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Contextualized AI Job Exposure Index

SWANA Future of Work Hub

FutureWORKS Asia – Knowledge Sharing Session

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- What is an AI Job Exposure Index?
  - A quantitative measure aimed at determining how much the labor force in a specific country or region is exposed to AI
  - It is a projection exercise aimed at understanding what proportion of jobs could be potentially exposed to AI in the future
  - Important implications
    1. Determine policy focus priorities
    2. Identify important gaps in research

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Canada

- Study Objective: Produce an AI job exposure index for countries of South-West Asia and North Africa Region
- Methodological contribution in the global south context
  - Different rates of technological adoption
  - Infrastructure readiness, legal and bureaucratic obstacles to adoption
  - Variation in nature of work between developing and industrialized economies
  - Data scarcity

- We adopt a skills-based approach
  - Define an occupation as a combination of skills that can be performed by human capabilities
- The exposure index is then constructed through a recursive process
  1. Skill exposure index
  2. Occupation exposure index
  3. Labor force exposure index

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- A survey is designed to estimate skills exposure index
  - A sample of regional experts in AI development, use, and integration identified by our research team
  - Expand base sample through snowball sampling
  - Survey is conducted online
- Survey participants are asked to determine the likelihood that 9 AI abilities are able to replicate human task performance capabilities

- Challenges and Limitations
  - Sample representativeness
  - Length of survey (9 AI abilities x 52 human skills)

  ⇒Low rate of participation, sample composition could be driven by the original set of participants

  - Experts could be over optimistic about AI capabilities and adoption

- Participants are asked to respond to a random subset of sections of the online survey
  - Demographic questions section
  - 2 sections focusing on the impact of an AI ability replicate human skills (2 x 52 questions)
- Adopt a different scale: instead of the Yes/No we use a more nuanced scale: Fully capable, partly capable, barely capable, not capable

- Defining an occupation as a combination of skills
  - Use online job posting to identify frequency of keywords that could be associated with the 52 skills
  - Construct a taskshare of skills for every occupation (country specific/regional)
- Main challenge: Selective job posting
  - Variation in usage of online job posting by country, sector of employment and occupation levels

- Labor force survey will then be used to determine occupation share in the labor force
- Using these labor share we can construct labor force AI exposure index
- Not all countries have publicly available and recent labor force surveys
- This approach identify employment exposure based on current composition of labor force and does not account for potential structural changes in anticipation

- Correcting for infrastructure readiness and willingness to adopt the new technology
  - Experts likely focus on technological feasibility
  - They might account for infrastructural limitations
  - Likely overstate adoption willingness and economic feasibility
- Adoption in many sectors is a political economy question rather than technological feasibility
- Additional layer of correction through FGDs

- What can we do with this index?
  - Distributional analysis of job exposure. Based on occupational exposure who are the most exposed groups (gender, age groups, migrant workers, educational levels, sectors, etc)
  - Identify key vulnerabilities and areas of exposure to identify important research avenues for policy interventions

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Thank you

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