EUROPEAN LABOUR AUTHORITY

European Platform
tackling undeclared work

Analysing the extent of undeclared work among highly skilled workers

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European Platform
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Contents

Executive summary

This study explores the **prevalence, types, and characteristics of undeclared work among highly skilled workers as well as the reasons for working undeclared** in the European Union (EU). The aim of this study is threefold: first, to analyse the prevalence and types of undeclared work among highly skilled workers; second, to identify the characteristics, contributing factors, and motives for undeclared work among this group; lastly, to provide an in-depth analysis of the magnitude and characteristics of undeclared work in selected sectors/ occupations in specific countries.

The study uses a mixed-method approach, combining data analysis and literature review.[1] To get an insight into the sectors in which undeclared work among highly skilled workers is most prevalent and the types of undeclared work, the study explores **five case studies**. Undeclared work among highly skilled healthcare workers is analysed in two case studies, one in Greece and another on the motivations for informal payments in the EU Member States. Undeclared work among highly skilled workers in the education sector is examined though a case study focusing on undeclared income from tutoring in Romania. Finally, under-declared work among highly skilled workers is further explored through two case studies, one on under-declared working hours among highly skilled workers in Denmark, the other on the risk of under-reporting wages among minimum-wage earners in Hungary.

For this study, the International Labour Organisation (ILO) classification structure is used to define 'highly skilled workers'. Highly skilled workers are defined as those employed in the following occupations: (i) managers, (ii) professionals, and (iii) technicians and associate professionals.[2]

Employment among highly skilled workers

Based on data from Eurostat and projections from the European Centre for the Development of Vocational Training (CEDEFOP), the main findings can be summarised as follows:

- In 2022, more than 40 % of the EU's workforce, equivalent to over 86.4 million workers, were highly skilled. In terms of the proportion of highly skilled employment across the Member States, Luxembourg leads with the highest share (64 % of total employment), followed by Sweden (57 %) and the Netherlands (54 %). Romania (28 %), Greece (32 %), and Bulgaria (33 %) have the lowest share of highly skilled employment in total employment.
- Analysing the changing composition of the highly skilled workforce in total employment in the EU, a steady trend for managers, an upward trend for professionals, and a downward trend for technicians and associate professionals was observed between 2018 and 2020.
- Highly skilled workers are most prevalent in the information and communication sector (86 % highly skilled workers), followed by professional, scientific, and technical activities (83 %) and the education sector (80 %).
- Temporary employment is significantly lower among managers (4.7 %) compared with the overall average (14.1 %), while among professionals (13.1 %) and technicians and associate professionals (11.2 %) it aligns closely with the overall average. This pattern is also similar for part-time employment.

[1] This report employs an integrative literature review, including a wide range of academic literature, reports, policy documents, and case studies.
[2] See the International Standard Classification of Occupations (ISCO): https://ilostat.ilo.org/resources/concepts-and-definitions/classification-occupation/.

- Except for hospitality and retail managers, all high-skilled occupations in the EU are expected to grow between 2022 and 2035.

Undeclared work among highly skilled workers

To explore undeclared work among highly skilled workers as well as their engagement in dependent self-employment, multiple data sources have been analysed (i.e. the European Working Conditions Telephone Survey (EWCTS), the Special Eurobarometer 498). In addition to examining undeclared work, this study explores the phenomenon of dependent self-employment which is particularly relevant to the working arrangements of highly skilled workers. Dependent self-employment is often used as a method to misclassify an employment relationship, allowing employers to avoid the application of collective agreements, labour regulations (such as minimum wage laws and working hour regulations), protections in case of job loss, employment taxes, and other employer obligations typically associated with standard employment contracts.

The findings of this section rely on survey data. It is important to acknowledge that findings derived from survey data fall below those obtained when using discrepancy methods, such as comparing household or business surveys with administrative data from tax and social security authorities (e.g. LIM estimates).[3] Nevertheless, survey data offer valuable information on occupations, socio-demographic groups, and motivations that drive highly skilled workers' engagement in undeclared work.

Unregistered employment

- In the EU in 2021, 1.8 % of employees reported that they worked without a written contract, with slightly higher rates observed among managers and lower rates among professionals and technicians/associate professionals.
- Unregistered employment spans all socio-demographic groups, with variable prevalence; for instance, men, older employees aged 56+, highly skilled workers with financial difficulties, and those residing in rural areas are more likely to work without contracts compared to their counterparts.

Under-declared employment

- In 2019, 2.6 % of highly skilled employees in the EU reported receiving envelope wages, compared with 3.2 % of all employees, indicating a slightly lower prevalence of under-declared employment among highly skilled workers compared to the overall labour market.
- Among highly skilled workers, under-declared employment is most prevalent among employed professionals such as doctors, lawyers, accountants, or architects (5.5 %) and other employed white-collar workers (3 %).
- Younger highly skilled workers are more likely to receive envelope wages as well as those facing frequent financial difficulties, showing a decreasing trend as financial status improves, while urban residents have higher rates compared to rural residents.

Dependent self-employment

- 9.3 % of the self-employed in the EU have the characteristics of dependent self-employment, in contrast to just 0.8 % of self-employed managers, 8.6 % of self-employed professionals, and 6.9 % of self-employed technicians and associate professionals.

[3] In surveys individuals tend to under-report their involvement in undeclared work or other fraudulent activities.

- Self-employed professionals, particularly in teaching (18.1 %), information technology (16.4 %), and legal/social/cultural fields (9.9 %), have a higher prevalence of dependent self-employment. Among self-employed technicians and associate professionals, the share is notable in the information technology (14.7 %) and health and business/administration sectors (both 7.9 %).
- Dependent self-employment among highly skilled workers is more prevalent among younger self-employed individuals, women, those living in urban areas, residing alone, and experiencing no financial challenges.

Characteristics of undeclared work among highly skilled workers

The above findings, derived from data analysis, have been complemented by an extensive literature review. This approach allowed a deeper understanding of the characteristics of undeclared work among highly skilled workers. The literature review ranged from small-scale studies using in-depth interviews to large-scale national investigations employing discrepancy methods (such as comparing survey data with administrative records from public institutions), and cross-national studies based on representative surveys. The main findings are summarised below.

- Evidence from EU Member States suggests the existence of a dual undeclared labour market. In the 'upper-tier,' workers leave the formal market mostly voluntarily and typically have higher wages, strong bargaining power, and benefits. Commonly, highly skilled workers fall into this tier of undeclared labour market. By contrast, the 'lower-tier' comprises workers who are forced into undeclared work due to exclusion from the formal labour market and face job insecurity, lower wages, and limited bargaining power and career prospects.
- Overall, under-reporting income (including envelope wages or income earned by the self-employed) and dependent self-employment are more common among highly skilled workers than those working without a contract (unregistered employment). Although undeclared work and/or dependent self-employment are found in all highly skilled occupations, each industry has its own specific characteristics.
- Extensive research points to managers as a group highly involved in undeclared activities, playing a central role in both undeclared work and income under-reporting. This research distinguishes two primary realms: undeclared work within formal business frameworks and informal entrepreneurship.
- Self-employment, a form of entrepreneurship often embraced by highly skilled workers, includes solo self-employed individuals and freelancers. Self-employment presents challenges such as income under-reporting and misclassification of employees as independent contractors (i.e. dependent self-employment). Freelancers might face a higher risk of such misclassification due to their limited control over work processes and deadlines
- Turning to the industries, undeclared freelancing and dependent self-employment are more common in science and engineering professionals and associate professionals (e.g. freelancers on online platforms, particularly in the video game industry; aircraft pilots). Similarly, an important characteristic of the Information Technology and Communications (IT&C) industry is the high prevalence of freelance work, especially for those working in technology and software development. In healthcare, common forms of undeclared work include providing medical services outside formal practice settings (such as medical procedures or consultations) owning or running an individual practice and under-reporting the turnover or wages of employees, or informal payments received in public hospitals. Similarly, in healthcare, dependent self-employment is used when working for private organisations. Teaching professionals most commonly engage in undeclared work through side jobs conducted outside of formal educational institutions (e.g. private tutoring). Among business and administration professionals it is common to provide undeclared consultancy services and to engage in dependent self-employment. Legal professionals frequently

participate in undeclared work by offering legal advice and services on the side or operating as self-employed individuals who do not fully disclose their income. The creative industry is widely recognised for its informal character (e.g. cash-in-hand work, online crowd-work, tips-based work).

Contributing factors and motives of undeclared work among highly skilled workers

To understand the factors and motives behind undeclared work among highly skilled workers, the analysis begins with a concise overview of scholarly explanations on participation in undeclared work. Following this, disparities in motives between highly skilled workers and those with lower skills are explored using insights from Special Eurobarometer 498. These findings have been further enriched by a literature review.

- Commonly, highly skilled workers voluntarily decide to exit the declared economy. To explain their participation in undeclared work, highly skilled workers cite explanations such as mutual benefits, higher earnings, and bureaucratic challenges more frequently than low or middle-skilled workers. However, the findings also underscored a high heterogeneity among highly skilled workers. While in many cases their participation in undeclared work is a voluntary choice, specific regional areas and industries pose limited options. This is exemplified by the increase in undeclared freelancing among highly skilled workers, the widespread use of dependent self-employment in professions such as IT workers and aircraft pilots, and the gig nature of artistic work.

- Highly skilled workers less frequently cite the perceived lack of adequate public goods and services they receive in exchange for the taxes they pay as a reason for engaging in undeclared work than do low- and medium-skilled workers. However, it is noteworthy that 10 % of highly skilled workers engaged in undeclared work across the EU feel that the state does not provide much in return for the taxes and contributions they pay. For example, previous studies based on in-depth interviews in specific EU Member States, revealed the lack of satisfaction of highly skilled workers regarding health services, security services, as well as road infrastructure.

- Comparing the responses of those who engage in undeclared work with those who do not, the findings suggest that highly skilled workers involved in undeclared work perceive fewer deterrents (e.g. risk of detection and penalties) and generally have lower trust in labour inspectorates, tax, and social security authorities.

- Highly skilled workers engaged in undeclared work tend to exhibit lower tax morale and have more personal acquaintances involved in such activities, compared with highly skilled workers not engaged in undeclared work.

1.0 Introduction

Traditionally, it has been widely accepted that workers engage in undeclared work primarily because they lack other options, having been excluded from the formal labour market (i.e. exclusion-driven undeclared work). However, **evidence from EU Member States shows that there is a dual undeclared labour market** composed of an 'upper-tier' of voluntary exit-driven workers with higher wages, high bargaining power and benefits and a 'lower-tier' of exclusion-driven undeclared workers facing job insecurity, lower wages, and limited bargaining power and career prospects (Grabowski and Korczak, 2023; Leontaridi, 1998; OECD, 2024; Williams and Kayaoglu, 2023; Williams, Horodnic and Windebank, 2017). It has been pointed out that undeclared work by highly skilled workers might generate higher earnings than in the declared economy (Firinu, 2012).

The 2019 Eurobarometer survey conducted in 28 European countries reveals an intriguing dynamic, with a notable higher ratio of upper-tier undeclared service workers compared to lower-tier undeclared workers[4]. Interestingly, those who voluntarily choose to work undeclared (i.e. the upper tier) are more likely to be characterised by older age, self-employment status, lack of frequent financial difficulties, and a background that includes a history of full-time education until 20 years old or older. In contrast, the lower tier of undeclared service workers is more likely to be composed of individuals aged 15–24, those with fewer years spent in full-time education, those who often struggle to pay bills, the unemployed, and students (Williams and Kayaoglu, 2023). Thus, this large segment of undeclared workers is often composed of highly skilled workers and their involvement in undeclared work is not explained mainly by exclusion from the regular market. Despite this evidence, there is limited information on the prevalence, types (e.g. unregistered employment, under-declared work), characteristics of, and the reasons for undeclared work among highly skilled workers. This study aims to fill this gap.

The International Standard Classification of Occupations (ISCO), an International Labour Organisation (ILO) classification structure for organising information on labour and jobs, is used to classify highly skilled workers in this report. Employed people with high-skills can be defined as those employed in the following occupations: **(i) managers, (ii) professionals, and (iii) technicians and associate professionals** (ISCO-08 major groups 1–3). Each of these three major groups (one-digit ISCO-08 code) is further organised into sub-major (2-digit), minor (3-digit), and unit (4-digit, not shown here) groups[5] (see Table 1 below for one and two-digit groups and Annex 1 for all the three-digit groups). The basic criteria used for this classification are the skill level and specialisation required to competently perform the tasks and duties of the occupations. Eurostat also uses this classification to group highly skilled workers.

Table 1. Highly skilled occupations in the EU by ISCO-08 one and two-digit levels

Major Groups	Sub Major Groups
1 Managers	11 Chief executives, senior officials, and legislators
	12 Administrative and commercial managers
	13 Production and specialised services managers
	14 Hospitality, retail, and other services managers
2 Professionals	21 Science and engineering professionals
	22 Health professionals
	23 Teaching professionals
	24 Business and administration professionals
	25 Information and communications technology professionals
	26 Legal, social, and cultural professionals
3 Technicians and associate professionals	31 Science and engineering associate professionals

[4] About 1 in 28 European citizens reported engaging in undeclared work in the 12 months prior to the 2019 Eurobarometer survey, with 80% of these individuals providing undeclared services (Williams and Kayaoglu, 2023)
[5] See: https://ilostat.ilo.org/resources/concepts-and-definitions/classification-occupation/.

	32 Health associate professionals
	33 Business and administration associate professionals
	34 Legal, social, cultural, and related associate professionals
	35 Information and communications technicians

Source: ILO, The International Standard Classification of Occupations (ISCO)

1.1 Aims and objectives

The aim of the study is to evaluate the prevalence, types, and characteristics of undeclared work as well as the reasons for undeclared work among highly skilled workers in the EU. To achieve this, this study has the following objectives:

1. **To analyse the prevalence and types of undeclared work among highly skilled workers**:
   - What are the prevalence and types (i.e. unregistered employment, under-declared employment) of undeclared work and dependent self-employment among highly skilled workers?
   - Does the prevalence of undeclared work among highly skilled workers vary across the EU Member States?
2. **To identify the characteristics, contributing factors, and motives for undeclared work among highly skilled workers, according to previous data and studies**:
   - In which occupations/economic sectors is undeclared work more common (e.g. ISCO groups)?
   - Who are the highly skilled workers undertaking undeclared work (by socio-demographic characteristics)?
   - What are the contributing factors and motives of undeclared work among highly skilled workers?
3. **To provide an in-depth analysis of the magnitude and characteristics of undeclared work in selected sectors/occupations in selected countries (i.e. case studies).**

1.2 Methodology

A mixed-method approach has been employed, combing data analysis and literature review. In providing an overview of **employment among highly skilled workers** in the European Union, data extracted from Eurostat have been used. This data displays the number and proportion of highly skilled workers within total employment, tracks trends in the share of highly skilled workers, and delineates the characteristics of these individuals. This is complemented by projections for future employment growth in highly skilled occupations, derived from data extracted from the European Centre for the Development of Vocational Training (CEDEFOP).

To gain insights into **undeclared work among highly skilled workers**, two databases have been used. The European Working Conditions Telephone Survey (EWCTS) and the Special Eurobarometer 498 provide information on specific types of undeclared work or dependent self-employment. These include employees working without a contract (unregistered employment), employees receiving envelope wages (under-declared employment), and dependent self-employment.

The information on the prevalence, types, and characteristics of undeclared work among highly skilled workers is further complemented by a literature review. For details about the data used and the search terms employed for

this review, please refer to Annex 2 (Technical Appendix). The findings of the literature review are presented according to the two-digit ISCO-08 code.[6]

To comprehend the **contributing factors and motivations behind undeclared work among highly skilled individuals**, a concise overview of scholarly explanations for participating in undeclared work is initially presented to establish the context of their involvement. Subsequently, an examination of the disparities in motivation between highly skilled workers and those with low to medium skills is conducted, drawing from findings in the Special Eurobarometer 498. These insights are deepened by integrating findings from previous studies identified through the literature review.

The mixed method approach described above facilitated the selection of **five case studies**, aiming to highlight industries where undeclared work among highly skilled workers is prevalent, along with specific types of undeclared work common for this group of workers. Two industries have been selected, namely healthcare and education. In-depth analysis of undeclared work among highly skilled workers in the **healthcare sector** is conducted through two case studies, one case study focusing on Greece and one examining the motivations driving informal payments to healthcare professionals across the EU Member States. In-depth analysis of undeclared work among highly skilled worker in the **education sector** is conducted through a case-study on undeclared income obtained from tutoring in Romania. Under-declared work, emerging as one of the most common forms of undeclared work among highly skilled workers, is further explored through a case study on **under-declared working hours** in Denmark and an examination of **the risk of under-reporting wages among highly skilled minimum-wage earners** in Hungary.

2.0 Employment among highly skilled workers

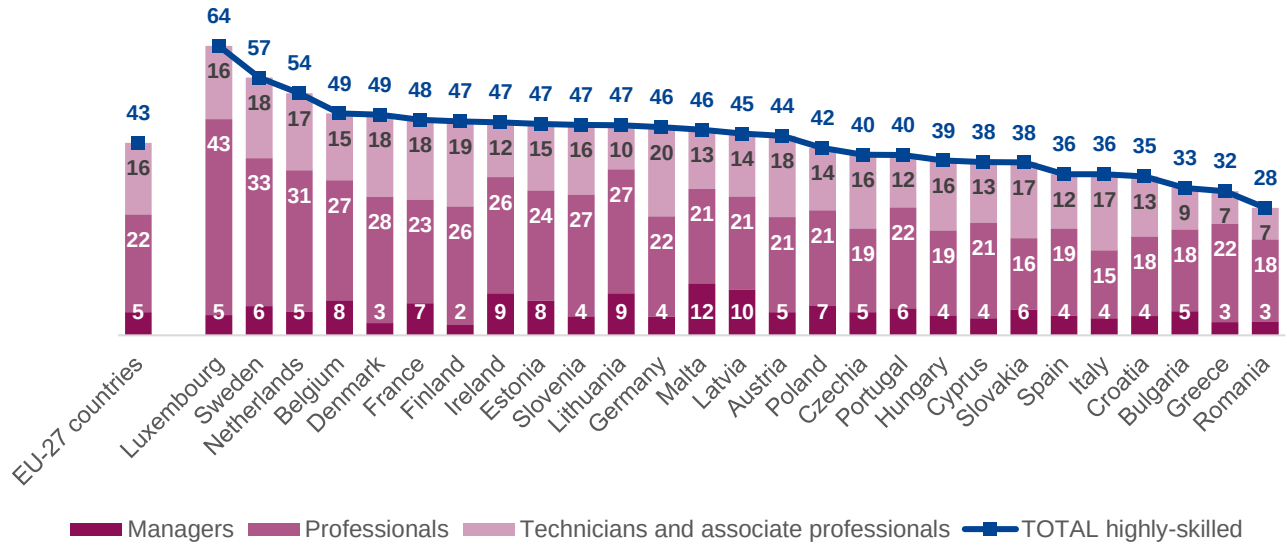
A notable share of the EU's workforce is highly skilled. As shown in Figure 1 below, in 2022 **more than 4 in 10 workers (86.4 million)** in the EU were highly skilled. Highly skilled employment, nevertheless, is concentrated in particular occupations. In 2022, managerial positions accounted for approximately 5 % of total EU employment (10.3 million), while professionals constituted 22 % of the total workforce (43.8 million). Additionally, technicians and associate professionals represented 16 % of the EU labour force (32.1 million). Within the EU, the predominant occupations among managers are production and specialised services managers (3.4 million) and administrative and commercial managers (2.7 million).[7] Similarly, among professionals, the most prevalent occupation is that of teaching professionals (10.8 million) and business and administration professionals (8.9 million), while among technicians and associate professionals the most prevalent occupation is that of business and administration associate professionals (13.3 million) and science and engineering associate professionals (7 million).

The importance of the highly skilled occupations (in terms of the numbers and proportions of workers employed) also significantly varies across the EU Member States. As Figure 1 displays, in terms of the proportion of highly skilled employment in each Member State, **Luxembourg** records the highest share (64 % of total employment) followed by **Sweden** (57 %) **and the Netherlands** (54 %). In these three Member States **highly skilled occupations account for more than half of total employment**. Figure 1 also reveals that the lowest share of highly skilled employment in total employment is found in Romania (28 %), Greece (32 %) and Bulgaria (33 %).

[6] These findings reveal that data from surveys provide lower estimates, which are consistently lower than the estimates obtained when using discrepancy methods. These methods include comparing household spendings or business surveys with administrative data from tax authorities and social security authorities. This is not surprising as individuals commonly under-report their involvement in undeclared work, thus survey estimates should be interpreted as conservative lower bounds (Horodnic and Williams, 2022).
[7] For more details, see Table A2 in Annex 3.

In terms of absolute numbers, **Germany** had the highest number in highly skilled employment (19.6 million), followed by **France** (13.5 million), **Italy** (8.2 million), **and Spain** (7.2 million).[8] These four Member States **account for more than 56 % of total highly skilled employment in the EU**. France has the highest number of managers, with 2 million individuals in this occupation, whereas Germany has the highest number of professionals (9.4 million) or technicians and associate professionals (8.4 million).

Figure 1. Proportion of highly skilled workers in total employment in the EU, 2022 (% of total employment)



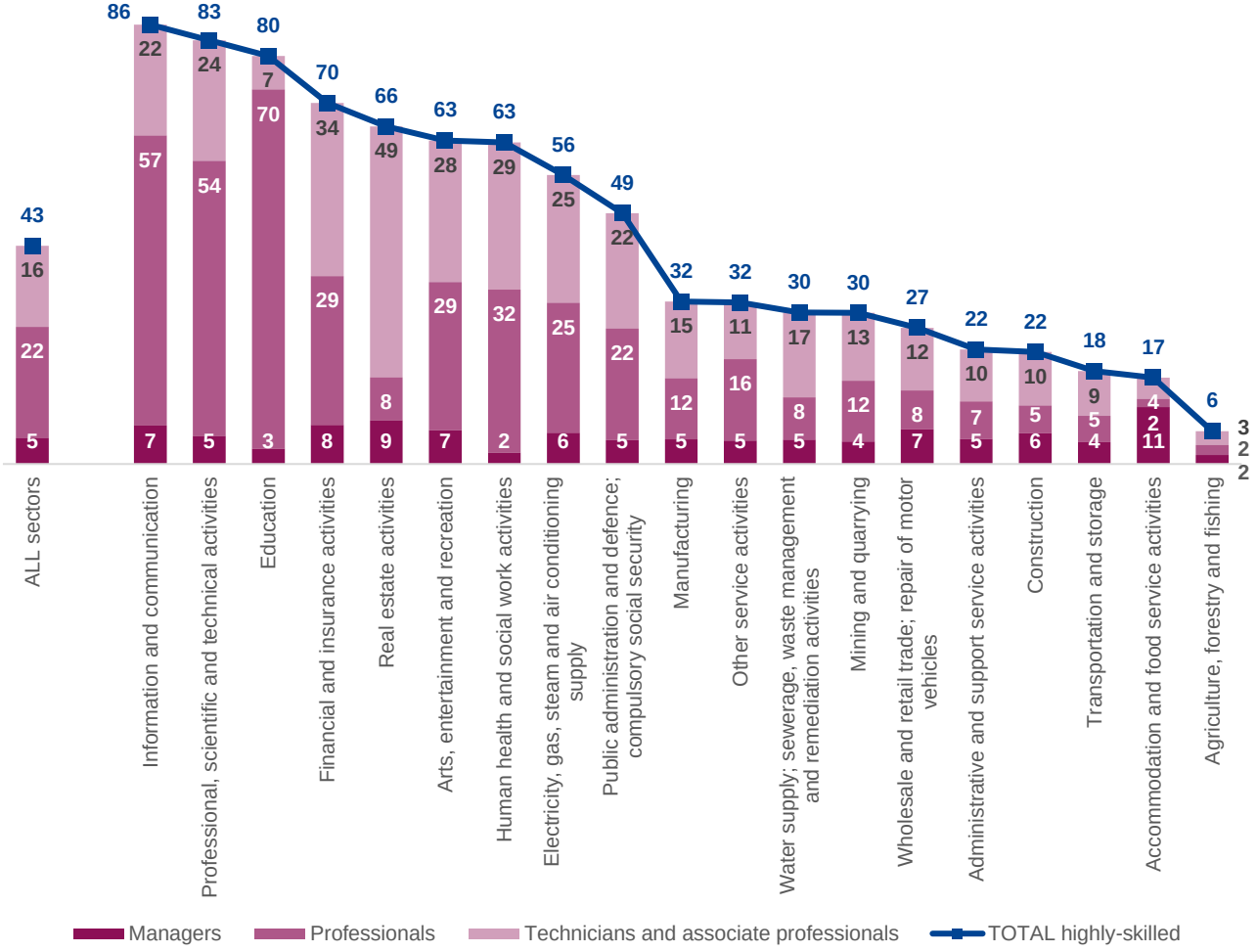
Source: Based on Eurostat data; DOI: 10.2908/lfsa_egai2d

Analysing the **changing composition of the highly skilled workforce**, a steady trend for managers, an upward trend for professionals, and a downward trend for technicians and associate professionals in total employment is identified in the EU.[9]

Highly skilled employment, nevertheless, is concentrated in specific sectors. According to Figure 2 below, **highly skilled workers are more prevalent in the information and communication sector** (where 86 % of workers are highly skilled), **professional, scientific, and technical activities** (83 %) **and the education sector** (80 %). Transportation and storage, accommodation and food service activities as well as agriculture, forestry and fishing have the lowest shares of highly skilled workers (18 %, 17 %, and 6 %, respectively). Breaking down the results by highly skilled occupations, the finding is that the share of managers is higher in accommodation and food service activities (11 %) and real estate activities (9 %), whereas the share of professionals is greater in education (70 %) and information and communication (57 %). Moreover, the share of technicians and associate professionals is higher in real estate (49 %) and financial and insurance activities (34 %).

[8] Ibid.
[9] Ibid.

