What is the state of microwork in Africa? A view from seven countries

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2017

(A working paper)

INTRODUCTION AND MARKET BACKGROUND

Digitisation and networked communications are increasingly touching all aspects of modern life and all sectors of the economy. Among them is employment, which has served as a key organising principle for society since the industrial revolution. Currently, several forces are reshaping traditional employment and more generally how labor markets operate. On one hand, advances in artificial intelligence in combination with modern robotics are threatening to automate jobs that were previously considered too complex for non-human execution. On the other hand, online labor platforms facilitate the unbundling of work into smaller tasks that employers can contract out to freelance workers around the world.

From a development perspective, the digitisation of work enables job seekers in poor countries to enter labor markets in rich countries, previously inaccessible due to high communication costs and barriers to labor migration. Virtual labor mobility thus has the potential to raise incomes by decoupling workers from the geographical constraints of local labour demand and improving matching with individual skills. At the same time, online work may erode labour protection standards and unleash a global race to the bottom in wages and workers' rights. Further, there is evidence that online labour platforms exacerbate the frictions that result in inferior labour outcomes for women, ethnic minorities and other disadvantaged groups.

In African countries, US platforms like Freelancer, Elance (Upwork), ODesk and Amazon's Mechanical Turk have been progressively challenged by local platforms. M-Ablode is a mobile microworking platform funded by the United States African Development Fund for microworkers based in emerging markets, especially African ones. Mintor, a South African platform looking to connect students (in the supply market) and SMEs (on the demand market). Hooros (South Africa), Crew Pencil (South Africa), Kuhustle (Kenya), Asuqu (Nigeria) and Jana (formerly Txteagle) are other African examples. Uber is the transport application that is the most used in Africa. It has developed its services in Egypt, Kenya, Morocco, South Africa and Ghana. Competition exists with MondoRide (Saudi Arabia) in Kenya and Tanzania, Maramoja (Kenya), Easy Taxi (South America) in Nigeria and Kenya or Olga Taxi (Nigeria). Moreover, some private service providers in impact-sourcing have developed. Impact sourcing is a specific type of online work that aims at training and including vulnerable communities on the labor market. It has started developing in India, Kenya and South Africa and employed about 150 000 workers in 2016 (World Bank, 2016). In Africa, Samasource operates in Ghana, Kenya and Uganda. Digital Divide Data (DDD) operates in Kenya, where disadvantaged youth (between 17 and 24) are recruited from urban slums to participate in a program of training and employment and provide digital content services to DDD clients.

Because of the development of such services, added to the increased potential for freelancing and entrepreneurship of citizens in some African countries, there is much that remains to be understood about the digitisation of work and its long-term implications for development and, particularly, employment. This research provides the only nationally

representative demand-side evidence-base for microwork in seven Africa countries, which will form part of a broader comparative analysis of 20 countries across the global South providing unique insights into the development context.

LITERATURE REVIEW

This research provides rare insights into the state of microwork in Africa and contributes to filling a gap in the existing literature by providing a complementary demand side perspective on the reality of microwork in some African countries.

Concepts and definitions

The recent concept of « **gig economy** » refers to the increasing trend for companies to hire temporary independent contractors and microworkers instead of full-time permanent roles. With technological progress and digitisation, firms have opened their market borders more easily and they increasingly deal with customers, suppliers and employees who are physically based in a different place or country. **Online outsourcing** enables them to distribute work to distant places by connecting businesses and suppliers through online platforms[1]. Its market has increased by 25,5% in the past year between July 2016 and June 2017 (Kässi & Lehdonvirta, 2016). It includes two different models: online freelancing and microwork (Banyan 2017). **Online freelancing** usually involves complex tasks (translation, content moderation, software development, administrative support, technical report writing…), requires a higher level of skills and tends to be done within longer projects (days, weeks…). **Microwork (MW)** is characterised buy online « microtasks » (forum participation, data input, image tagging…) that are usually quickly performed (seconds, minutes) and require no specialised skills. Usually, workers are paid small amounts of money for each task.

Because this trend is recent both in developing and developed countries, the literature is still scant and research still has a. Limited perspective on the issues and potential evolution of MW.

