Young Adults and Labor Markets in Africa^{*}

Oriana Bandiera Ahmed Elsayed Andrea Smurra Céline Zipfel

January 3, 2022

Appendix

A Jobs of the World Project

The Jobs of the World Project is a publicly available resource built to enable researchers to analyse comparable labor market outcomes across countries and time using micro data. At the core of the project is the collation and harmonisation of all available Censuses (IPUMS) and Demographic and Health Surveys (DHS) for low and middle income countries. The two sources combined provides coverage of countries representing about 81 percent of the world's population, and more than 90 percent of the population in low- and middle-income countries. A key innovation is the construction of comparable wealth measures that allow researchers to analyse labor market outcomes across wealth classes. The project has three outputs:

- 1. codes that allow researchers to implement the harmonisation and produce customised data sets from publicly available IPUMS International Censuses and Demographics and Health Surveys.
- 2. the Jobs of the World Data (JWD). The database focuses on a wide range of labor market characteristics including, but not limited to: labor force participation, type of employment (e.g., waged or self-employment), sector of employment (e.g., agriculture, manufacturing, or service), skill level (e.g., managers and professionals, white collar, or blue collar)

^{*}Bandiera: London School of Economics; O.Bandiera@lse.ac.uk. Elsayed: IZA (Institute of Labor Economics); elsayed@iza.org. Smurra: University College London; a.smurra.11@ucl.ac.uk. Zipfel: Stockholm School of Economics; Celine.Zipfel@hhs.se. We thank Gabriel Leite Mariante and Caterina Soto Vieira for their exceptional contribution in assembling the data, and Anders Jensen and Tommaso Sonno for sharing their data. We thank Heidi Williams, Nina Pavcnik, Erik Hurst and Timothy Taylor, for comments and suggestions that substantially improved this paper. The data building and harmonization have been funded by the joint IZA/FCDO Gender, Growth, and Labour Markets in Low Income Countries Programme (G^2 LM|LIC), we thank Hilmar Schneider, Marco Caliendo, and Benedetta Musillo for supporting this endeavour.

3. web platform to build downloadable maps and charts based on JWD.

More information on each of these elements and download able resources are available on the JWP website. $^{\rm 1}$

B Acknowledgements

IPUMS International

The authors wishes to acknowledge the statistical offices that provided the underlying data making this research possible: National Institute of Statistics and Censuses, Argentina; Armenia National Statistical Service, Armenia; Ministry of Statistics and Analysis, Belarus; National Institute of Statistics and Economic Analysis, Benin; National Institute of Statistics, Bolivia; Central Statistics Office, Botswana; Institute of Geography and Statistics, Brazil; National Institute of Statistics and Demography, Burkina Faso; National Institute of Statistics, Cambodia; Central Bureau of Census and Population Studies, Cameroon; National Institute of Statistics, Chile; National Administrative Department of Statistics, Colombia; National Institute of Statistics and Censuses, Costa Rica; National Statistics Office, Dominican Republic; National Institute of Statistics and Censuses, Ecuador; Central Agency for Public Mobilization and Statistics, Egypt; Department of Statistics and Censuses, El Salvador; Bureau of Statistics, Fiji; Ghana Statistical Services, Ghana; National Institute of Statistics, Guatemala; National Statistics Directorate, Guinea; Institute of Statistics and Informatics, Haiti; National Institute of Statistics, Honduras; BPS Statistics Indonesia, Indonesia; Statistical Centre, Iran; Statistical Institute, Jamaica; Department of Statistics, Jordan; National Statistical Committee, Kyrgyz Republic; Statistics Bureau, Laos; Bureau of Statistic, Lesotho; Institute of Statistics and Geo-Information Systems, Liberia; Department of Statistics, Malaysia; National Statistical Office, Malawi; National Directorate of Statistics and Informatics, Mali; Statistics Mauritius, Mauritius; National Institute of Statistics, Geography, and Informatics, Mexico; National Statistical Office, Mongolia; Department of Statistics, Morocco; Central Bureau of Statistics, Nepal; National Institute of Information Development, Nicaragua; General Directorate of Statistics, Surveys, and Censuses, Paraguay; National Institute of Statistics and Informatics, Peru; National Institute of Statistics, Romania; National Institute of Statistics, Rwanda; Government Statistics Department, Saint Lucia; National Agency of Statistics and Demography, Senegal; Central Bureau of Statistics, Sudan; General Bureau of Statistics, Suriname; Bureau of Statistics, Tanzania; National Institute of Statistics, Togo; Central Statistical Office, Trinidad and Tobago; Turkish Statistical Institute, Turkey; Bureau of Statistics, Uganda; National Institute of Statistics, Uruguay; General Statistics Office, Vietnam; Central Statistics Office, Zambia.

