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Evaluating the relationship between social exclusion and participation in the informal sector in the European Union

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Abstract

Purpose
This paper evaluates who engages in informal work. The intention in doing so is to analyse whether important causal factors of social exclusion such as age, education, gender and employment status, influence participation in informal work in the European Union.

Methodology
To do this, a 2013 Eurobarometer survey of who participates in undeclared work in 28 European member states is reported.

Findings
Using multilevel mixed-effects logistic regression analysis, the finding is that although some marginalised groups (the unemployed, those having difficulties paying their household bills, the working class and younger age groups) are significantly more likely to participate in the informal sector, others are not (those with less formal education and living in rural areas) and yet others (women and people in deprived European regions) are significantly less likely to participate.

Research implications
The outcome is a call for a nuanced and variegated understanding of the relationship between participation in the informal sector and social exclusion.

Practical implications
These results display the specific populations that need targeting when seeking to tackle informal work, revealing for example that the current the allocation of European funds for tackling informal work in poorer EU regions is mistaken, but that the targeting of the unemployed is not and current policy initiatives such as smoothing the transition from unemployment to self-employment worthwhile.

Originality/value
This is the first extensive evaluation of the relationship between participation in the informal sector and social exclusion at the level of the European Union

Key words: informal economy; undeclared work; shadow economy; social exclusion; European Union.

Introduction

For several decades, the dominant view has been that work in the informal sector is disproportionately conducted by populations living in marginalised areas, such as less affluent countries and peripheral rural areas (ILO, 2013), and marginalised socio-demographic and socio-economic groups, such as women, unemployed people, the less educated and those in financial difficulty (Brill, 2011; Slavnic, 2010; Taiwo, 2013). Until now nevertheless, the only evidence supporting this view has been small-scale surveys conducted in particular localities or populations (Kesteloot and Meert, 1999; Leonard, 1994; Stănculescu, 2005). The aim of this paper in consequence, is to evaluate who participates in informal work so as to evaluate whether important causal factors of social exclusion such as age, education, gender and employment status, influence participation in informal work. To do this, an extensive data set is used, namely a cross-national survey conducted in 28 European countries involving 27,563 face-to-face interviews.

In the first section therefore, a brief review is undertaken of the competing views on who participates in informal work. This will reveal that although the dominant view is that marginalised populations are more likely to participate in the informal sector, the advent of agency-oriented explanations which view such endeavour as conducted out of choice rather than necessity, have led to questions being raised about whether this is the case. Revealing that the only evidence derives from small-scale surveys of specific localities or populations, the second section introduces an extensive 2013 survey of participation in the informal sector across 28 European countries. The third section then reports the results. This displays that although some marginal groups are significantly more likely to participate in informal work, others are not and yet others significantly less likely. The fourth and final section then concludes by discussing the theoretical and policy implications of these findings.

Before commencing however, the key terms used in this paper need to be defined. Reflecting the consensus in the literature, the informal sector is here defined as paid activities not declared to the authorities for tax, social security and/or labour law purposes when they should be declared (European Commission, 2014; OECD, 2012; Williams, 2004). Social exclusion, meanwhile, here refers to "the situation in which certain members of a society are, or become, separated from much that comprises the normal 'round' of living and working within that society" (Philo, 2000: 751). Until now, a wide range of socio-demographic, socio-economic and geographical causal factors of social exclusion have been identified, including age, marital status, education, gender, employment status and income, with younger age groups, single, poorly educated, women, the unemployed and poor viewed as more likely to witness social exclusion (Levitas, 1998).

Social exclusion and the informal sector: a review of the theories and evidence

Theoretical perspectives

When theorising the relationship between social exclusion and the informal sector, two competing perspectives exist. On the one hand, and grounded in a view that participation in the informal sector is necessity-driven, marginalised populations are theorised as more likely to participate in the informal sector. On the other hand, and grounded in more agency-oriented explanations which view such endeavour as conducted out of choice, marginalised populations are theorised not to be more likely to do so. Each is here reviewed in turn.

The view that participation in the informal sector is concentrated in marginalised populations emerges out of, and is a central tenet of, two dominant theorisations of the informal sector. For modernisation theory, the informal sector is a leftover of a previous mode of production that persists in marginal enclaves that have not yet been subjected to

modernisation and economic development. The informal sector is thus viewed as typically conducted by for example uneducated people in small unproductive enterprises in separate 'bottom of the pyramid' markets producing low-quality products for low-income consumers using little capital and adding little value (La Porta and Schleifer, 2014).