[1] A common definition of a platform in economics is an intermediary that creates a market (by facilitating economic or social exchanges) by bringing together groups of users (including buyers and sellers). Labor platforms can be websites or mobile applications. They collect and display detailed workers profiles and work history and enable online payment of remuneration and rating of stakeholders.

Nevertheless, some papers examine how microwork is building up in developing countries. The two most extensive studies on the subject, one led by M. Graham *et al*. (2017) and the other by the Global Center for Youth Employment (2017), have built a body of work corpus consisting of quantitative data extraction from work platforms and of stakeholders interviews.

The microworker typical profile

Quantitative studies on microwork have been based on data extraction from one specific platform. On some platforms, workers with a full order agenda in the coming weeks or months have invisible profiles, which can create a statistical bias in the sample of data collected towards « less successful » workers (M. Graham *et al*. 2017). But these studies have the advantage of giving some demographic insights on microworkers.

Ipeirotis (2010) has made a quantitative study on Amazon Mechanical Turk (AMT) workers ('Turkers'), 50% of whom come from the United States and 40% of whom from India. According to their country of origin, Turkers have different demographics and motivational reasons to participate in AMT. Around 2/3 of US Turkers are women whereas 2/3 of Indian Turkers are men (A study on the Elance platform led by the World Bank (2016) has assessed that on a global level, 44% of workers were women, compared to 25% in the non agricultural economy). Young workers are overrepresented in the general Turkers population in both countries, confirming another study on freelancer.com platform according to which 57% of workers are between 16 and 25 (WB report 2016). 28% of Indian Turkers against 14% of US Turkers declare that AMT work is their main source of income, whereas it is the case for 68% of respondents in Graham's study (2017) on African and South Asia countries.

Expanding access to work

Still nascent, the literature on online work has underlined the new opportunities and benefits offered by digital labour. As early as 2010, some World Bank publications highlighted microwork (Microwork in MENA 2011, Rossotto *et al*. 2012) as an opportunity for job creation, particularly for women and youth, and a contribution to poverty d

alleviation in rural areas: « matching platforms can improve labour market efficiency particularly in developing countries and in the informal sector, where information failures are large ».

Traditionally, work is geographically determined: Labour and its place have always been inextricably linked (Hudson, 2001). In the early 1990s, countries like India or China started to benefit from outsourced work coming from developed countries (manufacturing industry). Then outsourcing had expanded to other sectors including services: Digitisation has made possible for stakeholders to work from different - and very remote - places, making the world a giant labour market. Standing (2016) of this phenomenon: « we have a mass migration of labour without the migration of workers ». Digital solutions have been more efficient than traditional one and the labor market is no exception to the rule. Because of network effects created by platforms, stakeholders have access to l**arger markets at lowers costs** (Stevenson, 2009) and **faster** (Kuhn *et al*. 2014).

The Nigeria's government, supported by the World Bank and the Rockefeller Foundation, organised workshops in 2013 to introduce thousands of citizens to microwork platforms[2], with the objective of lowering unemployment. The same year, the Digital Jobs Africa program was launched by the Rockefeller Foundation, building a partnership with the private sector, the government, the development community and the civil society[3]. These examples illustrate that work without geographical borders has been seen as an opportunity for governments and organisations to create employment in poorly served areas and have promoted microwork as a tool for development potential and an **opportunity for inclusion of the poorest populations.**

Indeed, microwork enables **flexibility** in working hours and home-based employment, which increases potential access to work for women (because they are pressured to stay at home or because they need to take care of children) and for people with disabilities (who cannot find work in a traditional work environment) (World Bank, 2016). Moreover, little knowledge of ICT and **few professional skills** are required to perform the micro-tasks required. Also, studies identify an increase in work experience and in skills thanks to microwork: CloudFactory estimates an increase of 27% in technical skills development,

[2] http://innovation-village.com/nigeria-to-lower-unemployment-rate-with-naijacloud/

[3] https://www.rockefellerfoundation.org/our-work/initiatives/digital-jobs-africa/

30% in leadership skills development and 47% in management skills development. Microwork also **increases livelihood**, with direct benefits to the microworker and indirect benefits to the household and community: for 68% of workers, online work is important or very important to the household income (Graham, 2017).

To some extent, digital work enables greater **access** to work but there are some limitations to that have been increasingly apparent as the research and literature has developed.

