

# From the Beginning to the Present. Exploring the Undeclared Work Patterns in Research Publications Using the Bibliometric Analysis



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**Abstract** The purpose of this study is to explore the research field of undeclared work patterns, highlighting the evolution of the literature and the directions and ramifications of possible future research. A mapping process is used as a tool in investigating scientific knowledge. To establish the temporal evolution of the undeclared work patterns research domain in terms of publications, we extracted articles from Scopus published between 1971 and 2022. The keywords used in the search query were undeclared employment, undeclared wages, envelope wages, undeclared work, and informal employment. We investigated 916 documents, with the focus point being on the author, paper, keyword, and journal. The subject areas of the investigated journals were social sciences, economics, econometrics and finance, business, management, and accounting. The empirical findings emphasize that C. Williams, I. Horodnic, J. Windebank, S. Nadin, F. Schneider, J. Franic, P. Adair, and H. Lehmann are the reference authors for the whole spectrum of undeclared work. Finally, the Indian Journal of Labour Economics, World Development, International Labour Review, International Journal of Sociology and Social Politics, Journal of Development Economics, and Review of Development Economics are the most prolific journals in the field.

**Keywords** Undeclared employment · Undeclared wages · Envelope wages · Undeclared work · Informal employment determinants · Bibliometric analysis

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## 1 Introduction

Recent literary works have begun to challenge the concept that the informal and formal economies are distinct. All economic activities that are not covered, or are inadequately covered, by legal arrangements are included in the informal economy, according to the International Labour Organization Conference (ILO 2014, 2015). The informal aggregate in today's global economy has been described in a variety of ways, and various aspects of both the informal and formal situations have been taken into consideration (Williams and Windebank 2005; Gialis and Leontidou 2014). Undeclared work is a significant and growing feature of the contemporary global economy (Feige and Urban 2008; Schneider 2008; Charmes 2009).

Undeclared work or what has been referred to as the 'informal sector, the shadow economy, or the hidden economy' must be defined to understand what is being discussed here. This, according to the definition, refers to the compensated manufacturing and sale of goods and services which are not registered or hidden from the government for taxes or advantage reasons, but are otherwise lawful. Although not declaring income or social security benefits usually breaches tax or social security laws, this rule exempts both unpaid employment and work (such as drug trafficking) where the service or product provided is unlawful in and of itself. There are no hard and fast boundaries in this field like there are in many others. As an example, prostitution and other services that are illegal in some countries but not others are included in some definitions.

For more than half a century, the leading theory to explain why people engage in illegal work has been that those who do so are rational economic actors who do so when the anticipated payments outweigh the anticipated costs of being discovered and penalized (Allingham and Sandmo 1972). But the acceptance of the fact that many people avoid doing illegal work even if the benefits outweigh the costs has sparked an alternative approach from social actors (Alm et al. 2012). This helps explain why people engage in illegal work when they lack confidence in government and, more recently, when they lack trust in each other (horizontal trust) (Hallsworth et al. 2017).

"Undeclared work" is work that is not reported for taxes, social security, and/or labour legislation reasons when it should have been. Academics and practitioners agree that this is the case. Illegality in other ways, such as the items or services that are given (e.g., counterfeit goods, illicit narcotics), does not make paid activities undeclared labour, but rather part of the greater criminal economy.

The purpose of this study is to examine the academic area of undeclared labour patterns, focusing on the variety of the literature and future research routes, using science mapping, which allows for the examination of scientific information.

This study is also providing answers to the following questions: (RQ1) Which researchers and publications, institutes, and countries are at the forefront of the study of illegal work practices? (RQ2) What are the most popular search terms and important research evolution themes linked with them? (RQ3) Who are some of the

most often mentioned writers in the undeclared work patterns field? (RQ4) Which authors and institutions are involved in collaborative networks?

There are a total of five sections in this document. The purpose of the introduction is to quickly explain the significance of the subject matter. There is a theoretical component in the next section that includes the most important works on the topic. The third section presents data and technique, while the next section demonstrates empirical outcomes. The paper's key conclusions are presented at the end.