For scholars adopting a political economy perspective, meanwhile, the informal sector is viewed as an inherent feature and direct by-product of a deregulated open world economy where outsourcing and subcontracting have become a primary way in which informal work has been integrated into contemporary capitalism so as to reduce production costs (Castells and Portes, 1989; Davis, 2006; Slavnic, 2010; Taiwo, 2013). Similarly, the resultant diminishing state involvement in social protection and economic intervention accompanying de-regulation are seen to have led to those excluded from the formal labour market and social protection being pushed into the informal sector as a survival strategy (ILO, 2014; Taiwo, 2013). Informal work therefore, is again viewed in this political economy perspective as 'necessity-driven' endeavour conducted by marginalised populations excluded from the formal labour market and social protection systems (Castells and Portes, 1989; Gallin, 2001).

Meanwhile, the questioning of whether the informal sector is concentrated amongst the socially excluded arises out of two agency-oriented theorisations. On the one hand, a rational economic actor perspective has depicted informal workers as rational actors who, after weighing up the costs of informal work and benefits of formality, decide not to operate in the formal economy. For these scholars, burdensome regulations, high taxes and corruption among public sector officials lead people to voluntarily exit the formal sector and to operate informally (De Soto, 1989, 2001; Nwabuzor, 2005). On the other hand, and drawing inspiration from institutional theory (North, 1990), another agency-oriented group of scholars adopting a more 'social actor' approach, view informal work as illegal but socially legitimate endeavour that arises when the formal institutions are not in symmetry with the norms, values and beliefs that constitute the informal institutions (Kistruck et al., 2015; Webb et al., 2009). When there is symmetry between formal and informal institutions, informal work only occurs unintentionally such as due to a lack of awareness of the laws and regulations. When there is institutional asymmetry however, the result is more informal work. Indeed, the greater the degree of asymmetry, the greater is the level of informal work (Williams and Shahid, 2016).

Review of the evidence

When examining the evidence, firstly, there are studies which support the view that participation is concentrated among the socially excluded by showing how participation in the informal sector is greater in less affluent areas at a variety of spatial scales, ranging from a comparison of global regions (ILO, 2012), cross-national variations (Schneider and Williams, 2013; Williams, 2015), variations across localities (Kesteloot and Meert, 1999; Williams and Windebank, 2001) or urban-rural variations (Button, 1984; Williams, 2010). Similar evidence exists when examining how participation in the informal sector varies by socio-demographic and socio-economic characteristics. For example, unemployed people are found to be more likely to participate in the informal sector than those in formal jobs (Brill, 2011; Castells and Portes, 1989; Leonard, 1994; Slavnic, 2010; Taiwo, 2013; Williams and Nadin,, 2014), women more likely to participate than men (ILO, 2013; Leonard, 1994; Stănculescu, 2004) and those with financial difficulties more likely than more affluent population groups (Barbour and Llanes, 2013).

However, there is also evidence that informal work is not disproportionately conducted by socially excluded populations. Several studies reveal that informal work is more prevalent in affluent regions and localities (Evans et al., 2006; van Geuns et al., 1987; Williams, 2004; Williams and Windebank, 2001). Similarly, it has been sometimes asserted that unemployed people are less likely to participate than people who have formal jobs

(MacDonald, 1994; Pahl, 1984; Renooy, 1990; Williams, 2001). This is the case for at least four reasons: they lack the resources (such as car, tools) necessary to engage in a wide range of informal work (Pahl, 1984; Williams, 2004); they receive and hear about fewer opportunities to do so due to their smaller and more confined social networks (Komter, 1996; Morris, 1994; Williams, 2006); they lack the skills and competencies to conduct informal work (Fortin et al., 1996; Renooy, 1990) since if their skills and competencies are inappropriate for finding formal employment, there is no reason to believe that they are appropriate for finding informal work; and they fear being reported to the authorities, not least because claiming welfare benefits illicitly is popularly considered a more serious offence than tax evasion (Cook, 1997; Williams, 2004). It has also been found that women are less likely to participate in informal work than men (Lemieux et al., 1994; McInnis-Dittrich, 1995) and those with financial difficulties less likely to participate than more affluent population groups (Williams, 2004).

Until now, most studies reported above of who participates in informal work have been small-scale surveys of specific localities and/or population groups. Few, if any, extensive cross-national surveys have been conducted that examine who participates in informal work. Here, therefore, we evaluate who participates in informal work and more particularly, the dominant view that socially excluded groups are more likely to participate, by testing the following propositions:

Socio-demographic hypotheses

H1.1: Women are more likely to participate in informal work than men, ceteris paribus.

H1.2: Younger age groups are more likely to participate in informal work than older age groups, ceteris paribus.

H1.3: Those unmarried are more likely to participate in informal work than married individuals, ceteris paribus.