Consideration of risks and drawbacks for workers

Graham highlights the risk that microwork could turn into digital “sweatshops” that would make the poorest populations work exploitatively (2017).

First of all, microwork raises the problem of **social and economic exclusion**. It may increase inequalities, depending on access to the Internet and on the skills it requires to be performed (including literacy). Affordable, quality broadband, as well as education and training would enable greater participation in microwork.

Also, some geographical discriminations have been studied in the literature. In theory, online work platforms hire and pay qualified workers, regardless of their country of origin or any other characteristics unrelated to productivity. But a quantitative analysis conducted on platform Nubelo (Spanish-speaking platform) showed that Spanish employers are more likely to hire Spanish workers than non-Spanish workers from other Spanish speaking countries and that they are willing to pay a wage premium to hire domestically (Galperin & Greppi, 2017). This is explained on one hand by the fact that « employers anticipate higher communication costs when working with foreign contractors » and on the other hand by information uncertainty (lack of verifiable information « tend to attribute quality to individual workers based on their country of origin »). So the expected distributional socioeconomic impact of MW across countries is probably mitigated.

Also, **power relations** between employers and labor force are more unbalanced. Microwork raises the question of worker protection. Microworkers do not benefit from unemployment nor health insurance or from guarantee of a minimum salary[4]. Lack of

[4] Some platforms have recently implemented a minimum salary policy.

upgrading and of professional training brings a poor skills development of workers compared to wage labor. 94% of them are not involved in a worker association or a labor union, and thus do not have powers of making their voice heard. The issue of lack of benefits has to be put in perspective: « In developing countries, most work do not have these benefits » (WB report 2016).

Then, the oversupply of workers entails a **competition** between them on a giant labor market, on which the employer may choose the cheapest one. This creates a « race to the bottom » (Graham 2017) towards low-paid labor and enhance the feeling of precariousness and employment insecurity (43% of workers feel easily replaceable, Graham 2017).

Finally, microwork facilitates **opacity**. There is first some uncertainty on legal obligations of workers (32% of them are not sure if income tax is paid on their earnings and 34% do not pay income tax, Graham 2017). Also, microwork enables intermediaries (workers with higher feedback scores who delegate work to other workers for smaller amounts of money).

The recent literature proposes some policy recommendations and some food for thought to leverage on microwork and make the best of microwork for socioeconomic development. We will come back to that in the policy section below.

Existing data on microwork in developing economies

In terms of existing indicators and data collected on online work in developing countries and particularly on Africa, some premises have been established.

At a macro level, the iLabour research project of the Oxford Internet Institute studies the social, organisational and policy impacts of the dramatic changes the labour markets are currently experiencing. Part of the research project is the creation of the **Online Labour Index** (OLI), in order to have an equivalent of the statistical measurement of traditional labour (types of occupation, number of workers). It aggregates the utilisation of the six largest English-language work platforms (60% of the market in terms of traffic) over time

(since mid-2016) and across countries[5]. For the time being, the OLI collects data in the following African countries: Morocco, Algeria, Tunisia, Egypt, Ghana, Nigeria, Cameroon, Kenya, Zimbabwe and South Africa.

On a more micro level, the most extensive study on microwork in developing countries has recently been published by M. Graham *et al*. (2017). It has used a large research corpus: from one specific platform (microworkers.com), 125 interviews were undertaken between 2014 and 2016 in Southeast Asia (Philippines, Malaysia and Vietnam) and in sub-Saharan Africa (South Africa, Kenya and Nigeria); an online survey was conducted on 456 workers in 2016 and a 2013 dataset on 362000 projects has been analysed. Halperin and Greppi (2017) also have based their analysis on data extracted from one platform (Nubelo). This methodology provides a partial picture on demographics of workers, as each study builds on one particular platform data. This might result into fragmented research on microworkers that would prevent it from being comparable across marketplaces (workers might have different profiles depending on the platform). The present research uses a complementary method, as our sample of workers has been selected from field population using MW through all types of platforms and applications.

Because it is nascent, microwork the literature on it is still underdeveloped. There is a lack of data on the profile of microworkers and the extent of its practice in developing countries. This comparative study brings a complementary perspective to the existing literature on the subject and aims to lay the foundation for a longitudinal study on this topic, by collecting and analysing updated data on a regular basis[6].