## 2 Literature Review

For several decades, the study of undeclared labour was dominated by a “size matters” approach. Scholars worked on quantifying the scope of this area using methods of indirect measuring (Friedman et al. 2000; Schneider et al. 2011). Insufficient thought was given to analysing the type of undeclared work.

Undeclared labour has traditionally been seen unfavourably in advanced capitalist nations, as it contributes little or no to economic and social growth (Gallin 2001; Grabiner 2000); as a result, the standard public policy response has been to prohibit it (Hasseldine and Zhuhong 1999; Sandford 1999). Most European governments have tried to deter such activity by increasing fines and coordinating strategies and actions to improve detection rates. Many scholarly critics and supranational bodies (European Commission 1998; ILO 2002) have approved such an approach (Castells and Portes 1989).

Self-employment (like in the “worker-entrepreneur” idea) or interdependent employment (as in the “employee” concept) are two examples of undeclared labour. It can also refer to work done in exchange for payment in kind, as additional to labour done for cash (Mingione 1991; Pedersen 1998; European Commission 2007).

In recent decades, a stream of social democratic ideology in Europe has taken up the portrayal of unregistered employment as a site of entrepreneurship, regarding unregistered business as a resource only if it can be controlled and pushed into the formal economic system (Renooy et al. 2004; Small Business Council 2004).

Other types of illicit compensated work have also been discovered. Not only have well-paid unregistered wage-earning jobs been recognized (Williams and Windebank 2011), but it has also been demonstrated that, in addition to “unregistered” jobs that are completely hidden from the country for levy, social welfare, and labour law reasons, also there are “under-declared” official jobs in which proclaimed employees are paid two salaries from their proclaimed employer, one proclaimed and one unreported “envelope wage” (Karpuskiene 2007; Woolfson 2007; Williams 2007). Many nations have established that substantial undeclared labour is done on its own or self-employed premise (Round et al. 2008; Williams 2005).

Until recently, much of this unregistered self-employment was carried out under business conditions for income reasons. However, in certain communities, such possess undeclared work has been identified as being frequently undertaken for nearer human relationships such as relatives, neighbours, mates, and work colleagues, for

the reasons of redistributing wealth and helping, instead of primarily for monetary benefit (Persson and Malmer 2006).

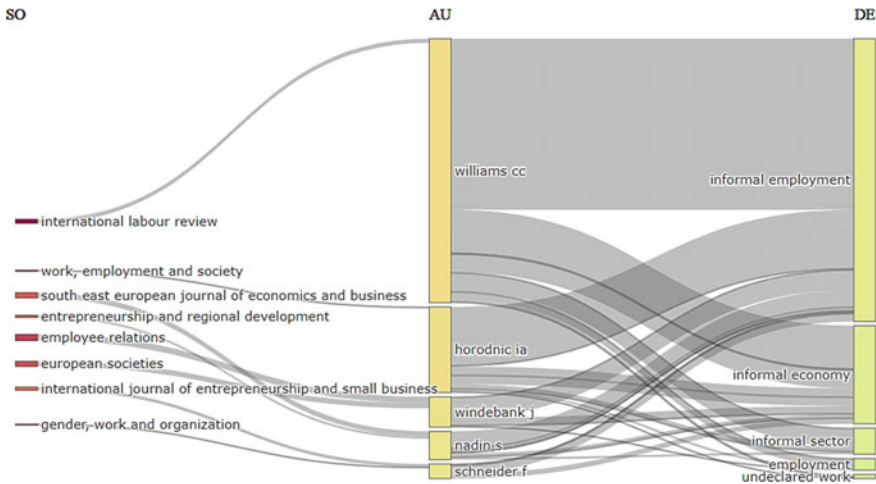
However, research related to institutional asymmetry theory has mostly studied the relationship between undeclared employment and the level of “vertical trust” in the workplace (between government and citizens). The relationship between undeclared work and “horizontal trust” is an important part of the social actor technique that has gotten less attention (between citizens). While previous research has found no link between general trust (trusting in others) and non-compliance behaviour (Chan et al. 2018), horizontal trust (willing to trust others to be tax compliant) is linked to undeclared labour participation. Individuals may be more prone to avoid paying taxes when they live in an area where tax avoidance is widely accepted, not only because they might be less concerned regarding statutory and informal penalties, but because they assume that if others do it, why wouldn't they do it as well? Furthermore, previous laboratory studies have shown that taxpayers' propensity to cooperate is influenced by their neighbours' conduct (Ajzen 1991; Chang and Lai 2004; Traxler 2010), and those individuals cooperate when tax law is the norm in society (Alm et al. 1999, 2012). Furthermore, a link has been shown between corporate taxation and the emotional distress associated with breaking a social convention (Dulleck et al. 2016).