H1.4: Those who self-define themselves as working class are more likely to participate in informal work than those defining themselves as middle or higher class, ceteris paribus.

H1.5: Those with fewer years in formal education are more likely to participate in informal work than those who spent longer in formal education, ceteris paribus.

H1.6: Single person households are more likely to participate in informal work than households with more than one occupant, ceteris paribus.

H1.7: Households with children are more likely to participate in informal work than households with no children, ceteris paribus.

H1.8h: Informal work will be lower when there is higher tax morale, ceteris paribus.

Socio-economic hypotheses

H2.1: Unemployed individuals are more likely to participate in informal work than those employed, ceteris paribus.

H2.2: Those with financial difficulties are more likely to participate in informal work than those without financial difficulties, ceteris paribus.

Spatial hypotheses

H3.1: Those living in rural areas are more likely to participate in informal work than those living in urban areas, ceteris paribus.

H3.2: Those living in less affluent European regions are more likely to participate in informal work than those living in more affluent EU regions, ceteris paribus.

Methodology

To evaluate these hypotheses regarding who participates in informal work, we here use an extensive data-set, namely Special Eurobarometer No. 402, conducted in all 28 European Union member states in 2013. Using the same sampling method as other Eurobarometer surveys, 27,563 face-to-face interviews were undertaken during April and May 2013, with some 500 conducted in smaller countries and 1,500 in larger nations. In every country, a multi-stage random (probability) sampling methodology was used. The weighting process used ensures that on the issues of gender, age, region and locality size, the sample was proportionate to the universe in each country. For the univariate analysis therefore, we employed the sampling weighting scheme as the literature suggests (Solon et al., 2013; Winship and Radbill, 1994). For the multivariate analysis however, there is a debate over whether such a weighting scheme should be used (Solon et al., 2013; Winship and Radbill, 1994; Pfeffermann, 1993). Given that the vast majority of this literature specifies that weighting is not recommended, we here decided not to use the weighting scheme for the multivariate analysis.

To collect data on participation in informal work, the face-to-face interviews were conducted in the national language with adults aged 15 years and older. Given the sensitive nature of the issue under investigation, the interview schedule built rapport with the participants before posing the more sensitive questions regarding their participation in informal work. Pursuing a gradual approach to the more sensitive questions, the interview schedule thus started by asking about their attitudes towards informal work, followed by questions on whether they had purchased goods and services from the informal sector. Only then were questions put regarding their participation in informal work. Analysing the responses of interviewers regarding the perceived reliability of the interviews, the finding is that cooperation was deemed bad in only 1.2 per cent of the interviews. Cooperation was deemed excellent in 61.9 per cent, fair in 29 per cent and average in 7.9 per cent.

Given this, attention can turn to an analysis of the results. To do this, we here use multilevel mixed-effects logistic regression analysis. The dependent variable measures whether respondents participate in informal work and is based on the question 'Apart from regular employment, have you yourself carried out any undeclared paid activities in the last 12 months?'. The independent variables used to analyse who engages, and whether marginalised populations are more likely to participate in informal work, are divided into socio-demographic, socio-economic and spatial variables and are as follows:

Socio-demographic independent variables:

- Gender (men): a dummy variable with value 1 for males and 0 for females.
- Age (age): a categorical variable for the age of the respondent with value 1 for those aged 15 to 24 years old, value 2 for those aged 25 to 34, value 3 for those aged 35 to 44, value 4 for those aged 45 to 54, value 5 for those aged 55 to 64, and value 6 for those over 65 years old.
- Marital Status (marital): a categorical variable for the marital status of the respondent with value 1 for married/ remarried individuals, value 2 for cohabiters, value 3 for singles, value 4 for those separated or divorced, and value 5 for widowed and for other form of marital status.
- Social class (sclass): a categorical variable for the respondent perception regarding social class of society to which s/he belongs with value 1 for the working class of society, value 2 for middle class of society, value 3 for higher class of society, and value 4 for other or none.

- Age when stopped full time education (educ): a categorical variable for age of the respondent when stopped full time education with value 1 for 15 years old and under, value 2 for 16-19 years old, value 3 for 20 years old or over, and value 4 for 'still studying'.
- People 15+ years in own household (household): a categorical variable for people 15+ years in respondent`s household (including the respondent) with value 1 for one person, value 2 for two persons, value 3 for 3 persons, and value 4 for 4 persons or more.
- Children (up to 14 years old in the household) (children): a categorical variable for number of children with value 1 for individuals with no children, value 2 for the presence of children less than 10 years old live in respondent`s household, value 3 for the presence of children aged 10 to 14 years old live in respondent`s household and value 4 for the presence of children less than 10 years old and children aged 10 to 14 years old live in respondent`s household.
- Tax morality index (taxmorale): Constructed index of self-reported tolerance towards tax non-compliance.