RESEARCH DESIGN AND SCOPE

Based on the desk study above, the main objective of the present analysis is firstly to assess the importance and main characteristics of microwork in some African countries (Rwanda, Tanzania, South Africa, Kenya, Lesotho, Ghana, Nigeria) and secondly to identify some new policy paths for developing countries to leverage microwork for

[5] More information on the OLI methodology available at: http://ilabour.oii.ox.ac.uk/measuring-the-supply-of-digital-labour-how-the-oli-worker-supplement-is-constructed/

[6] In the framework of Households/Business ICT country studies by Research ICT Africa

development. This first set of data constitutes a baseline for future analyses and longitudinal studies to understand the evolution of the gig economy in these specific countries. Microwork is conceptualised for the purposes of this study as being work that is income-generating, low-skilled and not necessarily digital intensive[7].

This paper will contribute to answering the following research question: How to make the gig economy efficient in African countries? As discussed above, recent studies have demonstrated that the recent microwork phenomenon is not homogeneously efficient globally neither creating a frictionless labour market, as often stated in common narratives.

In order to answer this general question, building on the existing research, the paper will proceed in two steps:

Firstly, a descriptive assessment of the data to identify any patterns in the undertaking of microwork in the countries studied, to answer the following questions:

- Is the demographic and user profile of microworkers consistent across countries?
- Is the demographic and user profile of microworkers in African countries consistent with literature findings in other developing markets (young, male, single, microwork as primary source of income)?

This research is based on a field experiment and draws upon 169 interviews of workers conducted in 2017 in seven sub-Saharan countries (Ghana, Mozambique, Nigeria, Rwanda, Tanzania, South Africa). It will highlight the demographic profile of microworkers, the type of tasks they conduct, the significance for them of MW revenues and the motivation for using MW. Workers are randomly selected among Internet users in poor populations, as part of a larger study on ICT usage by individuals and households.

Secondly, the discussion will propose some directions for future research and policy recommendations in attempting to answer the following questions:

[7] The value created is not only coming from manipulation of data online, but also from services ordered and transactions made through digital networks (cleaning, driving, etc).

- How can developing countries capture a larger share of the value of the global microwork market?
- According to literature and this research most microworkers in developing countries are men. Could microwork be a lever for inclusion of women in the labour market, particularly because of its flexibility? Or does the evidence indicate that this simply adds another layer of exploitation?

Methodology

The study uses data from in-depth individual surveys which were conducted by Research ICT Africa in 2017 in the following seven countries: Ghana, Kenya, Mozambique, Nigeria, Rwanda, South Africa and Tanzania. The survey data includes individual-and-household-level information on fixed line, mobile phone and Internet access and use.

As a result of data sampling process, a total of 9 163 respondents participated in the survey. The study restrict the sample to 2 793 respondents who have used the Internet in the past three months. The restriction is based on the fact that only individuals with Internet access have the potential to participate on online platforms.Table 1 shows the number of individual surveyed in each country and the share of male and urban areas in the whole sample. Once the data is weighted to correct for over- or under-representativeness of rural/urban, age groups, there is evidence that majority of the population in the countries surveyed in Africa are female while most respondents reside in rural areas except for Ghana and South Africa.

TABLE 1: SAMPLE DISTRIBUTION

Country	Observation	Male (%)	Urban (%)
Ghana	1,200	48,49	55,31
Kenya	1,208	45,28	26,49
Mozambique	1,171	44,23	32,82
Nigeria	1,200	50,35	49,40
Rwanda	1,211	47,22	21,60
South Africa	1,815	45,12	64,50
Tanzania	1,200	46,74	33,02

Source: Research ICT Africa #afteraccess survey, 2017

Notes: Table 1 presents the full sample of the survey conducted by Research ICT Africa among seven Africa countries in 2017.