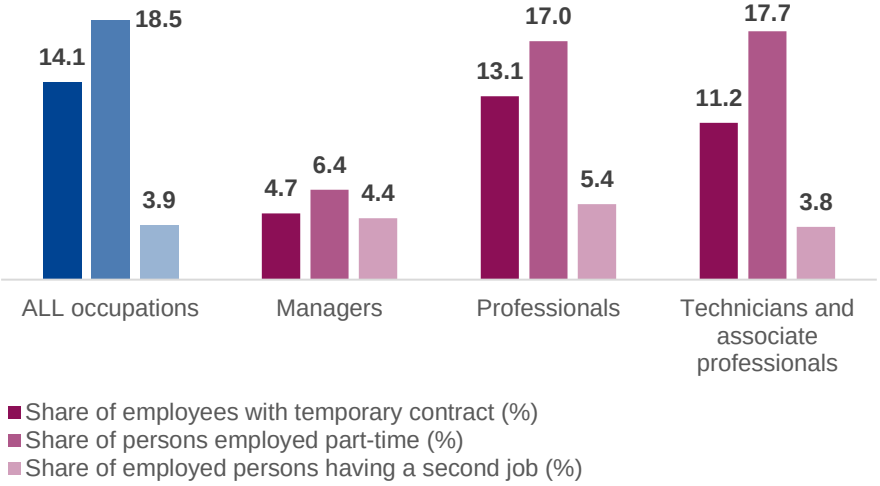
Figure 2. Highly skilled workers in the EU by economic sector, 2022 (%)



Source: based on Eurostat data; DOI: 10.2908/lfsa_eisn2

Figure 3 below reports three labour market characteristics associated with undeclared work, namely the share of temporary contracts, part-time employment, and second-job incidence. This reveals that **temporary employment is significantly less prevalent among managers** (4.7 % of employees in management positions) when compared with all employees (14.1 %). However, **temporary employment among professionals** (13.1 % of employees) **and technicians and associate professionals** (11.2 % of employees) **is comparable to the overall average across all occupations** (14.1 %). **This is similar for part-time employment**, with managers being less-likely to work part-time (6.4 %), whereas the shares of professionals and technicians and associate professionals in part-time employment (17.0 % and 17.7 %) are comparable to the overall average across all occupations (18.5 %). Meanwhile, when analysing the second-job incidence, Figure 3 shows that **the share of managers and professionals having a second job** (4.4 % and 5.4 %) **exceeds the overall average** across all occupations (3.9 %).

Figure 3. Characteristics of highly skilled workers in the EU, 2022

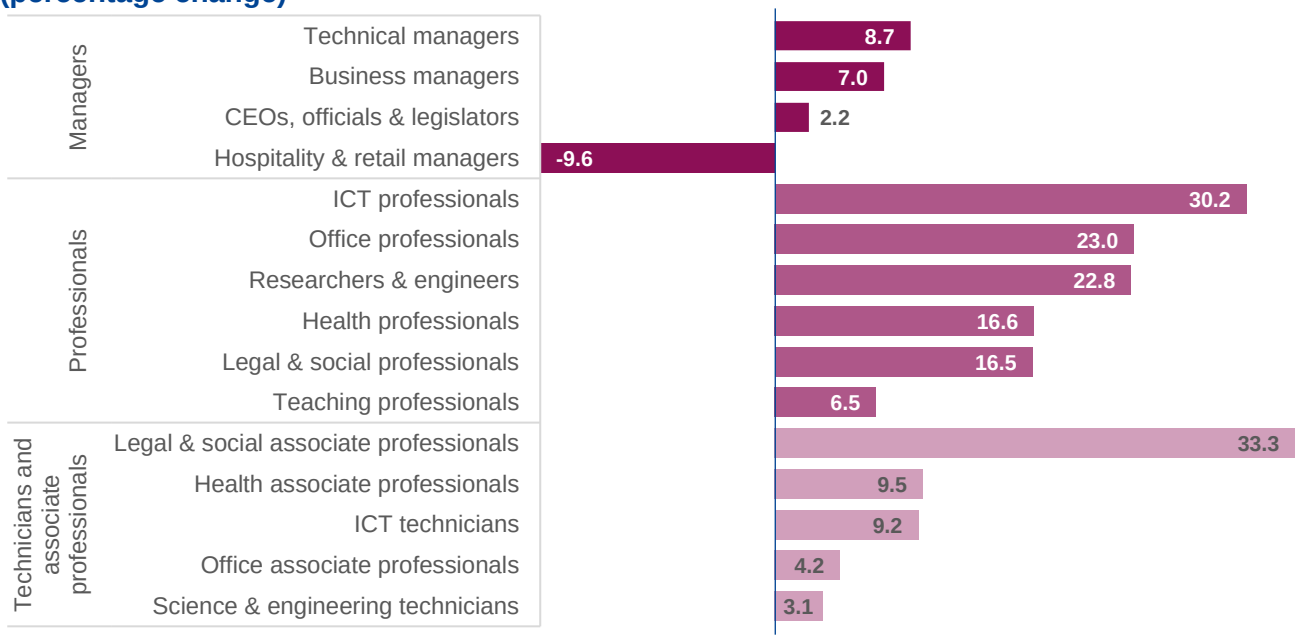


Source: Based on Eurostat data; DOI: 10.2908/lfsa_eegais | 10.2908/lfsa_eisn2 | 10.2908/lfsa_etgais | 10.2908/lfsa_epgais | 10.2908/lfsa_e2gis

Turning to the **employment growth forecast** in Figure 4, **a positive percentage change is expected in the EU for all highly skilled occupations, with the exception of hospitality and retail managers**, anticipated to register a decline of -9.6 % between 2022 and 2035.

Figure 4 also reveals that the highest employment growth is projected for legal, social, cultural and related associate professionals (33.3 %), information and communications technology professionals (30.2 %), business and administration professionals (23 %), science and engineering professionals (22.8 %), health professionals (16.6 %) and legal, social and cultural professionals (16.5 %).

Figure 4. Future employment growth by highly skilled occupations in the EU, 2022-2035 (percentage change)



Source: Extracted from Cedefop database (European Centre for the Development of Vocational Training). Available at: https://www.cedefop.europa.eu/en

Overall, highly skilled workers in the EU display diverse employment patterns and trends across Member States, occupations, and economic sectors, with varying rates of temporary and part-time employment, incidence of second jobs, and different growth forecasts across professions. As a consequence, tackling undeclared work

among highly skilled workers will be more important in some Member States, occupations, and economic sectors than in others.

Key findings

- In 2022, over 40 % of the EU workforce, approximately 86.4 million workers, were highly skilled.
- Luxembourg leads with highly skilled workers accounting for 64 % of total employment, followed by Sweden (57 %) and the Netherlands (54 %), while Romania (28 %), Greece (32 %), and Bulgaria (33 %) have the lowest shares.
- Managers remained steady, professionals increased, and technicians and associate professionals decreased as a share of total employment.
- Highly skilled workers are prevalent in the information and communication (86 %), professional, scientific, and technical activities (83 %), and education (80 %) sectors.
- Temporary employment is lower among managers (4.7 %) compared to the overall average (14.1 %), aligning closely for professionals (13.1 %) and technicians (11.2 %).
- All highly skilled occupations, except for hospitality and retail managers, are expected to grow from 2022 to 2035.

3.0 Undeclared work among highly skilled workers

In this chapter, we investigate the types of undeclared work among highly skilled individuals, based on available data. The analysis focuses on specific types of undeclared work, namely unregistered employment (those working without a contract), under-declared employment (involving an official wage and an additional 'envelope' wage), followed by an analysis of dependent self-employment (workers classified as self-employed but possessing the characteristics of dependent employees).[10]

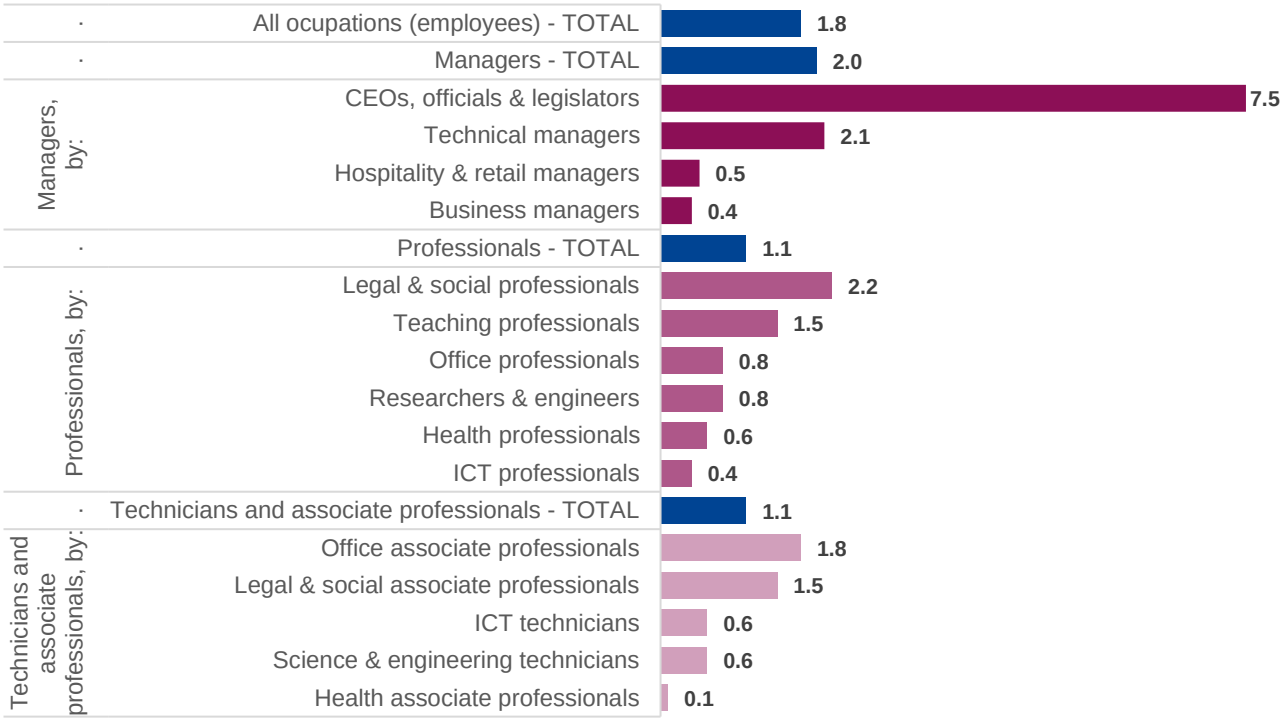
3.1 Unregistered employment

Unregistered employment refers to an employment arrangement that has not been formally registered with the appropriate authorities. Employees in such arrangements typically lack written contracts or terms of employment and their remuneration is unreported. As shown in Figure 5, 1.8 % of employees in the EU worked without having a written contract in 2021, compared with 2 % of managers,[11] 1.1 % of professionals, and 1.1 % of technicians and associate professionals. In the case of managers, unregistered employment is more common in some occupations, namely chief executives, senior officials and legislators (7.5 %) and production and specialised services managers (2.1 %) compared with hospitality, retail and other services managers (0.5 %) and administrative and commercial managers (0.4 %). Turning to professionals, the higher prevalence of unregistered employment (working with no contract) is observed amongst legal, social, and cultural professionals (2.2 %) and teaching professionals (1.5 %). Finally, analysing technicians and associate professionals, the finding is that unregistered employment is more common among business and administration associate professionals (1.8 %) and legal, social, cultural and related associate professionals (1.5 %).

[10] Before proceeding, it is important to acknowledge that survey data tend to provide lower estimates because individuals often under-report their participation in undeclared work as they might fear reporting a fraudulent behaviour. Additionally, cultural differences create challenges in designing a cross-national survey that allows for accurate comparisons between countries (Schneider and Buehn, 2018). For example, based on data from two waves of the Eurobarometer survey (2007 and 2013), it has been found that 91% of participants exhibited good or excellent cooperation during the survey, while 8% showed average cooperation. Nordic countries had the highest cooperation at 96%, whereas Southern Europe had the lowest at 87%. This suggests potentially lower sincerity among respondents in Southern Europe, which may explain the higher participation rates in undeclared work in Nordic countries despite their generally documented higher tax morale (Horodnic and Williams, 2022). In 2024, an innovative method for resolving the social desirability bias in the survey investigating undeclared work has been proposed (Arezzo et al., 2024). This study used data on undeclared work based on the 2019 Eurobarometer survey and revealed that while only 3.5% of the respondents openly acknowledged involvement in undeclared work, a Probit model adjusting for misclassified cases unveiled that a large share of the respondents engaged in undeclared work hesitated to admit it. The estimated overall proportion of undeclared workers stands at 17.3% after correcting for social desirability bias. Therefore, the estimates based on surveys are consistently lower than those obtained using discrepancy methods, such as comparing household spending or business surveys with administrative data from tax and social security authorities.

[11] Some managers without a working contract might not work undeclared. Depending on the legislation in each country, managers may work under different types of contracts, such as civil law contracts (e.g. 'managerial contracts' in Poland). Furthermore, if they own the business they manage, they might be allowed in some countries to work without an employment contract (e.g. Romania).

Figure 5. Highly skilled employees working with no contract in the EU by occupation - ISCO-08 two-digit level, 2021 (%)

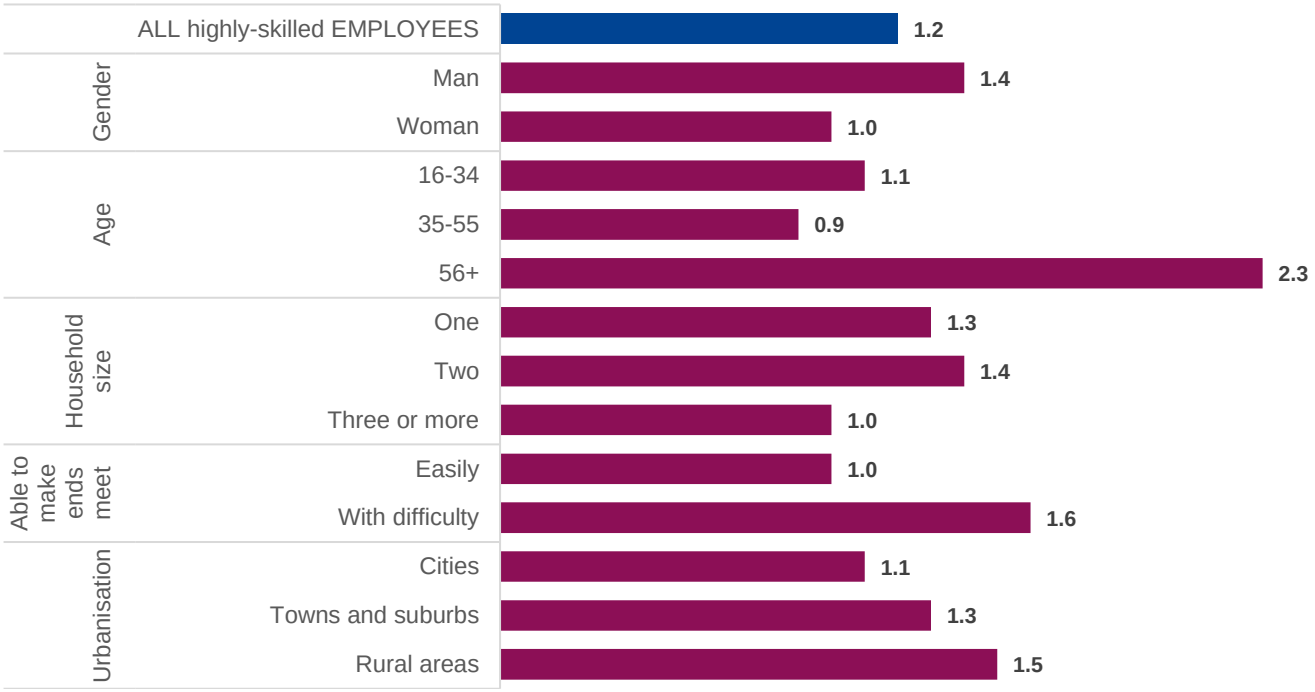


Source: Based on EWCTS 2021 (European Working Conditions Telephone Survey). Available at: https://www.eurofound.europa.eu/en/data-catalogue/european-working-conditions-telephone-survey-2021-0

There are also variations in the likelihood of working with no contract by socio-demographic characteristics. As Figure 6 below shows, unregistered employment exists across all socio-demographic groups. However, it is more common among some groups than others. Figure 6 reveals that highly skilled men employees are more likely to work with no contract than women (1.4 % compared with 1 %) as are older employees aged 56+ (2.3 %) more likely to engage in this type of working arrangement than younger employees. Moreover, unregistered employment is more common among highly skilled employees living in a single- or two-persons household (1.3 % and 1. 4 %) than those living in a household with three or more persons (1 %). Figure 6 also reveals that highly skilled employees facing financial difficulties are more likely to work with no contract than those not having such difficulties (1.6 % compared with 1 %). Likewise, highly skilled employees living in rural areas are more likely to work with no contract than those who live in cities (1.5 % compared with 1.1 %).

As such, highly skilled employees working with no contract in the EU are more likely to be men, from older age groups, living in single- or two-person households located in rural areas and facing financial difficulties.

Figure 6. Highly skilled employees working with no contract in the EU by socio-demographic characteristics, 2021 (%)



Notes: Highly skilled employees – managers, professionals, technicians and associate professionals

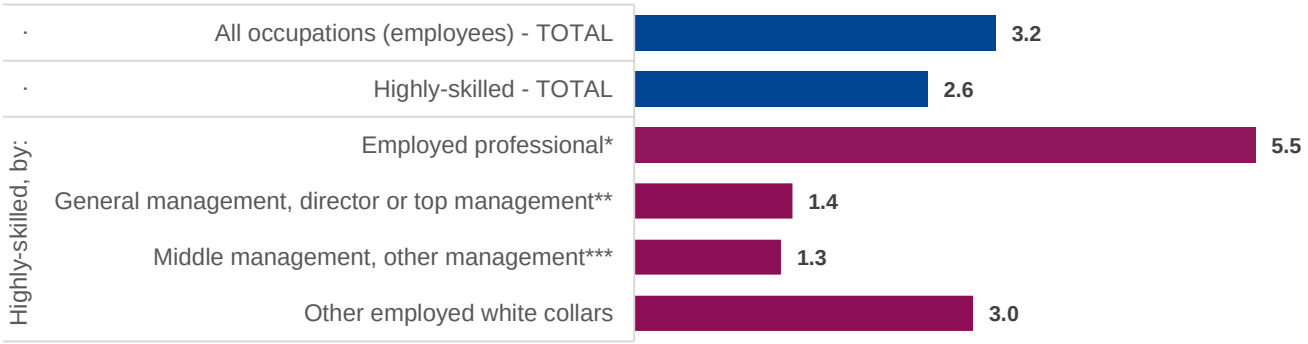
Source: Based on EWCTS 2021 (European Working Conditions Telephone Survey). Available at: https://www.eurofound.europa.eu/en/data-catalogue/european-working-conditions-telephone-survey-2021-0

3.2 Under-declared employment

Under-declared employment is an illicit practice in which employers remunerate their employees with two distinct salaries: an official declared salary and a supplementary undeclared 'envelope' wage, agreed upon verbally and concealed from public authorities. This arrangement aims to diminish tax and social security contributions (Williams and Horodnic, 2017).

As shown in Figure 7, 2.6 % of highly skilled employees in the EU declared that they have received envelope wages in 2019 (compared with 3.2 % of all employees within the EU). Therefore, under-declared employment is slightly lower among highly skilled employees compared to all employees in the labour market. Within the highly skilled category, under-declared employment is most common among employed professionals such as doctors, lawyers, accountants, or architects (5.5 %) and other employed white collars (3 %).

Figure 7. Highly skilled employees receiving envelope wages in the EU by occupation, 2019 (%)



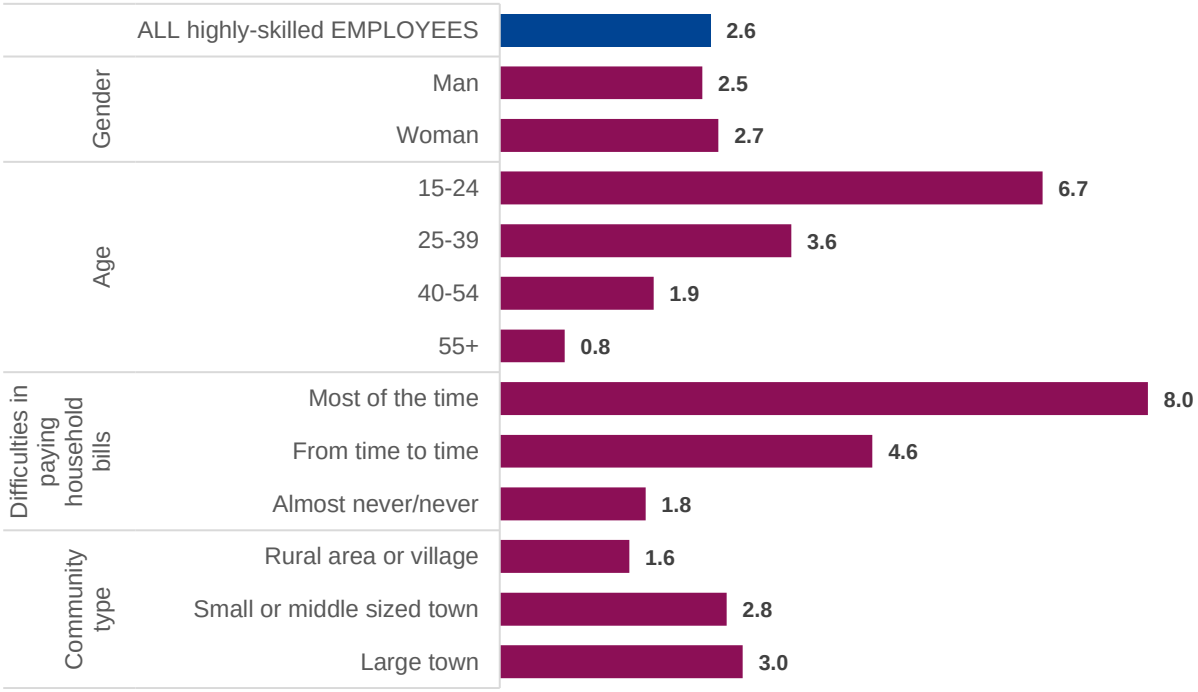
Notes: * Doctor, lawyer, accountant, architect; ** managing directors, director general, other director; *** department head, junior manager, teacher, technician

Source: Based on Special Eurobarometer 498 (Undeclared work in the European Union) - Eurobarometer 92.1 (2019). Available at: https://doi.org/10.4232/1.13716

Turning to the variations across socio-demographic groups, Figure 8 reveals that younger highly skilled employees are more likely to receive envelope wages (with 6.7 % of employees aged 15-24 and 3.6 % of employees aged 25-39 receiving envelope wages) and this steadily declines with age.

Similarly, highly skilled employees experiencing frequent difficulties in paying household bills more commonly receive envelope wages than those who have less difficulties. Therefore, as financial status improves, there is a decreasing propensity among highly skilled employees to receive envelope wages. Examining the variations between urban and rural areas, highly skilled employees living in large towns or small and middle-sized towns are more likely to receive envelope wages than those living in rural areas or villages (3 % and 2.8 % compared with 1.6 %, respectively).

Figure 8. Highly skilled employees receiving envelope wages in the EU by socio-demographic characteristics, 2019 (%)



Notes: Highly skilled employees - employed professional (employed doctor, lawyer, accountant, architect); general management, director or top management (managing directors, director general, other director); middle management, other management (department head, junior manager, teacher, technician); other employed white collars.

Source: Based on Special Eurobarometer 498 (Undeclared work in the European Union) - Eurobarometer 92.1 (2019). Available at: https://doi.org/10.4232/1.13716

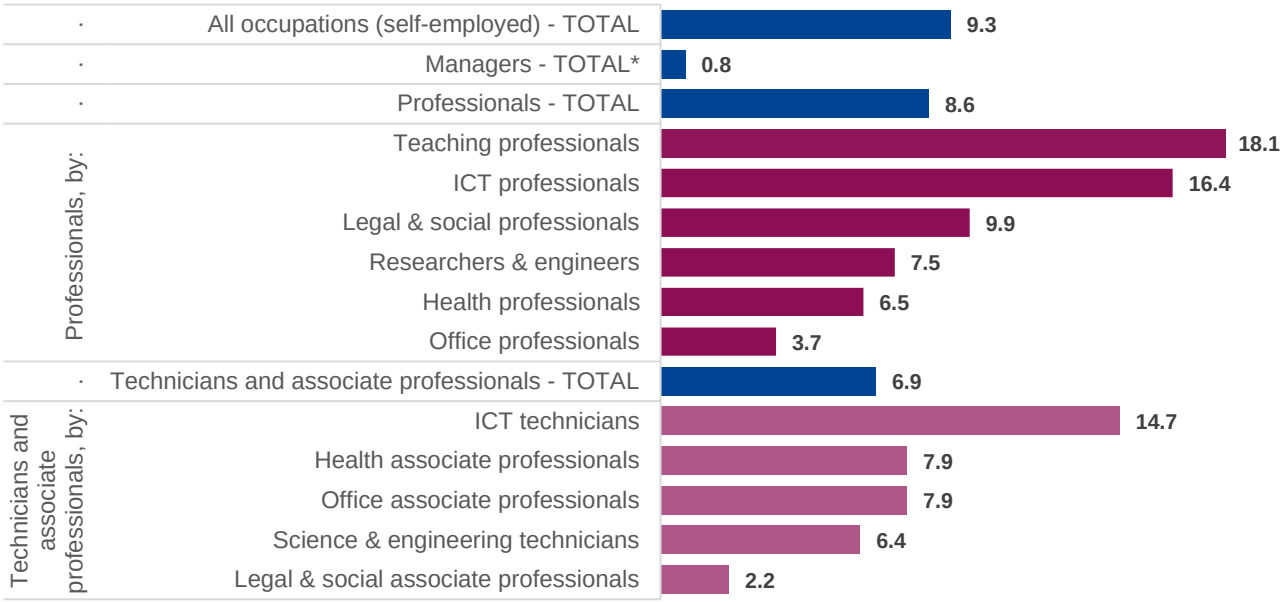
3.3 Dependent self-employment

Dependent self-employment refers to workers who are classified as self-employed but possess the characteristics of dependent employees. As such, dependent self-employed persons are those self-employed without employees who fulfil only one or none of the following criteria: 1) they have the authority to hire/fire; 2) they have generally more than one client or customer; and 3) they have the authority to make important strategic decisions (details in the Technical Appendix – Annex 2).