### 3 Methodology

In order to explore the field of undeclared work patterns, the present research focuses on a bibliometric analysis. For this analysis, there were selected articles from Scopus published from 1971 to 2022. The selection was based on the following keywords: “undeclared employment”, “undeclared wages”, “envelope wages”, “undeclared work”, and “informal employment”.

All the documents that were selected were then imported into Bibliometrix and Biblioshiny using the R environment. Biblioshiny facilitates the way in which the user could conduct a visual and bibliometric analysis, since it is an R-tool with an interactive and user-friendly web interface. As it is shown in Fig. 1, the database used for the analysis contains a total of 916 documents split in: articles (805), books (6), book chapters (45), conference papers (17), notes (2), retracted (1), and reviews (40) (Table 1).

This research consists of three major steps. The first one is creating the needed database; during this step, the most important points are to establish the timespan of the search, the selection criteria, and the tools that will be used further in the research for manipulating and analysing the data. The second step is represented by the data analysis; here, the focus is on obtaining information about the evolution of the scientific production over the years, the most productive sources, and the author's impact. The third step is an interpretation over the social, conceptual, and intellectual structure; here, the focus is on cluster and network analyses. The thematic evolution of the documents (based on the keywords plus), the authors' co-citation network,



**Fig. 1** Three field plots. *Source* Own illustrations

and the institutions and authors’ collaboration networks are the main topics of the third step.

The clustering concept implies the separation of the data into understandable, useful, or both groupings (clusters). If meaningful groupings are the aim, the clusters should reflect the data’s inherent structure. However, in certain circumstances, cluster analysis is merely a starting point for additional tasks, such as data summarization. Cluster analysis has long been used in a range of domains, including psychology and other social sciences, biology, statistics, pattern recognition, information retrieval, machine learning, and data mining.

#### 4 Analysis/Results Interpretation

This study takes into consideration a total of 916 documents written by a total of 1346 authors, collected from 422 different sources, in a time span of 51 years, from 1971 to 2022. Those documents are split into 805 articles, six books, 45 book chapters, 17 conference papers, two notes, 40 reviews, and 1 retracted. Out of all these documents, 509 are multi-authored documents, and there are 1002 authors of multi-authored documents, this means that the collaboration index is 1.97. Also, looking at the citations, there are a total of 13.3 citations per document, but a 1.23 per year and document. The most cited document, with a total of 681 citations per entire period and a 35.84 total citation per year, is “Informality Revisited” by F. Malony published in 2004 in the “Word Development” journal.

In terms of evolution, the annual scientific production in the field of undeclared work is very low and approximatively on the same level for the period 1971–1986.