Table 2 shows that mobile phone penetration in African countries is considerably lower than those provided by the ITU, which is older data, or even the GSMA, as a result of its measurement of SIMS as unique subscribers, which fails to account for duplicate SIMS which is very prevalent in Africa. The mobile phone industry continues nevertheless to scale rapidly with more than 50% of the African population covered by mobile phone technologies. Migration to higher speed networks and smartphones continues apace, with mobile broadband connections set to reduce the historical digital divide created by high cost fixed-line infrastructure. In four of the countries surveyed countries, more than 20% of respondents have used the Internet, but in Mozambique (9,70%), Rwanda (8,21%) and Tanzania (13,53%), which constitute the poorest of the countries surveyed it is below 20%. As the vast majority of people in all seven countries access the Internet through their mobile phone, the low Internet penetration in these countries can be attributed to low smartphone penetration which, except for Tanzania, is lower than 20% compared to South Africa (55,53%), Ghana (34,27%), Kenya (27,57%) and Nigeria (23,83%). Surprisingly, Tanzania's smartphone penetration is above 20% but Internet penetration remains lower. This could be attributed to supply-side issues such as data prices or the dearth of skills to enable Internet use.

Table 2: Individual use of ICTs

Country	Mobile Phone (%)	Smartphone (%)	Internet Use (%)	Microwork (%)
Ghana	73,87	34,27	26,00	0,99
Kenya	86,94	27,57	25,59	0,98
Mozambique	39,73	17,01	9,70	9,70
Nigeria	64,42	23,83	30,22	3,37
Rwanda	48,16	9,02	8,21	0,33
South Africa	83,84	55,53	49,72	3,22
Tanzania	58,52	22,12	13,53	0,08

Source: Research ICT Africa beyond access survey, 2017.

Notes: Table 2 presents ownership of mobile phones and the use of Internet and adoption of microwork.

Given its strong growth and new innovative products, the global mobile industry is now a major source of employment opportunities. Mobile industry jobs can be classified as direct and indirect ones, with a diverse labour force supplying each category. Direct jobs are professional in nature and require some form of training and skills. They are created by mobile operators and manufactures in professions that range from engineers to managers to sales support staff.

Indirect jobs, however, do not necessarily require IT expertise. They are created by mobile operators, manufacturers, as well as third party content and device producers, including entrepreneurs. The indirect job are generally small in nature providing employees with part-time employment. Indirect jobs/microwork has shown a potential for growth but in most cases found to compete with the traditional employment opportunities. For instance the Uber/Taxi-fire are big competitors to the traditional taxi systems. For many individuals in developing countries, a mobile device is a tool not only for contacting customers and accessing the Internet, but it is a platform that also provide jobs such as driving for ride-applications, shopping for delivering household items, performing tasks online and cleaning services.

As shown in Table 2 microwork penetration is very low when analysed using a full sample. This is mainly due to microwork being an online platform which can only be used by individuals who have access to the Internet. As shown in Table 2, Internet penetration in the surveyed countries is very low. Among the surveyed countries only two countries, Nigeria and South Africa, have reached the 30% Internet penetration level. This is a further explanation of why microwork has not yet reached its potential in Africa. Restricting the sample to respondents who stated that they have used the Internet in the past three months the sample reduces to 2 793 respondents from all the countries. Focusing on the restricted sample the results show that countries with high Internet penetration are more likely to have high levels of microwork participants than those with low Internet penetration. Table 3 shows that about 10% of Internet users in Nigeria participate in microwork activities while in Mozambique and South Africa only 8% and 6%, respectively do. The results further show that there is a gender gap in the use of microwork. Males are more likely to participate in microwork jobs than females except in Kenya and Tanzania where 51,30% and 77,44% of microworkers are females, respectively.

Table 3: Number of restricted sample

Country	Observation	Microwork (%)	Male (%)
Ghana	409	2,14	55,48
Kenya	186	3,52	48,70
Mozambique	309	7,90	83,81
Nigeria	299	9,68	53,71
Rwanda	129	3,93	77,91
South Africa	796	6,48	56,19
Tanzania	244	0,56	22,56

Source: Research ICT Africa beyond access survey, 2017.

Notes: Table 3 shows the number of observation in the restricted sample and the share of microwork and gender distribution.

Education is one of the main determinant of digital divide. In order to benefit from the digital technologies one must know how to use it. Evidently so, the survey results show that people with no education and primary school certificate are less likely to participate in microwork jobs as compared to those with at-least a secondary school certificate. However, it is important to note that these jobs pay small wages and therefore are not attractive to people with the skills or opportunities to undertake other better paid work. This is also evidenced by the survey results, shown in Table 4, with no masters and PhD holders participating in microwork except in Nigeria where about 1% of microworkers have a masters degree.