DHS Program

The individual Demographic and Health Surveys (DHS) used in this paper correspond to the following citations:

¹https://dx.doi.org/10.15185/JWP

Institute of Statistics, Institute of Public Health/Albania and ICF Macro. 2010. Albania Demographic and Health Survey 2008-09 [Datasets]. ALHR51FL.DTA; ALIR51FL.DTA; ALMR51FL.DTA; ALPR51FL.DTA. Tirana, Albania: Institute of Statistics, Institute of Public Health/Albania and ICF Macro [Producers]. ICF [Distributor], 2010.

State Statistical Committee -SSC-/Azerbaijan and Macro International. 2008. Azerbaijan Demographic and Health Survey 2006 [Datasets]. AZHR52FL.DTA; AZIR52FL.DTA; AZMR52FL.DTA; AZPR52FL.DTA. Calverton, Maryland, USA: State Statistical Committee and Macro International [Producers]. ICF [Distributor], 2008.

Centre National de la Statistique et des Études Économiques - CNSEE/Congo and ORC Macro. 2006. Enquête Démographique et de Santé du Congo 2005 [Datasets]. CGHR51FL.DTA; CGIR51FL.DTA; CGMR51FL.DTA; CGPR51FL.DTA. Calverton, Maryland, USA: CNSEE and ORC Macro [Producers]. ICF [Distributor], 2006.

Central Statistical Office/Swaziland and Macro International. 2008. Swaziland Demographic and Health Survey 2006-07 [Datasets]. SZHR51FL.DTA; SZIR51FL.DTA; SZMR51FL.DTA; SZPR52FL.DTA. Mbabane, Swaziland: Central Statistical Office/Swaziland and Macro International [Producers]. ICF [Distributor], 2008.

Ministerio de Salud Pública y Asistencia Social - MSPAS/Guatemala, Instituto Nacional de Estadística - INE/Guatemala, Secretaría de Planificación y Programación del la Presidencia -Segeplán/Guatemala and ICF International. 2017. Encuesta Nacional de Salud Materno Infantil 2014-2015: Informe Final [Datasets]. GUHR71FL.DTA; GUIR71FL.DTA; GUMR71FL.DTA; GUPR71FL.DTA. Rockville, Maryland, USA: MSPAS, INE, Segeplán and ICF International [Producers]. ICF [Distributor], 2017.

Ministry of Health - MOH/Guyana, Bureau of Statistics - BOS/Guyana, and ICF Macro. 2010. Guyana Demographic and Health Survey 2009 [Datasets]. GYHR5IFL.DTA; GYIR5IFL.DTA; GYMR5IFL.DTA; GYPR5IFL.DTA. Georgetown, Guyana: MOH/Guyana, BOS/Guyana, and ICF Macro [Producers]. ICF [Distributor], 2010.

Kenya National Bureau of Statistics - KNBS - and ICF Macro. 2010. Kenya Demographic and Health Survey 2008-09 [Datasets]. KEHR52FL.DTA; KEIR52FL.DTA; KEMR52FL.DTA; KEPR52FL.DTA. Calverton, Maryland: KNBS and ICF Macro [Producers]. ICF [Distributor], 2010.