As Figure 9 displays, 9.3 % of the self-employed in the EU possess the characteristics of dependent self-employment, compared with only 0.8 % of self-employed managers, 8.6 % of self-employed professionals and

6.9 % of self-employed technicians and associate professionals. In the case of self-employed professionals, the higher prevalence of the self-employed possessing the characteristics of being dependent self-employed is observed amongst self-employed teaching professionals (18.1 %), information and communications technology professionals (16.4 %), and legal, social and cultural professionals (9.9 %). Analysing self-employed technicians and associate professionals, the finding is that dependent self-employment is more common among information and communications technicians (14.7 %), health associate professionals (7.9 %), and business and administration associate professionals (7.9 %).

Figure 9. Highly skilled dependent self-employment in the EU by occupation - ISCO-08 two-digit level, 2021 (% self-employed)



Notes: * Data at ISCO-08 two-digit level are not displayed due to very low number of cases (very low reliability)

Source: Based on EWCTS 2021 (European Working Conditions Telephone Survey). Available at: https://www.eurofound.europa.eu/en/data-catalogue/european-working-conditions-telephone-survey-2021-0

There are also variations in the prevalence of dependent self-employment by socio-demographic characteristics. Dependent self-employment exists across all socio-demographic groups. However, it is more common among some groups than others (see Figure 10 below).

Figure 10 reveals that highly skilled self-employed women are about twice as likely to possess the characteristics of being dependent self-employed than men (9.3 % compared with 4.8 %) as are younger highly skilled self-employed aged 16-34 (12.5 %) than those in older age groups (5.4 % for 35-55 age group and 5.3 % for 56+ age group). Highly skilled self-employed persons not facing financial difficulties are more likely to possess the characteristics of being dependent self-employed than those facing such difficulties (7 % compared with 5.4 %). Likewise, highly skilled self-employed persons living in cities are more likely to engage in dependent self-employment than those who live in towns or rural areas (7.9 % compared with 4.6 % and 6.6 %, respectively).

As such, highly skilled self-employed persons possessing the characteristics of dependent self-employment are more likely to be young women, living in a single person household, located in a city, and without financial difficulties.

Figure 10. Highly skilled dependent self-employment in the EU by socio-demographic characteristics, 2021 (% self-employed)

Notes: Highly skilled employees – managers, professionals, technicians and associate professionals

Source: Based on EWCTS 2021 (European Working Conditions Telephone Survey). Available at: https://www.eurofound.europa.eu/en/data-catalogue/european-working-conditions-telephone-survey-2021-0

In sum, the findings suggest that there are certain professions and socio-demographic groups who could be targeted when seeking to tackle undeclared work among highly skilled workers.

Key findings

- In 2021, 1.8 % of employees in the EU worked without written contracts (unregistered employment), with slightly higher rates among managers (2 %) and lower rates among professionals and technicians/associate professionals (1.1 % each). Unregistered employment cuts across all socio-demographic groups, with men, older employees aged 56+, financially struggling highly skilled workers, and rural residents showing higher likelihoods of working without contracts compared to their counterparts.
- In 2019, 2.6 % of highly skilled employees in the EU received envelope wages, compared to 3.2 % of all employees, indicating slightly lower under-declared employment among highly skilled workers. Within this group, professionals like doctors, lawyers, accountants, or architects (5.5 %) and other white-collar workers (3 %) are most affected. Younger highly skilled workers, those facing financial difficulties, and urban residents are more likely to receive envelope wages.
- 9.3 % of self-employed individuals in the EU exhibit characteristics of dependent self-employment, with higher prevalence among some of the self-employed professionals, particularly in teaching (18.1 %), information technology (16.4 %), and legal/social/cultural fields (9.9 %). Among self-employed technicians and associate professionals, notable shares are observed in the information technology (14.7 %), health (7.9 %), and business/administration (7.9 %) sectors. Dependent self-employment is more common among younger self-employed individuals, women, urban residents, those living alone, and those without financial challenges.

4.0 Characteristics, contributing factors, and motives of undeclared work among highly skilled workers

4.1 Characteristics of undeclared work among highly skilled workers

There is a growing body of evidence indicating that highly skilled workers are extensively involved in a wide range of undeclared work. The Eurobarometer survey conducted in **28 European countries** reveal that, for example, within the service industry there are more upper-tier undeclared workers than lower-tier counterparts (Williams and Kayaoglu, 2023). A more recent study, based on the Eurobarometer survey conducted in 2019 in **EU Member States**, analyses undeclared work, under-declared employment, and dependent self-employment. The findings indicate significant involvement of professionals in these forms of undeclared work and misclassifying workers. Specifically, the study reveals that among formally employed individuals, professionals such as doctors, lawyers, accountants, and architects have the second-highest prevalence of undeclared work, with 5.1 % admitting to engaging in such activities within the 12 months prior to the survey. Notably, this participation rate is only slightly lower than that of skilled (5.4 %) and unskilled manual workers (5.9 %). Turning to under-declared employment, the study reveals that the highest percentage of employees receiving envelope wages is represented by professionals (5.5 %). Similarly, when analysing the self-employed, the results show that 19.9 % of professionals are dependent self-employed. This percentage is nearly double compared to the following group where the second highest level of dependent self-employment is found, namely among farmers and fishermen (Williams and Horodnic, 2017, 2020a). However, when analysing the proportion of employed workers without a working contract, the European Social Survey covering **30 European countries** reveals that the lowest percentage of workers without contracts is found among those in highly skilled non-manual occupations (5 %), while the highest share of workers without a contract is associated with elementary occupations (17 %) (Hazans, 2011).

Similar findings have been observed in other studies focusing on specific countries and occupations. For example, in Hungary, income under-reporting is more prevalent among highly skilled professionals compared to manual workers, with many professionals under-declaring their earnings, particularly those reporting minimum wage (Bíró *et al.*, 2022; Elek *et al.*, 2012; Pálma and Ádám, 2022). In Greece, affluent professional groups such as doctors, lawyers, and accountants are found to be highly involved in undeclared work and under-declaring income/tax evasion (Artavanis *et al.*, 2015, 2016; ILO, 2016; Stasinopoulos *et al.*, 2024). Similarly, in Denmark, undeclared work is common among highly skilled workers, both waged and self-employed, with significant portions of their working hours unreported (Søndergaard, 2023). In Poland, a notable percentage of those engaged in undeclared work hold higher education degrees (Statystyczny, 2024).

These findings highlight the participation of highly skilled workers in undeclared work and tentatively suggest that **under-reporting income (envelope wages or income earned by the self-employed) and dependent self-employment are more prevalent among highly skilled workers** than working without a contract. To provide a qualitative review of the various types of undeclared work performed by highly skilled workers, section 4.1 analyses each highly skilled occupation separately (by ISCO-08 major groups and, where available, sub major groups). It assesses the different forms of undeclared work and provides examples. Section 4.2 investigates the contributing factors and motives that lead highly skilled workers to participate in undeclared work.

4.1.1 Managers

The professional category of 'managers' includes chief executives, senior officials, and legislators; administrative and commercial managers; production and specialised services managers and hospitality, retail, and other services managers. Studies focusing on undeclared work involving managers are rarely conducted for specific sectors, which restricts the ability to separate the findings within each of these categories. Therefore, this section discusses the findings on managers in general.

An extensive body of research links managers to undeclared activities, pointing to them as key actors in the initiation of undeclared work and income (tax evasion). However, only a few studies directly address the objectives outlined in this report and investigate how managers engage in or instigate undeclared work. Both the European Platform tackling undeclared work and the ILO hold the view that undeclared work can occur within formal or informal businesses and may be fully or partially undeclared.[12,13] Upon examining previous literature regarding the types of undeclared work undertaken by managers, two distinct research streams emerge, namely: **undeclared work conducted within a formal business framework** and **informal entrepreneurship**.

Starting with the types of **undeclared work conducted by managers in a formal business framework**, the following types can be found:

- Unregistered work: employing workers without a working contract (this is used more often in seasonal work).
- Under-declared work: under-reporting the number of working hours, the manager's own income, or that of their employees.
- Under-reporting income/tax evasion: deliberately reducing reported income to lower tax and social security obligations.

Misclassification of an employment relationship as self-employment (i.e., bogus/dependent self-employment) can be also found, and means incorrectly classifying employees as independent contractors or freelancers to avoid paying payroll taxes, providing benefits, or complying with labour laws.

There is limited research directly exploring managers' attitudes and behaviour towards undeclared work. Nonetheless, a summary of existing literature is presented here. Putniņš and Sauka (2015) employ an indirect method to investigate undeclared work activities by questioning managers about companies' participation in undeclared work within the industry, rather than their own company. Nevertheless, previous research indicates that responses from company owners/managers, even when asked indirectly, reflect the individual respondent or the company they represent (Sauka, 2008). Their findings, based on a minimum of 500 companies from each of the **Baltic countries** showed that, in 2022, undeclared activities represented 18 % of GDP in Estonia, 26.5 % in Latvia, and 25.8 % in Lithuania. When analysing the structure of undeclared activities, the finding is that the highest share is represented by the use of envelope wages followed by under-reporting the company's income and the use of unregistered employees (Sauka and Putniņš, 2022). Merikull and Staehr (2010), analysing the data from the Working Life Barometer in Baltic countries found that workers in higher positions, like specialists or managers, are less likely to engage in unregistered employment. Therefore, these results indicate that in Baltic countries, managers are increasingly reducing the use of unregistered employment for both their employees and themselves.

Using the same methodology on surveying company owners/managers Putniņš *et al.* (2019) estimated the magnitude of undeclared activities in **Romania** at 33.3% of GDP in 2016, with unreported company income being the largest component, followed by unregistered employees and envelope wages. Similarly, a study surveying 614 managers, administrators, or human resource managers from Romania's construction sector revealed a high

[12] https://www.ela.europa.eu/en/undeclared-work [10.04.2024]
[13] https://metadata.ilo.org/thesaurus.html [10.04.2024]

perception on the use of undeclared practices. Nearly a third of those estimating the extent of undeclared work believe that over half of the workers in the construction industry are either entirely undeclared or receive envelope wages (Horodnic and Horodnic, 2021).

Data from a 2015 survey, comprising 1 430 face-to-face interviews with owners or managers in **Croatia, Bulgaria**, and **North Macedonia** reveal significant levels of undeclared activity in their sectors. Around one quarter of trade is estimated to be conducted undeclared, with the overall undeclared economy reaching approximately 38 % (Horodnic and Williams, 2018). The most common undeclared practices reported include reporting lower turnover, lower profits, and hiring employees under contracts with hidden clauses such as paying the social contribution for a minimum wage, while the remaining portion of the wage is issued undeclared, without payslips. However, disparities exist between countries. In North Macedonia, common undeclared practices involve under-reporting employee numbers or wages, while in Croatia and Bulgaria prevalent practices revolve around financial under-reporting (lower profits, lower turnover, or partial invoicing) (Horodnic and Williams, 2018).

In **Czechia**, Belešová *et al.* (2016) conducted interviews with 74 managers from hospitality businesses. According to the respondents, unregistered employment is used by around a half of small hotels, restaurants, and small bars and by 80 % of other accommodation establishments.

A further study conducted in **Hungary** based on surveying 1 000 individuals in 2007 and 2008, revealed that nearly one-third of managers have been involved in undeclared work either in the form of envelope wage payments or as partially invoicing their work (Tóth, 2008). Using various data sources including the Hungarian Household Budget Survey, the Hungarian Labour Force Survey, and administrative records from the Hungarian Pension Authority, Filep-Mosberger and Reiff (2022) found that from 2012 to 2017, approximately 12 % of total workers were unregistered, indicating no decline. However, a downward trend in income under-reporting by managers has been identified.

For instance, Battaglini *et al.* (2019, 2020) analysed administrative data from the Italian Revenue Agency, specifically examining return files and audit records of all **Italian** sole proprietorship businesses from 2007 to 2014. They found that among the businesses audited during this period, around 65 % were involved in under-declaring income (tax evasion). No less than 12 % of audited taxpayers were found to have evaded taxes on all their taxable income.

Highly relevant for managers involved in undeclared is the category of the **self-employed**. This category comprises **individuals working for their own businesses**, which may or may not involve the hiring of additional workers. While not immediately intuitive, it is important to acknowledge that many self-employed individuals inherently assume managerial roles within their businesses. Their own leadership and decision-making responsibilities classify them as managers within their enterprises. All the above types of undeclared work can be conducted by the self-employed. Self-employed individuals without employees, also known as solo self-employed workers, can be divided into two groups: those who independently operate their own business, farm, or production facility without hiring additional staff (Milasi and Mitra, 2022; Skrzek-Lubasińska and Szaban, 2019), and **freelancers** who provide professional knowledge or services to companies or individual clients (Markovic *et al.*, 2021; Skrzek-Lubasińska and Szaban, 2019).

Regarding **freelancers**, even though they operate as self-employed individuals, they frequently encounter reduced control over project deadlines and, occasionally, over the work process when they accept assignments (Kazi *et al.*, 2014; Markovic *et al.*, 2021). This raises concerns about their misclassification by online platforms, as these workers possess many characteristics of dependent employees (Horodnic and Williams, 2020; Williams *et al.*, 2020). Indeed, dependent self-employment has been documented among aircraft workers, including pilots (Turnbull, 2020). Another concern regarding freelancers is the high prevalence of income under-reporting and undeclared work (OECD, 2020; ILO, 2021). Indeed, a substantial share of freelance work has been conducted

informally, often involving workers who did not report their income to tax authorities. Similarly, a study of highly skilled video game workers in **Poland**, including graphic designers, game designers, character artists, software engineers, and creative directors uncovered the misuse of civil law contracts and self-employment arrangements to conceal employment relationships (Ozimek, 2019).

With the emergence of **online platforms**, the extent of unreported income could potentially grow significantly requiring specific initiatives enabling formalisation of unreported income (Thomas, 2017; van Slageren, 2023). The results of the Eurobarometer survey on undeclared work conducted in 2019 in the EU Member States and the UK revealed that 13 % of undeclared work was conducted on digital labour platforms (Mațcu *et al.*, 2023). In addition, while the current focus for national enforcement agencies in the EU regarding the collaborative economy is on sectors such as food/parcel delivery and personal transportation, there is an increasing recognition of the much wider and growing variety of sectors and services provided by freelancers. This includes highly skilled workers such as translators, graphic designers, software developers, and online content reviewers (Hauben, 2021). Indeed, according to the Online Labour Index (OLI), which tracks projects and tasks on major platforms in English, Spanish, and Russian, there has been a significant increase in demand for technology and software developers over the past five years (Stephany *et al.*, 2021).

Returning to **self-employment**, Bag and Wang (2021) suggest that there is a connection between the probability of under-reporting income and the abilities of self-employed entrepreneurs, noting that those with higher skill levels have a greater tendency to under-report. For instance, in **Greece,** utilising data from a major bank and cross-referencing it with administrative data on reported income provided by tax authorities, it has been estimated that, on average, between 43 % and 45 % of self-employed individuals' income is not reported. The most significant portion of under-reported income was observed within professional services such as medicine, law, engineering, education, and media. In 2009, this translated to around EUR 28.2 billion of income not reported by the self-employed individuals, equivalent to approximately 30 % of the country's deficit (Artavanis *et al.*, 2015, 2016). In various countries, significant rates of income under-declaration among the self-employed have also been observed, such as 41.6 % in **Denmark** (Kleven *et al.*, 2011), 67 % in **Hungary** (Benedek and Lelkes, 2011), and 30 % in **Sweden** (Engstrom and Holmlund, 2009). The high involvement in undeclared work of self-employed individuals from industries requiring highly skilled work in Denmark is confirmed by Søndergaard *et al.* (2023) who revealed it to be much higher than that of waged workers in the same industries.

Moving to the second stream of research, managers may opt to establish their own **informal businesses/ enterprises**, running them entirely off the record without formal registration or tax or social security payments. Regarding the scale of informal businesses, this could involve solely the manager's own informal work (i.e. informal self-employment) or, alternatively, the employment of unregistered workers. Salvi *et al.* (2023) conducted an integrative review of the informal entrepreneurship field and revealed that more than 350 journal articles have been published on the topic. Although getting into more details about informal entrepreneurship is beyond the scope of this study, **it is important to recognise that in most economies informal entrepreneurship exists**. For instance, analysing the World Bank Enterprise Survey, Williams (2019) provided evidence on informal entrepreneurship in **Bulgaria**, **Lithuania**, **Poland**, **Hungary**, **Estonia**, **Romania**, **Croatia**, **Slovenia**, and **Slovakia**. Informal entrepreneurship and dependent self-employment have been identified as pathways for migrants to integrate into the labour market of the recipient countries, as shown, for example, by Ukrainian migrants in Poland (Borkowski *et al.*, 2021) and in the UK (Vershinina *et al.*, 2018).

To summarise, managers can participate in undeclared work through diverse avenues, with their choices exerting direct influence not only on themselves but also on their employees. Nevertheless, it is important to acknowledge the precarious nature of the work undertaken by certain individuals labelled as managers, such as dependent self-employed individuals and certain freelancers.

Key findings

- Extensive research connects managers to undeclared activities, highlighting managers as key initiators of undeclared work and under-reporting income, with two main research streams emerging: undeclared work within formal business frameworks and informal entrepreneurship.
- Within formal business frameworks practices such as unregistered work, under-declared work, misclassification of workers (bogus/dependent self-employment), and under-reporting income/tax evasion are revealed. The prevalence and practices vary across countries and sectors.
- Self-employment among highly skilled workers, including solo self-employed individuals and freelancers, presents challenges such as income under-reporting and misclassification, especially notable in freelancing due to reduced control of the self-employed over the work processes and deadlines.
- With the rise of online platforms, there is a growing concern about the potential increase in undeclared work. A significant share of freelance work is conducted informally, highlighting the need for specific initiatives to enable formalisation of the work and address misclassification issues. Additionally, there is a need to acknowledge the diverse sectors and services provided by freelancers, including translators, graphic designers, software developers, and online content reviewers.

4.1.2 Professionals, technicians and associate professionals

This section examines the characteristics of undeclared work performed by professionals, technicians, and associate professionals across various industries (i.e. science and engineering, healthcare, education, business and administration, information and communication technology and legal, social and cultural industries).

4.1.2.1 Science and engineering professionals and associate professionals

Professionals and associate professionals have the potential to engage in various forms of undeclared work. They may pursue undeclared side work related to their professional expertise, which falls outside their formal contract (e.g. conducting geological surveys or environmental assessments, providing consultancy services in data analysis, offering construction or structural engineering services, or providing technical support for engineering projects, and offering design services). They may also work as registered self-employed professionals (either in addition to their formal employment or as their sole source of income) or set up a business and under-report their actual earnings. Similarly, they often receive envelope wages, under-reporting their real wages. In addition, due to the significant diversity among workers in this professional category, some may find themselves in more vulnerable positions, such as being dependent/bogus self-employed (e.g. freelancers on online platforms, particularly in the video game industry; pilots).

For example, in **Denmark**, investigating the discrepancy between the Danish Labour Force Survey data and tax authority data reveals that many highly skilled workers in professional, scientific, and technical activities engage in undeclared work, with 22% of waged workers and 36% of non-waged workers concealing significant portions of their actual working hours (Søndergaard, 2023). Similarly, through the analysis of administrative and bank data, Artavanis *et al.* (2015, 2016) found that Greek self-employed professionals in engineering and science under-reported 60 % of their total income, positioning these professionals as the third highest tax evaders in Greece, following health and law professionals.

A survey of 1 212 workers in the construction sector in **Romania** revealed that construction site managers, engineers, and architects record higher percentages of involvement in undeclared work (around a quarter of them)

as compared with the lower- or medium-skilled workers (Horodnic and Horodnic, 2021). The results are attributed to the higher level of cooperation among professionals and associate professionals, as they have a better understanding of market research requirements, data confidentiality, and the lack of risk associated with being honest. Consequently, the high percentage of undeclared work among highly skilled workers in construction, although acknowledged as high, is believed to be similar to or even surpassed by lower- and medium-skilled workers (Horodnic and Horodnic, 2021). However, based on the same data, and investigating only the under-reporting of wages, a further study revealed that those with professions such as team leaders, technicians, site managers, engineers, and architects are engaged in this practice to a much lower extent than unskilled- and skilled- manual workers (Horodnic *et al.*, 2022). This indicates that **undeclared work of highly skilled workers in the construction industry takes the form of undeclared own account work (i.e. side work outside their formal job) or under-reporting the income as a self-employed individual.** Based on the examination of literature on criminal behaviour within the architecture, engineering, and construction (AEC) industry, Lohne *et al.* (2019) identified also that undeclared work represents a persistent issue, alongside other types of crimes involving materials, organisation, and health, safety, and environmental regulations.

The Institute of political, economic and social studies (EURISPES), a reputable private Italian research institute, conducted a survey of 1 120 individuals to investigate undeclared work practices, specifically focusing on work performed without a contract and the failure to issue invoices. The findings revealed that 57 % of electricians admitted to engaging in at least one of these forms of undeclared work in **Italy** (EURISPES, 2016; Talani, 2017).

An examination of highly skilled video game professionals in **Poland** revealed the utilisation of civil law contracts and self-employment arrangements to hide employment relationships (Ozimek, 2019). Dependent self-employment, along with other types of undeclared work such as under-reported working hours and evasion of tax and social security contributions were also noted among aircrew workers (e.g. pilots) (Turnbull, 2020).

The recognised participation in undeclared work of science and engineering professionals and associate professionals is exemplified by the fact that in 2015, the National Tax and Customs Administration of **Hungary** targeted electricians and designers, while in 2014 engineers were targeted by the Office of the Revenue Commissioners in **Ireland** (European Commission, 2016).

4.1.2.2 Health professionals and associate professionals

Turning to health professionals and associate professionals, various avenues to engage in undeclared work have been identified. This category of workers can provide medical services outside of formal practice settings (e.g. medical procedures or consultations, administering medications, paramedical services such as physical therapy or chiropractic care, home-based nursing care or midwifery services, veterinary services at farm premises) without declaring the income earned. They can also be a business owner who owns/runs an individual practice (which can be in addition to their formal job in the public sector) and under-reports the turnover or wages of their employees. Another form of undeclared income of health professionals and associate professionals is represented by the cash-in-hand money they receive from patients of public health facilities. Nevertheless, in the private sector, they can also receive envelope wages, be paid supplements in accordance with the number of consultations undertaken, or working as self-employed for a clinic or hospital, even though they have a fixed schedule, they use the equipment and the premises of the company they work for, making them susceptible to dependent self-employment.

Artavanis *et al.* (2015, 2016) found that **Greek** health professionals under-reported their income by EUR 32 548, representing 57 % of their total income, positioning them as the highest tax-evaders across various sectors, including workers in sectors such as farming, construction, transportation, lodging, and tourism. In a more recent study by Stasinopoulos *et al.* (2024), it was estimated that dentists and doctors in Greece hid an average annual income of EUR 565.6 million (approximately 42% of their income) during 2011-2017, accounting for 0.31 % of the

country's GDP for that period. These figures fall below the average annual estimates for other human-to-human life services such as accommodation services, catering, or education, but surpass those of personal care or funeral-associated services (Stasinopoulos *et al.*, 2024). Nonetheless, when considering these figures in context, especially acknowledging Greece's substantial tourism sector relative to the healthcare sector, these results strongly suggest that health professionals indeed represent a significant group of workers under-reporting their real income in Greece.

In **Denmark**, estimates suggest a significant proportion of workers in human health and social work activities participate in undeclared work. Approximately 20 % of waged workers are estimated to be engaged in undeclared activities, concealing about 5 % of actual working hours, while an estimated 23 % of non-waged workers, primarily self-employed individuals, conceal around 11 % of actual worked hours (Søndergaard, 2023). It is important to note, however, that these percentages of undeclared workers in healthcare and social work activities are among the lowest in the country when compared with other sectors involving both skilled and non-skilled workers.

Similarly, the aforementioned 2016 report by EURISPES revealed that a half of health specialists in **Italy** admitted to practicing without issuing an invoice (EURISPES, 2016; Talani, 2017). The undeclared own account work undertaken by the health professionals has been also acknowledged in **Cyprus** (European Commission, 2016).

In addition, previous studies have documented another form of undeclared income among health professionals and associate professionals, which involves informal payments made by patients in public health institutions, often referred to as 'under the table', 'out-of-pocket', or 'unofficial' payments (Încalțărău *et al.*, 2021; Horodnic, 2021; Horodnic *et al.*, 2022). For example, findings from the Special Eurobarometer 502, which surveyed 27 731 respondents across European Union Member States and the UK in 2019, highlighted the high prevalence of informal payments in healthcare in certain countries listed in order of prevalence: **Romania**, **Austria**, **Greece**, **Hungary**, **Bulgaria, Latvia**, and **Lithuania** (Horodnic, 2021). Moreover, it has been documented that health professionals use public facilities to provide treatment to private-paying patients, constituting yet another form of under-reporting their income (Eggleston and Bir, 2005).

Furthermore, a study conducted in **Belgium** found that volunteer medical personnel for non-profit sports clubs, even though they were not supposed to be paid for their services, received reimbursements exceeding the scope of actual expenses, thus concealing a form of wage payment through the improper use of the fixed amount reimbursement scheme (Vos *et al.*, 2012).

In contrast, in **Croatia**, a dentist's in-depth interview revealed that certain doctors are in a more vulnerable position, as evidenced by the dentist having no other employment options and being determined to accept envelope wages (Franic, 2020a).

To examine the demand for undeclared healthcare goods and services, a survey was conducted among 3 048 respondents across four Southern EU Member States. The findings indicate that 13 % of **Maltese** citizens, 9 % of **Cypriots**, 7 % of **Greeks**, and 2 % of **Italians** had purchased undeclared healthcare goods and services. Variations were observed regarding whether these purchases were made knowingly or unknowingly (i.e. individuals may only become aware later that they have made a purchase from the informal economy because they did not receive an invoice or receipt). About 80 % of buyers in Greece and 65 % in Cyprus made purchases knowingly (Horodnic *et al.*, 2021). Thus, informal payments for healthcare services are rather common and are accepted by the society.

The involvement of health professionals in undeclared work is also reinforced by the fact that they represent a focus for enforcement authorities across many countries. For example, in 2015 doctors and vets represented one of the targets of National Tax and Customs Administration of **Hungary** and, in 2014 the doctors and dentists were targeted by the Office of the Revenue Commissioners in **Ireland** (European Commission, 2016).