Table 4 shows that majority of microworkers are secondary school certificate holders. About 65% of microworkers in Rwanda hold are secondary school certificate holders with about 56% of microworkers in Ghana, 50% Kenya and Tanzania having secondary school certificate. While a few bachelor degree holders participate in microwork jobs in most of the countries, in Nigeria about 47% of microworkers are bachelors degree holders. Of particular interest is that in Ghana only secondary school certificate holders and certificate/ diploma holders participate in microwork jobs.

Generally microwork is expected to benefit those who are left out by the traditional employment system and lessen the burden of unemployment. Furthermore, microwork is likely to be taken up by students as part-time jobs to supplement allowances. The survey

results, in Table 4, show that majority of microwork participants are students, employed and self-employed individuals. The results show that microwork seems to be a major contributor to employment in Ghana, with about 60% of micro-wokers being unemployed. In Mozambique about 24% of microwork participants are unemployed while in Kenya and Rwanda only 16% are unemployed.

The results further show that microwork does not only provide direct employment opportunities but has the potential for entrepreneurship. The results show that majority of microworkers are self-employed. More than 40% of microworkers in Kenya, Nigeria and Tanzania are microworkers. Only 4% of microworkers in Mozambique are self-employed with majority (51%) being students. These results show the potential that microwork has in reducing unemployment in developing countries.

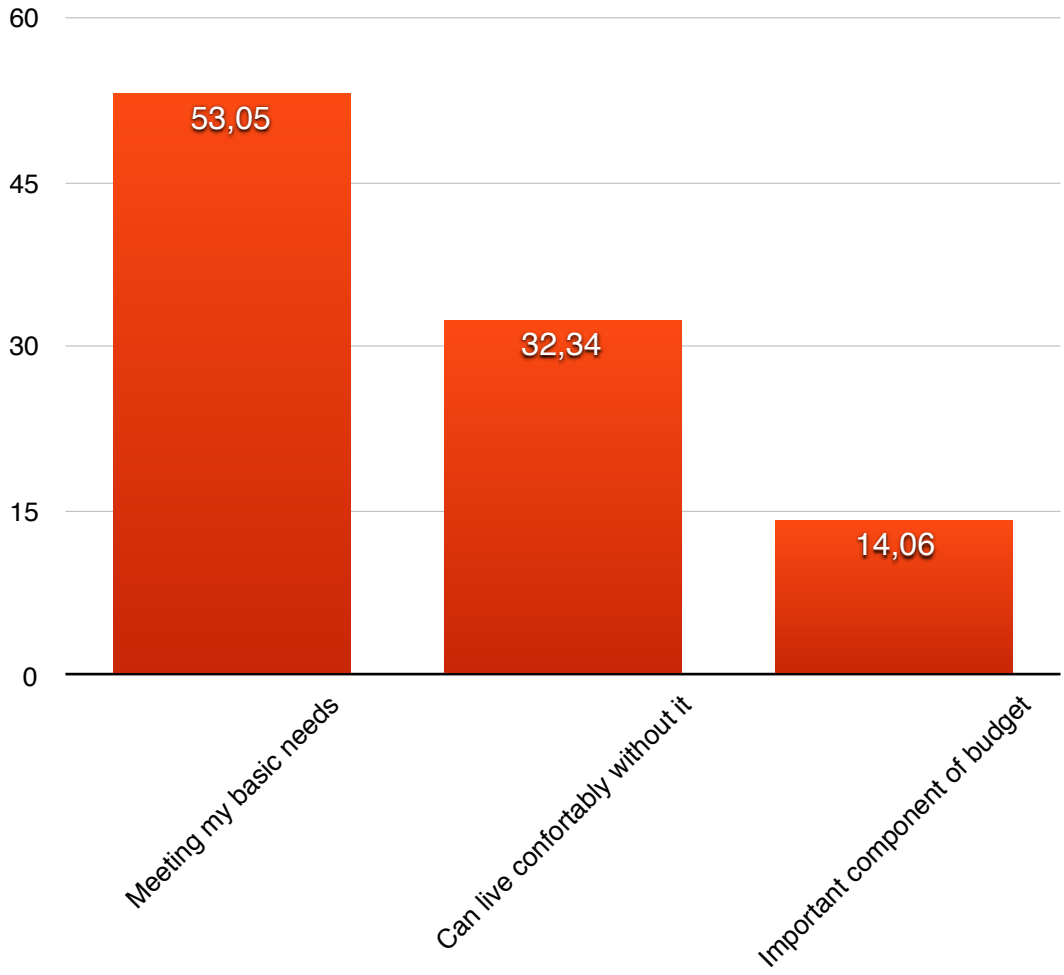
Table 4: Distribution of microwork participants by education and employment status

