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Digitization and the informal economy: Scope and measurement challenges

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Abstract:

It has been more than 50 years since informality was incorporated within the conceptual framework and toolkit for the measurement of labour force and employment, and even before within the system of national accounts and the measurement of GDP.
This paper asks whether these concepts and the related methods of measurement are still valid in times when digitization and the economy of platforms are expanding rapidly and transforming the world of work all over the world.
After a brief recall of the definitions in use, of the various components of the informal economy and of its magnitude and trends, the paper highlights the contexts and determinants of the rise of employment in the informal economy over the last decades until the digitization revolution and the development of the economy of platforms. Digitization, the development of artificial intelligence, and the expansion of platforms may represent a landmark and transform in depth the informal economy by shifting its focus from the developing countries to the developed and reshoring a part of informal employment in the developed economies. A new challenge opens up as regards the measurement of work, more and more fragmented and more and more invisible though not operating in the moonlight but in the open sun. The adaptation of traditional concepts and tools coined for the measurement of work may not be enough to disentangle the positive and the negative aspects of the so-called “gig economy”, making it necessary to resort on big data for a better assessment of the volume of work performed through the digital platforms and of its main features.

Keywords:
Informal employment; economy of platforms; gig economy; crowdworkers; clickworkers

Introduction

It has been more than 50 years since informality was incorporated within the conceptual framework and toolkit for the measurement of labour force and employment, and even before within the system of national accounts and the measurement of GDP. As a matter of fact, the concept of informal sector was coined at the beginning of the 1970s (by the World Employment Programme in Kenya: ILO 1972), but the 1968 revision of the System of National Accounts already contained the main elements that would later be used to define the concept (UN 1968). As regards the conceptual framework of labour force and employment, the 15th International Conference of Labour Statisticians (ICLS) adopted a definition of employment in the informal sector in 1993 (ILO 1993) and the 17th ICLS drafted guidelines for a definition of informal employment in 2003 (ILO 2003), whereas the 1993 revision of the SNA included the definition of informal sector as a sub-sector of the household institutional sector and the 2008 revision (SNA 2008) dedicated a full chapter (Ch. 25) on the informal aspects of the economy. This paper asks whether these concepts and the related methods of measurement are still valid in times when digitization and the economy of platforms are expanding rapidly and transforming the world of work all over the world.

After a brief recall of the definitions in use, of the various components of the informal economy and of its magnitude and trends, we will highlight the contexts and determinants of the rise of employment in the informal economy over the last decades until the digitization revolution and the development of the economy of platforms. Digitization, the development of artificial intelligence, and the expansion of platforms may represent a landmark and transform in depth the informal economy by shifting its focus from the developing countries to the developed and relocating a part of informal employment in the developed economies. A new challenge opens up as regards the measurement of work, more and more fragmented and more and more invisible though not operating in the moonlight but in the open sun.

1) The now long ascension of the concept of informality.

It has been more than 50 years since informality was incorporated within the conceptual framework and toolkit for the measurement of labour force and employment, and even earlier within the system of national accounts and the measurement of GDP. As a matter of fact, the concept of informal sector was coined at the beginning of the 1970s (by the World Employment Programme in Kenya: ILO 1972), but the 1968 revision of the System of National Accounts already contained the main elements that would later be used to define the concept (UN 1968). As regards the conceptual framework of labour force and employment, employment in the informal economy has been defined by the 1993 and 2003 International Conferences of Labour Statisticians (ICLS). These two conferences have distinguished employment in the informal sector (ILO 1993) and informal employment (ILO 2003). *Employment in the informal sector* (1993) – an enterprise-based definition - is comprised of the small individual micro-enterprises that do not hold a complete set of accounts, employ less than 5 permanent employees, or are not registered or do not register their employees. *Informal employment* (2003) – an individual/job based definition - is a broader concept, which includes informal workers outside the informal sector (i.e. in the formal sector or in the households) who are not contributing to, and are not covered by social protection or who do not have written contracts. *Employment in the informal economy* is a combination of both definitions (not exactly a simple addition because the two concepts overlap).