Ministry of Health and Social Welfare - MOHSW/Lesotho and ICF Macro. 2010. Lesotho Demographic and Health Survey 2009 [Datasets]. LSHR61FL.DTA; LSIR61FL.DTA; LSMR61FL.DTA; LSPR61FL.DTA. Maseru, Lesotho: MOHSW and ICF Macro. ICF [Distributor], 2010.

Institut National de la Statistique - INSTAT/Madagascar and ICF Macro. 2010. Enquête Démographique et de Santé de Madagascar 2008-2009 [Datasets]. MDHR51FL.DTA; MDIR51FL.DTA; MDMR51FL.DTA; MDPR51FL.DTA. Antananarivo, Madagascar: INSTAT and ICF Macro [Producers]. ICF [Distributor], 2010. National Statistical Office - NSO/Malawi and ICF Macro. 2011. Malawi Demographic and Health Survey 2010 [Datasets]. MWHR61FL.DTA; MWIR61FL.DTA; MWMR61FL.DTA; MWPR61FL.DTA. Zomba, Malawi: NSO/Malawi and ICF Macro [Producers]. ICF [Distributor], 2011.

Ministry of Health and Social Services - MoHSS/Namibia and Macro International. 2008. Namibia Demographic and Health Survey 2006-07 [Datasets]. NMHR51FL.DTA; NMIR51FL.DTA; NMMR51FL.DTA; NMPR52FL.DTA; Windhoek, Namibia: MoHSS/Namibia and Macro International [Producers]. ICF [Distributor], 2008.

National Population Commission - NPC/Nigeria and ICF Macro. 2009. Nigeria Demographic and Health Survey 2008 [Datasets]. NGHR53FL.DTA; NGIR53FL.DTA; NGPR53FL.DTA. Abuja, Nigeria: NPC/Nigeria and ICF Macro [Producers]. ICT [Distributor], 2009.

Instituto Nacional de Estatística - INE/São Tomé e Príncipe, Ministério da Saúde, and ICF Macro. 2010. Inquérito Demográfico e Sanitário, São Tomé e Príncipe, IDS STP, 2008-2009 [Datasets]. STHR51FL.DTA; STIR51FL.DTA; STMR51FL.DTA; STPR51FL.DTA. Calverton, Maryland, USA: INE/São Tomé [Producers]. ICF [Distributor], 2010.

Statistics Sierra Leone - SSL and ICF Macro. 2009. Sierra Leone Demographic and Health Survey 2008 [Datasets]. SLHR51FL.DTA; SLIR51FL.DTA; SLMR51FL.DTA; SLPR51FL.DTA. Calverton, Maryland, USA: SSL and ICF Macro [Producers]. ICF [Distributor], 2009.

Uganda Bureau of Statistics - UBOS and Macro International. 2007. Uganda Demographic and Health Survey 2006 [Datasets]. UGHR52FL.DTA; UGIR52FL.DTA; UGPR52FL.DTA. Calverton, Maryland, USA: UBOS and Macro International [Producers]. ICF [Distributor], 2007.

Ukrainian Center for Social Reforms - UCSR, State Statistical Committee - SSC/Ukraine, Ministry of Health - MOH/Ukraine, and Macro International. 2008. Ukraine Demographic and Health Survey 2007 [Datasets]. UAHR51FL.DTA; UAIR51FL.DTA; UAMR51FL.DTA; UAPR51FL.DTA. Calverton, Maryland, USA: UCSR and Macro International [Producers]. ICF [Distributor], 2008.