	Ghana	Kenya	Mozambique	Nigeria	Rwanda	South Africa	Tanzania
	EDUCATION						
Primary					16,37		22,03
Secondary	56,36	50,15		44,10	65,46		49,21
Certificate/ Diploma	43,64	49,06		7,45	8,63		
Bachelors		0,79		47,39	9,54		28,75
Masters				1,06			
	EMPLOYMENT						
Student/ Pupil	12,18	18,07	51,30	7,99		16,71	28,75
Unemployed, active	59,79	16,26	24,57	13,66	16,37	15,17	
Employed	7,35	21,32	18,81	31,86	58,46	60,08	22,03
Self-employed	20,68	44,35	4,16	46,49	25,18	7,31	49.21

Source: Research ICT Africa beyond access survey, 2017

Notes: Table 4 presents demographical characteristics of microworkers in the surveyed countries. No education and PhD holders are not presented in the table since there were no microworkers in these groups for all the surveyed countries. On the employment status, unemployed discouraged, retired and disabled are also not presented.

Respondents were also asked to state what sorts of jobs or tasks have they performed.



The results show that most microwork jobs are online tasks such as completion of surveys and online data entry (28%). About 14% of respondents stated having participated in cleaning services and only 8% doing shopping for household delivering. A few (4.80%) stated their microwork jobs as driving for ride-hailing application such as Uber, Lyft and others. The results further shows that the income earned from microwork jobs is essential to participants welfare with only 15% stating that they can live comfortably without the microwork income. However, about 30% of microwork participants stated that there are instances where they participate in these platforms and never get paid.

OVERALL DISCUSSION AND POLICY RECOMMENDATIONS

Microwork has progressively made its way to developing countries in the past few years. Existing studies might give a partial view of what is really happening, as most of them focus on one platform and analyse workers' demographics on that platform, first trends on

microwork and labor market frictions. This type of research based on interviews with hundreds or even thousands of microworkers, can give an impression of strong uptake of microwork, despite it representing a very small contribution to individual incomes at the national level.

What this survey tells us is that currently there is **very little uptake** of microwork in Africa. This is mainly due to the fact that Internet usage in Africa is very low. Among the surveyed countries only 28.43% of these countries respondents use the Internet. Among the 2 793 residents who use the Internet, only seven percent participate on microwork activities.

This data on microwork that are being collected for the first time in Africa at a nationally representative level, will provide an important baseline for further studies. In Sri Lanka for instance, freelancers are estimated around 0,1% of country population but the uptake is strong (growing at a rate of 44%)[8].

Several hypotheses might explain the low take off of microwork among the population in Africa: the lack of connectivity; of awareness and of the skills and opportunities for training to acquire them[9].

A first possible structural barrier to microwork being able to make a significant contribution to job creation and poverty alleviation would be the low access of individuals to broadband services. This is one the one hand the result of the **lack of broadband connectivity** and on the other hand because of **high data prices** in some countries which makes access to internet unaffordable to significant numbers of people in Africa, not only the very poor. Improving connectivity and access to data services would be a necessary condition for microwork to contribute to economic inclusion.

It is not a sufficient condition, however. The largest and far more difficult challenge in Africa is the lack of education and training to **enhance basic ICT skills** essential in order to make microwork a tool for gender and regional inclusion and not an exploitative one.

[8] LIRNAsia, 2017

[9] Willingness to work through online services is another factor but is not possible to assess at this stage of the data collection. In Sri Lanka for instance, 11 percent of the population is willing to do microwork (LIRNAsia, 2017).

Without active steps by government to address these issues, enhanced opportunities for those with the means and capabilities to undertake microword will in fact increase digital inequality and not contribute to social and economic inclusion.