4.1.2.3 Teaching professionals

The most common form of undeclared work conducted by teaching professionals involves work performed as side jobs outside of formal educational institutions. Some examples include: higher education teachers conducting research or consulting work (e.g. for private sector or for governments and supra-national institutions), vocational education teachers providing specialised skills training or mentoring services, secondary education teachers offering private tutoring sessions or exam preparation courses, primary school and early childhood teachers providing after-school care, and other teaching professionals offering private tutoring for languages, art, and music. These activities may involve either entirely undeclared work or the undertaking of work as registered self-employed individuals, with income not fully disclosed. Furthermore, envelope wages can be used in private educational institutions. Previous findings about teaching professionals are summarised below.

Based on a survey of 1 002 respondents from **Romania**, Vasilescu *et al.* (2016) found that around 12 % of the respondents engaged in **undeclared activities outside their declared employment**. Among these individuals, a significant percentage (5.7 %) engaged in tutoring without reporting it, thus making tutoring the only highly skilled work among the top four undeclared side activities, following house repairs and renovations, cleaning residential and/or commercial spaces, agriculture and gardening. A representative study conducted in Romania in 2021 among parents and children unveiled that approximately one in three children receive private tutoring, with payments predominantly arranged through informal agreements lacking formal contracts and tax receipts (Pup, 2021). The results of a Special Eurobarometer survey conducted in 2013 show that paying for tutoring for high school entrance exams and foreign language lessons has emerged as one of the frequently undeclared activities in **Bulgaria**, alongside domestic repairs, healthcare, cleaning, gardening, and babysitting as indicated by Dzhekova and Williams (2014). Similarly, in **Croatia**, approximately 19 % of the 360 000 households found to be involved in providing undeclared **side activities (i.e. in addition to their declared employment)** were providers of intellectual services such as teaching and translating. This placed tutoring as the second most common undeclared activity after agricultural activities (reported in 32 % of all households) (Bejaković and Stefanov, 2019).

Meanwhile, in **Greece** it has been estimated that self-employed professionals in education under-reported their income by EUR 27 166, representing around 63 % of their total income. In terms of the under-reported amount of money, self-employed individuals in education rank as the fourth highest group of tax evaders, following those in medicine, law, engineering, and science. However, when considering the proportion of the real income hidden from authorities, the self-employed professionals in education rank first among all analysed workers, regardless of high- or low-skilled (Artavanis *et al.*, 2015, 2016). Indeed, a more recent study conducted in Greece by Stasinopoulos *et al.* (2024) suggests that the workers in the education sector are becoming increasingly problematic in terms of accurately declaring their income. The annual unreported income by the workers in the education sector was estimated at least EUR 2.1 billion, representing 1.18 % of the country's GDP. According to the same study, this concealed income represents 63.1 % of the actual income earned between 2011 and 2017 by workers in the sector. Unlike in the health sector, an increasing share of hidden income has been observed in the education sector during the same period, from 42.34 % in 2011 to 65.51 % in 2017 (Stasinopoulos *et al.*, 2024).

In **Denmark**, 25 % of workers in education were engaged in undeclared work, concealing 6 % of the actual working hours. Meanwhile, when analysing non-waged workers (mainly represented by the self-employed), the study revealed a much higher proportion involved in undeclared work, reaching 43 %, the highest across professionals' groups, with an increase observed in 2015 compared with 2014. Similarly, the percentage of **undeclared working hours** among non-waged workers in this sector is more than four times higher than that of waged workers, reaching 26 %, placing them among the top four industries in terms of the percentage of under-declared working hours by non-waged workers (Søndergaard, 2023). In addition, in Denmark, students have been identified as a significant group of workers **providing tutoring without utilising an intermediary company and without declaring their income** (Zhang, 2023). In **Italy,** the 2016 EURISPES report revealed that 78.7 % of **tutors acknowledged work conducted without a contract or the absence of invoicing**. This places teaching

professionals as the second most involved group in undeclared work across all occupations, following babysitters (EURISPES, 2016; Talani, 2017). Similarly, a study involving 6, 035 respondents uncovered the prevalence of undeclared work, covering both **unregistered employment and envelope wages**, in training and tutoring activities as follows: 4 % in **Estonia**, 9 % in **Latvia**, 7 % in **Lithuania**, 9 % in **Poland**, and 8 % in **Sweden** (Žukauskas and Schneider, 2016). In **Czechia**, a survey of 494 teachers in lower secondary schools revealed that 36 % of teachers are involved in additional **paid work activities in addition to their school employment**, almost half of these activities involving tutoring (Stastný *et al.*, 2021). Undeclared work undertaken by tutors has also been acknowledged in **Cyprus** (European Commission, 2016). The Eurobarometer Survey conducted in 2019 across the EU Member States revealed that 10 % of individuals who declared themselves to be participating in undeclared work within the service industries were involved in tutoring activities (Williams and Kayaoglu, 2023).

The significance of undeclared activities among teaching professionals is substantial and should not be overlooked. For instance, in **France**, the private tutoring sector was valued at approximately EUR 2.21 billion in 2006, EUR 300 million in **Romania** in 2020, while in **Greece** it was estimated to surpass government expenditure on education at the senior secondary level (Bray, 2009; Daedalus Millward Brown, 2010; Psacharopoulos and Tassoulas, 2004).

4.1.2.4 Business and administration professionals and associate professionals

There are various ways in which highly skilled business and administrative professionals and associate professionals can engage in undeclared work. However, this category comprises a rather heterogeneous group of workers. Examples of common forms of undeclared work within this professional group include providing financial consulting or advisory services by finance professionals and accountants, freelancing for marketing and public relations campaigns, and earning commissions by purchasing agents and brokers. Dependent self-employment is also prevalent within this professional group, with many consultants, accountants, or financial advisers working as self-employed individuals for companies despite using the company premises and relying mainly on a single client. Additionally, accountants and financial professionals are often associated with undeclared work due to their involvement in advising clients on tax compliance matters. Examples of previous studies focusing on this occupational group are provided below.

In **Denmark**, a significant portion of workers in administrative and support service activities have been found to engage in undeclared work. No less than 30 % of workers participated in undeclared work, concealing 7 % of the actual working hours. This places waged workers in administrative and support service activities as the professional group with the highest involvement in undeclared work in Denmark. Meanwhile, when examining non-waged workers (mostly composed of self-employed), the study uncovered a slightly higher proportion involved in undeclared work, reaching 33 %. However, the percentage of **undeclared working hours** among non-waged workers in this sector is more than double that of waged workers, reaching 18 % (Søndergaard, 2023).

However, when surveyed about their participation in undeclared work, business and administration professionals and associate professionals consistently report lower levels of involvement. This discrepancy suggests that they may be more reluctant to admit to engaging in undeclared work compared with other workers. For example, the 2016 Žukauskas and Schneider study involving 6 035 participants explored the extent of undeclared work, including both unregistered employment and envelope wages, within financial intermediation and consultancy activities. In contrast with other studies, workers engaged in financial intermediation and consultancy activities were found to display the lowest involvement in undeclared work, with figures standing between 2 % and 6 % in **Estonia**, **Latvia**, **Lithuania**, **Poland**, and **Sweden** (Žukauskas and Schneider, 2016). Similarly, the Eurobarometer Survey carried out in 2019 across the **EU Member States** found that only 5 % of individuals who acknowledged participating in undeclared work within the service industries were engaged in professional services such as accounting, consulting, and project management (Williams and Kayaoglu, 2023).

A study conducted in **Czechia** and **Slovakia** revealed the participation of business and administration professionals and associate professionals in **dependent self-employment**. According to Hanousek and Palda (2004), 'hundreds of thousands of citizens claim to be 'consultants' for companies even though they work in the companies' offices. Therefore, these workers serve as an example of the misleading usage of this professional label (i.e. consultants), as they should be categorised as employees and some of them may actually hold completely different professional positions (such as engineers, architects, IT workers, etc.)

Another stream of research examines the role of business and administration professionals and associate professionals in **enabling and advising their clients to participate in the informal economy**, even though it does not directly assess their own engagement in undeclared work practices. For instance, Battaglini *et al.* (2019, 2020) analysed administrative data from the **Italian** Revenue Agency, focusing on return files and audit records of all Italian sole proprietorship businesses from 2007 to 2014. Their research highlights the crucial role of tax professionals in shaping their clients' tax compliance behaviours. They found a strong correlation between a taxpayer's evasion and that of other clients of the same tax practitioner.

The involvement of accountants in undeclared work is further reinforced by the fact that they represented one of the white collar groups targeted by the Office of the Revenue Commissioners in **Ireland** in 2014 (European Commission, 2016)

4.1.2.5 Information and communications technology professionals and technicians

Turning to information and communications technology (ICT) professionals and technicians, various avenues for engaging in undeclared work are possible, also given the increasing demand for their services. Examples of activities conducted by this professional group include software development projects, coding or app development services, database management or network administration services, optimisation or network security services, repair services for computers or other ICT equipment, services for setting up telecommunications infrastructure for events or conferences, and equipment installation. Like other professional categories, these endeavours may involve either entirely unreported work (either as their primary source of income or as supplementary work alongside their formal employment) or the undertaking of work as registered self-employed individuals, with income not fully disclosed. However, an important particularity of this industry is the high prevalence of freelance work, especially for those working in technology and software development. Indeed, the Online Labour Index (OLI), which tracks projects and tasks across major English-, Spanish-, and Russian-language platforms, reveals that technology and software development comprised 43 % of total project demand in 2021, indicating a notable increase over the previous five years (Stephany *et al.*, 2021). The main findings of previous studies on undeclared work by this category of highly skilled workers are summarised below.

The 2019 Eurobarometer Survey conducted across the EU Member States revealed that 5 % of individuals who admitted to engaging in **undeclared work** within the service industries were involved in creative, multimedia, and software services, such as design, marketing support, and software development (Williams and Kayaoglu, 2023).

Vasilescu *et al.* (2016) survey of 1 002 respondents revealed that among the respondents from **Romania** who engaged in **undeclared side work activities alongside their formal jobs**, 5.7 % were involved in undeclared activities related to IT support. This percentage is comparable to the proportion of individuals undertaking undeclared activities related to caring for elderly and sick people, babysitting, and personal care services, and higher than the percentage of those involved in activities related to facilitating moving to another house (1.9 %). Similarly, based on a Special Eurobarometer survey, Dzhekova and Williams (2014) revealed that providing administrative and IT assistance services ranks as one of the most prevalent undeclared activities in **Bulgaria**. It constitutes 7 % of those who admit to engaging in undeclared work and stands out as the sole highly skilled occupation among the listed undeclared activities performed by the respondents. Similalrly, based on a survey conducted in 2015 with around 2 000 respondents from **Croatia**, Stefanov *et al.* (2017) found that one in 11

Croatians engaged in undeclared work and, of these 8 % conducted activities related to IT assistance. Similarly, undeclared work in IT and telecommunications activities has been reported in **Estonia**, **Latvia**, **Lithuania**, **Poland**, and **Sweden** (ranging between 3 % and 9 %) (Žukauskas and Schneider, 2016).

The existence of unreported work within the IT sector is additionally supported by the findings of a survey involving 1 430 businesses from **Bulgaria, Croatia**, and **North Macedonia**. The research revealed that **businesses in the IT industry are the most affected by competitors performing undeclared work** (77.3 % of businesses) (Horodnic *et al.*, 2023). This is not surprising considering the high prevalence of freelance work in this occupation.

Furthermore, in the information and communication sector in **Denmark**, it was estimated that 21 % of workers were engaged in undeclared work, concealing 5 % of the actual working hours. Upon analysing non-waged workers, the study discovered a significantly higher proportion involved in undeclared work, reaching 38 %. Similarly, the percentage of undeclared working hours among non-waged workers in this sector is nearly four times that of waged workers, reaching 19 % (Søndergaard, 2023).

4.1.2.6 Legal, social and cultural professionals

This category of highly skilled workers is very diverse and is characterised by different forms of undeclared work.

Legal professionals often engage in undeclared work by providing legal advice and services as side work or operating as self-employed individuals who fail to fully disclose their income. Additionally, they may receive envelope wages, particularly during the initial stages of their careers when undergoing mandatory training before achieving full professional recognition.

Librarians, archivists, and curators may freelance as researchers or consultants in fields such as academia, publishing, or media without fully disclosing their earnings. **Social and religious professionals** may offer counselling or therapy services, as well as conduct workshops or seminars without fully disclosing their income. This could occur either as supplemental work alongside their formal employment or as self-employed individuals.

Authors, journalists, and linguists often freelance or generate additional undeclared income by selling articles, manuscripts, or translations. They may also participate in speaking engagements, workshops, or consultancy services without fully disclosing their earnings.

The **creative industry** is widely recognised for its informal character. Indeed, it has been recognised as involving both informal paid labour practices, which operate outside the scrutiny of state authorities, like cash-in-hand work, online crowd-work, tips-based work, and paid favours as well as informal unpaid labour practices, such as bartering, favour-swapping, and voluntary work within networks of reciprocity (Alacovska, 2018). These workers are often vulnerable and confront precarious working conditions and lack of income stability, necessitating a deeper examination (beyond the scope of this report). Nevertheless, artistic, cultural, and culinary workers differ in the types of undeclared work they undertake. They may engage in such activities by selling artwork (online or at events and fairs), providing cultural performances (e.g. in restaurants and bars, hotels, or other venues), offering culinary services (for instance, chefs catering for private events) without appropriate reporting (Williams and Horodnic, 2020b).

Finally, **sports and fitness workers** might engage in undeclared work by providing personal training, coaching, instruction services, organising sports events or leading fitness classes, all without fully disclosing their income. The results of previous studies analysing this groups of highly skilled workers are summarised below.

Through the analysis of administrative and bank data it was found that between 2006 and 2009 **legal professionals** in **Greece** under-reported their income by EUR 30,979, which represented 58 % of their total income. This positions legal professionals as the second highest tax-evaders, following health professionals

(Artavanis *et al.*, 2015, 2016). Undeclared work undertaken by lawyers has been also acknowledged in **Cyprus** (European Commission, 2016).

In **Denmark**, a significant portion of **workers in arts, entertainment and recreation activities** have been found to engage in undeclared work. It has been estimated that 28% of workers and 42% of non-waged workers (mainly the self-employed) in these industries engaged in undeclared work, hiding 10% and 27% of their actual working hours, respectively (Søndergaard, 2023). These statistics position workers in arts, entertainment and recreation activities among the top three industries with the highest proportion of undeclared working hours and as the professional group with the **greatest percentage of undeclared hours** among self-employed individuals in Denmark. Similarly, in **Sweden**, qualitative data extracted from three projects between 2018 and 2021 and aimed at strengthening the ability of unions to tackle undeclared work revealed that musicians and stagehands are characterised by non-standard forms of employment and are seldom engaged in undeclared work in terms of both tax evasion and off-the-books gigs (Håkansta *et al.*, 2024). Similarly, Umney (2016) acknowledged that artistic work is characterised by freelancing and exemplified by the fact only a small proportion of jazz singers in Paris are working formally. In **Italy**, a study of creative and cultural workers revealed as well that undeclared work is highly prevalent amongst these workers (Dent *et al.*, 2023). Meanwhile, journalists in the Italian television industry protested to raise awareness about their precarious working conditions and the issue of undeclared work within the sector (Casula, 2021). These findings are not surprising given that creative work has been often recognised as highly informal.

In the **culinary industry**, hiring **unregistered chefs and cooks for short-term employment** can occur, especially in holiday accommodations and other short-term accommodations such as bed and breakfast establishments. Also, workers in the culinary industry may receive **envelope wages** from their formal employer as compensation for their extensive working hours as well as a shared part of the tips from the facility they work for (Franic, 2020a; Williams and Horodnic, 2020b).

A study conducted in **Belgium**, utilising a mixed-method approach involving surveys, in-depth interviews, and focus groups revealed that the non-profit sport sector (i.e. sport clubs) 'employs' approximately 52 000 undeclared volunteer workers, with over half of them having sports technical occupations (e.g. coaches, trainers). Their involvement in undeclared work is linked to the fact that these volunteers, who are not supposed to receive payment for their services, receive reimbursements exceeding the scope of actual expenses and that the fixed amount reimbursement scheme is improperly used, and is in fact hiding a wage (Vos *et al.*, 2012).

Key findings

- Under-reporting income, including envelope wages or earnings from self-employment, and dependent self-employment are more prevalent among highly skilled workers compared to working without a formal contract.

- While undeclared work exists across all highly skilled occupations, each industry has distinct characteristics. For instance, freelancing (which is frequently associated with undeclared work) and dependent self-employment are more common among science and engineering professionals and workers in the IT&C sector. In healthcare, undeclared work involves providing medical services outside formal settings, owning individual practices and under-reporting earnings, receiving informal payments in public hospitals. Professionals in the healthcare sector also engage in dependent self-employment when working for private companies. Teaching professionals often do undeclared work through side jobs such as private tutoring. Business and administration professionals may provide undeclared consultancy services or engage in dependent self-employment. Legal professionals engage in undeclared work by providing legal advice and services as side jobs or by working as self-employed individuals who do not

fully report their income. The creative industry is renowned for its informal nature, including cash-in-hand work, online crowd-work, and tips-based employment.

4.2 Contributing factors and motives of undeclared work among highly skilled workers

This section offers a succinct synthesis of the key drivers for participating in undeclared work. It is followed by a comparison of the main drivers among highly skilled workers to those of low- and medium-skilled workers, based on the Eurobarometer survey on undeclared work conducted in 2019. It also summarises the findings of previous studies along with specific contributing factors in certain industries.

Over time, scholarly perspectives on undeclared work have evolved. Initially, modernisation theory dominated, attributing undeclared work to economic underdevelopment and lack of modernisation of the government. Later, neoliberal and political economy theories competed, with the former blaming over-intervention in formal work and welfare, and the latter emphasising under-intervention. Currently, institutional theory prevails because it not only synthesises but also incorporates the core assumptions of previous theories, offering a more comprehensive understanding of the drivers of undeclared work. Indeed, according to the institutional theory, both formal and informal institutions require changes to address the main drivers of undeclared work, as synthesised in Table 2 below. Thus, achieving the transition to declared work requires careful consideration of a comprehensive range of policy tools tailored to the specific needs of various groups of undeclared workers, each driven to the informal economy by different motivations.

Table 2. Determinants and key drivers of participation to undeclared work

Determinant	Key drivers	Explanation/link to undeclared work participation
A. Drivers requiring formal institutional change		
Formal institutional resource misallocations and inefficiencies		
Modernisation perspective		
Level of economic development	Economic under-development	An excess of labour exists, thus specific groups such as vulnerable, unskilled, and migrant workers remain marginalised from the formal economy until economic advancement and modernisation take place.
Lack of modernisation of the government	Lack of redistributive justice	Citizens perceive they don't receive adequate public goods and services for the taxes paid.
	Lack of procedural justice	Citizens perceive a confrontational approach from public authorities (i.e. *cops and robbers*).
	Lack of procedural fairness	Citizens feel that the taxes they pay are unfair compared with those paid by others.
Corruption and bribery	Misuse of public office for private gain	Citizens perceive public officials as extorting them through demands or acceptance of gifts and bribes.
	State capture	Powerful groups shape laws and government policies to their advantage, leading to preferential treatment and resource allocation that limits public services for citizens.
	Personal connections	Citizens believe others bypass formal rules, using personal connections for privileged access to public services such as education and health.
Formal institutional voids and weaknesses		
Neo-liberal perspective		
Regulatory environment	Excessive/complex regulatory environment	Citizens *voluntarily decide to exit the formal economy* due to its high taxes and numerous institutional constraints imposed by the state, which result in increased costs, time, and effort.
Political economy perspective		
Under-intervention in work and welfare	Lack of worker protection	Due to reduced state intervention in work and welfare provision, citizens find themselves *excluded from the formal economy*, lacking adequate protection and forced to resort to undeclared work as a survival strategy.

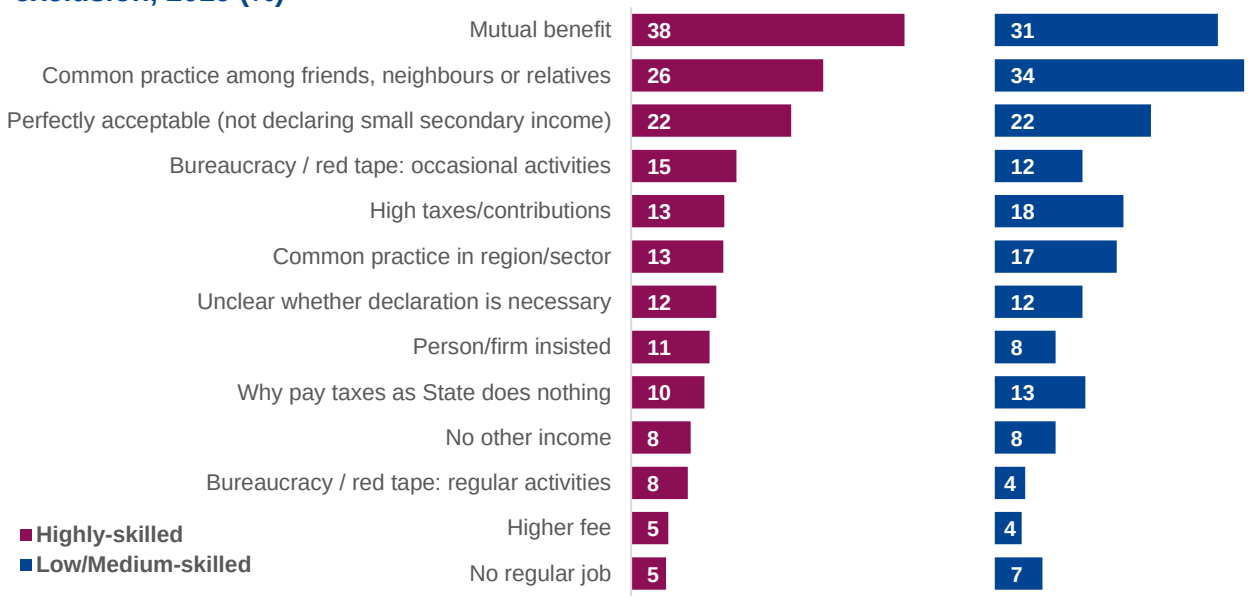
Formal institutional powerlessness		
Lack of capacity to enforce formal rules	Lack of capacity and ability of state institutions to deter participation in undeclared work	Citizens' engagement in undeclared work is driven by the low costs and consequences involved, reflecting a reduced level of actual and/or perceived deterrents (e.g. low penalties and risk of detection).
Lack of ability to provide incentives to encourage adherence to the formal rules	State institutions lack the capacity and ability to facilitate and incentivise engagement in the formal economy.	Citizens engage in undeclared work due to the low perceived and/or actual ease and benefits of being compliant.
Formal institutional instability and uncertainty		
Instability and uncertainty of the formal rules	Continuous changes in laws and regulations	Citizens' lack of confidence in the stability of current regulations, which undergo continuous changes, leads them to perceive minimal benefits in paying social contributions. Consequently, they doubt that future rules will enable them to access benefits such as unemployment benefits and pensions.
B. Drivers requiring informal institutional change		
High acceptability of undeclared work (high asymmetry between formal and informal institutions or low tax morale)	Low vertical trust	Citizens engage in undeclared work due to their lack of trust in public institutions, including the government, legal system, labour inspectorates, and tax authorities.
	Low horizontal trust	Citizens participate in undeclared work because they perceive widespread non-compliance among their peers. Perceiving a significant portion of the population engaged in undeclared work, or personally knowing individuals involved in such activities, influences them to adopt similar behaviour (i.e. the social norm).

Source: Abridged and adapted from Horodnic and Williams (2019) and Quaresma *et al.* (2023).

Based on the responses from the 2019 Eurobarometer survey on undeclared work with respondents from EU Member States, Figure 11 below shows the motives mentioned by highly skilled workers who engage in undeclared work, compared with those of low- and medium-skilled workers. Respondents were allowed to select multiple motives, as undeclared work is typically driven by various factors.

The findings in Figure 11 below indicate that for highly skilled workers, **motives tend to be associated more frequently with a voluntary choice to exit the formal economy**, aligning with the neo-liberal perspective. They explain their more frequent participation in undeclared work compared to low- and medium-skilled workers by citing reasons such as **mutual benefits for both provider and client, higher earnings, and the bureaucracy or red tape associated with regular or occasional activities**. Similar motives have also been identified in previous studies investigating highly skilled workers. For instance, a study based on 30 in-depth interviews conducted in **Croatia** with workers who received envelope wages (i.e. under-declared employment), revealed that the opportunistic goal of higher income motivates highly skilled workers to engage in undeclared work(Franic, 2020b, p962). This is exemplified by the response of a 28-year-old financial intermediary: *'I earn more this way. If I were completely declared, I could work much more than now and get the same wage'* (Franic, 2020b, p962). Similarly, in the sports industry, Vos *et al.* (2012) revealed that the primary reason behind undeclared work of skilled volunteers with sports technical occupations (e.g. trainers and coaches) is to reduce labour costs, which serves as an incentive for both the non-profit sports club and the volunteers.

Figure 11. Motives of undeclared work among highly skilled undeclared workers in the EU: exit – exclusion, 2019 (%)



Notes: Highly skilled workers include self-employed professional (lawyer, medical practitioner, accountant, architect, etc.); employed professional (employed doctor, lawyer, accountant, architect); general management, director or top management (managing directors, director general, other director); middle management, other management (department head, junior manager, teacher, technician); other employed white collars.

Source: Based on Special Eurobarometer 498 (Undeclared work in the European Union) - Eurobarometer 92.1 (2019). Available at: https://doi.org/10.4232/1.13716

However, the **monetary incentive is seldom the sole factor influencing the decision of highly skilled professionals to engage in undeclared work**, as other contributing factors also play a role, particularly those **specific to each industry**. For instance, although many musicians are motivated to join the profession to escape formal regulations and bureaucracy, and thus could be classified as exit-driven undeclared workers, it is important to note that several other contributing factors exist, such as, the prevalence of non-standard employment conditions in this industry due to the highly mobile nature of the work and the involvement of workers with multiple employers, akin to the employment arrangements commonly found in other industries such as construction and forestry; the highly precarious nature of the work as individuals rely on their social capital to secure employment opportunities and advance their careers; the highly competitive nature of the sector and the adverse effects of digitalisation in the recorded music industry which have resulted in reduced income, emphasising the significance of live music performances for making a living for musicians; unpaid work in the music industry; the vulnerability of musicians and stagehands to economic fluctuations, clearly visible during the COVID-19 pandemic; minimal representation through a union, and inability of freelance musicians to appoint or be appointed by Occupational Safety and Health (OSH) representatives (Lizé *et al.*, 2022; Umney, 2016; Håkansta *et al.*, 2024).