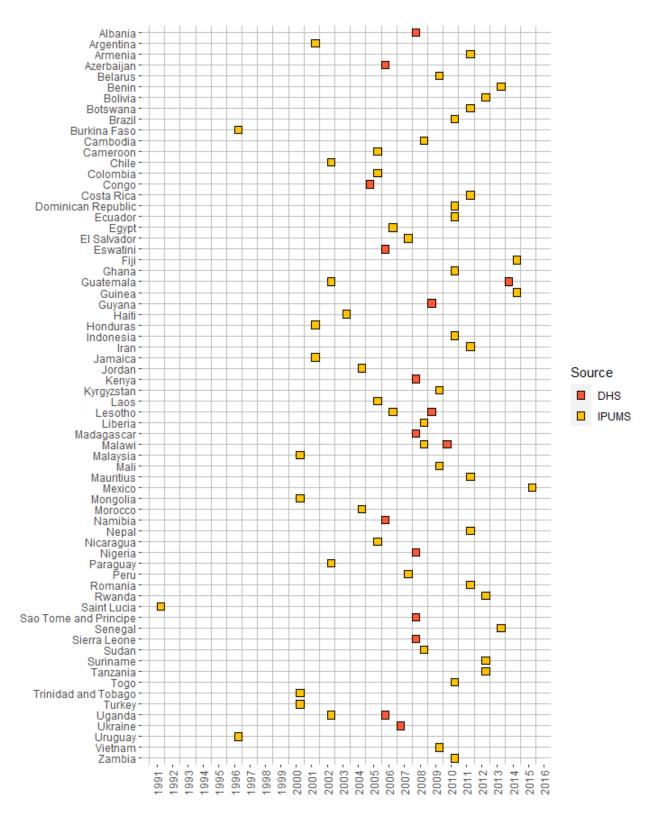


Table A1. Samples and Sources of Data

C Additional Figures

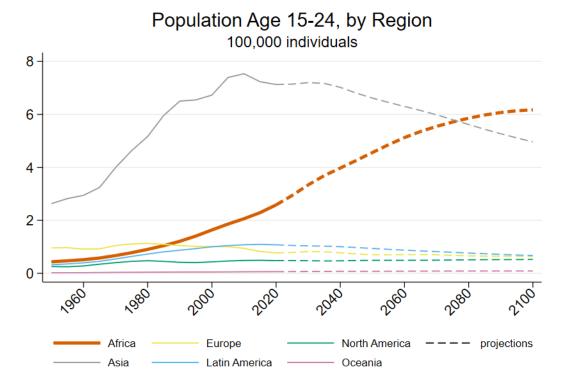


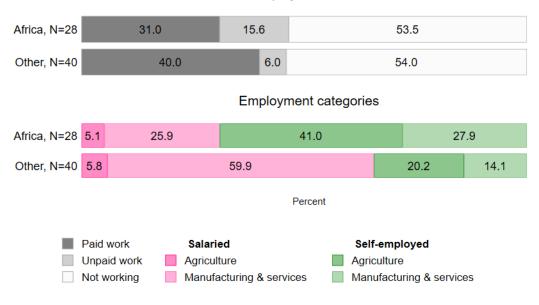
Figure A.1

Source: UN World Population Prospects (2019).

Note: Regional shares of the world's total 15-24-year-old population, constructed from population estimates and projections from the UN World Population Prospects, 2019 (https://population.un.org/wpp/). Regions correspond to the geographical units coded in the source data. The figure refers to the cohort aged 15-24 as population counts and projections are provided for 5-year bands. In the remainder of the paper, where we examine aggregates produced from microdata, we will focus on the 18-24 age group.

Figure A.2

Occupational structure of the 18-24 year old population



Employment status

Source: Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

Note: Regional aggregates for the 18-24-year-old population in 68 developing countries (28 countries from Africa and 40 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and sector of occupation. The left panel plots the relative shares of three 'extensive margin' categories: fraction of individuals aged 18-24 (i) working for pay, (ii) in unpaid work and (iii) not working. The right panel plots the relative shares of four employment categories (defined according to sector and type of work), restricting the sample to working individuals (paid and unpaid). This figure is the version of Figure 2 in the paper when aggregates are not weighted by country population size.