**Table 1** Main information of documents

Bibliometric analysis	
Description	Results
Timespan	1971:2022
Sources (journals, book, etc.)	422
Documents	916
Average year from publication	9.67
Average citations per documents	13.3
Average citations per year per doc	1.232
References	35,386
Article	805
Book	6
Book chapter	45
Conference paper	17
Note	2
Retracted	1
Review	40
Keywords plus (ID)	1533
Author's keywords (DE)	1852
Authors	1346
Author appearances	1685
Authors of single-authored documents	344
Authors of multi-authored documents	1002
Single-authored documents	407
Documents per author	0.681
Author per document	1.47
Co-authors per documents	1.84
Collaboration index	1.97

*Source* Own illustrations

Starting with 1987, the interest towards this field has increased, and the number of documents presents an average annual growth rate of 6.75%. Looking at the entire studied period, the top 10 most important countries for the scientific production are: UK (243 documents), USA (233), India (91), South Africa (68), Germany (67), France (58), Italy (42), Australia (38), Canada (31), and Romania (29).

As mentioned earlier, this study covers documents collected from 422 sources. The top 5 sources are: “Indian Journal of Labour Economics” with 33 articles and a h-index of 7, “World Development” with 27 articles but a 18h-index, “International Labour Review” with 24 articles and a h-index of 10, “International Journal of Sociology and Social Policy” with 13 articles and a h-index of 9, “Journal of Development Economics” with 11 articles and a h-index of 9. If the focus is on the

number of articles, then the first and most important source is the “Indian Journal of Labour Economics”. But the absolute number of articles is not always relevant; in this case, the impact of the source should also need to be taken into consideration, so if the focus moves towards the Hirsch index, then the “World Development” will become the first most relevant source.

Of the 1346 authors present in this study, the most relevant 5, based on the number of written documents in the field of undeclared work, are: C. Williams—with 98 articles published between 1999 and 2022 with the highest point in 2015, I. Horodnic—with 25 articles published between 2015 and 2022 with the highest point in 2015, J. Windebank—with 12 articles published between 1999 and 2017 with the highest point in 2015, S. Nadin—with 10 articles—published between 2010 and 2014 with the highest point in 2012 and F. Schneider—with nine articles published between 2010 and 2022 with the highest point in 2014.

If the top five most relevant authors are based on the impact that the authors had and not on the number of articles, the top will be the same: Williams (h-index 22), Horodnic (h-index 13), Windebank (h-index 9), Nadin (h-index 7), and Schneider (h-index 5). Figure 1 shows each of the five authors and the topics they have written about, and in which sources the articles were published. For Williams, the most common topics (“informal employment”, “informal economy”, and “undeclared work”) are published in the “International labour review” journal. Schneider wrote about “informal economy” and “informal employment” in both “Gender, Work and Organization” and “International Journal of Entrepreneurship and Small Business”.

During the studied period, not only the scientific production changed, but also the interest topics that are discussed in connection with the undeclared work changed over time. To analyse this thematic evolution, the time horizon of this study was split into two, before and after 2015. As shown in Fig. 2, in the first period slice of time, 1971–2015, there are three well-defined clusters: “Informal sector”—in the red colour, “Female”—in the green colour, and “Developing country”—in blue colour.

As shown in Fig. 3, in the second period of time, 2015–2022, six clusters are formed: “Employment”—in the red colour, “Women employment”—in blue, “Economic development”—in brown, “Income”—in green colour, “Trade liberalization”—in yellow colour, and “covid”—in colour purple.

Further, this study also analyses the intellectual structure based on the co-citation of the authors. Figure 4 shows the results of the authors’ co-citation analysis. There are three main clusters: the green one—the predominant authors are Schneider and Williams, and the main topic is in the informal sector, the red one—the predominant authors are Maloney and De Soto and the main topic is about the developing countries and their macroeconomic factors, the blue one—the main authors are Castells and Davis, and the main topic of the cluster is the gender and age split.