In contrast, as shown in Figure 11, low- and medium-skilled workers mention more often than highly skilled workers motivations such as **social norms** for engaging in undeclared work (common practice among friends, neighbours, or relatives and in their region or sector of work), a **lack of redistributive justice** (questioning the necessity of paying taxes when the state provides little in return), and a **lack of alternative opportunities for regular employment**. No difference was observed between the two groups of workers in citing reasons such as the acceptability of not declaring secondary small income, and there is also consistency in their understanding of whether declaration is necessary for a certain activity.

However, while the perceived lack of redistributive justice is mentioned less frequently by highly skilled workers than by low- and medium-skilled workers, it is worth noting that 10 % of highly skilled workers across the EU perceive that **the state does not offer much in return** for the taxes they pay. Indeed, the lack of redistributive

justice has been identified in previous studies. A study based on in-depth interviews with workers receiving envelope wages in **Croatia** exemplifies this notion through the viewpoint of one interviewee, a head of finance, who perceives a lack of solidarity from the state in terms of how public money returns to the citizens (Franic, 2020a, p 105). The lack of redistributive justice and the **lack of satisfaction with the public goods and services** has also been revealed in a study involving 40 in-depth interviews with people engaged in undeclared work conducted in **Romania** and the UK.[14] This can be exemplified by two Romanian teachers who expressed their lack of satisfaction with health services, security services and road infrastructure. The same interviews revealed the perceived spread of corruption in society and concerns about how public money is spent and how public contracts are allocated (Horodnic and Williams, 2019).

In the same vein, a study on owners/managers from the **Baltic countries** revealed that the only significant factor affecting the managers participation in undeclared activities is represented by the **satisfaction factor** (Putniņš *et al.*, 2019).. This factor comprised the satisfaction with the government, the tax authority, and with the quality of business legislation and the government support to entrepreneurs (Putniņš *et al.*, 2019).

The **lack of satisfaction with public goods and services** has been identified as a driver of undeclared work in the education sector. For example, through a survey of 418 university students and secondary education graduates, Giavrimis *et al.* (2018) found that the prevalence of shadow education in **Greece**, including legal non-formal education or '*frontistiria'* (shadow education schools), and undeclared work in private courses or '*idiaitera mathimata*' (private lessons, tutoring) is attributed to the negative public perception of the education system. This perception includes concerns about the functionality, structure, funding, and the quality of teachers' work within the public education system, reflecting a perceived decline in the welfare system. Similarly, Jokic *et al.* (2013) analysed why informal private tutoring is widely used in Croatia. They attribute it to parental anxiety towards the educational system characterised by standardised curricula and complex assessments, a teacher-centric approach, and low tolerance towards slow learners, leading the parents to seek informal tutoring for their children.

Only 5 % of highly skilled workers in the EU cited the **lack of a regular job** as one of the drivers of undeclared work (see Figure 11). This could be attributed to the high heterogeneity among highly skilled workers who face varying constraints or opportunities depending on their industry or country. Firinu (2012) argues that the occasional provision of services in the informal sector becomes attractive for highly skilled workers and professionals (such as doctors, dentists, therapists, psychoanalysts) when there is insufficient demand in the formal market. Indeed, such an example is provided by a 28-year-old Croatian dentist who described how they ended up accepting envelope wages after months of searching for a job. (Franic, 2020a, pp. 101, 102).

Another segment often excluded from the declared labour market comprises **migrant workers**. For instance, highly skilled migrants, facing language barriers, may find themselves compelled to engage in undeclared work in low-skilled positions. This scenario was identified in a study conducted in **Norway**, where a Polish teacher was found to be involved in undeclared work in cleaning services (Cappelen and Muriaas, 2019).

Additionally, there are industries where the use of certain forms of undeclared work is standard practice, leaving highly skilled workers with limited options. For instance, representatives from labour inspectorates, social security, tax, and customs authorities from 21 countries, as well as national and European social partner representatives from the air transport sector, and the European Commission, have identified several main drivers for the highly common use of dependent self-employment among aircraft crew. These include the high mobility of aircrew workers, the extensive use of self-employment in the industry to cut costs and diminish rights associated with formal working contracts (such as holidays, regulation on working hours, sick pay, and pension contributions), the use of intermediary agencies for employment, intensive cost competition between airlines, and atypical forms of

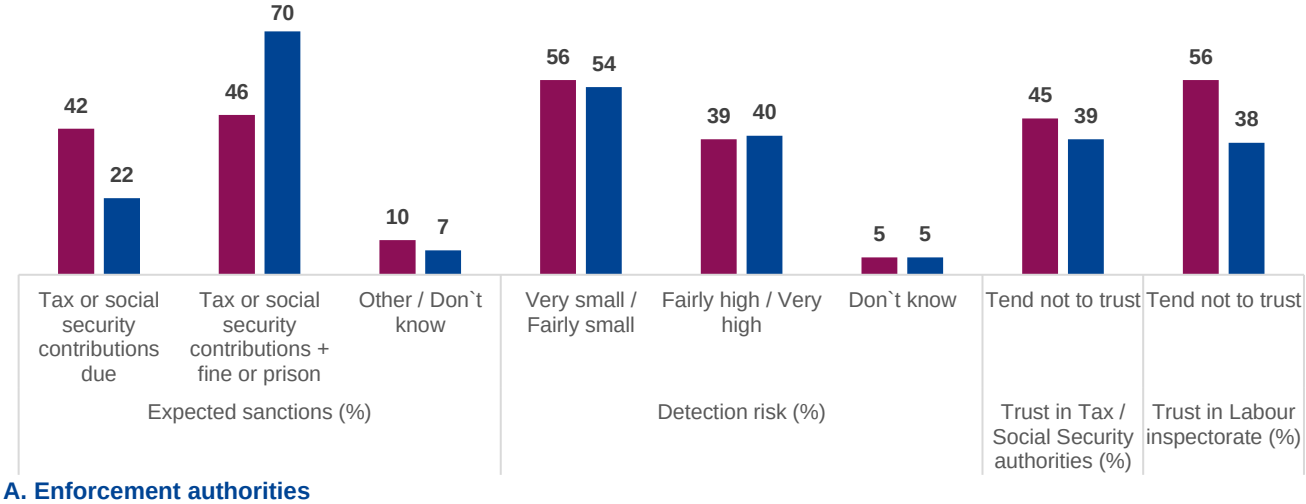
[14] Although the published study does not specify the occupations of the respondents, the authors of the report had access to the dataset and included here only the responses of highly skilled workers.

employment focusing on fluctuations in flying time (Turnbull, 2020). Within the architecture, engineering, and construction industry (AEC), conducting a literature review, Lohne *et al.* (2019) found that the main drivers for undeclared work and tax evasion in the industry encompass the extensive reliance on employment agencies and informal networks, alongside tax policies.

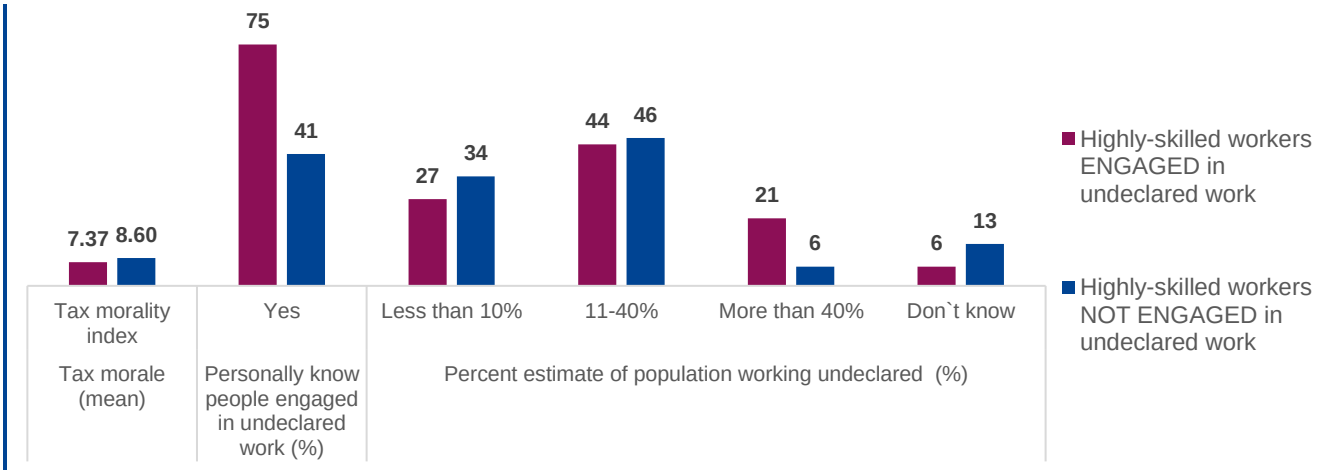
Figure 12 further examines the motives behind the participation of highly skilled workers in undeclared work by comparing the responses of those who engage in undeclared work with those who do not. The findings indicate that highly skilled workers engaging in undeclared work perceive **lower deterrents** and tend to **have lower trust in labour inspectorate, tax, and social security authorities** (Figure 12A). Indeed, 42 % of those engaged in undeclared work perceive that if caught, they will only have to pay tax and social contributions due, compared with 22 % of those not engaged in undeclared work. Additionally, 56 % of those engaged in undeclared work perceive the risk of being detected as very or fairly small, compared with 54 % of those not engaging in undeclared work. Similarly, 45 % of those engaged in undeclared work tend to lack trust in the tax and social security authorities, while 56 % of them tend not to trust the labour inspectorate. In comparison, 39 % and 38 % of those not engaged in undeclared work, respectively, display the same lack of trust.

Figure 12B further explores the drivers of participation in undeclared work, specifically examining the levels of tax morale and social norms, including respondents' personal acquaintance with individuals engaged in undeclared work. The findings reveal that those engaged in undeclared work display **lower tax morality than those not engaged in undeclared work** (7.37 compared with 8.60). Furthermore, a higher percentage of them personally know others engaged in undeclared work (75 % compared with 41 %), and a higher percentage perceive that the proportion of the population engaged in undeclared work is high, exceeding 40 % (21 % compared with 6 % of those not engaged in undeclared work having this perception).

Figure 12. Motives of undeclared work among highly skilled workers in the EU: enforcement authorities, tax morale and social norms, 2019 (%)



A. Enforcement authorities



B. Tax morale and social norm

Notes: Highly skilled workers include: self-employed professional (lawyer, medical practitioner, accountant, architect, etc.); employed professional (employed doctor, lawyer, accountant, architect); general management, director or top management (managing directors, director general, other director); middle management, other management (department head, junior manager, teacher, technician); other employed white collars.

Source: Based on Special Eurobarometer 498 (Undeclared work in the European Union) - Eurobarometer 92.1 (2019). Available at: https://doi.org/10.4232/1.13716

The same main findings have been revealed by other previous studies analysing highly skilled workers. For example, a survey of company owners/managers from the Baltic countries revealed that determinants of engaging in undeclared work include low tax morality (e.g. a high tolerance for tax evasion), dissatisfaction with the tax system and government, and perception of low deterrents, with detection risk having a greater effect than the level of penalties (Putniņš and Sauka, 2015). A study involving 139 professionals and tradespeople in the UK construction sector found that the **impact of deterrence in influencing the avoidance of cash payments was outweighed by social norms** (Sigala, 2000). These norms included various factors such as the prevalence of opportunities for cash income, the industry's acceptance of cash transactions, tax morality regarding unreported earnings, perceptions of the frequency of cash payments among colleagues, the potential risk to professional reputation, clients' suspicions towards those requesting such payments, and the possibility of losing clients when requiring such payments (Sigala, 2000). A **low level of tax morale** among those engaged in undeclared work and the influence of social norms have also been revealed by in-depth interviews with Croatian and Romanian highly skilled workers engaged in undeclared work (Franic, 2020a; Horodnic and Williams).

Similarly, the **lack of trust in government and its institutions**, such as labour inspectorates and tax authorities, has been identified as a driver of undeclared work by highly skilled workers in previous studies based on in-dept interviews (Franic, 2020a; Horodnic and Williams, 2019), In addition, **the lack of trust, both in government and in fellow citizens**, also emerged as significant drivers influencing those who knowingly made purchases of undeclared healthcare goods and services across four Southern EU Member States, namely **Cyprus, Greece, Italy,** and **Malta** (Horodnic *et al.*, 2021).

Finally, previous studies reveal additional contributing factors for the engagement of highly skilled workers (included as potential drivers of undeclared work in Table 2 above). For instance, three main contributing factors to the high incidence of under-declaration of income amongst the self-employed professionals in **Greece** have been identified (Artavanis *et al.*, 2015, 2016). Firstly, a negative correlation has been established between the extent of paper trails and the degree of income under-reporting by self-employed individuals. Secondly, the results indicate that tax enforcers are aware of areas where income under-declaration occurs, yet they might lack the institutional capacity or willpower to collect the evaded taxes. Thirdly, there is a potential lack of willpower to implement tax reform (i.e. a bill aimed at targeting specific high-skilled professionals has been rejected by the Parliament) (Artavanis *et al.*, 2015, 2016).

Meanwhile, in-depth-interviews with highly skilled workers from **Romania** revealed the perceived lack of procedural justice (i.e. the confrontational approach from the public authorities) and the low level of willingness and availability of the public officials to help the citizens (Horodnic and Williams, 2019). Some interviewees (consultants) complained about the lack of consistency in the information provided by public servants and the continuous changes in regulations, making consultancy work very difficult and insecure (Horodnic and Williams, 2019).

In summary, while the participation of highly skilled workers in undeclared work has not been investigated as extensively as that of low- or medium-skilled workers, the findings demonstrate the heterogeneity among highly skilled workers. While in many cases their participation in undeclared work is a voluntary choice, representing a voluntary exit from the declared market, **there are specific regional areas and industries where highly skilled workers have limited options**. This is exemplified by the increase in freelancing among highly skilled workers, the widespread use of dependent self-employment in professions such as aircraft pilots, the gig nature of artistic work, and other similar examples. Therefore, facilitating the transition to declared work for highly skilled workers requires a careful analysis of both structural factors (e.g. country-specific and industry-specific) and individual factors (e.g. job opportunities, the opportunistic increase of income, tax morale).

Key findings

- Highly skilled workers more frequently cite explanations such as mutual benefits, higher earnings, and bureaucratic challenges for their participation in undeclared work compared to low or middle-skilled workers.
- While highly skilled workers mention redistributive justice less than low or medium-skilled workers, it is notable that 10 % of highly skilled workers engaged in undeclared work in the EU feel the state does not provide much in return for their taxes and contributions.
- When comparing the responses of highly skilled workers engaged in undeclared work with those who are not, the findings suggest that the former perceive fewer deterrents (e.g. risk of detection and penalties) and generally have lower trust in labour inspectorates, tax, and social security authorities. Similarly, they tend to exhibit lower tax morale and have more personal acquaintances involved in such activities.

5.0 Case studies regarding undeclared work among highly skilled workers

Based on insights from preceding chapters and the availability of data, this section explores **five case studies** in detail, aiming to highlight industries where undeclared work among highly skilled workers is more common as well as the specific types of undeclared work that are prevalent among this group or workers. The two selected industries, healthcare and education, were identified in the literature described in the previous chapter as having a high prevalence of undeclared activities in many EU Member States. In-depth analysis of undeclared work among highly skilled workers in the **healthcare sector** is conducted through two case studies, one case study focusing on Greece and one examining the motivations driving informal payments to healthcare professionals across the EU Member States. In-depth analysis of undeclared work among highly skilled worker in the **education sector** is conducted through a case-study on undeclared income obtained from tutoring in Romania. As previous chapters have revealed, among highly skilled workers, under-declared work (both in terms of wages of employees and income of the self-employed) emerges as the most common type of undeclared work. This issue is further explored through a case study on **under-declared working hours** among highly skilled workers in Denmark, as well as an examination of the **risk of under-reporting wages among minimum-wage earners**, specifically among highly skilled workers in Hungary.

5.1 Under-declared income of highly skilled workers in the healthcare sector in Greece

The first case study concerns under-declared income of highly skilled workers in the healthcare sector in Greece (see Box 1 below).

Box 1. Under-declared income of highly skilled workers in the healthcare sector in Greece

Under-reported income of workers in the healthcare sector in Greece received a lot of criticism and accusations in the media (Stasinopoulos *et al.*, 2024). Similarly, there is a large body of research revealing a large prevalence of informal payments made to healthcare professionals in Greece (e.g. Kaitelidou *et al.*, 2013, Souliotis *et al.*, 2015). Indeed, undeclared income by self-employed doctors, along with informal payments to doctors in public health institutions, are recognised as the two primary components of the shadow economy within this sector (Stasinopoulos *et al.*, 2022). A report for the International Monetary Fund has emphasised addressing out-of-pocket payments for healthcare services in both public and private institutions as an important aspect to be tackled in reforming the healthcare system in Greece (Niki and Jin, 2021). In order to understand the extent of the undeclared income phenomenon in Greece and to uncover its underlying causes, this case study relies heavily on data from four research studies conducted by Artavanis *et al.* (2015, 2016) and Stasinopoulos *et al.* (2023, 2024). Furthermore, this analysis includes a brief discussion of the solutions implemented to address the problem of undeclared work in Greece.

For estimating the under-reported income among self-employed professionals in the healthcare sector as well as in other sectors, Artavanis *et al.* (2015, 2016) use data from 2003 to 2009 from a major bank in Greece which uses a methodology to calculate the real income of applicants for credit scoring purpose. This data is then contrasted with the administrative data on reported income provided by tax authorities, offering a thorough assessment of the accuracy of income declarations made by self-employed individuals. The results of this study identify the health sector as displaying the highest average of undeclared income, as shown in Table B1.1.,

regardless of whether we examine sectors associated with highly skilled workers or those associated with lower- and medium-skilled workers.

Table B1.1. Undeclared income, 2003-09

	Undeclared income (average)	Share of undeclared income	Legislative Bill proposed in 2010	Degree required
	(EUR)	*(%)*	*(-)*	*(-)*
Medicine	32 548	57	Yes	Yes
Law	30 979	58	Yes	Yes
Engineering & Science	29 565	60	Yes	Yes
Education	27 116	63		Yes
Media & Entertainment	20 349	55		
Lodging & Tourism	17 237	51		
Accounting & Finance	16 727	45	Yes	Yes
Business Services & Trade	16 665	49	Mixed	Mixed
Construction & Transport	12 862	49		Mixed
Retail	11 855	38		
Manufacturing	7 271	30		
Personal Services	6 374	31		Mixed
Farming	6 121	34		

Source: Extracted and calculated from Artavanis *et al.* (2015)

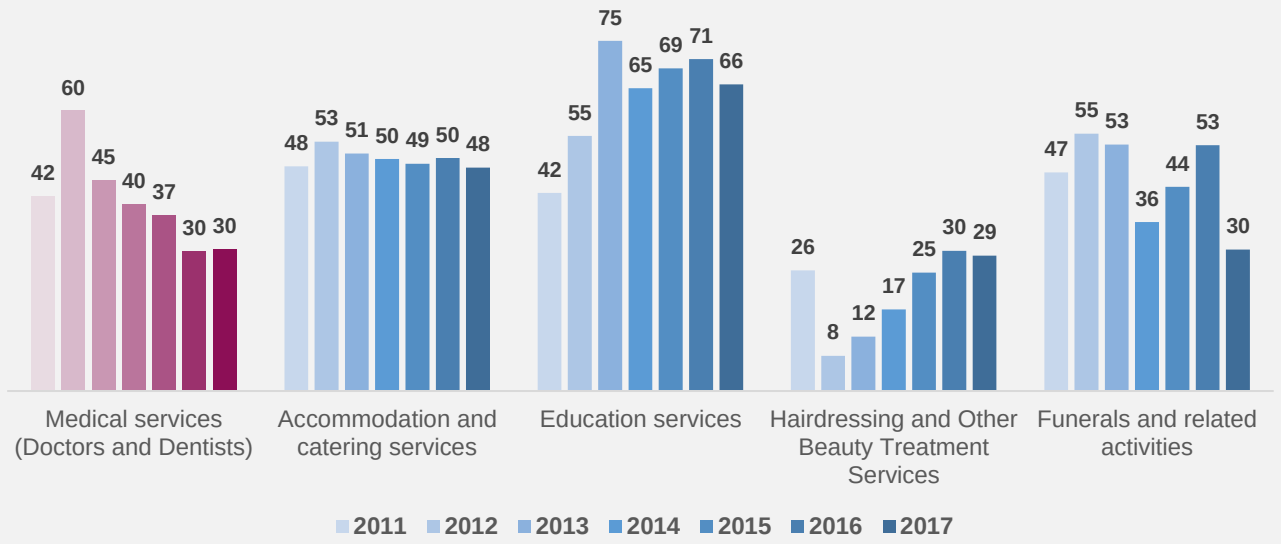
A more recent study by Stasinopoulos *et al.* (2024) restricts the analysis to professionals in the healthcare sector (i.e. doctors and dentists, excluding associated professionals) and compares the undeclared income of these professionals with that of workers in other sectors. The study utilises data from 2011 to 2017 and compares individuals' expenditure extracted from the Household Budget Survey conducted by the Hellenic Statistical Authority with the financial reported data from the Statistical Business Register, which is yearly updated and comprise administrative data sourced from the tax authority. Notably, their findings reveal that doctors and dentists exhibit lower average undeclared income when contrasted with workers in sectors like accommodation and catering services or education services. However, the study presents results for the industry as a whole and does not provide insights into individual average undeclared income, as depicted in Table B1.2.

Table B1.2. Undeclared income, 2011-17 (EUR)

	2011	2012	2013	2014	2015	2016	2017	*Average 2011-17*
Medical services (Doctors and Dentists)	1 216 875	1 408 927	936 848	704 221	618 826	471 998	475 269	*833 281*
Accommodation and catering services	9 772 265	9 815 289	9 627 105	10 473 488	10 383 452	10 667 127	10 766 355	*10 215 012*
Education services	1 102 789	1 275 832	2 809 713	2 376 355	2 676 003	2 599 971	2 257 977	*2 156 949*
Hairdressing and Other Beauty Treatment Services	132 205	24 559	38 266	60 484	100 412	128 402	127 011	*87 334*
Funerals and related activities	51 163	70 861	60 951	34 311	48 350	61 744	24 846	*50 318*

Source: Extracted from Stasinopoulos *et al.* (2024)

Figure B1. Share of undeclared income, 2011-17 (%)



Source: Extracted from Stasinopoulos *et al.* (2024)

Looking at the percentage of total income undeclared by doctors and dentists, Figure B1 illustrates the evolution observed between 2011 and 2017. This demonstrates that in 2016 and 2017 approximately 30 % of the income of doctors and dentists went undeclared, a significantly lower percentage compared with the figures for 2011 and 2012 (42 % and 60 %, respectively). Figure B1 also displays that while the portion of income undeclared by doctors and dentists decreased from 2011 to 2017, it remained relatively stable for workers in accommodation and catering services and even increased for those in education services or hairdressing and other beauty services.

Turning to the potential explanations for the significant portion of undeclared income among healthcare professionals and professionals in other fields such as engineering, education, accounting and financial services, and law, Artavanis *et al.* (2015, 2016) investigate three possible avenues. Firstly, they identified a correlation between the traceability of under-reported activity (paper trail) and the prevalence of unreported income. Indeed, the industries with minimal paper trails, such as law, education, and medicine, tend to exhibit higher rates of under-reported income, while sectors like transportation, which involve detailed tracking documents, display lower levels of under-reported income. Secondly, Artavanis *et al.* (2015, 2016) test whether the weak state capacity in terms of both fiscal capacity and legal capacity correlates with the high prevalence of undeclared income across various sectors. Based on data from the tax authority regarding closed enforcement cases and total assessment values across 235 Greek tax districts from January 2011 to July 2012, the results indicate that while the tax authority is aware of hotspots for under-declared income (i.e. professionals in various industries described above), it struggles to recover evaded income taxes due to institutional obstacles and insufficient paper trails to verify violations. Thirdly, around 60 % of parliamentarians come from the top four tax-evading industries, and over 80 % from the top six out of thirteen. While the correlation between the occupational backgrounds of Greek parliamentarians and the top tax-evading industries is merely an association, it might indicate a potential explanation for the lack of willpower to implement tax reform (i.e. the Greek Parliament proposed a bill requiring tax audits for declared income below EUR 20 000 for specific self-employed professionals such as doctors and other professionals displayed in Table B.1.1, but the proposal was swiftly dismissed) (Artavanis *et al.*, 2015, 2016).

Stasinopoulos *et al.* (2023) examine the perspectives of Greek doctors regarding the under-reporting of their income and the acceptance of informal payments from patients in public hospitals based on a sample of 1 022 doctors. Their results underline several factors perceived to contribute to the two unlawful behaviours mentioned

above. These include the perceived high level of taxation, the perceived low likelihood of being detected (i.e. audit), a perceived low value of the fine if caught, the Tax Authority and the National Audit Bodies being perceived as the least trusted entities by doctors, high tolerance towards the shadow economy, 'tacit' requests for lower charges by patients in the case of self-employed doctors, and informal payments in public hospitals being part of a social and cultural phenomenon seen as gifts and expressions of gratitude.

The Greek Government is committed to addressing undeclared work, as evidenced by the "Road map to implement a comprehensive integrated strategic approach towards tackling undeclared work in Greece," established in 2016 through a tripartite agreement between the Greek Government, the International Labour Organization (ILO), and social partners. The roadmap has been implemented between 2017 and 2019 under the coordination of the Supreme Labour Council (ELA, 2022). Four types of measures are commonly used in Greece to tackle undeclared work, namely: incentives to increase the risk of detection (e.g. the implementation of the ERGANI system since 2013 for recording all employment data - a training programme has been developed to enhance the competence of labour inspectors towards the utilisation of this specialised IT tool), a reformed penalty system encouraging the shift from undeclared to declared work, measures to simplify registration and procedures to facilitate declared work, and educational and awareness-raising initiatives aimed at modernising authorities and fostering trust in the government (Horodnic and Williams, 2022; ELA, 2022; European Platform tackling undeclared work, 2020). Indeed, the national action plan for tackling the undeclared economy in Greece (ILO, 2016) proposed that one of the target groups of the awareness campaigns should be the professionals' groups such as doctors, lawyers, and accountants.

5.2 Under-declared working hours by highly skilled workers in Denmark

The second case study concerns under-declared working hours by highly skilled workers in Denmark (see Box 2 below).