Socio-economic independent variables:

- Employment status (employed): a dummy variable with value 1 for employed respondents and 0 for unemployed respondents.
- Difficulties paying bills (bills): a categorical variable for whether the respondent witnessed difficulties in paying bills with value 1 for having difficulties most of the time, value 2 for occasionally, and value 3 for almost never/never.

Spatial independent variables:

- Region (region): a categorical variable for the region where the respondent lives with value 1 for the Western Europe region, value 2 for the Southern Europe region, value 3 for the East-Central Europe region, and value 4 for the Nordic nations region.
- Area respondent lives (area): a categorical variable for the urban/rural area where the respondent lives with value 1 for rural area or village, value 2 for small or middle sized town, and value 3 for large urban area.

Below, we report the findings.

Findings: the participation of socially excluded populations in informal work

Descriptive statistics

Examining the 27,563 face-to-face interviews, and as Table 1 displays, 3.75 per cent of participants report undertaking informal work during the past 12 months. A further 2.9 per cent refused to answer or said that they did not know. These are lower-bound estimates of the level of participation in informal work, not least because the primer questions used as a lead-in to the more sensitive questions were shorter in this survey than previous surveys (Pedersen, 2003), meaning that there was less opportunity to build up rapport and trust with the respondent. As such, the results need to be treated cautiously. Even if participation in informal work is a sensitive issue and the differences between the reported situation and lived practice might be significant, this survey finds that 1 in 26 citizens of the 28 member states of the European Union (EU-28) reported participating in informal work in the past year. The mean earnings from informal work are €414, with 20 per cent earning in the range of €1-100, 9 per cent €101-200 and 17 per cent between €201-500. Therefore, 46 per cent of Europeans earn €500 or less from informal work. A further 11 per cent earn €501-1000 and just 12 per cent earned more than €1000. Some 31 per cent nevertheless, either do not remember how much they earned, do not know or refused to answer.

INSERT TABLE 1 HERE

To start to evaluate the relationship between participation in the informal sector and social exclusion, Table 1 reports the cross-national variations so as to understand whether the poorer East-Central European and Southern European countries have higher participation rates than the more affluent Nordic and Western European nations. The finding is that the most affluent European region, namely the Nordic nations, has the highest participation rate in informal work (6 per cent) compared with 4 per cent in East-Central Europe is 4 per cent, 4 per cent in Western Europe and 3 per cent in Southern Europe. This therefore negates the view that poorer European regions have higher participation rates in informal work. This is further reinforced when average earnings are examined. Those living in Nordic nations earn on average €511 compared with €459 in East-Central Europe, €489 in Southern Europe and €391 in Western Europe. As such, affluent European regions have higher participation rates in informal work than less affluent European regions and earn more from such work. It is important to note that we here only examine how participation rates vary. The varying size of the informal economy cannot be read off from variations in participation rates.

Turning to socio-demographic, socio-economic and other forms of spatial variation, Table 2 displays that, contrary to the view that informal work is concentrated in socially excluded groups, participation in informal work is higher amongst men than women (5 per cent of men participated in informal work over the past 12 months but only 3 per cent of women) and women earn 77 per cent less than men from such work. Furthermore, the unemployed are no more likely to participate in informal work than the employed and even when they do, their earnings are 86 per cent the amount earned by the employed. Neither do respondents living in rural areas participate in informal work to a greater extent than respondents living in urban areas. The tentative suggestion from these descriptive statistics therefore, is that when examining gender, employment status and the urban/rural divide, participation is not greater among women, the unemployed and rural areas.

INSERT TABLE 2 HERE

However, when examining other population groups, participation does appear to be greater among those seen as relatively excluded. Not only are younger age groups more likely to participate in informal work, but so too do those who are not married compared with married/remarried participants, those who self-define themselves as working class compared with those defining themselves as middle or higher class, those with children, and those who have difficulty paying bills compared with those who seldom have difficulties. For all these population groups, participation in informal work is greater.

Analysing these descriptive statistics therefore, the tentative conclusion is that it is not possible to assert that those participating in informal work are across all spatial, socio-demographic and socio-economic characteristics positively associated with social exclusion.

Analysis: are the socially excluded more likely to participate in informal work?