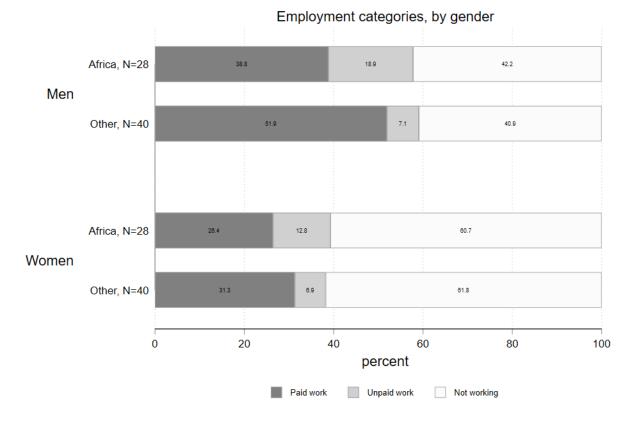


Figure A.3

Source: Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

Note: Regional aggregates for the 18-24-year-old population in 68 developing countries (28 countries from Africa and 40 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and sector of occupation. The figure plots the relative shares of three 'extensive margin' categories: fraction of individuals aged 18-24 (i) working for pay, (ii) in unpaid work and (iii) not working, split by gender.

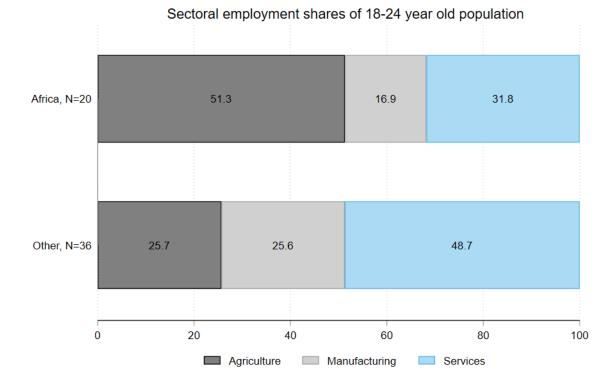


Figure A.4

Source: Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

Note: Regional aggregates for the 18-24-year-old population in 56 developing countries (20 countries from Africa and 36 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and disagregated sector of occupation. The latter variable is available only for a subset of the countries in the core sample.

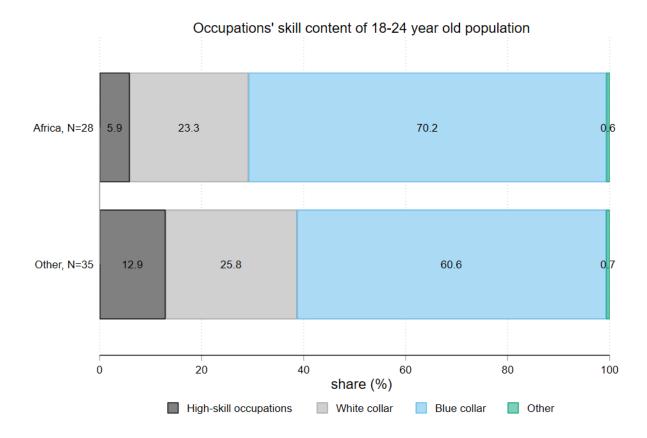


Figure A.5

Source: Demographic and Health Surveys and IPUMS International, harmonized via the Jobs of the World Project.

Note: Regional aggregates for the 18-24-year-old population in 63 developing countries (28 countries from Africa and 35 countries from the rest of the world) constructed from the latest sample available for each country in the Jobs of the World Database. Samples are selected if they contain the following information for both men and women: whether the individual is engaged in any form of economic activity at the time of the survey or census, type of employer (self/family/someone else), paid/unpaid work, and type of occupation. The figure reports the relative share of the work force engaged in each of three types of occupations: (i) high-skill: professional, managerial and technical occupations; (ii) white collar; clerical, sales and service sector occupations; and (iii) blue collar: manual and unskilled jobs in agriculture and industry, and domestic services.