Box 2. Under-declared working hours by highly skilled workers in Denmark

Under-declared work comprising both, under-declared number of working hours and/or under-declared wage persists as a common form of undeclared labour. This practice is difficult to detect by the enforcement authorities while granting employees access to social protection benefits, thereby making it an appealing option for employers and workers. This type of undeclared work is still widespread even in high-income countries like Denmark and Norway despite the presence of third-party reporting mechanisms (Bjørneby *et al.*, 2021; Søndergaard, 2023). However, there is limited prior evidence regarding this phenomenon categorised by professions or skill levels. Nevertheless, such data is available for Denmark in a study conducted by Søndergaard (2023), providing rich data useful for tailored policy measures.

By linking the Labour Force Survey in Denmark with individual-level tax administrative data (*eIncome* data reported to the tax administration by Danish businesses for their employees, supplemented with administrative data from tax returns for self-employed workers), Søndergaard (2023) conducts estimations of the under-declared number of hours for both wage workers and non-wage workers, primarily composed of self-employed individuals, across various sectors. The findings reveal that roughly 29 % of workers have undeclared hours, comprising 25 % of wage workers and 37–39 % of non-wage earners, with the combined value of these hours representing nearly 2 % of Danish GDP (Søndergaard, 2023). Defining sectors according to respondents' primary occupation makes it straightforward to identify the participation of highly skilled workers in under-declaring their real working hours (the sectors populated mainly with highly skilled workers, are highlighted in bold in Tables B2.1 and B2.2). The results for 2015 show that the percentage of undeclared working hours is

higher than the overall average of 7 % at country level for some highly skilled workers such as those working in arts, entertainment and recreation (10 %). Nevertheless, there are other highly skilled workers with a rather high prevalence of undeclared hours as a percentage of total worked hours such as those in education (6 %), those performing professional, scientific and technical activities or human health and social work activities (5 %). Turning to non-wage workers, mostly comprising self-employed individuals, the percentage of undeclared hours is much higher compared with wage workers. As Table B2.1 display, the self-employed individuals in arts, entertainment, and recreation, as well as those in education, have more than a quarter of their total working hours undeclared (27 % and 26 %, respectively), which is above the average of 20 % corresponding to all industries.

Table B2.2 shows the gross value added of the undeclared hours worked by wage earners at approximately DKK 23 billion in current prices (almost EUR 3.2 billion). The table shows the variation in the value added across sectors. Across the highly skilled occupations, a higher impact can be observed for human health and social work activities (11 % of total), education (9 %) and information and communication (5 %). Meanwhile, the gross value added of the missing hours worked by non-wage earners displays a lower gross added value of approximately DKK 9 billion (EUR 1.2 billion). As such, even if the non-wage workers under-report more of their working hours, their impact on tax gap is smaller being relative to their size in the labour market. However, turning to the sectors comprising largely highly skilled workers, a high impact can be observed for the workers in professional, scientific and technical activities and information and communication.

Table B2.1. The share of all hours and of declared hours worked undeclared, 2015

	WAGE EARNERS		NON-WAGE EARNERS	
	Undeclared hours as percentage of all hours worked	Undeclared hours as percentage of declared hours	Undeclared hours as percentage of all hours worked	Undeclared hours as percentage of declared hours
	(%)	*(%)*	*(%)*	*(%)*
OVERALL AVERAGE	*7*	*7*	*20*	*26*
I. Accommodation and food service activities	11	13	29	40
A. Agriculture, forestry and fishing	10	11	29	41
R. Arts, entertainment and recreation	10	11	27	37
F. Construction	9	9	16	19
S. Other service activities	8	8	18	23
N. Administrative and support service activities	7	8	18	22
H. Transportation and storage	7	7	14	16
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	6	7	23	29
P. Education	6	7	26	34
C. Manufacturing	6	6	19	23
J. Information and communication	5	6	19	23
M. Professional, scientific and technical activities	5	6	17	20
Q. Human health and social work activities	5	6	11	13
D. Electricity, gas, steam and air conditioning supply	4	5	*	*
L. Real estate activities	4	5	*	*
E. Water supply; sewerage, waste management and remediation activities	3	3	*	*
K. Financial and insurance activities	3	3	*	*
B. Mining and quarrying	*	*	*	*
O. Public administration and defense; compulsory social security	–	–	–	–

Notes: * fewer than 20 respondents with undeclared work

Source: Extracted from Søndergaard (2023)

These results show that the involvement of highly skilled workers in under-declared work cannot be ignored. While measures for attracting highly skilled workers (e.g. applying special tax regimes[15]) have been identified in Denmark, no tailored measure for tackling undeclared work conducted by this group of workers has been found. This is not surprising considering previous findings suggest that, in Denmark, those more educated are less likely to engage in undeclared work. While approximately 32 % of Danes trained in skilled trades receive yearly offers to work without declaring income, only 16 % of those who completed long-cycle higher education courses receive similar offers. This suggests that their lower involvement in undeclared work may not be solely due to superior morality but rather to fewer opportunities and less necessity, given their higher income (Rockwool Foundation Research Unit, 2011). However, addressing undeclared work remains a central focus of policies in Denmark, as demonstrated by the political agreement reached in 2017 to strengthen the efforts against undeclared work[16]. Indeed, it is acknowledged that undeclared work in Denmark includes the under-reported hours worked by formally registered employees (European Labour Authority, 2023). As a consequence, the main focus on tackling undeclared work in Denmark is in reducing under-declaration, with a great emphasis on the use of third-party reporting as this is considered as an effective alternative to the expensive controls or audits (Kleven *et al.*, 2011).

Table B2.2. Gross value added of undeclared hours, 2015

	WAGE EARNERS		NON-WAGE EARNERS	
	2015 gross value added of missing FTEs in million DKK in current prices		2015 gross value added of missing hours in million DKK in current prices	
	(DKK millions)	*(%)*	*(DKK millions)*	*(%)*
TOTAL	*23 277*	*100*	*9 361*	*100*
A. Agriculture, forestry and fishing	322	1	865	9
B. Mining and quarrying	*	*	*	*
C. Manufacturing	4 352	19	786	8
D. Electricity, gas, steam and air conditioning supply	493	2	*	*
E. Water supply; sewerage, waste management and remediation activities	174	1	*	*
F Construction	1 579	7	840	9
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	2 886	12	1 598	17
H. Transportation and storage	1 598	7	349	4
I. Accommodation and food service activities	696	3	470	5
J. Information and communication	1 184	5	700	7
K. Financial and insurance activities	914	4	*	*
L. Real estate activities	1 386	6	*	*
M. Professional, scientific and technical activities	937	4	1 129	12
N. Administrative and support service activities	765	3	369	4
O. Public administration and defence; compulsory social security	-	-	-	-
P. Education	2 111	9	273	3
Q. Human health and social work activities	2 589	11	264	3
R. Arts, entertainment and recreation	745	3	443	5
S. Other service activities	452	2	263	3

Notes: * fewer than 20 respondents with undeclared work

Source: Extracted and calculated from Søndergaard (2023)

[15] Tax scheme for researchers, see https://skat.dk/en-us/businesses/employees-and-pay/non-danish-labour/tax-scheme-for-researchers
[16] Styrket indsats mod sort arbejde (Strengthened Efforts Against Undeclared Work), see https://skm.dk/aktuelt/publikationer/politiske-udspil-og-aftaler/aftaletekst-om-styrket-indsats-mod-sort-arbejde

In conclusion, the Danish example highlights that while there is a common assumption that undeclared work is primarily conducted by vulnerable groups, the involvement of highly skilled workers in under-declared work should not be overlooked as it makes a significant contribution to the revenue gap.

5.3 The risk of under-reporting wages of minimum wage earners in Hungary

The third case study concerns the risk of under-reporting wages of the minimum wage earners in Hungary (see Box 3 below).

Box 3. The risk of minimum-wage earners in Hungary under-reporting wages

The minimum wage serves as a crucial boundary in the realm of under-reporting wages, acting as the lowest permissible threshold for declaring earnings. By formally registering at the minimum wage level, both employers and employees gain protection from scrutiny, reducing the risk of detection compared with unregistered employment. Furthermore, the minimum wage facilitates access to critical benefits such as social security and health insurance, encouraging individuals to comply with its regulations. However, beneath the facade of apparent compliance, instances emerge where employers and employees engage in informal agreements to under-report the employees` real earnings (Bíró *et al.*, 2022).

To explore and gain a better understanding of the relationship between the minimum wage and under-reporting wages (i.e. under-reported employment), we focus on the case of Hungary.

Hungary introduced a national monthly gross minimum wage in 1989, covering all wages except for bonuses and overtime payments. Additional wage tiers were established for highly skilled workers (those with a high school diploma) from 2006 to 2008. Despite minimal impact on wage distribution until the early 2000s, significant changes occurred in 2001-2002 when the minimum wage nearly doubled, leading to a higher increase in private sector employees earning close to the minimum (more than double than before). To reduce wage under-reporting, Hungary implemented the "double minimum wage rule" in September 2006.[17] This regulation mandated that employers pay social security contributions based on at least twice the current minimum wage for each employee. Employers had the option to request an exemption if the actual wages were lower, allowing them to continue paying social security contributions based on the reported wages. However, while firms had the option to pay wages below this threshold, doing so increased their likelihood of being audited by tax authorities and raised the risk of being identified as non-compliant, whether for disguising real wages or for other violations (Bíró *et al.*, 2022; Elek *et al.*, 2009). As a result, the combination of increased contributions for employees along with higher deterrence makes this example highly appropriate for exploring the link between the minimum wage regulations and under-declared wages. The results of two studies are briefly reported here.

The analysis by Elek *et al.* (2015) uses the *Wage Survey*, linked employer-employee data, conducted by the National Employment Service in Hungary. This dataset comprises over 150 000 individuals and about 20 000 firms. The *Wage Survey* covers enterprises with at least 5 workers, with larger Hungarian firms (more than 20 employees) mandated to report data, while smaller ones are selected randomly. The survey includes information on wages, demographics, and job characteristics as well as information on firm-level variables such as industry, region, size, ownership, and financial metrics. Based on a sample of 92 140 observations comprising private sector observations, the authors estimate the likelihood of under-reporting among minimum wage earners,

[17] Although the regulation was effective only until December 2010, it serves as an excellent case study for testing the relationship between the minimum wages and under-declaring wages.

simulate their real earnings, and categorise both the employees and their employers as either 'cheaters' or 'non-cheaters'. The finding suggests that approximately half of the minimum wage earners under-report a portion of their actual wages, and the average real wage was nearly 250 % of the minimum wage value (i.e. 150 % gap). Table B3 illustrates the percentage of minimum wage earners across various occupations, the likelihood of wage under-reporting among occupational groups, and the simulated actual wages of those who engage in under-reporting. The estimated proportion of individuals under-reporting their wages among minimum wage earners varies across different skill levels. Notably, it is significantly lower among lower-skilled workers compared with highly skilled workers. For instance, the rates are notably below the average for cleaners (13 %), unskilled workers (22 %), porters and guards (24 %), and agricultural workers (29 %). Conversely, the rates are higher than the average for those with white-collar positions, nearing 100 % for ***professionals*** (97 %) and ***managers*** (96 %). Similarly, the simulated actual wages are substantially higher for those in white-collar roles, especially for ***managers*** (440 % of the minimum wage) and ***professionals*** (510 % of the minimum wage).

Table B3. Predictions of the under-reporting phenomenon among minimum wage earners in Hungary, 2006

	Probability of Under-Reporting Among MW Earners (%)	Share of MW Earners (%)	Simulated Wage of Cheaters (MW = 1.0)
TOTAL	*48*	*11.9*	*2.4*
Occupations			
Agriculture	29	27.5	1.8
Construction	56	23.4	1.8
Services	43	6.7	2.2
Trade	39	20.5	1.8
Industry	49	12.8	2.0
Other blue collar			
Cleaners	13	23.8	1.6
Unskilled labourers	22	33.3	1.6
Machine operators	45	5.7	2.1
Porters and guards	24	15.6	1.6
Drivers	72	15.8	2.2
White collar			
Office clerks	59	11.0	2.4
Technicians, assistants	84	5.3	2.8
Administrators	78	6.4	2.9
Managers	96	5.2	4.4
Professionals	97	2.5	5.1

Notes: MW = Minimum-Wage | Models: Wage equation with occupation dummies

Source: Extracted from Elek *et al.* (2015)

Bíró *et al.* (2022) employ an administrative panel dataset that brings together data on earnings, occupations, benefit receipts, healthcare spending, and various other domains. This dataset represents a random 50 % sample of the Hungarian population from 2003 to 2011, with the sample restricted to individuals aged 18-65, focusing specifically on the working-age population. This resulted in more than 1.85 million private sector workers and nearly 400 000 firms being included in the analysis. The authors measured the share of minimum wage earners in 2005 who transitioned to the new audit threshold in 2007 (i.e. the "double minimum wage rule" introduced in legislation in September 2006) by various characteristics of workers and firms' characteristics. The most important differences have been identified with respect to the education, and in consequence, to the skills of the worker. Only 4.6 % of workers in occupations requiring primary education, who reported earning the minimum wage in 2005, reported doubling their earnings by 2007. Similarly, workers in occupations mostly

requiring lower secondary education or less had a transition probability of 7 %. However, among workers in higher-skilled positions, the transition probability was notably higher: 15.1 % for those with primarily upper secondary education and 24.9 % for those with predominantly tertiary education in their occupation (Bíró *et al.*, 2022). As such, the authors conclude that these findings suggest that among more highly skilled workers, those reporting the minimum wage before the new audit policy had substantially higher actual earnings.

In conclusion, the results of the previous research show a relationship between the level of the minimum wage and under-reporting wages, especially in the case of ***highly skilled workers***, including ***managers***. Indeed, both studies show that the there is a high probability that a highly skilled minimum waged worker would under-report their real wage. As such, this can be used by the enforcement authorities as an indicator in risk analysis methodology. Nevertheless, a previous study assessing the effects of the tax reforms targeting the "whitening process", concluded that, starting with 2010, the under-declared income and/or wages of the ***entrepreneurs*** decreased (Filep-Mosberger and Reiff, 2022).[18] However, Bíró *et al.* (2022) underlined a potential unintended consequence associated with increasing the minimum wage. They point out that such policies may inadvertently lead to more employees and employers agreeing to operate entirely off the books rather than continuing to under-report earnings.

5.4 Undeclared income obtained from tutoring activities in Romania

The fourth case study concerns undeclared income obtained from tutoring activities in Romania (see Box 4 below).

Box 4. Undeclared income obtained from tutoring activities in Romania

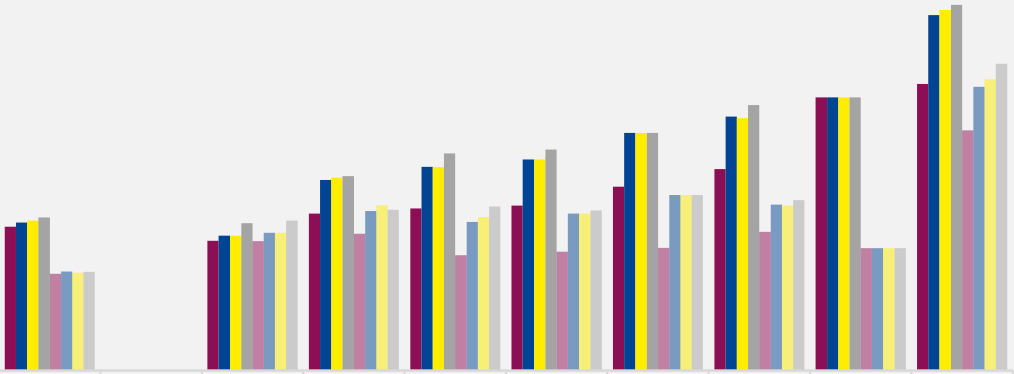
The Romanian education system ensures formal education for youth and is aligned with European standards, facilitating recognition of qualifications globally. Mandatory schooling for children aged 6–16 is governed by the National Education Law nr. 1/2011. Student progression from one grade to the next is gradual, involving completion of subjects in the national curriculum and passing national evaluation exams at the end of grades II, IV (primary education), VIII (lower secondary education/gymnasium), and XII/XIII (upper secondary education concluding with the baccalaureate examination), respectively (Ciuchi, 2023). Public school education is often enhanced by private tutoring, especially in subjects essential for progressing to higher education or gaining admission to university. Most parents view private paid tutoring as acceptable, while teachers see it potentially as a means to attain relatively respectable social status and economic rewards (Popa and Acedo, 2006). Indeed, the widely debated issue of low teacher wages is considered one of the primary contributing factors, alongside societal norms, to the substantial tutoring market in Romania. As shown in Figure B4.1, teacher wages in Romania ranked second lowest among various Central and Eastern European countries during the 2021-2022 school year, amounting to nearly half of those in Lithuania and Slovenia. In 2023, for the first time since 2005, the examination period for graduation to a higher level of education was jeopardised in Romania as over 150 000 teachers went on strike demanding wage increases and improved working conditions.[19] The students were not negatively impacted by the strike as a resolution was reached with the government for a gradual increase of the wages and resources for planning the teaching materials.

But how large is the tutoring market in Romania? The 2021 national study, conducted by the Romanian Academic Society (SAR) and the Romanian Institute for Evaluation and Strategy (IRES) with support from

[18] Hungary progressively introduced a flat rate Personal Income Tax regime between 2010 and 2013, reducing both the marginal tax rate for higher earners and the average tax rate.
[19] Exams in Romania postponed as thousands of teachers strike for better pay. See, https://www.euronews.com/2023/06/09/exams-in-romania-postponed-as-thousands-of-teachers-strike-for-better-pay

Friedrich-Ebert-Stiftung Romania (FES), marks the first effort to map the phenomenon of shadow education in Romania post-EU accession (Pup, 2021). Based on a representative sample of children (938) and parents (1 745), their findings indicate that ***one in three children participated in paid private tutoring*** during the 2019-2020 school year. Their findings align with other previous research from 2010 indicating that 27 % of children in urban areas and 7 % in rural areas participate in private tutoring, contributing to a market worth over EUR 300 million annually (Daedalus Millward Brown, 2010).

Figure B4.1. Average annual gross actual salaries (EUR) of public school teachers aged 25-64 in Central and Eastern Europe, 2021/2022 vs. 2016/2017



	Romania	Hungary	Poland	Latvia	Slovakia	Estonia	Czechia	Lithuania	Slovenia
2021/2022 ISCED 02	12,468	11,262	13,599	14,051	14,307	15,953	17,469	23,690	24,844
2021/2022 ISCED 1	12,823	11,687	16,531	17,672	18,301	20,590	22,016	23,690	30,804
2021/2022 ISCED 24	12,987	11,687	16,725	17,639	18,301	20,590	21,884	23,690	31,248
2021/2022 ISCED 34	13,279	12,785	16,851	18,837	19,158	20,590	23,030	23,690	31,707
2016/2017 ISCED 02	8,385	11,212	11,861	10,000	10,301	10,633	12,029	10,620	20,825
2016/2017 ISCED 1	8,583	11,937	13,820	12,884	13,608	15,231	14,376	10,620	24,597
2016/2017 ISCED 24	8,484	11,937	14,325	13,317	13,608	15,231	14,314	10,620	25,260
2016/2017 ISCED 34	8,552	12,997	13,934	14,225	13,883	15,231	14,770	10,620	26,598

Notes: International Standard Classification of Education (ISCED): ISCED 0: Early childhood education ('less than primary' for educational attainment) | ISCED 1: Primary education | ISCED 2: Lower secondary education | ISCED 3: Upper secondary education | ISCED 4: Post-secondary non-tertiary education | Data for Bulgaria and Croatia - Not available

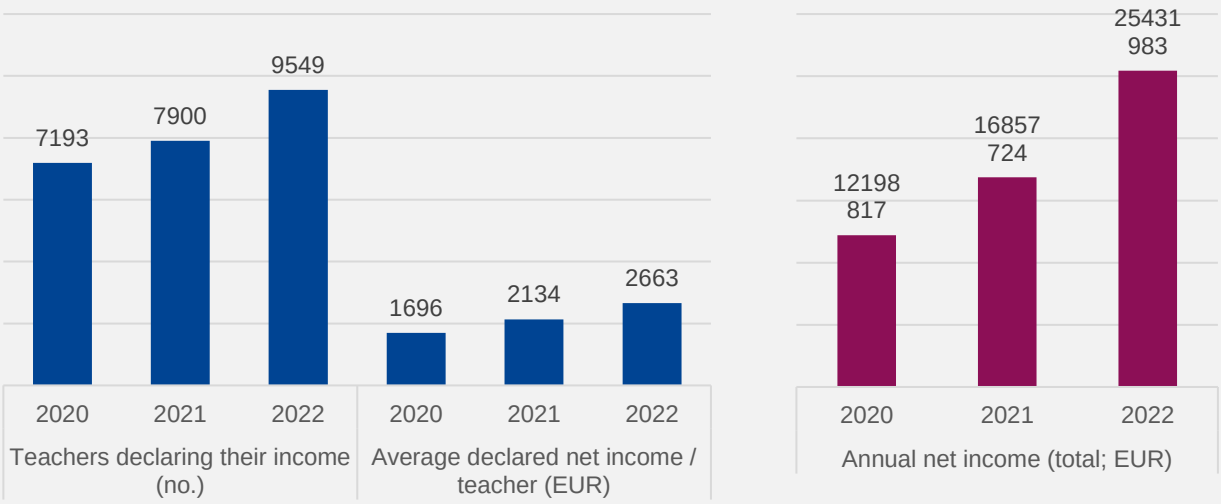
Source: Extracted from European Commission, European Education and Culture Executive Agency, Balcon, M., Nikolova, S. (2023) and European Education and Culture Executive Agency, Eurydice (2018).

The same report shows that the majority of parents believe that children should acquire knowledge through private tutoring, but they also support the idea of taxing this activity. Indeed, one of their main findings is that tutors generally receive payment through informal arrangements, with only a few cases involving formal contracts or the issuance of tax receipts. On average, a private tutoring session costs between RON 50 (EUR 10) and RON 100 (EUR 20), with families typically paying around RON 300 (approximately EUR 60) per month for their child's tutoring (Pup, 2021). Therefore, the undeclared income earned by teachers from tutoring is not insignificant.

The authorities are aware of this phenomenon and started to implement policies targeting the teachers. For example, in 2022 the National Agency for Fiscal Administration (ANAF) initiated an information campaign and provided support in understanding how the income from tutoring should be declared. As such, an informative guide entitled "Fiscal obligations regarding income obtained from private tutoring by natural persons" was

developed in mid-2022.[20] Following these activities, as shown in Figure B4.2, both the number of teachers and the average income declared by each teacher increased in 2022 compared with 2020.

Figure B4.2. Teachers declaring tutoring in Romania, 2020-22



Notes: 1 EUR = 4.9687 RON (exchange rate 4 April 2024 https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html)

Source: Based on National Agency for Fiscal Administration data, extracted from https://www.gandul.ro/social/exclusiv-numarul-profesorilor-care-au-declarat-la-anaf-venituri-din-meditatii-a-crescut-in-pandemie-unde-se-castiga-cel-mai-mult-din-meditatii-20017104

Figure B4.3 further visually depicts the data shown in the figure above, clearly illustrating the rising trend in the declaration of income from tutoring by Romanian teachers. However, the declared income remains significantly below the estimated size of the tutoring market.

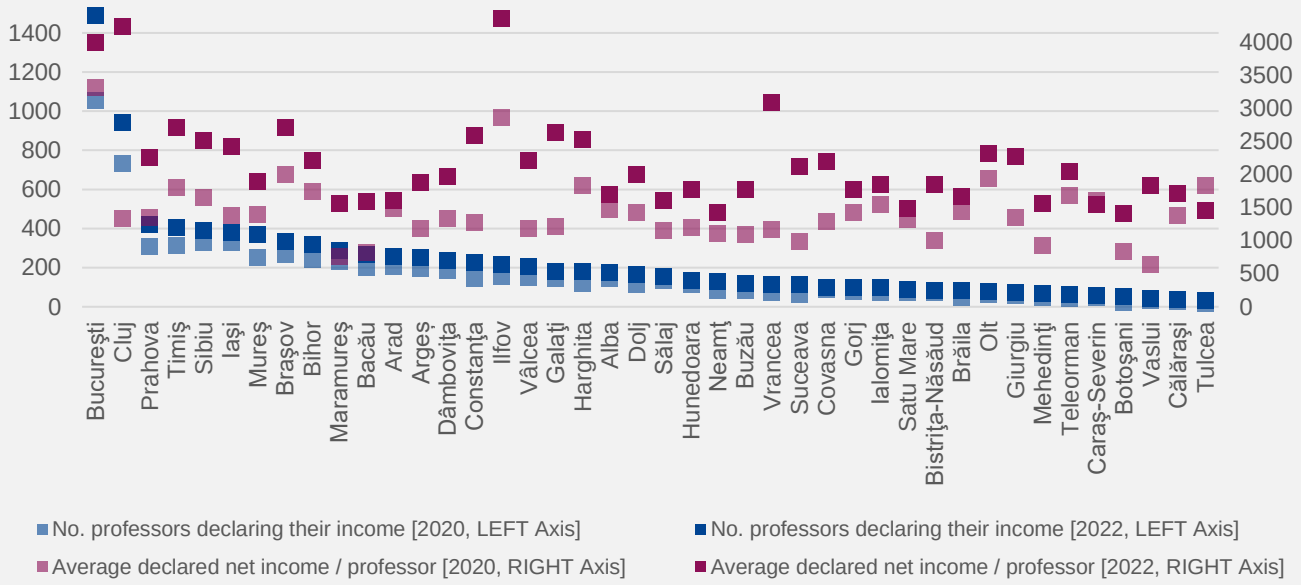
Actions to support the transition of private paid tutoring to the declared economy was strengthened in 2023 and 2024. For example, in 2023, ANAF developed a dedicated guide for the tutoring activity entitled "*Guide on the tax treatment applicable to income obtained from private tutoring provided privately by natural persons*" and in 2024 they provide an on-line seminar on how to declare the income from tutoring. [21,22]

Other measures aimed at improving the tutoring sector and reducing inequalities within the public education system include offering "Educational Vouchers" to vulnerable families for additional tutoring for their children, implementing the "School after School" programme for additional learning opportunities (Ciuchi, 2023), and enacting Law no. 198 on 4 June 2023 prohibiting teachers from tutoring students in their own classes.