We here analyse the hypothesis that participation in informal work significantly varies according to individual socio-demographic, socio-economic and spatial characteristics when other variables are held constant. Given the hierarchical structure of the data (individuals nested within countries), for the multivariate analysis, we employ a multilevel model. As the dependent variable is dichotomous, we use a multilevel mixed-effects logistic regression (Snijders and Bosker, 2012). The first stage in the analysis was to estimate a baseline random intercept model with no explanatory variables to identify whether a multi-level approach was

appropriate. This analysis indicated that over 9 per cent of the variance in participation in informal work was accounted for at the country level (Wald = 10.915, df=1, p<0.001), indicating significant variation between countries in the prevalence of participation in cash-in hand. Therefore, the multilevel mixed-effects logistic regression should be the one used. Secondly, to analyse the effect of the various independent variables on participation in informal work when other variables are held constant, an additive model is used. The first stage model (M1) includes solely the socio-demographic factors to examine their effects while the second stage model (M2) adds socio-economic factors alongside the socio-demographic factors, and the third stage model (M3) adds spatial factors to the socio-demographic and socio-economic factors to examine their influence on participation in informal work.

Thus, our final logit random intercept model specification including both, individual level explanatory variables and country level explanatory variables is the following (Steele, 2009):

$$\log\left(\frac{\pi_{ij}}{1-\pi_{ij}}\right) = \beta_0 + \beta_1 X_{ij} + \beta_2 X_j + u_j$$

where, β_0 is the overall intercept, β_1 is the cluster specific effect, β_2 is the contextual effect, X_{ij} is the vector containing individual level explanatory variables, X_j is the vector containing country level explanatory variables and u_j is the group (random) effect.

According to the hypotheses and the variables listed above we expect that the full test equation will have the following derivation of the signs:

$$\log\left(\frac{\pi_{ij}}{1-\pi_{ij}}\right) = \beta_0 - \beta_1 men_{ij} - \beta_2 age2_{ij} - \beta_3 age3_{ij} - \beta_4 age4_{ij} - \beta_5 age5_{ij} - \beta_6 age6_{ij} + \beta_7 marital2_{ij} + \beta_8 marital3_{ij} + \beta_9 marital4_{ij} + \beta_{10} marital5_{ij} - \beta_{11} sclass2_{ij} - \beta_{12} sclass3_{ij} - \beta_{13} sclass4_{ij} - \beta_{14} educ2_{ij} - \beta_{15} educ3_{ij} - \beta_{16} educ4_{ij} - \beta_{17} household2_{ij} - \beta_{18} household3_{ij} - \beta_{19} household4_{ij} + \beta_{20} children2_{ij} + \beta_{21} children3_{ij} + \beta_{22} children4_{ij} + \beta_{23} taxmorale_{ij} - \beta_{24} employed_{ij} - \beta_{25} bills2_{ij} - \beta_{26} bills3_{ij} - \beta_{27} area2_{ij} - \beta_{28} area3_{ij} + \beta_{29} region2_j + \beta_{30} region3_j - \beta_{31} region4_j + u_j$$

Table 3 reports the results.

INSERT TABLE 3 HERE

Model 1 in Table 3 shows that some socio-demographic groups viewed as relatively socially excluded do indeed have higher participation rates in informal work. Not only are younger age groups significantly more likely to participate in informal work (confirming H1.2), doubtless due to their greater exclusion from the formal labour market (European Commission, 2014), but so too are those defining themselves as working class rather than middle or higher class (confirming H1.4), as are single person households more likely than households with more than one occupant (confirming H1.6), both of which might be explained in terms of the greater financial difficulties they often face in getting-by. In addition, those more tolerant of informal work and holding non-conformist attitudes towards tax compliance are more likely to participate in such endeavour (confirming H1.8), providing some support for the institutional theory explanation discussed above. That is, those marginalised in the sense that their norms, values and beliefs regarding informal work do not conform to those of the formal institutions are more likely to participate in such work (Williams and Martinez, 2014).

Other socio-demographic groups however, are not more likely to participate in informal work. Men are significantly more likely to participate in informal work than women (refuting H1.1), reflecting how the exclusion of women from the formal labour market is further compounded when examining informal work. No significant correlation with participation in informal work is found when analysing the age participants stopped education (refuting H1.5), the number of children in the household (refuting H1.7) and marital status, except amongst widowed/separated people who are more likely to participate than married/remarried people (partially confirming H1.3), again doubtless because they may need to participate in informal work to make ends meet and do so in ways not traceable by the authorities, such as for matrimony payments. As such, when considering the socio-demographic variables, the finding is that a variegated understanding of the validity of the relationship between social exclusion and participation in informal work is required. Participation is greater among some marginalised population groups (such as younger people, those defining themselves as working class, single person households and those with non-conformist attitudes), but not others (such as women, the less educated).