For a better understanding of the clusters structure, it is important to look at the betweenness and closeness measures. For the first cluster (green), the most important author, with the highest influence over the rest authors in the cluster, based on these two measures, is Schneider (85.64—Betweenness; 0.017—Closeness) followed by Williams (48.22—Betweenness; 0.017—Closeness), they both present the highest

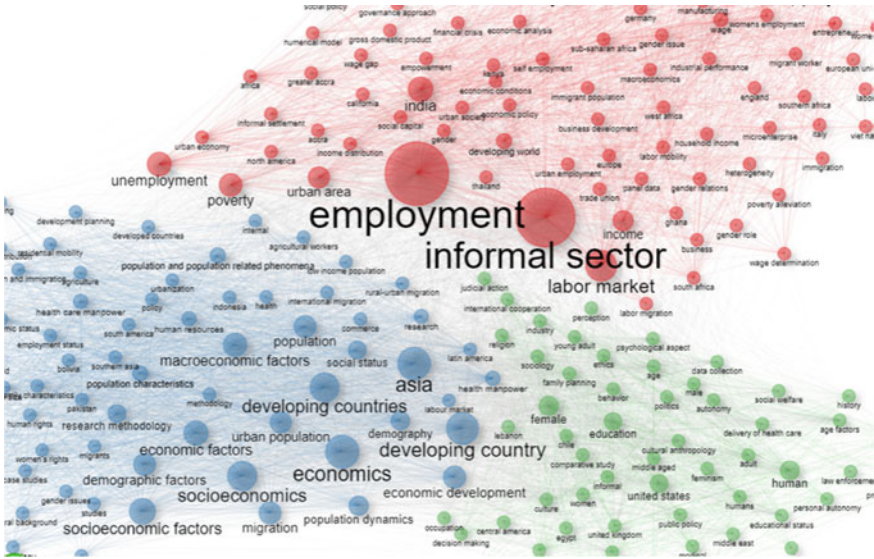


Fig. 2 Thematic evolution network 1971–2015. *Source* Own illustrations

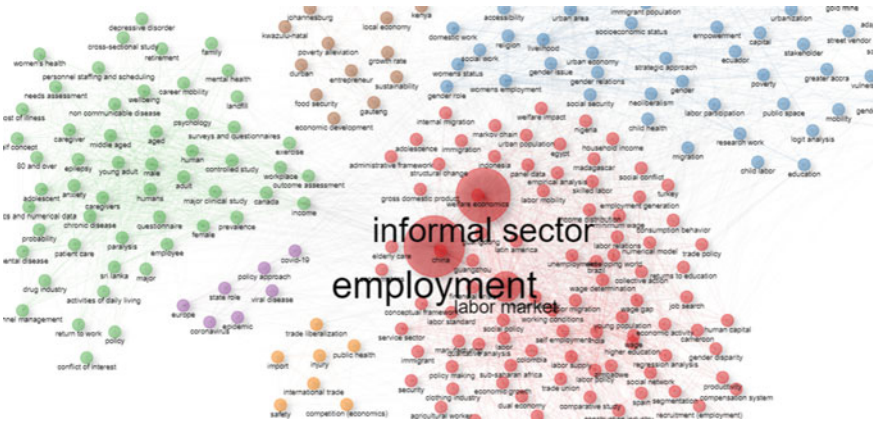


Fig. 3 Thematic evolution network after 2015. *Source* Own illustrations

betweenness and closeness values. In the second cluster, the red one, with a betweenness value of 32.89 and a closeness value of 0.017, the most influential author is De Soto, followed by Maloney (22.74—Betweenness; 0.015—Closeness). In the third cluster, coloured blue, the most influential author is Castells, having a betweenness value of 91.92 and a closeness value of 0.018.

In Fig. 5 are presented two collaboration networks, one between different institutions, and one for the authors. For the authors, there can be distinguished 6 different clusters, but the main one is the red-coloured cluster having Williams and Windebank