In sum, this case study illustrates that the undeclared income from tutoring should not be ignored and requires tailored measures for ensuring formalisation. As shown in the previous chapter, undeclared tutoring activities emerge as a prominent form of undeclared work among EU professionals, with 10 % of individuals engaging in undeclared work within the service industries identified as participants in tutoring activities (Williams and Kayaoglu, 2023).

[20] Obligații fiscale privind veniturile obținute din meditații de persoane fizice (Fiscal obligations regarding income obtained from private tutoring by natural persons), https://static.anaf.ro/static/10/Iasi/material_informativ_21-06-2022.pdf
[21] Ghid privind tratamentul fiscal aplicabil veniturilor obtinute din meditatii acordate in particular de persoane fizice (Guide on the tax treatment applicable to income obtained from private tutoring provided privately by natural persons), https://static.anaf.ro/static/10/Anaf/AsistentaContribuabili_r/Ghid_meditatii_2023.pdf
[22] List of web seminars by ANAF, https://static.anaf.ro/static/10/Anaf/Informatii_R/intalniri.htm

Figure B4.3. Professors declaring tutoring in Romania, 2020 and 2022



Notes: 1 EUR = 4.9687 RON (exchange rate on 4 April 2024 https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/index.en.html)

Source: Based on https://www.gandul.ro/social/exclusiv-numarul-profesorilor-care-au-declarat-la-anaf-venituri-din-meditatii-a-crescut-in-pandemie-unde-se-castiga-cel-mai-mult-din-meditatii-20017104

5.5 Motives for making informal payments to health professionals in the public sector in EU

The last case study concerns the motives for making informal payments to health professionals in the public sector in the EU (see Box 5 below).

Box 5. Motives for making informal payments to health professionals in the public sector in the EU

A strong correlation has been identified between corruption and various forms of undeclared work. Previous literature identified, for example, an association between corruption (e.g. perceived level of corruption, control of corruption, irregular payments, and bribes) and informal/unregistered employment (e.g. Krasniqi and Williams, 2017; Williams and Horodnic A.V., 2019), under-declared employment or income (Franic, 2017; Kayaoglu and Williams, 2017), or dependent self-employment (Williams and Horodnic, 2019).[23] In addition, previous studies have found a correlation between informal payments and undeclared work/income (tax evasion) in the health sector considered as *"'complementary actions' where the increase of one increases the other, through a relationship of 'mutual feed' and 'interaction' of the actors' actions"* (Stasinopoulos *et al.*, 2023). Therefore, informal payments can be used as a proxy for investigating under-declared income by highly skilled workers.

According to Figure B5.1. giving/taking informal payments or the abuse of power for personal gain are practices that citizens of EU Member States perceive to be present in all EU countries and/or public services (i.e.

[23] For an extensive literature review on the association between corruption and undeclared work, see Williams and Horodnic (2020c)

healthcare, education, tax or social security authorities, inspectors). As such, at EU level this phenomenon is perceived as more widespread amongst inspectors (32 % of all respondents in the EU) and within the healthcare sector (29 %) and less common in tax authorities (21 %) and social security authorities or the education sector (14 %). However, there are cross-national variations as shown in Figure B5.1. For instance, informal payments in the education sector are perceived as more widespread in Portugal (30 %), Slovakia (30 %), Cyprus (27 %), Italy (26 %), and Romania (25 %), while informal payments in the health sector are perceived as more widespread in Greece (88 %), Lithuania (69 %), Cyprus (61 %), Slovakia (59 %), and Romania (53 %). Among the public services analysed in Figure B5.1., the healthcare system ranks first for perceived widespread informal payments in 12 European Member States. Indeed, only a minority of respondents in each EU Member State said that they gave a gift, extra money, or did a favour for the other public services analysed in Figure B5.1[24], except for the healthcare system, further analysed in Figure B5.2.

Figure B5.2 reveals that, out of those who have been to a public healthcare institution in the past 12 months (74 % of all EU citizens), 3 % said that they had to make an informal payment.[25] The prevalence of informal payments is higher in Greece (14 %), Romania (9 %), Croatia (7 %), Bulgaria and Austria (6 %). The proportions diminish to 1 % in Finland, Cyprus, and Denmark, with no instances reported in Sweden, the Netherlands, and Spain.

Turning to the reasons for making informal payments in healthcare, Figure B5.3 reveals that 25 % of patients making such payments did so for preferential treatment, 17 % were asked to go for a private consultation in order to be treated in a public hospital and 16 % said that the doctor/nurse requested an extra payment or a valuable gift in advance. A similar proportion wanted to express gratitude before the care was given (15 %) or after the care was given (14 %). Moreover, 11 % of patients making informal payments felt that the doctor/nurse expected an extra payment or a valuable gift following the procedure. Indeed, these findings align with prior research indicating that informal payments are offered to secure better treatment (Liaropoulos *et al.*, 2008, Atanasova *et al.*, 2015), gain access to supplementary services (Ensor, 2004), or as an expression of gratitude, reflecting social norms (Liaropoulos *et al.*, 2008, Chiua *et al.*, 2007; Falkingham, 2004). Healthcare practitioners commonly receive informal payments as a result of their low salaries (Stasinopoulos *et al.*, 2023).

[24] Due to the sensitive issues investigates (i.e., illegal practices), these figures should be considered as lower bound estimates.
[25] '… give an extra payment or a valuable gift to a nurse or a doctor, or make a donation to the hospital' (apart from official fees) (Special Eurobarometer 534 - Citizens' attitudes towards corruption in the EU in 2023 – Questionnaire).

Figure B5.1 Contact with institutions and extent of asked/expected informal payments for a service (gift, favour, or extra money) by EU country, 2023 (%)

		EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE
The healthcare system	*widespread corruption**	***29***	11	**45**	**36**	10	19	18	17	**88**	17	17	**45**	**41**	**61**	**33**	**69**	13	**43**	**40**	19	28	**40**	**33**	**53**	**48**	**59**	3	8
The education sector	*widespread corruption**	***14***	6	**19**	**18**	6	9	10	9	**19**	12	9	**22**	**26**	**27**	13	**15**	8	13	**22**	8	**20**	11	**30**	**25**	**19**	**30**	3	14
	*contact with***	***23***	28	**16**	26	31	20	27	26	22	29	26	19	20	25	21	18	34	**16**	23	36	28	**17**	25	**16**	24	19	29	34
	*asked/expected payment****	***0***	1	**2**	**2**	0	1	**2**	1	0	0	0	1	0	0	0	1	0	0	0	1	**2**	0	0	1	0	1	0	0
Tax authorities	*widespread corruption**	***21***	**23**	**37**	15	8	11	11	12	**61**	**24**	**23**	**42**	**27**	**44**	**22**	17	13	**22**	**41**	**23**	14	13	**38**	**29**	**26**	**28**	2	5
	*contact with***	***15***	13	15	13	32	21	20	20	34	**4**	**9**	11	**7**	11	15	15	19	15	15	45	16	**9**	18	14	**10**	16	38	42
	*asked/expected payment****	***0***	1	1	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0
Social security authorities	*widespread corruption**	***14***	13	**21**	8	11	8	13	11	**45**	14	10	**25**	**20**	**31**	11	**23**	11	12	**28**	**16**	**15**	10	**34**	**19**	**21**	**25**	3	11
	*contact with***	***15***	**12**	**11**	17	**13**	**10**	16	**13**	25	27	24	**9**	**5**	18	**10**	**10**	31	**6**	18	20	19	**11**	25	**5**	**11**	15	**11**	19
	*asked/expected payment****	***0***	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1
Inspectors	*widespread corruption**	***32***	**34**	**39**	30	19	**33**	24	19	**64**	25	27	**46**	**42**	**45**	28	**50**	15	27	**48**	**41**	27	25	**43**	30	**41**	**36**	8	25
	*contact with***	***5***	5	**3**	6	9	6	9	**3**	5	5	**3**	5	**4**	6	6	5	8	**2**	5	11	7	**2**	**3**	**3**	6	**4**	8	10
	*asked/expected payment****	***0***	0	1	1	0	1	1	0	1	1	0	0	1	0	1	1	0	1	0	0	**2**	0	0	1	0	1	0	0

Notes:

Above EU27 average

Below EU27 average

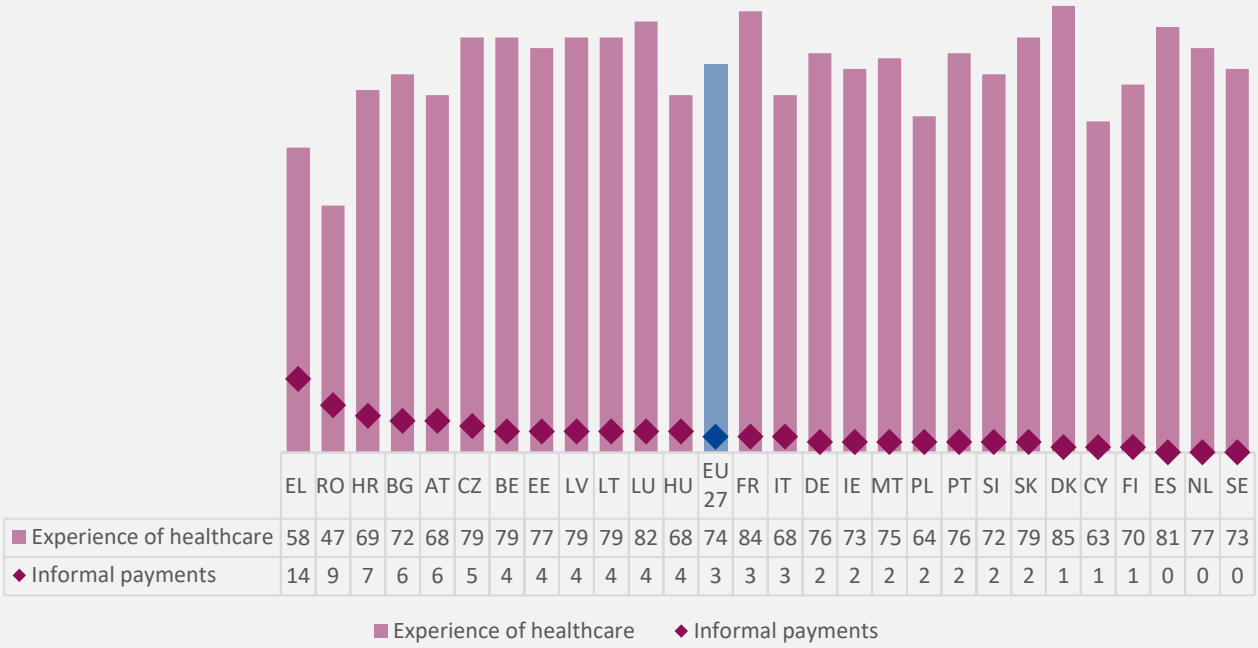
* perception/giving and taking bribes and the abuse of power for personal gain

** over the last 12 months

*** give a gift, favour, or extra money for the service

Source: Extracted from Special Eurobarometer 534 - Citizens' attitudes towards corruption in the EU in 2023 (Fieldwork: April-May 2023)

Figure B5.2. Informal payments for public healthcare services by EU country, 2023 (%)



	EL	RO	HR	BG	AT	CZ	BE	EE	LV	LT	LU	HU	EU 27	FR	IT	DE	IE	MT	PL	PT	SI	SK	DK	CY	FI	ES	NL	SE
Experience of healthcare	58	47	69	72	68	79	79	77	79	79	82	68	74	84	68	76	73	75	64	76	72	79	85	63	70	81	77	73
Informal payments	14	9	7	6	6	5	4	4	4	4	4	4	3	3	3	2	2	2	2	2	2	2	1	1	1	0	0	0

Source: Extracted from Special Eurobarometer 534 - Citizens' attitudes towards corruption in the EU in 2023 (Fieldwork: April-May 2023)

Figure B5.3. Reasons for informal payments in healthcare in the EU, 2023 (%)

Source: Extracted from Special Eurobarometer 534 - Citizens' attitudes towards corruption in the EU in 2023 (Fieldwork: April-May 2023)

In conclusion, informal payments are found across all EU countries and public services, particularly within the public healthcare sector. Consequently, policy interventions aimed at reducing the perceived need for informal payments among patients and healthcare professionals will not only enhance the accessibility and quality of healthcare services but also mitigate undeclared work/income.

6.0 Conclusions

This report assessed the prevalence, characteristics, and motives for undeclared work among highly skilled workers in the EU through a mixed-method approach. Data from Eurostat and the European Centre for the Development of Vocational Training were utilised to explore employment trends. Specific types of undeclared work, such as unregistered employment, under-declared employment, alongside with dependent self-employment, were examined using data from the European Working Conditions Telephone Survey and Special Eurobarometer 498. Additionally, a literature review was conducted to supplement this analysis and to understand the factors and motivations behind undeclared work among highly skilled individuals.

- The findings show that, in 2022**, highly skilled workers comprised more than 40 % of the EU's workforce**, totalling over 86.4 million individuals. Despite fluctuations in specific occupations, such as an upward trend for professionals and a slight decline for technicians and associate professionals, overall growth is anticipated for highly skilled occupations across the EU between 2022 and 2035.

- Regarding **unregistered employment** (those working without a contract), in 2021, 1.8 % of EU employees operated without a written agreement. Managers had slightly higher rates at 2 %, while professionals and technicians/associate professionals had lower rates at 1.1 % each. This form of employment spans across all socio-demographic groups, with men, older workers aged 56+, financially struggling highly skilled workers, and rural residents showing higher likelihoods compared with others.

- Turing to **under-declared employment**, the findings show that in 2019, 2.6 % of highly skilled employees in the EU reported receiving envelope wages, compared with 3.2 % of all employees, indicating slightly lower prevalence among highly skilled workers versus the overall labour market. Within the highly skilled category, under-declared employment is most prevalent among employed professionals such as doctors, lawyers, accountants, or architects (5.5 %) and other employed white-collar workers (3 %). Younger highly skilled workers are more likely to receive envelope wages as well as those facing frequent financial difficulties, with rates decreasing as financial status improves, while urban residents have higher rates compared to rural areas.

- Concerning **dependent self-employment**, 9.3 % of self-employed individuals in the EU possess its characteristics, compared to just 0.8 % of self-employed managers, 8.6 % of self-employed professionals, and 6.9 % of self-employed technicians and associate professionals. Self-employed professionals, particularly in teaching (18.1 %), information technology (16.4 %), and legal/social/cultural fields (9.9 %), have a higher prevalence of dependent self-employment. Among self-employed technicians and associate professionals, the share is notable in the information technology (14.7 %), health (7.9 %), and business/administration (7.9 %) sectors. Dependent self-employment among highly skilled workers is more prevalent among younger self-employed individuals, women, those living in urban areas, residing alone, and experiencing no financial challenges.

- Among highly skilled workers, the findings show that under-reporting income (or wages) and engaging in dependent self-employment are more prevalent compared to working without a contract. While undeclared work exists across all high-skilled occupations, each sector displays unique characteristics. For example, freelancing, which is frequently associated to undeclared work, and dependent self-employment are prominent in science and engineering professions, notably among online platform freelancers and pilots. Similarly, the IT&C industry sees a significant prevalence of freelance work, particularly in technology and software development roles. In healthcare, common forms include providing medical services outside formal settings, owning individual practices, or working as self-employed and under-reporting income, alongside informal payments received in public hospitals. Teaching professionals often engage in undeclared work

through side jobs like tutoring, while business and administration professionals may provide undeclared consultancy services or partake in dependent self-employment. Legal professionals may offer undisclosed legal advice or operate as self-employed individuals without full income disclosure. The creative industry is characterised by informal practices such as cash-in-hand work, online crowd-work, and tips-based activities.

- Exploring the **factors and motivations behind undeclared work among highly skilled workers**, the findings suggest that it is often a voluntary choice to exit the declared economy. Those engaged in undeclared work mention mutual benefits, higher earnings, and the bureaucratic hurdles of declared employment more often compared to low- or medium-skilled workers. While discussions on redistributive justice are less common among this group, 10 % express dissatisfaction with the state's utilisation of their taxes and contributions. Additionally, those engaged in undeclared work perceive fewer deterrents and display lower trust in labour inspectorates, tax, and social security authorities compared with their non-participating counterparts. They also demonstrate lower tax morale and have more personal connections involved in such activities.

- In summary, while there is less research on the involvement of highly skilled workers in undeclared work compared with lower-skilled workers, the findings reveal a varied landscape. **In many instances, highly skilled workers choose undeclared work voluntarily** as a deliberate departure from the declared market, **yet certain regional areas and industries offer limited alternatives**. This trend is illustrated by the rise in freelancing among highly skilled professionals, the prevalent use of dependent self-employment, particularly evident in industries such as aviation, and the gig nature of artistic work, among other examples. Therefore, **enabling the shift to declared work for highly skilled individuals necessitates a thorough examination of structural elements** such as country-specific and industry-specific conditions, alongside individual factors like job prospects, income incentives, and tax morale.

References

Alacovska, A. (2018). Informal creative labour practices: A relational work perspective, Human Relations, 71(12), 1563-1589.

Arezzo, M.F., Horodnic, I.A., Williams, C.C., Guagnano, G. (2024). Measuring participation in undeclared work in Europe using survey data: A method for resolving social desirability bias, Socio-Economic Planning Sciences, 91, 101779.

Artavanis, N., Morse, A., Tsoutsoura, M. (2015). Tax evasion across industries: Soft credit evidence from Greece. NBER working paper series, Working Paper 21552. Cambridge: National Bureau of Economic Research.

Artavanis, N., Morse, A., Tsoutsoura, M. (2016). Measuring Income Tax Evasion Using Bank Credit: Evidence from Greece, The Quarterly Journal of Economics, 131:2, 739-798.

Atanasova, E., Pavlova, M., Groot, W. (2015). Out-of-pocket patient payments for public health care services in Bulgaria, Frontiers in Public Health, 3,175.

Bag, P.K., Wang, P. (2021). Income tax evasion and audits under common and idiosyncratic shocks, Journal of Economic Behavior and Organization, 184, 99-116.

Battaglini, M., Guiso, L., Lacava, C., Patacchini, E. (2019). Tax Professionals: Tax-Evasion Facilitators or Information Hubs? NBER Working Paper No. 25745. Cambridge: National Bureau of Economic Research.

Battaglini, M., Guiso, L., Lacava, C., Patacchini, E. (2020). Tax Professionals and Tax Evasion. Available at: https://econ.vt.edu/content/dam/econ_vt_edu/seminars/fall-2020/10-23-20%20Eleonora%20Patacchini.pdf [28.02.2024].

Bejaković, P., Stefanov, R. (2019). Characteristics of Undeclared Work in Service Sector in Countries of South East Europe, Zagreb International Review of Economics & Business, 22:1, 107-131.

Belešová, S., Kalabisová, J., Vlček, J., Studnička, P. (2016). Dirty Money as a Part of Legal Economy? Czech Hospitality and Tourism Papers, XII(26), 3-20.

Bíró, A., Prinz, D., Sándor, L. (2022). The minimum wage, informal pay, and tax enforcement, Journal of Public Economics, 104728.

Bjørneby, M., Alstadsæter, A., Telle, K. (2021). Limits to Third-Party Reporting: Evidence from a Randomized Field Experiment in Norway, Journal of Public Economics, 203(1), 104512.

Borkowski, M., Brzozowski, J., Vershinina, N., Rodgers, P. (2021). Networks and Migrant Entrepreneurship: Ukrainian Entrepreneurs in Poland. In: Vershinina, N., Rodgers, P., Xheneti, M., Brzozowski, J., Lassalle, P. (Eds.). Global Migration, Entrepreneurship and Society (Contemporary Issues in Entrepreneurship Research, Vol. 13). Leeds: Emerald Publishing Limited. 161-176.

Bray, M. (2009). Confronting the shadow education system, What government policies for what private tutoring? UNESCO and IIEP. Paris: International Institute for Educational Planning.

Cappelen, C., Muriaas, R.L. (2018). Polish Labour Migrants and Undeclared Work in Norway, Scandinavian Political Studies, 41(2), 167-187.

Casula, C. (2021). Local Broadcast Journalists and the Trap of Professional Heterogeneity, Professions and Professionalism, 11(1), e3912.

Chiua, Y.C., Smith, K.C., Morlock, L., Wissow, L. (2007). Gifts, bribes and solicitations: Print media and the social construction of informal payments to doctors in Taiwan, Social Science & Medicine, 64(3), 521-530.

Cichocki, S. (2016). Informal work in a post-transition country: some evidence for Poland, Prakseologia, 158, 255-273.

Ciuchi, O.M. (2023). Tutoring—An Emerging Phenomenon in the Romanian Education System, Sustainability, 15, 14054.

Daedalus Millward Brown (2010). Piața Meditațiilor, estimate la peste 300 milioane euro annual (The Meditation Market, estimated at over 300 million euros annually). Fundația Dinu Patriciu.

Dent, T., Tanghetti, J., Comunian, R. (2023). Creative and cultural work post-Covid-19: Interruptions as space of political re-futuring, International Journal of Cultural Studies, DOI: 10.1177/13678779231217295.

Dzhekova, R., Williams, C.C. (2014). Tackling the Undeclared Economy in Bulgaria: A baseline report. GREY Working Paper No. 1. Sheffield: University of Sheffield.

Eggleston, K., Bir, A. (2006). Physician dual practice, Health Policy, 78, 157-166.

ELA (2022). Road map to implement a holistic integrated strategic approach towards tackling undeclared work. European Labour Authority. Available at: https://www.ela.europa.eu/sites/default/files/2024-02/EL-UDW_factsheet-2023-fin.pdf [02.04.2024].

Elek, P., Köllő, J., Reizer, B. and Szabó, P.A. (2012). Detecting Wage Under-Reporting Using a Double-Hurdle Model. In: Lehmann, H. and Tatsiramos, K. (Ed.). Informal Employment in Emerging and Transition Economies Leeds: Emerald Group Publishing Limited. 135-166.

Ensor, T. (2004). Informal payments for health care in transition economies, Social Science and Medicine, 58, 237-246.

EURISPES (2016). Italy Report 2016. Summary Document. The Research Institute of Italians.

European Commission (2016). European Platform tackling undeclared work, Member States Factsheets and Synthesis Report. Brussels: European Commission.

European Commission, European Education and Culture Executive Agency, Balcon, M., Nikolova, S. (2023). Teachers' and school heads' salaries and allowances in Europe 2021/2022, Balcon, M.(editor), Publications Office of the European Union. Available at: https://data.europa.eu/doi/10.2797/764821 [04.04.2024].

European Education and Culture Executive Agency, Eurydice (2018). Teachers' and school heads' salaries and allowances in Europe – 2016/17. European Commission. Available at: https://data.europa.eu/doi/10.2797/24212 [04.04.2024].

European Labour Authority (2023). Factsheet on undeclared work – DENMARK. European Labour Authority, European Platform tackling undeclared work. Available at: https://www.ela.europa.eu/sites/default/files/2024-02/DK-UDW_factsheet-2023-fin.pdf [02.04.2024].

European Platform tackling undeclared work (2020). Training labour inspectors to use the new IT tools. Available at: https://www.ela.europa.eu/sites/default/files/2021-09/EL-TrainingInspectorsToUseNewITtools.pdf [02.04.2024].

Falkingham, J. (2004). Poverty, out-of-pocket payments and access to health care: Evidence from Tajikistan, Social Science & Medicine, 58(2), 247-258.

Filep-Mosberger, P., Reiff, Á. (2022). Income tax evasion estimation in Hungary. MNB Working Papers, No. 2022/4. Budapest: Magyar Nemzeti Bank.

Firinu, A. (2012). Undeclared Flexibility: Irregularities in Nonstandard Work in Italy (PhD Thesis). Milano: Università degli Studi di Milano.

Franic, J. (2017). Envelope wage practices: Underlying motivations from the perspective of workers (thesis). Sheffield: The University of Sheffield.

Franic, J. (2020a). Why workers engage in quasi-formal employment? Some lessons from Croatia, Eastern Journal of European Studies, 11(2), 94-112.

Franic, J. (2020b). Dissecting the illicit practice of wage underreporting: some evidence from Croatia, Economic Research-Ekonomska Istraživanja, 33:1, 957-973.

Giavrimis, P., Eleftherakis, T., Koustourakis, G. (2018). An Approach of Shadow Education in Greece: Sociological Perspectives, Open Journal for Sociological Studies, 2(2), 71-82.

Grabowski, W., Korczak, K. (2023). Identifying the envelope wages phenomenon based on LFS and SES data sets – evidence from Poland, Economics and Sociology, 16(4), 130-154.

Håkansta, C., Albin, M., Kreshpaj, B., Gunn, V., Hogstedt, C., Matilla-Santander, N., O'Campo, P., Orellana Pozo, C., Wegman, D.H., Bodin, T. (2024). Power resources and the battle against precarious employment: Trade union activities within a tripartite initiative tackling undeclared work in Sweden, Economic and Industrial Democracy, 45(1), 29-56.

Hanousek, J., Palda, F. (2004). Quality of Government Services and the Civic Duty to Pay Taxes in the Czech and Slovak Republics, and other Transition Countries, KYKLOS, 57(2), 237-252.

Hauben, H. (2021). Tools and approaches to tackle undeclared work in the collaborative economy. Learning resource paper from the thematic review workshop on undeclared work in the collaborative economy. European Platform tackling undeclared work.

Hazans, M. (2011). Informal Workers across Europe. Evidence from 30 European Countries. Policy Research Working Paper 5912. The World Bank, Europe and Central Asia Region, Human Development Economics Unit.

Horodnic, A.V. (2021). Trends in Informal Payments by Patients in Europe: A Public Health Policy Approach, Frontiers in Public Health - Health Economics, 9, 780337.

Horodnic, A.V., Horodnic, I.A. (2021). The labor market in the construction sector - analysis at the level of Romania (in Romanian). Bucharest: FGS Familia.

Horodnic, A.V., Williams, C.C., Drugă, R.I. (2022). The companion pandemic to Covid-19: the use of informal practices to access public healthcare services in the European Union, International Journal of Public Health, 67, 1604405.

Horodnic, I.A., Williams, C.C. (2018). Does Trust Prevent Undeclared Work? A Policy Brief. An Evaluation of the Social Actor Approach. Sheffield: Sheffield University Management School.

Horodnic, I.A., Williams, C.C. (2019). Institutional Asymmetry and the Acceptability of Undeclared Work. SHADOWS Working Paper no. 01-2019. Sheffield: Sheffield University Management School.