When Model 2 adds the socio-economic factors of employment status and financial circumstances people face to the socio-demographic variables, there are no major changes to the influence of the socio-demographic variables on participation in informal work. Those socio-demographic characteristics statistically significant in Model 1 remain the same. However, the additional finding is that the unemployed and those with financial difficulties are significantly more likely to participate in informal work than those with formal jobs and fewer financial difficulties (confirming H2.1 and H2.2). Both these socio-economic characteristics, namely employment status and financial circumstances, thus support the view that the socially excluded are more likely to participate in the informal sector.

When spatial factors are added in Model 3, the significance of the socio-demographic and socio-economic characteristics remain as discussed above. However, although there is no evidence to support the view that those living in rural areas participate more compared with those living in more urban areas (refuting H3.1), and those living in the more affluent EU region of the Nordic nations are found to be more likely to participate in informal work than those living in Western Europe, and those living in Southern Europe are less likely (refuting H3.2). As such, when considering the urban-rural divide and European regional variations, it is not marginal populations who participate more in informal work. At a European regional level therefore, there appears to be support for the view that informal work is not a substitute for the formal economy. Rather, informal work appears to be more prevalent in economies where the formal economy is stronger, not least because more money is in circulation that can be used to purchase goods and services from informal work. Table 4 provides a summary of which hypotheses have been confirmed and which not.

INSERT TABLE 4 ABOUT HERE

Discussion and Conclusions

To evaluate who engages in informal work and whether marginal populations are more likely to participate, this paper has used multilevel mixed-effects logistic regression analysis to reveal that in the European Union, younger age groups are significantly more likely to engage in informal work as are those who are divorced/separated, those defining themselves as working class, the unemployed, single-person households, those more tolerant of informal work (who are marginalised in the sense that their values and attitudes do not conform to those of the codes, regulations and laws of the formal institutions) and those who have difficulties paying household bills. However, men are found to be significantly more likely to

work informally than women, as are those living in the more affluent EU region of the Nordic nations. No significant relationship exists moreover, so far as the educational level, the number of children in the household or the urban-rural divide are concerned.

Examining the theoretical implications, the outcome is that a variegated interpretation of the relationship between participation in informal work and social exclusion is required. Some factors, including age, marriage status, class, household size, tax morality, employment status and household financial circumstances, are significantly associated with the participation of marginal groups in informal work. However, when gender and regional variations are analysed, the opposite is the case; women and poor EU regions are significantly less likely to participate in the informal sector. When other characteristics are analysed moreover, such as the urban-rural divide, educational level and number of children, no significant relationship with informal work is found. What is now required is to evaluate whether the findings are similar when examining other global regions, especially developing countries, and other spatial scales such as particular nations, regions and localities.

Turning to the policy implications, the first important consequence is that these results display the specific spaces and populations that need targeting when seeking to tackle informal work. In recent years for example, there has been an emphasis in the European Union on targeting poorer EU regions such as East-Central and Southern Europe when allocating resources through European structural funds to tackle informal work (Dekker et al., 2010; European Commission, 2014). However, these poorer EU regions are not disproportionately engaged in informal work. Indeed, affluent European regions have significantly higher participation rates, suggesting the need for a rethinking of the spatial allocation of European funds for tackling informal work. However, this paper does reveal that the current targeting of the unemployed by many national governments when tackling informal work is not a mistake. The unemployed are significantly more likely to participate in informal work. Popular policy initiatives such as those which seek to smooth the transition from unemployment to self-employment therefore, are worthwhile. As such, although this survey reveals that it is inappropriate to target some marginal populations when tackling informal work (such as women, rural areas, the less educated, those living in less affluent EU regions), it displays that it may be worthwhile targeting other marginalised population groups such as the unemployed, younger people, single-person households, the divorced/widowed and those with household financial difficulties. This analysis, in other words, provides a useful risk assessment of the different marginalised populations to enable an evaluation of the validity of the currently targeted populations.

In sum, this paper has revealed for the first time the need for a more nuanced approach towards the association between social exclusion and participation in the informal sector. Although it is applicable when considering some marginal populations (such as younger age groups, the unemployed), who are more likely to participate in informal work, it is not valid in relation to others (such as the less educated, poor European regions, rural areas). If this paper thus stimulates the emergence of a more variegated understanding of the relationship between social exclusion and participation in the informal sector, then it will have fulfilled its objective. If it also encourages a deeper investigation of the policy implications of this more nuanced understanding, not least in terms of the populations being targeted by the authorities and how resources are allocated, then it will have fulfilled its wider intention.