On the National Accounts side, the primacy of the 1968 revision of the System of National accounts in tackling the issue was followed by the 1993 revision of the SNA that included the definition of informal sector as a sub-sector of the household institutional sector and the 2008 revision (SNA 2008) that dedicated a full chapter (Ch. 25) on the informal aspects of the economy.

Without entering into the details of these definitions (for more details, one can refer to ILO 2013 or Charmes 2019 and 2020), the main components of the informal economy can now be established and measured worldwide: 1) employment in the informal sector, which is comprised of micro-businesses of own account workers or employers with 5 or less permanent workers, not holding a complete set of accounts or not registered or not

registering their paid employees; 2) informal employment in the formal sector (workers and their employers not contributing to social protection); 3) informal domestic workers in the households; 4) producers of goods for own final use.
Recent compilations by the ILO (2018) estimate at more than 2 billion (61.2% of the 3.3 billion employed population across the world) the number of women and men working in the informal economy (agricultural and non-agricultural), and at nearly 1.2 billion the number employed in the non-agricultural informal economy (50.5% of total non-agricultural employment). Globally it is in sub-Saharan Africa that the informal employment rates are at the highest (75%) against 64% in Southern and South-Eastern Asia, 55% in Latin America and 22% in transition economies (Charmes 2020).
In terms of contribution to GDP, estimates range from 19% (in transition economies) to 29% (in Latin America) and to 65% (in sub-Saharan Africa) of total GDP and from 14% (in transition economies) to 26% in Latin America and Asia) and to 38% (in sub-Saharan Africa) in terms of non-agricultural value added (Charmes 2020).
Interestingly, the higher the share of employment in the informal economy in a region, the higher the share of micro-businesses of the informal sector (4/5 of total informal employment in sub-Saharan Africa against ½ in transition economies).
The 2018 ILO estimates extended the measurement procedures to developed countries (a debatable issue) and ended up with rates of informal employment ranging from 5.1% in Finland up to 18.3% in Italy, 25.5% in Greece and 26.8% in Spain (ILO 2018).
Trends in informal employment as a share of non-agricultural employment and over several decades are upward-oriented in Northern Africa, in Southern and South-Eastern Asia and in transition economies, downward-oriented in Latin America, Western and Central Asia, and rather stable in sub-Saharan Africa.

2) Context of the emergence and growth of the informal economy

The notion of informality emerged in developing countries and especially in sub-Saharan Africa to reflect economic and social changes occurring with the expansion of the market economy in societies where rural livelihoods and pre-capitalist modes of production still predominated. Over the 1960s-1970s rural-urban migration was the historic process that was meant to provide nascent industries with the required cheap manpower and the consecutive labour surplus could by no means translate into open unemployment in countries where unemployment benefits do not exist: the informal activities were subsistence/survival activities characterised by their small size and low level of technology. Existing crafts and trades help to absorb the surplus of labour, either by hiring or by accepting this competition by below.
With the expansion of the market economy and the globalisation process, along with its succession of crises (oil, debt, structural adjustments, until the 2009 financial crisis), the informal sector became the cradle that hosted newly created micro-businesses in periods of economic growth and also a safety valve through which formal enterprises struggling with competition from outside as well as from within hired low paid workers or sub-contracted them as own-account workers at lower cost, in periods of recession. The various economic actors found in the informal economy opportunities of resilience: micro-businesses tended to behave pro-cyclically, whereas informal employment in the formal sector behaved counter-cyclically, the combination of both components influencing the overall growth or recession of the informal economy.
With the entry into the digital revolution, the question arose whether digitisation can impact directly or indirectly the informal economy. By definition the informal economy is characterised by labour-intensive and adapted rather than capital-intensive technologies. Therefore, technological change seems antinomic to informality. However, technological change may intervene in several aspects of informality. Firstly, cellphones and smartphones have for long begun to be in use among the operators of the informal sector and more broadly among the populations in developing countries, even in rural areas. Secondly, it has been a long time that digital skills have penetrated the informal economy, such types of skills having failed to protect from unemployment and to guarantee formal employment to their

holders. Thirdly, digitization facilitates home-based work and its extreme fragmentation, two characteristics of informal work.