Horodnic, I.A., Williams, C.C. (2020). Evaluating the working conditions of the dependent self-employed, International Journal of Entrepreneurial Behavior & Research, 26(2), 326-348.

Horodnic, I.A., Williams, C.C. (2022). Tackling undeclared work in the European Union: beyond the rational economic actor approach, Policy studies, 43(1), 21-55.

Horodnic, I.A., Williams, C.C., Manolică, A., Roman, C.T., Boldureanu, G. (2023). Employer perspectives on undeclared work in the service sector: impacts and policy responses, The Service Industries Journal, 43(5-6), 358-377.

Horodnic, I.A., Williams, C.C., Maxim, A., Stoian, I.C., Țugulea, O.C., Horodnic, A.V. (2021). Knowing and Unknowing Purchases of Undeclared Healthcare Goods and Services: The Role of Vertical and Horizontal Trust, International Journal of Environmental Research and Public Health, 18(21), 11561.

ILO (2021). World Employment and Social Outlook 2021: The role of digital labour platforms in transforming the world of work. Geneva: ILO.

ILO. (2016). Diagnostic report on undeclared work in Greece. Geneva: ILO.

Încalțărău, C., Horodnic, A.V., Williams, C.C., Oprea, L. (2021). Institutional Determinants of Informal Payments for Health Services: An Exploratory Analysis across 117 Countries, International Journal of Environmental Research and Public Health, 18(23), 12421.

Jokic, B., Bregvadze, T., Kazimzade, E., Kirss, L., Ristić Dedić, Z., Soldo, A. (2013). Emerging from the Shadow: A Comparative Qualitative Exploration of Private Tutoring in Eurasia. Zagreb: Network of Education Policy Centres.

Kaitelidou, D.C., Tsirona, C.S., Galanis, P.A., Siskou, O.C., Mladovsky, P., Kouli, E.G. Prezerakos, P.E., Theodorou, M., Sourtzi, P.A., Liaropoulos, L.L. (2013). Informal payments for maternity health services in public hospitals in Greece, Health Policy, 109(1), 23-30.

Kalavrezou, N., Jin, H. (2021). Healthcare Reform in Greece: Progress and Reform Priorities. International Monetary Fund, European Department.

Kayaoglu, A., Williams, C.C. (2017). Beyond the declared/undeclared economy dualism: Evaluating individual and country level variations in the prevalence of under-declared employment, International Journal of Economic Perspectives, 11(4), 36-47.

Kazi, A.G., Yusoff, R., Khan, A., Kazi, S. (2014). The Freelancer: A Conceptual Review, Sains Humanika, 2(3), 1-7.

Kleven, H.J., Knudsen, M.B., Kreiner, C.T., Pedersen, S., Saez, E. (2011). Unwilling or unable to cheat? Evidence from a tax audit experiment in Denmark, Econometrica, 79(3), 651-692.

Krasniqi, B.A., Williams, C.C. (2017). Explaining individual- and country-level variations in unregistered employment using a multi-level model: Evidence from 35 Eurasian countries, South East European Journal of Economics and Business, 12(2), 61-71.

Leontaridi, M.R. (1998). Segmented labour markets: theory and evidence, Journal of Economic Surveys, 12(1), 63-101.

Liaropoulos, L., Siskou, O., Kaitelidou, D., Theodorou, M., Katostaras, T. (2008). Informal payments in public hospitals in Greece, Health Policy, 87, 72-81.

Lizé, W., Greer, I., Umney. C. (2022). Artistic work intermediaries as industrial relations institutions: The case of musicians, Economic and Industrial Democracy, 43(2), 793-809.

Lohne, J., Kjesbu, N.E., Engebø, A., Young, B., Lædre, O. (2019). Scoping Literature Review of Crime in the AEC Industry, Journal of Construction Engineering and Management, 145(6), 03119002.

Malik, S. (2010). HM Revenue and Customs tax health plan 2010, BMJ, 340, c1005.

Markovic, M.R., Vujicic, S., Nikitovic, Z., Milojevic, A. (2021). Resilience for freelancers and self-employed, Journal of Entrepreneurship and Business Resilience, 4(2), 30-36.

Mațcu, M., Zaiț, A., Ianole-Călin, R., Horodnic, I.A. (2023). Undeclared activities on digital labour platforms: an exploratory study, International Journal of Sociology and Social Policy, 43(7/8), 740-755.

Merikull, J., Staehr, K. (2010). Unreported Employment and Envelope Wages in Mid-Transition: Comparing Developments and Causes in the Baltic Countries, Comparative Economic Studies, 52, 637-670.

Milasi, S., Mitra, A. (2022). Solo Self-Employment and Lack of Paid Employment: An Occupational Perspective across EU Countries. European Commission Background Paper no. 5. Brussels: European Commission.

OECD (2020). Digital Economy Outlook 2020. OECD.

OECD (2024). Breaking the Vicious Circles of Informal Employment and Low-Paying Work. Paris: OECD Publishing.

Ozimek, A.M. (2019). The 'grey area' of employment relations in the Polish videogame industry, International Journal of Cultural Studies, 22(2), 298-314.

Popa, S., Acedo, C. (2006). Redefining professionalism: Romanian secondary education teachers and the private tutoring system, International Journal of Educational Development, 26(1), 98-110.

Psacharopoulos, G., Tassoulas, S. (2004). Achievement at the higher education entry examinations in Greece: a procrustean approach, Higher Education, 47(2), 241-252.

Pup, A.-L. (2021). Meditațiile în România: sistem educațional paralel sau complementar? (Private Tutoring in Romania: parallel or complementary educational system?). Policy Brief 78, Romanian Academic Society (SAR). Romanian Institute for Evaluation and Strategy (IRES), Friedrich-Ebert-Stiftung Romania (FES).

Putniņš, T.J., Sauka, A. (2015). Measuring the shadow economy using company managers, Journal of Comparative Economics, 43(2), 471-490.

Putnins, T.J., Sauka, A., Davidescu, A.A.M. (2019). Shadow Economy Index for Moldova and Romania. In: Ratten, V., Jones, P., Braga, V., Marques, C.S. (Eds.). Subsistence Entrepreneurship. Contributions to Management Science. Cham: Springer. 89-130.

Quaresma, H., Euler, C., Koronthalyova, I., Thornton-Lee, R., Horodnic, I.A., Franic, J., Thoung, C., Barbieri, L. (2023). Study on the effectiveness of policies to tackle undeclared work. Luxembourg: Publications Office of the European Union.

Rockwool Foundation Research Unit (2011). News from the Rockwool Foundation Research Unit. Available at: https://en.rockwoolfonden.dk/publications/the-majority-of-danes-buy-undeclared-services/ [02.04.2024].

Salvi, E., Belz, F.-M., Bacq, S. (2023). Informal Entrepreneurship: An Integrative Review and Future Research Agenda, Entrepreneurship Theory and Practice, 47(2), 265-303.

Sauka, A. (2008). Productive, unproductive and destructive entrepreneurship: A theoretical and empirical exploration. Frankfurt am Main: Peter Lang GmbH.

Sauka, A. and Putniņš, T. (2022), Shadow Economy Index for the Baltic Countries 2009–2022, 13th Annual Shadow Economy Conference, Stockholm School of Economics.

Schneider, F., Buehn, A. (2018). Shadow economy: estimation methods, problems, results and open questions, Open Economics, 1, 1-29.

Sigala, M. (2000). Social Norms, Occupational Groups and Income Tax Evasion: A Survey in the UK Construction Industry. Open Discussion Papers in Economics. The Open University.

Skrzek-Lubasińska, M., Szaban, J.M. (2019). Nomenclature and harmonised criteria for the self-employment categorisation. An approach pursuant to a systematic review of the literature, European Management Journal, 37(3), 376-386.

Søndergaard, J. (2023). Undeclared Danish Labor: Using the labor input method with linked individual-level tax data to estimate undeclared work in Denmark, Journal of Economic Behavior and Organization, 214, 708-730.

Souliotis, K., Golna, C., Tountas, Y, Siskou, O., Kaitelidou, D. and Liaropoulos, L. (2015) Informal payments in the Greek health sector amid the financial crisis: old habits die last..., European Journal of Health Economics, DOI 10.1007/s10198-015-0666-0.

Stasinopoulos, D., Goula, A., Kastanioti, C., Sarris, M., Soulis, S. (2024). Estimating Tax Evasion in the Medical Sector in Comparison with Other Human-to-human (H2H) Life Services, Journal of Health Management, 26(1), 13-27.

Stasinopoulos, D., Goula, A., Kastanioti, C., Sarris, M., Soulis, S. (2023). Shadow Economy in Physicians' Sector: The Physicians' Point of View from Greece, Journal of Health Management, 25(3) 672-685.

Stasinopoulos, D., Goula, A., Soulis, S. (2022). The Economics of Shadow Economy in Health: The Case of Greek Physicians Sector, Journal of Health Management, 24(4), 617-634.

Stastný, V., Chval, M., Walterova, E. (2021). An ordinary moonlighting activity? Determinants of the provision of private tutoring by Czech schoolteachers, International Journal of Educational Development, 102351.

Statystyczny, G. U. (2024), Unregistered employment in Poland in 2022, Statistics Poland, Social Surveys and Labour Market Department, Warsaw, Available at: https://stat.gov.pl/files/gfx/portalinformacyjny/pl/defaultaktualnosci/5475/22/6/1/praca_nierejestrowana_w_polsce_w_2022_r..pdf [30.04.2024]

Stefanov, R., Williams, C.C., Rodgers, P. (2017). Tackling Undeclared Work in Croatia: Knowledge-Informed Policy Responses. GREY Policy Brief No. 3. Sheffield: Sheffield University.

Stephany, F., Kässi, O., Rani, U., & Lehdonvirta, V. (2021). Online Labour Index 2020: New ways to measure the world's remote freelancing market, Big Data & Society, 8(2), 1-7.Talani, L.S. (2017). The Political Economy of Italy in the Euro. Between Credibility and Competitiveness. London: Palgrave Macmillan.

Thomas, K.D. (2017). Taxing the Gig Economy, University of Pennsylvania Law Review, 166, 1415-1473.

Tóth, I.J. (2008). Social Determinants of Undeclared Work in Hungary. Available at: http://www.wargo.hu/tij/publications/uw_hungary_en_081216.pdf [28.02.2024].

Turnbull, P. (2020). Tackling undeclared work in the air transport sector, with a special focus on bogus self-employment of aircrews: a learning resource. A learning resource from the seminar of the European Platform tackling undeclared work. European Platform tackling undeclared work.

Umney, C. (2016). The labour market for jazz musicians in Paris and London: Formal regulation and informal norms, Human Relations, 69(3), 711-729.

van Slageren, J. (2023). Beyond National Reach? An Institutional Analysis of the High-Skill Online Gig Economy in the Global North (PhD Thesis). Utrecht: Universiteit Utrecht.

Vasilescu, M.D., Stănilă, L., Cristescu, A., Popescu, M.E. (2015). A survey-based analysis of undeclared work in Romania. International Conference Development as purpose of human action, New challenges for the economic science. Bucharest University of Economic Studies. Bucharest, 20–21 November.

Vershinina, A.A., Rodgers, P., Ram, M., Theodorakopoulos, N., Rodionova, Y. (2018). False self-employment: the case of Ukrainian migrants in London's construction sector, Industrial Relations Journal, 49(1), 2-18.

Vos, S., Breesch, D., Scheerder, J. (2012). Undeclared Work in Non-Profit Sports Clubs: A Mixed Method Approach for Assessing the Size and Motives, Voluntas, 23, 846-869.

Williams, C.C. (2017). Entrepreneurship in the Informal Sector: An Institutional Perspective. Routledge.

Williams, C.C. (2018). Entrepreneurship in the Informal Sector. An Institutional Perspective. New York: Routledge.

Williams, C.C., Horodnic, A.V. (2019). Why is informal employment more common in some countries? An exploratory analysis of 112 countries, Employee Relations, 41(6), 1434-1450.

Williams, C.C., Horodnic, I.A. (2017). Evaluating the Illegal Employer Practice of Under-Reporting Employees' Salaries, British Journal of Industrial Relations, 55(1), 83-111.

Williams, C.C., Horodnic, I.A. (2019). Dependent self-employment. Theory, practice and policy. Cheltenham: Edward Elgar.

Williams, C.C., Horodnic, I.A. (2020c). Horizon scanning: early warning signals of future trends in undeclared work. European Platform tackling undeclared work.

Williams, C.C., Horodnic, I.A. (2020a). Trends in the undeclared economy and policy approaches. Evidence from the 2007, 2013 and 2019 Eurobarometer surveys. Brussels: European Commission.

Williams, C.C., Horodnic, I.A. (2020b). Tackling undeclared work in the tourism sector. European Platform tackling undeclared work.

Williams, C.C., Horodnic, I.A. (2022). Progress of national authorities towards a holistic approach. Study using a common assessment framework May 2022. European Platform tackling undeclared work.

Williams, C.C., Kayaoglu, A. (2023). Revisiting the undeclared service economy as a dual labour market: lessons from a 2019 Eurobarometer survey, The Service Industries Journal, 43(13-14), 940-961.

Williams, C.C., Llobera Villa, M., Horodnic, A.V. (2020). Tackling Undeclared Work in the Collaborative Economy and Bogus Self-Employment. European Platform Tackling Undeclared Work.

Zhang, W. (2023). Taming the Wild Horse of Shadow Education. The Global Expansion of Private Tutoring and Regulatory Responses. London and New York: Routledge.

Žukauskas, V., Schneider, F. (2016). Micro Based results of shadow labour market in the Baltic States, Poland, Sweden, and Belarus, Taikomoji ekonomika: sisteminiai tyrimai, 10(2), 117-134.

Annex 1: The International Standard Classification of Occupations (ISCO)

The below outlines the scope of highly skilled worker occupations, as defined by Eurostat using the ISCO-08 classificatory structure.

► Managers (ISCO-08 major group 1)

- 11 Chief executives, senior officials and legislators
  - 111 Legislators and senior officials
  - 112 Managing directors and chief executives
- 12 Administrative and commercial managers
  - 121 Business services and administration managers
  - 122 Sales, marketing and development managers
- 13 Production and specialized services managers
  - 131 Production managers in agriculture, forestry and fisheries
  - 132 Manufacturing, mining, construction, and distribution managers
  - 133 Information and communications technology service managers
  - 134 Professional services managers
- 14 Hospitality, retail and other services managers
  - 141 Hotel and restaurant managers
  - 142 Retail and wholesale trade managers
  - 143 Other services managers

► Professionals (ISCO-08 major group 2)

- 21 Science and engineering professionals
  - 211 Physical and earth science professionals
  - 212 Mathematicians, actuaries and statisticians
  - 213 Life science professionals
  - 214 Engineering professionals (excluding electrotechnology)
  - 215 Electrotechnology engineers
  - 216 Architects, planners, surveyors, and designers
- 22 Health professionals
  - 221 Medical doctors
  - 222 Nursing and midwifery professionals
  - 223 Traditional and complementary medicine professionals
  - 224 Paramedical practitioners
  - 225 Veterinarians
  - 226 Other health professionals
  - 227 Medical assistant professionals
- 23 Teaching professionals
  - 231 University and higher education teachers
  - 232 Vocational education teachers
  - 233 Secondary education teachers
  - 234 Primary school and early childhood teachers
  - 235 Other teaching professionals
- 24 Business and administration professionals
  - 241 Finance professionals
  - 242 Administration professionals
  - 243 Sales, marketing and public relations professionals
- 25 Information and communications technology professionals
  - 251 Software and applications developers and analysts
  - 252 Database and network professionals

- 26 Legal, social and cultural professionals
  - 261 Legal professionals
  - 262 Librarians, archivists and curators
  - 263 Social and religious professionals
  - 264 Authors, journalists and linguists
  - 265 Creative and performing artists

► Technicians and associate professionals (ISCO-08 major group 3)

- 31 Science and engineering associate professionals
  - 311 Physical and engineering science technicians
  - 312 Mining, manufacturing and construction supervisors
  - 313 process control technicians
  - 314 Life science technicians and related associate professionals
  - 315 Ship and aircraft controllers and technicians
- 32 Health associate professionals
  - 321 Medical and pharmaceutical technicians
  - 322 Nursing and midwifery associate professionals
  - 323 Traditional and complementary medicine associate professionals
  - 324 Veterinary technicians and assistants
  - 325 Other health associate professionals
- 33 Business and administration associate professionals
  - 331 Financial and mathematical associate professionals
  - 332 Sales and purchasing agents and brokers
  - 333 Business services agents
  - 334 Administrative and specialized secretaries
  - 335 Regulatory government associate professionals
- 34 Legal, social, cultural and related associate professionals
  - 341 Legal, social and religious associate professionals
  - 342 Sports and fitness workers
  - 343 Artistic, cultural and culinary associate professionals
- 35 Information and communications technicians
  - 351 Information and communications technology operations and user support technicians
  - 352 Telecommunications and broadcasting technicians

Annex 2: Technical Appendix

Table A1. Data used

Undeclared work	Description	Source of data / Year
Unregistered employment	Employees working with no written contract. Based on the question: 'What kind of employment contract do you have in your main paid job?' - … no contract	EWCTS (European Working Conditions Telephone Survey)/2021
Under-declared employment	Formal employers pay their employees: 1) an official declared salary (declared for tax and labour law purposes) and 2) an additional envelope wage (not declared for tax and labour law purposes) (Horodnic and Williams, 2021). Based on the question: 'Sometimes employers prefer to pay all or part of the salary or the remuneration (for extra work, overtime hours, the amount above the legal minimum wage or bonuses) in cash and without declaring it to tax or social security authorities. Has your employer paid you any of your income in the last 12 months in this way?'	Special Eurobarometer 498 (Undeclared work in the European Union) - Eurobarometer 92.1/2019
Dependent self-employment	Based on the following criteria for self-employed: ▪ 'have the authority to hire/fire ▪ have generally more than one client or customer ▪ do not disagree with the statement 'I make the most important decisions on how the business is run' If 0 or 1 of these criteria are fulfilled and the person is a self-employed without employees, the person is considered to be economically dependent." (EWCTS 2021 – dictionary, constructed variables)	EWCTS (European Working Conditions Telephone Survey)/2021

Figure A2. Search terms

UNDECLARED WORK

Economy / Market / Activity / Labour / Sector / Business / Employment / (Dependent, Bogus, False) Self-employment / Entrepreneurship / Freelance / Own-account work(er) / Work(er) / Wages, Salaries, Income

Informal, Shadow, Black, Grey, Underground, Unregistered, Undeclared, Unreported, Unrecorded, Non/(Un)-observed, Unofficial, Invisible, Irregular, Hidden, Clandestine, Concealed, Dual, Moonlight, Off-the-books, Cash-in-hand, Under-the-table, Quasi-formal, Semiformal, Under-declared, Under-reporting, Envelope

Tax(ation) / Labour law / Social security / Social insurance / Welfare / Benefits

Non-compliance, Evasion, Dodge

HIGHLY SKILLED WORKERS

- Education, Skills level, Highly skilled, High skilled, White-collar, Profession, Occupation
- Occupation, by various ISCO-08 groups:
  - *Major Group* (1-digit code) (e.g., Professionals)
  - *Sub-Major Group* (2-digit code) (e.g., Teaching professionals; Information and Communications Technology professionals)
  - *Minor Groups* (2-digit code) (e.g., Secondary Education Teachers; Software and Applications Developers and Analysts)

Examples of terms combination:
Undeclared activity and skills level
Under-reporting wages among Software and Applications Developers and Analysts
Unreported income by Teaching professionals
Tax evasion among Professionals

Annex 3: Supplementary data

Table A2. Employed persons in highly skilled occupations in the European Union, 2022 (ISCO-08 two-digit level; 000s persons)

	TOTAL employed	Managers					Professionals							Technicians and associate professionals					
		Total	Chief executives, senior officials and legislators	Administrative and commercial managers	Production and specialised services managers	Hospitality, retail and other services managers	Total	Science and engineering professionals	Health professionals	Teaching professionals	Business and administration professionals	Information and communications technology prof.	Legal, social and cultural professionals	Total	Science and engineering associate prof.	Health associate professionals	Business and administration associate prof.	Legal, social, cultural and related associate prof.	Information and communications technicians
EU	*202 756.7*	*10 367.8*	*1 657.9*	*2 713.5*	*3 427.6*	*2 550.6*	*43 893.9*	*7 196.6*	*6 023.3*	*10 869.8*	*8 935.5*	*4 639.6*	*6 112.4*	*32 187.8*	*7 007.8*	*6 171.6*	*13 340.0*	*3 597.3*	*2060.2*
Belgium	4 990.3	385.4	88.4	146.3	96.7	54.1	1 328.7	162.9	217.1	357.4	217.2	175.4	198.7	739.6	151.4	121.7	354.1	80.8	31.6
Bulgaria	3 150.5	167.2	13.5	42.5	53.4	57.9	570.5	77.0	90.0	113.2	138.6	66.5	85.2	290.2	75.6	15.7	158.5	16.4	24.0
Czechia	5 173.5	265.8	40.5	93.1	97.9	34.4	957.4	167.4	136.9	239.1	173.4	108.6	131.9	848.7	252.2	93.4	357.5	64.3	81.4
Denmark	2 994.4	82.1	14.8	24.9	27.3	15.1	835.3	95.6	145.3	210.9	200.1	93.8	89.6	546.6	141.0	43.4	263.8	47.4	51.1
Germany	42 528.6	1 756.4	575.6	454.4	499.6	226.8	9 455.3	1 818.8	1 018.2	2 486.5	1 688.5	1 013.2	1 430.1	8 405.9	1 829.6	2 629.9	2 995.0	586.1	365.1
Estonia	680.8	52.2	1.4	6.5	30.5	13.9	166.4	23.0	17.5	36.1	40.8	28.3	20.7	100.2	24.6	7.9	49.3	12.7	5.6
Ireland	2 547.3	237.5	5.9	47.8	89.9	93.9	655.2	107.6	113.7	126.0	165.8	86.6	55.4	309.6	43.3	27.6	149.0	61.0	28.8
Greece	4 140.6	119.9	7.3	30.6	35.6	46.5	904.7	135.0	182.5	287.7	133.3	43.6	122.6	298.9	68.3	35.3	134.4	46.0	14.8
Spain	20 390.6	889.0	51.4	260.7	272.5	304.4	3 933.5	612.8	769.0	1 201.4	505.2	225.8	619.2	2,458.6	468.0	232.2	1 077.9	305.2	375.4
France	28 341.1	2 013.2	211.5	598.0	683.8	516.7	6 495.8	1 104.1	793.9	1 275.3	1 635.1	747.2	848.6	5,021.1	928.2	937.1	1 949.5	992.2	207.1
Croatia	1 707.1	72.7	5.2	14.9	32.2	20.4	300.8	54.5	33.3	86.8	35.1	25.7	65.3	228.0	65.5	46.4	89.1	13.0	14.0
Italy	23 099.4	867.1	80.5	42.9	314.7	428.9	3 476.1	568.0	354.5	1 283.1	517.5	219.6	533.5	3,898.8	913.3	785.0	1 613.0	218.1	369.4
Cyprus	450.5	17.1	2.0	4.6	7.6	2.8	95.2	18.3	14.0	22.4	15.8	10.1	14.6	60.7	8.8	3.2	39.7	5.4	3.5
Latvia	891.2	90.2	36.5	23.2	23.2	7.3	183.5	22.7	23.3	44.5	45.8	24.8	22.4	125.0	23.3	11.7	74.0	9.9	6.1
Lithuania	1 420.8	132.7	40.1	50.0	32.4	10.2	390.0	45.7	54.8	67.2	139.1	37.6	45.7	139.3	29.5	19.0	64.9	18.2	7.7
Luxembourg	312.0	14.1	3.3	6.3	2.7	1.8	135.4	14.5	8.8	18.1	54.5	15.1	24.3	50.6	5.7	5.4	27.7	8.5	3.3
Hungary	4 709.0	206.7	8.8	39.4	108.9	49.7	886.6	176.4	69.1	240.6	146.5	109.3	144.7	730.6	124.0	125.5	384.0	71.9	25.2
Malta	283.3	32.7	7.8	8.5	6.7	9.7	59.3	8.1	9.2	12.7	15.5	6.9	6.8	37.0	6.8	2.4	18.0	7.3	2.5
Netherlands	9 587.0	505.3	55.5	152.6	194.5	89.9	2 997.8	369.0	390.8	477.3	867.5	465.8	402.9	1,639.9	252.4	277.4	660.4	361.1	87.5
Austria	4 442.5	228.8	34.0	81.9	74.7	38.2	934.1	137.7	187.3	217.6	136.5	119.6	135.4	803.2	217.2	78.4	377.0	97.1	33.3
Poland	16 742.3	1 109.8	198.1	300.4	310.1	299.1	3 528.9	514.3	569.2	830.7	913.4	329.3	371.3	2,312.1	644.3	219.9	1 103.7	245.1	99.1
Portugal	4 881.4	293.4	30.3	56.2	109.2	97.7	1 087.9	175.7	191.1	270.0	189.7	110.7	150.7	569.3	108.2	64.1	284.3	67.8	45.0
Romania	7 806.5	237.6	93.2	40.2	63.5	40.8	1 420.6	296.7	231.3	282.2	333.0	108.4	169.1	546.7	98.8	117.8	246.9	34.6	48.5
Slovenia	986.1	41.7	5.7	13.8	17.0	5.3	265.4	54.9	35.3	70.4	43.5	24.3	37.1	153.0	40.1	18.5	75.6	11.9	7.0
Slovakia	2 603.9	148.0	12.5	28.1	64.5	42.9	411.5	46.2	52.0	141.2	54.2	50.4	67.5	438.1	128.1	83.2	171.5	19.5	33.0
Finland	2 640.2	59.8	11.9	18.4	20.9	8.6	694.6	170.6	40.8	130.9	156.3	108.6	87.4	497.6	103.4	106.6	167.6	90.6	29.3
Sweden	5 255.8	341.3	22.3	127.3	157.9	33.8	1 723.4	219.1	274.4	340.6	373.4	284.3	231.7	938.5	256.0	63.0	453.3	105.3	60.9

Source: extracted from Eurostat; DOI: 10.2908/lfsa_egai2d

Figure A1. Trends in the share of highly skilled workers in the EU, 2018-22 (%)

A. Share of all employment **B. Share of self-employed** **C. Share of employees**

Source: Based on Eurostat data; DOI: e| 10.2908/lfsa_esgais | 10.2908/lfsa_eegais