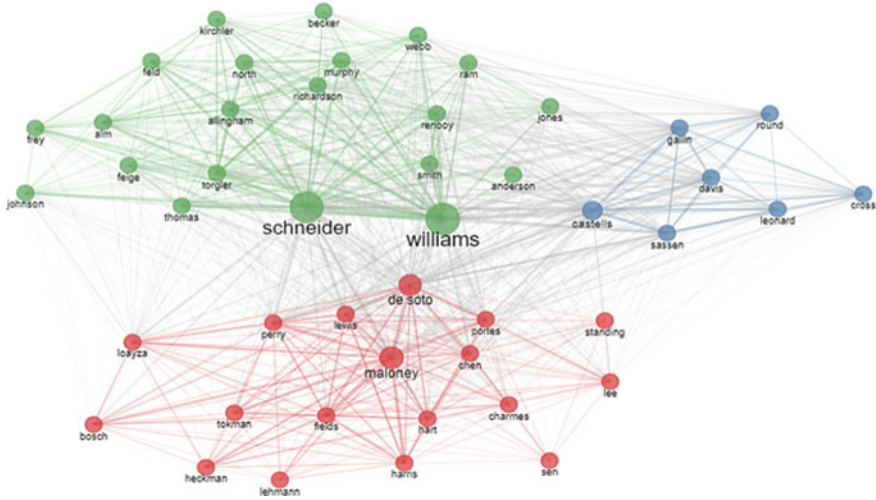


Fig. 4 Authors’ co-citation network. *Source* Own illustrations

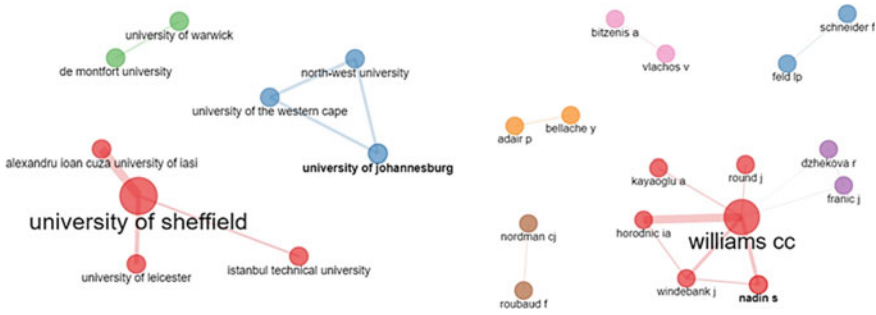


Fig. 5 Institutions and authors collaboration networks. *Source* Own illustrations

as the most influent authors. As for the institutions, there are three main clusters, with the red-coloured cluster as the main one where the “University of Sheffield” and the “Alexandru Ioan Cuza University of Iasi” as the most influent institutions.

## 5 Conclusions

For the goal of this study, researchers analysed more than 916 scholarly papers published between 1971 and 2022 on the Web of Science platform, concentrating on the dynamics of academic papers and prospective future research subjects.

It began in 1971, with an annual growth rate of about 6.75%, and has continued ever since. The “World Development” and the “Indian Journal of Labour Economics”

have been regarded as the most representative journals in the area. Maloney, F. (2004)'s research in the "Word Development" magazine has the highest citations with 681 citations.

For example, in the first slice of time, from 1971 to 2015, there are three clearly defined clusters: "Informal sector" (in red), "Female" (in green), and "Developing country" (in blue). In the second slice of time, from 2015 to 2022, there are six clusters: "Employment" (in red), "Women employment" (in blue), "Economic development" (in brown), and "Income" (in green).

There are three primary clusters based on the co-citation of the authors: The green cluster is dominated by Schneider and Williams, the red cluster is dominated by Maloney and De Soto, and the blue cluster is dominated by Castells and Davis.

There are six distinct author clusters to be found in the cooperation network, but the most important one is the red cluster, which includes Williams and Windebank as its most influential members. It is important to note that "University of Sheffield" and "Alexandru Ioan Cuza University of Iasi" are the two most influential universities in the red-coloured cluster.

In terms of future directions of research and limitations, it can be mentioned that this study does not cover the other main database of scientific papers, namely, Scopus, which is worth exploring in terms of research publications that cover the subject of the chapter. A comparative and extended analysis of undeclared work patterns in the future might include authors' impact, keywords growth over time, abstracts word clouds and tree maps, country collaboration network, and keywords co-occurrence network.

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