increase in general negative sentiment (parents and community's satisfaction) to online learning platforms during COVID-19 lockdown Oct 2020 in Jordan.
7. The compounding crises in Greater Beirut Area resulted in slashed Illumination Maps
8. (-30 to -60%) comparing May 2019 to May 2020.
9. Port vessel calls for passenger ships decreased 28% in Arab region during the first 6 Months of 2020 compared to 2019 due to the Covid-19 pandemic
10. The number of passenger flights decreased 53% while cargo counterparts increased 5.5% in the Arab region, during the first 6 Months of 2020 compared to 2019 due to the Covid-19 pandemic

The session was organized by ESCWA on Friday 18 December 2020, at 12.00-14.00 CET (or 13.00-15.00 Beirut time) as part of the ITU Emerging Technologies for Development Week dedicated for the Arab and African regions. It was moderated by Mr Bassel AlAyoubi, Director General of the Ministry of Telecommunication in Lebanon, and consisted of three panellists.

The first intervention was by Dr. Ziad Abdallah, from the Central Administration of Statistics in Lebanon. He first started by discussing the potential of using Big Data in complementing official statistics, highlighting that decision makers are often faced with situations requiring time-sensitive actions such as in times of crises, and in these cases timely information is crucial and unavailable in official statistics. He drew on a case study

conducted by ESCWA, the Central Administration of Statistics, the Ministry of Telecommunications, Data-Pop Alliance and Qatar Research for Computing Institute, that exploited Big Data non-traditional sources (Facebook, Twitter, Call Details Records, News Articles) to obtain various indicators on the conditions of Syrian Refugees and their host communities in Lebanon.

In that project, through statistical analysis and data mining techniques, the team were able to reconstruct several important statistics such as the distribution of these populations, their economic and security status, as well as their mobility patterns due to certain events leading to their displacement. He then explained and displayed statistical evidence of how these alternative sources of information in the study were promising reliable alternatives to some official statistics, but not replacements. He concluded his talk by stressing the role and importance of the partnership between the Ministry of Telecommunications, the Central Administration of Statistics and ESCWA in enabling such a project to see light, and proposed further steps forward for more collaborative projects aiming at integrating Big Data with official statistics.

The second intervention was by Mr Fouad Mrad from the Statistics, Technology and Information Society Cluster in ESCWA. He thanked Mr AlAyoubi and Dr Abdallah for the one-year partnership formed in the project from the first intervention. Mr Mrad presented an ongoing project that combined various big data sources to inform policy makers on different socio-economic perspectives during the COVID-19 pandemic in Lebanon and Jordan and monitor and evaluate the implementation and effectiveness of policies targeting this crisis. He explained that in times of crises, such as the current one, new sources of Big Data are released, such as mobility reports from Facebook and Google, but the availability of these depends on the situation and the owners of this information. Nonetheless, Big Data can be a useful tool to study the efficiency of policies geared towards the COVID-19 pandemic. “As policy evaluation is challenging,” he warns to be cautious when evaluating public policies, and argues that this project, as well as other Big Data ones, are not providing a complete answer to all the problems they address; rather they offer a “spark of light to improve on decision making in the dark times of crisis”.

The case study undertaken by ESCWA and partners examined 5 different policies with different stakeholders in both countries, all aiming at mitigating some of the negative repercussions of the COVID-19 pandemic at different levels of the countries. By utilizing different sources of Big Data information and techniques, from social media mining to web analytics to satellite imagery analysis, the project has so far evaluated and contrasted the solidarity social funding and educational measures taken as a result of the pandemic by both Jordan and Lebanon. In this project, Big Data was also successful in determining and locating which regions required the most assistance during the various imposed lockdowns, and which regions failed to enforce lockdown measures. He next outlined the remaining targets of the ongoing project, which will include a platform accompanied by a technical guide or “playbook”. He concluded his intervention by reminding the audience of the transitory availability of novel data sources in times of crisis, and that other sources of unused data proprietary to the government can be harnessed to further extract useful information for policy makers in times of crisis.

The third intervention was by Mr Yarob Badr, the Regional Advisor on Transport and Logistics at ESCWA. In it, Mr Badr presented the several mobility and logistical barriers, as well as their repercussions, that have emerged worldwide in light of the COVID-19 pandemic. He then proceeded to point out the various technological advancements in the field of transportation that have allowed the live tracking of many transportation vehicles, such as ships and flights, and how some of this timely information has been made available for public use.

He discussed an ongoing project undertaken at ESCWA that assesses the impact of the COVID-19 pandemic on transportation disruptions using Big Data sources, in order to offer a holistic view about the crisis' effect on this sector and shed light on possible solutions to remedy them. He shared with the audience current findings from the project, which revealed sharp decreases in commercial passenger flights but increases in cargo flights nonetheless, compared to the previous year. He then laid down the next steps in the project, which involves expanding the analysis to include additional sources of transportation information from Big Data sources, as well reconciling these findings with official statistics, in order to depict a clearer and current view of the transportation sector for decision makers.

At the end, a discussion took place based on several questions from participants to the members of the panel. The organizers thanked speakers and participants for the contributions to the session and informed all that the presentations are posted on line through ESCWA and ITU web sites.