3) Challenges posed to the informal economy by the digital revolution in terms of scope and measurement

The digital platform economy is mainly comprised of 1) web-based platforms, where work is outsourced through an open call to a geographically dispersed crowd (“crowdwork”) generally for performing microtasks such as collection of data and other information to train machine learning algorithms, tasks related to programming and coding or to solving mathematical or logical problems, classification of entities into groups (bookmarking, tagging, classifying, pinning), detecting if any of the material posted on the website might violate local laws, social norms or the platform’s guidelines, verifying and “cleaning” existing data or classifications, or confirming the validity of some content; 2) location-based applications (apps) which allocate work to individuals in a specific geographical area for example for taxi or delivery services (for example Uber and Deliveroo).

Statistics are lacking for a complete assessment of the volumes of employment in the digital economy or related to the digital economy (and even more regarding the its informal segment). The recent ILO report on digital platforms (ILO 2021) enumerates estimates undertaken by various authors and institutions in various countries, that range from 0.5% of labour force, 1% of total employment (in the US 2017) to 4.5% of total adult (or working age) population (in Sweden 2016) and 12% in seven EU countries in 2016-17, and even 44% in the US. All depends on the definitions and applied criteria: in the latter case cited (44%), it is the proportion of adults having purchased or used one of the services of the platforms. For the US 2017 estimate (1% of total employment), it comes from the supplement of the labour force survey conducted by the Bureau of Labor Statistics and covers electronically mediated workers doing short jobs or tasks through websites or mobile apps that both connect them with customers and arrange payment for the tasks, on a reference week. And for Sweden 2016 (4.5%), it is the proportion of adult population who performed work via digital platforms during past year.

Furthermore, the digital work is comprised of a variety of occupations, from the casual click workers (paid by the click for microtasks) to the drivers, deliverers, up to artists and highly skilled freelance consultants.

Several difficulties arise when it comes to identify which of these jobs can be defined as informal, all the more so as they may be temporary and occasional, performed by persons who have another main job and practice digital work for extra earnings. And among digital platforms, it must be distinguished between the labour platforms and the capital platforms.

The digital economy and the economy of platforms affect the magnitude and the composition of the informal economy in several ways: 1) by the expansion of the number of own-account workers and more generally the self-employed as opposed to the paid employees; 2) by the putting out system that transform the paid workers into outworkers and especially home-based workers; 3) by the extreme fragmentation of the tasks and the related remuneration by the task, by the piece and even by the click; 4) by reaching a potential workforce outside the traditional labour force and on a worldwide scale.

For these very reasons, the digital economy extends the scope of employment beyond the traditional definition of the labour force, by involving the unemployed (who can keep their status of unemployed while working at home on a piece rate basis), the inactive (especially women restrained by their unpaid domestic and care tasks and attracted by flexible working hours) and also the employed enticed by secondary income opportunities. The price (for the workers) or the gain (for the contractors) lies in low pay, low (or even absence of) social contributions.

In addition, the digital platforms as well as the medium and large companies, but also the micro-businesses, push to mobilise a casual workforce in developing countries and in developed countries, either directly (through what is euphemistically called non-standard forms of work), or mostly indirectly through a new ‘putting-out system’ that consists in sub-contracting to smaller firms, intermediaries, informal enterprises with cascading effects so that at the end of the chain one can find home-based workers or irregular workers with neither permits nor rights, including child labour and a high proportion of women, even in countries where their participation in the labour market is very low. If digital platform deal with individuals, they are in fact dealing with self-entrepreneurs or even, without knowing it, with micro-businesses of intermediation.To the extent that these sub-contracting or sub-contracted firms or arrangements are informal, the growth of this workforce is associated with the expansion of the informal economy. Paradoxically, the slow decline of self-employment in developed countries could be interpreted as contradicting the rise of the economy of platforms, but it must be kept in mind that in some countries the traditional own-account workers have been offered to become the unique manager/employee of their enterprise, a means of accessing to the more interesting social protection schemes. Moreover, the Covid-19 pandemic that resulted in an expansion of teleworking has also been an opportunity for digital platforms.