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Table 1. Participation in informal work in the past 12 months, by European country

	Sample size	% engaged in informal work	Earnings from informal work (EU 28):						
			€1-100 (%)	€101-200 (%)	€201-500 (%)	€501-1000 (%)	€1000+ (%)	Don't know; refusal (%)	Mean
All EU-28	27,563	3.75	20	9	17	11	12	31	414
Western Europe	8,380	4	26	9	21	11	13	20	391
Netherlands	1,019	11	32	5	23	9	15	16	383
Austria	1,022	5	8	3	15	15	18	41	635
Luxembourg	505	5	6	11	14	17	11	41	519
France	1,027	5	23	16	26	12	10	13	364
Belgium	1,000	4	9	9	20	19	23	20	576
United Kingdom	1,306	3	25	0	13	20	16	26	497
Ireland	1,002	2	18	27	18	6	18	13	388
Germany	1,499	2	36	11	19	3	8	23	264
Southern Europe	5,039	3	16	9	7	9	17	42	489
Spain	1,003	5	24	9	10	6	14	37	390
Greece	1,000	3	11	10	10	4	16	49	168
Italy	1,016	2	0	11	0	16	24	49	738
Portugal	1,015	2	6	0	6	6	23	59	729
Cyprus	505	2	10	30	0	10	0	50	250
Malta	500	1	41	0	0	0	0	59	50
East-Central Europe	10,131	4	13	8	16	10	5	48	459
Estonia	1,003	11	29	12	11	7	16	25	378
Latvia	1,006	11	36	6	15	13	6	24	312
Lithuania	1,027	8	13	16	12	12	11	36	426
Croatia	1,000	7	11	10	13	8	19	39	518
Slovenia	1,017	7	20	13	12	9	14	32	410
Slovakia	1,000	5	18	6	14	10	4	48	350
Bulgaria	1,018	5	18	11	17	4	0	50	230
Hungary	1,033	4	17	5	6	14	9	49	455
Czech Republic	1,000	4	14	18	21	12	2	33	324
Poland	1,000	3	9	4	24	9	4	50	404
Romania	1,027	3	2	6	12	7	0	73	387
Nordic nations	3,013	6	18	9	22	20	21	10	511
Denmark	1,004	9	14	11	13	31	16	15	543
Sweden	1,006	7	17	5	29	13	29	7	543
Finland	1,003	3	32	21	25	13	6	3	301

Table 2. Participation in informal work in the European Union: by socio-demographic, socio-economic and spatial characteristics

		% engaged in informal work	Earnings from informal work (EU 28):						
			€1-100 (%)	€101-200 (%)	€201 - 500 (%)	€501 - 1000 (%)	€1000 + (%)	Don`t remember /know; Refusal (%)	Mean
Gender	Men	5	18	6	17	12	14	33	459
	Women	3	23	13	17	10	9	28	355
Age	15-24	7	30	11	17	12	12	18	367
	25-34	6	23	8	15	11	14	29	447
	35-44	3	11	10	15	9	18	37	509
	45-54	4	17	7	18	10	8	40	478
	55-64	2	7	8	21	11	13	40	503
	65+	1	8	7	19	13	3	50	417
Marital status	Married/ Remarried	2	17	8	16	8	12	39	420
	Unmarried/cohabitating	7	20	7	24	9	12	28	406
	Unmarried/single	6	24	12	16	15	13	20	411
	Divorce/separated	5	18	10	10	10	15	37	451
	Widowed/other	2	17	2	12	8	8	53	412
Social class	Working class	4	15	10	14	10	12	39	437
	Middle class	3	22	10	20	11	14	23	436
	Higher class	3	68	1	12	7	2	10	167
	Other/ None	9	25	0	28	22	3	22	392
Age education ended		3							412
	<15		16	9	15	13	8	39	
	16-19	4	19	9	16	7	14	35	418
	20+	3	18	8	22	11	14	27	439
	Still Studying	7	29	11	15	19	6	20	358
Adults in household		4							442
	One		17	9	18	12	13	31	
	Two	3	16	10	20	12	13	29	441
	Three	4	32	5	15	10	10	28	349
	Four and more	4	21	11	10	8	13	37	400
Children	<10 years old	5	17	4	20	12	20	27	513
	10-14 years old	5	23	11	17	15	9	25	387
	<10 and 10-14	4	33	19	11	8	4	25	245
	No children	3	20	9	17	10	11	33	400
Employment	Unemployed	4	20	11	18	10	10	31	383
	Employed	4	21	7	16	11	15	30	442
Difficulty paying bills	Most of the time	8	23	9	16	11	11	30	391
	From time to time	4	15	7	16	9	14	39	461
	Almost never/never	3	22	11	18	12	11	26	393
Area	Rural area or village	4	17	8	19	9	12	35	422
	Small or middle sized town	4	15	13	19	11	13	29	431
	Large town	4	32	4	12	12	12	28	381