This will also require the building of citizen awareness of the **existence, opportunities and risks of microwork**. Indeed, some platforms do not pay the same wages to workers from developed countries and on those from developing countries, who are paid considerably less. hence the importance to inform (potential) workers in developing countries of possible exploitation and to encourage them to use platforms with explicit non-discriminatory internal rules (minimum wage, etc.) and where possible to enforce compliance with local industrial policies and law.

ISSUES TO INVESTIGATE IN FUTURE RESEARCH

This very early attempt to understand the dynamics of microwork in Africa, highlight more questions probably than answers. This work may be able to contribute to empirical studies on flow of values, who create it, who capture it and impact on local economies and communities (Graham, 2017, impact on livelihood)

Following the World Bank call for further research (2015, online outsourcing), additional research would be needed to understand the microworker profile across platforms: possible extension on workers demographics for the ILO.

Most importantly, further research is required to create governance frameworks that will created the trusted environments required for widespread use of the Internet, include digital rights frameworks, labour and taxation regimes that prevent the exploitation of African resources without some contribution to their sustainability, while ensuring that these are flexible and adaptive to the changing Internet environment and to the complementary function global platforms can play in the area of stimulating Internet take up and innovation.

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BIBLIOGRAPHY

CloudFactory, Social Impact Report 2015, accessed August 1st 2017, https://blog.cloudfactory.com/social-impact-report-2015

Galperin H., C. Greppi; Geographical discrimination in the gig economy

Galperin H., C. Greppi, Are online platforms really creating a frictionless global labor market?

Graham, M. and Anwar, M. A. (2018: forthcoming) Labour, in Ash, Kitchin and Leszczynski (eds) 'Digital geographies', Sage: London.

Graham M., Hjorth I., Lehdonvirta V., Digital labour and development: impacts of global digital labour platforms and the gig economy on worker livelihoods, 2017, Vol. 23(2) 135–162

Graham, M., Lehdonvirta, V., Wood, A., Barnard, H., Hjorth, I., Simon, D. P. (2017). The Risks and Rewards of Online Gig Work At The Global Margins. Oxford: Oxford Internet Institute. https://www.oii.ox.ac.uk/publications/gigwork.pdf (accessed on July 15th 2017)

Hudson R (2001) Producing Places. New York: Guilford Press

International Monetary Fund, Sub-Saharan Africa: Restarting the growth Engine, Regional Economic Outlook, World Economic and Financial Surveys, 2017

Ipeirotis, P. (2010) The New Demographics of Mechanical Turk. http://behind-the-enemy-lines. blogspot.com/2010/03/new-demographics-of-mechanical-turk.html (accessed July 26, 2017)

Ipeirotis, P. "Analyzing the Amazon Mechanical Turk Marketplace", ACM XRDS, Vol 17, Issue 2, Winter 2010, pp 16-21.

Kässi, O. & Lehdonvirta, V. (2016) Online Labour Index: Measuring the Online Gig Economy for Policy and Research. Paper presented at Internet, Politics & Policy 2016, 22-23 September, Oxford, UK. http://ilabour.oii.ox.ac.uk/online-labour-index/

Kuek S. C., Paradi-Guilford C., Fayomi T., Imaizumi S., Ipeirotis P., The global opportunity in online sourcing, June 2015, World Bank Group

Kuhn, Peter and Mansour, Hani, Is Internet Job Search Still Ineffective? (December 2014). The Economic Journal, Vol. 124, Issue 581, pp. 1213-1233, 2014. Available at SSRN: https://ssrn.com/abstract=2536177 or http://dx.doi.org/10.1111/ecoj.12119

Lehdonvirta, Vili. & Ernkvist, Mirko, 2011. Converting the Virtual Economy into Development Potential: Knowledge Map
of the Virtual Economy, Washington, DC; infoDev / World Bank.
Available at http://www.infodev.org/publications

Meyers L., Minic B., Rafter L., Hurst T., The nexus of microwork and impact sourcing, Implications for youth employment, Global Center for Youth Employment, Banyan Global, March 2017

Stevenson, B. (2009), The internet and job search, in D.H. Auto (ed.), Studies of labor market intermediation, Chicago: University of Chicago Press, pp 67-86

World Bank ICT Sector Unit, Microwork, game-changing opportunities for youth employment in the Middle East and North Africa, infodev.org/en/Publication.1076.html

World Bank, Digital Dividends, World Development Report, 2016