As for sharecropping in agriculture, ancient forms of income sharing (that exist in many activities of the informal sector) prosper on such profitable ground: migrant workers with no work permits are many to find ways of earning a living in such jobs. Intermediaries acquire the apps, provide the means of production (bicycle, motorcycle, car or computer) and retain a proportion of the final worker's gains, just as the land owner retains half of the production from the sharecropper: self-employment is limited to a role of intermediary hiring low-paid informal employees. And in the case of clickwork, the direct clickworker (registered on the platform) may mobilise other members of the family, giving rise to an invisible unpaid/contributing workforce, given that the platform is unable and unwilling to know who is performing the task.

The development of these new commercial forms of work arrangements (in place of the labour contracts) have made obsolete the usual concepts and tools for the measurement of work. Slowly, the traditional instruments are adapted, for instance it has been proposed to change the International Classification of Status in Employment (ICSE) for a classification of work relationships that, among other suggestions and besides independent own-account workers, add a new category of dependent contractors defined as follows:

> Dependent contractors are employed for profit and paid by way of a commercial transaction. They are therefore usually responsible for arranging their own social insurance and other social contributions.
> One or more of the following characteristics may be relevant for their identification in statistical collections, depending on the national context:
> (a) their work is organized or supervised by another economic unit as a client, or as an entity that mediates access to clients;
> (b) the price paid for the goods produced or services provided is determined by the client or an intermediary;
> (c) access to raw materials, equipment or capital items is controlled by the client or an intermediary;
> (d) their actual working arrangements or conditions may closely resemble those of employees;
> Included among dependent contractors are dependent workers who do not have a contract of employment, and
> (a) are paid only by the piece or commission, and do not benefit from social contributions paid by the economic unit paying for the work; or
> (b) are paid only by gratuities (tips) from clients.
> Source: ILO 2018b

But it will probably take years before countries introduce these changes in their own system of household surveys.

In addition, far from being new, these features of work in the gig economy imply that informal sector and informal employment surveys take them into account in their design.

Surveys carried out on platforms' workers remain difficult. The recent ILO report (ILO 2021) provides examples of such difficulties: because there is no database on platform workers, the survey, which is one of the first comparative survey of this type, was advertised on the platforms at different times of the day, as a paid task to perform and workers self-select to participate in the survey. It happened that some respondents used multiple accounts or platforms to complete the survey several times. For these reasons, representativeness is far from being ensured so that the recourse to big data produced by the platforms will remain an indispensable means for assessing the magnitude of the work they generate.

4) In conclusion, despite an abundant literature stemming from scholars, big consulting firms and statistical institutions, little is known on the real magnitude of work in the digital economy, and especially on the relative size of its informal component. Until now, the impact of the development of the digital and platform economy on statistical concepts and methodologies remains confined to a tentative revision of the International Classification of Status in Employment (ICSE) and occasional supplementary sets of questions or modules in labour force surveys. However, the pervasive character of the digital economy implies more efforts in the delimitation of scope and coverage of surveys and in harmonisation of the approach. Because the phenomenon encompasses the traditional limits of labour force definitions, it should be recommended to extend the set of questions designed to capture it in household surveys to the entire population aged 15+ (or the working age population) and to locate these sets of questions in an ICT module rather than in the labour force module in order to better take into account its fragmented, opportune, occasional and sometimes ambivalent character between leisure and work. The initial introductory question could be labelled as follows: Have you ever performed any task for pay, profit or family gain (in cash or in kind) on a digital platform (provide examples) during past year/past month/past week, at least for one hour? Next questions would ensure the adequate measure of the volume of work and the consistency with the labour force module for further reconciliation.

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