Skills Lab Network of Experts Live Event – 13/14 June 2022

CHALLENGE 3 – USING BIG DATA

Vision statement: The country of Etherland is capable of developing policies to attract and retain talents based on the gathering, use and analysis of Big Data

Challenge to be tackled: developing education and employment policies that adapt to both the new emerging needs of the labour market and to the new needs of individuals, thanks to the use of Big Data gathered through different methods and techniques.

Context

The country of Etherland is a middle size country, its economy is in transition. In the last twenty years, it has experienced a rather quick development, primarily based on an improved educational outcome of its population. Employment data have also improved throughout the years, however at a much slower pace compared to the educational ones. Despite the improvements, Etherland still has moderate unemployment, especially among the youth. Many of them emigrate abroad to look for better jobs and lives.

However, the country is rich in mineral resources and is also developing well in the service sector. ICT is becoming prominent and the quality of life, the favourable weather conditions, the well-structured education system and the rather advanced health sector are factors that can potentially revert the emigration trend and even attract talents, if the right policies are put in place.

The Government of Etherland wants to take action and adopt policies that can attract and retain talents. To do so, it has set up a Group of Experts who must present concrete proposals based on scientific data that provide information on employers' needs, sentiment of workers, and other factors that can be gathered through data analytics.

The Government knows that the data revolution is not restricted to the industrialized world. The numbers of real-time information streams and people using e-platforms or social media are growing rapidly in developing countries as well. Tracking trends in online news, understanding new skills needs through online job portals or social media, analysing massive online open courses can provide insights on emerging trends that can be highly relevant to country development.

The Government also knows that the recent waves of global shocks – food, fuel and financial – have led to greater volatility, and policymakers are increasingly aware of the social and financial impact. Despite greater interconnectivity, local impacts of shocks like food crises or natural disasters may not be immediately visible and trackable with traditional tools. Indeed, these are important issues that often unfold beneath the radar of traditional monitoring systems, and by the time hard evidence finds its way to the front pages of newspapers and desks of decision makers, it's often too late and more

expensive to respond. While early-warning systems and data collected through “traditional” methods (surveys and statistics) continue to generate relevant information, the digital revolution presents a tremendous opportunity to gain richer insight into the human experience, and big data can complement the existing indicators.

If properly mined and analysed, big data can improve the understanding of local dynamics and offer policymaking support for development in three main ways:

- Early warning: early detection of phenomena can enable faster responses to population in times of crisis.
- Real-time information and awareness: fine-grained representation of reality through big data can inform the design and targeting of programs and policies.
- Real-time feedback: adjustments can be made possible by real-time monitoring of the impact of policies and programs.

Three main weaknesses have emerged:

- Representativeness: especially in developing and transition countries, Big Data are weaker in capturing labour market developments, due to factors like low digital coverage of labour market (overall or sectoral) and high levels of informality (with consequent lower likelihood to have jobs advertised online). Moreover, given that the share of informal jobs tends to be lower for higher-skilled positions, job vacancy data in developing countries will tend to be more biased towards these high-skilled jobs. Moreover, despite the positive trends, low internet penetration and the limited use of online platforms by employers and workers in many developing countries remains a major barrier to sound analysis and reliable results. Further challenges to using big data in developing and transition countries typically include the identification of reliable online job portals, data-cleaning problems, taxonomy decisions and limited complementarity with other labour market information.
- Securing resources and expertise. Big Data analysis requires specific technical and domain expertise and a dedicated hard- and software infrastructure. Developing such tools and infrastructure require long term vision and commitment over time. Organising support to data governance mechanisms is another key challenge for countries.
- Limited application in public policy. Before it can be used effectively, big data needs to be managed and filtered through data analytics - tools and methodologies that can transform massive quantities of raw data into “data about the data” for analytical purposes. Only then it is possible to detect changes that may be useful for policy making. While Big Data analytics are widely used in the private sector, their application is still limited in the public policy domain.

Challenges

1. **How can Etherland use Big Data to understand new skills needs in the labour market?**
    - What innovative mechanism can be used to understand new employers’ needs and to improve job intermediation?
    - How can Big Data be integrated with traditional quantitative statistical evidence?
    - How can it use Big Data to define long-term development strategies and programs, followed by the ability to attract funds from international actors and private partners?
    - How can information gathered through Big Data can be transferred to speed up change in education and training so to align them with the speed of changes in industrial and social sectors? Are there experiences or good practices that can be replicated on our territory?

- Can Big Data help in understanding upskilling and reskilling needs? If yes, how?

2. **How can BD be used to understand sentiment of high skilled workers and use it to develop attractive mechanisms and offer?**
   - Are there examples at international levels that can be observed and replicated?
   - What specific measures can be proposed and implemented to attract high skilled workers?
   - What tools can be developed to foster innovation in the use of data science and analytics? Can strategic public-private partnership be a way to promote innovative actions such as the creation of hubs, incubators or others?
   - How to ensure a whole of Government approach while implementing policies to attract talents?
3. **What type of ecosystem needs to be set up to create a facilitating virtuous environment?**
   - How can actors create facilitating environments and ecosystems, with the provision of platforms, data, infrastructures and above all the capacity for integration and coordination between the various public and private involved actors?
   - Which tools/methods can promote a widespread knowledge of innovation opportunities and ways of accessing different technologies? Are there experiences or good practices to be taken into account?
   - In what other ways can the public administration support the development and diffusion of innovation? Are there good practices in this regard?
   - Can strategic public-private partnerships function as an engine for applying innovations in data science and analytics? If yes, what type of mechanisms could be put in place?