Table 3. Multilevel mixed-effects logistic regression of participation in informal work

Variable	Model 1	Model 2	Model 3
Gender (CG: Women):			
Men	0.688*** (0.0669)	0.756*** (0.0682)	0.757*** (0.0682)
Age (CG: 15-24):			
25-34	-0.268** (0.127)	-0.267** (0.127)	-0.262** (0.127)
35-44	-0.659*** (0.139)	-0.645*** (0.139)	-0.644*** (0.139)
45-54	-0.801*** (0.142)	-0.783*** (0.142)	-0.791*** (0.142)
55-64	-1.094*** (0.157)	-1.108*** (0.158)	-1.118*** (0.158)
65+	-1.974*** (0.182)	-2.012*** (0.190)	-2.023*** (0.190)
Marital status**:** (CG: Married/Remarried)			
Cohabitating	0.0894 (0.104)	0.0670 (0.105)	0.0659 (0.105)
Single	-0.0872 (0.115)	-0.136 (0.116)	-0.135 (0.116)
Divorced/Separated	0.326** (0.131)	0.247* (0.132)	0.249* (0.132)
Widowed	-0.231 (0.163)	-0.257 (0.165)	-0.259 (0.165)
Social class (CG: Working class of society)			
Middle class of society	-0.313*** (0.0723)	-0.166** (0.0754)	-0.154** (0.0757)
Higher class of society	-0.519** (0.237)	-0.283 (0.238)	-0.257 (0.239)
Other/none	0.0392 (0.227)	-0.132 (0.236)	-0.126 (0.236)
Age stopped full time education (CG: 15- years):			
16-19	-0.0654 (0.117)	0.0311 (0.119)	0.0217 (0.119)
20+	-0.0869 (0.128)	0.0715 (0.131)	0.0661 (0.131)
Still Studying	-0.176 (0.173)	-0.146 (0.180)	-0.142 (0.181)
Number 15+ years in household (CG:1 person):			
2 persons	-0.336***(0.106)	-0.329***(0.106)	-0.330***(0.107)
3 persons	-0.254**(0.117)	-0.220*(0.117)	-0.222*(0.118)
4+ persons	-0.340***(0.128)	-0.302**(0.129)	-0.300**(0.130)
Number of children**:** (CG: No Children)			
Children < 10	-0.0239(0.0998)	-0.0771(0.101)	-0.0884(0.101)
Children 10-14	-0.0326(0.127)	-0.0741(0.128)	-0.0824(0.128)
One or more <10 and 10-14	-0.0273(0.153)	-0.110(0.155)	-0.136(0.155)
Tax morality	0.385***(0.0169)	0.377***(0.0171)	0.375***(0.0171)
Employment (CG: Unemployed):			
Employed		-0.204**(0.0835)	-0.203**(0.0835)
Difficulty paying bills last year (CG: Most of the time)			
From time to time		-0.472***(0.0930)	-0.484***(0.0931)
Almost never/never		-0.856***(0.0990)	-0.883***(0.0991)
Area respondent lives (CG: Rural area or village):			
Small/middle sized town			-0.0774(0.0780)
Large town			-0.113(0.0859)
EU Region**:** (CG: Western Europe)			
Southern Europe			-0.747**(0.316)
East-Central Europe			0.0701(0.258)
Nordic Nations			0.768**(0.377)
Constant	-3.447***(0.249)	-2.933***(0.261)	-2.802***(0.302)
Observations	24,173	23,920	23,905
Number of groups	28	28	28
Random-effects Parameters			
Identity: Country			
Variance (constant)	0.372***	0.440***	0.275***

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 4. Is participation in informal work positively associated with social exclusion?

Hypothesis	Result*
H1.1: Women more likely to participate than men	Not confirmed
H1.2: Younger people more likely to participate than older people.	Strongly confirmed
H1.3: Unmarried more likely to participate than married	Weakly confirmed
H1.4: Working class more likely to participate.	Weakly confirmed
H1.5: Less formally educated more likely to participate	Not confirmed
H1.6: Single person households more likely to participate than multi-occupant households	Weakly confirmed
H1.7: Households with children more likely to participate	Not confirmed
H1.8: Informal work lower when there is higher tax morale	Strongly confirmed
H2.1: Unemployed more likely to participate than employed	Weakly confirmed
H2.2: Those with financial difficulties more likely to participate than those without financial difficulties	Strongly confirmed
H3.1: Rural populations more likely to participate than urban populations	Not confirmed
H3.2: Those in less affluent European regions more likely to participate than those in more affluent EU regions	Not confirmed

*** $p<0.01$ = strongly confirmed; ** $p<0.05$ or * $p<0.1$ = weakly confirmed