



UNRAVELLING THE SUBCONTRACTING CHAIN IN CONSTRUCTION WORKS

DECLARATION OF WORKS IN IMMOVABLE PROPERTY IN BELGIUM

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Abstract

Although there are considerable concerns about the potential issues arising from large subcontracting chains in the construction sector, to our knowledge, no study has yet examined the average size and profile of these chains. Using data from 'the declaration of works' (DOW), a study is conducted about the size and profile of subcontracting chains for 'works in immovable property' in Belgium. Overall, subcontracting chains were found not to be extremely large, averaging 5.6 (sub)contractors per declaration. However, this paper also focused on declarations above the threshold of € 500 000. On average, declarations above this threshold involved 17 (sub)contractors, with 59% of these declarations having at least two tiers of subcontractors. Despite a high proportion of Belgian contractors in these declarations overall (97.3%), a different picture emerges lower in the subcontracting chain. For instance, 55% of subcontracting chains above the threshold have at least one foreign subcontractor. Moreover, while non-Belgian companies at the top levels of the chain (clients and contractors) were mainly from neighbouring countries (the Netherlands, Germany, France, and Luxembourg), non-Belgian companies at the lower levels of the chain were predominantly Polish, with Slovakian and Slovenian companies also present to a lesser extent.

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Abbreviations

CBE	Crossroads Bank for Enterprises
DOW	Declaration of Works
NSSO	National Social Security Office
OSH	Occupational safety and health
VAT	Value-added tax

Executive summary

A subcontracting chain in the construction sector occurs when a main contractor engages one or more subcontractors to carry out specific tasks through their own staff or by further subcontracting parts of the work to other subcontractors. This practice enables main contractors to be highly flexible, leverage specialised skills, and control costs. However, subcontracting may also lead to several issues, such as reduced accountability and transparency, and precarious working conditions for the subcontracted workers. These problems often stem from the high number of layers of subcontractors involved. Consequently, limiting subcontracting chains is regularly considered a solution for these problems.

Despite the attention given to this topic in public, political, and scholarly debate, to our knowledge, no research has yet mapped the average size and profile of subcontracting chains in the construction sector. This paper addresses this research gap by **mapping the size and characteristics of subcontracting chains for ‘works in immovable property’¹ in Belgium**. Two research questions are discussed in this paper:

- 1) What is the *composition* of subcontracting chains for works in immovable property in Belgium, both vertically and horizontally?
- 2) What is the *profile* of subcontracting chains for these works?

To answer these research questions, administrative data are analysed on the ‘declaration of works’ (DOW)² relating to works in immovable property ongoing in 2022. Making a declaration of works is obligatory in certain cases in Belgium, among others for work in immovable property.³ **It should be kept in mind, however, that the data analysed in this paper only concern the *reported* declarations of works. Therefore, reality might differ from the reported data, even though sanctions are in place for non-reporting or late reporting.⁴** Therefore, the results should be considered as an estimate of the size and characteristics of subcontracting chains for work in immovable property in Belgium.

The administrative data on declarations of works in immovable property provide general information for every declaration (number of companies involved, amount of the contract(s)) and specific information for every company (client, contractor, or subcontractor)⁵ involved in the declaration. For instance, the level the company is active on (level 0 for clients, level 1 for contractors, level 2 and lower for subcontractors), the country of establishment of the company, and the activity/ies performed by the subcontractor. The figure

1 “Works in immovable property” are legally defined as follows “Being all works relating to the building, remodelling, finishing, furnishing, repairing, maintaining, cleaning and demolishing, in whole or in part, of an immovable property in its nature, as well as any operation including the supply of a movable property as well as its placement in an immovable property so that this movable property becomes immovable by nature” (RSZ, 2023 – own translation).

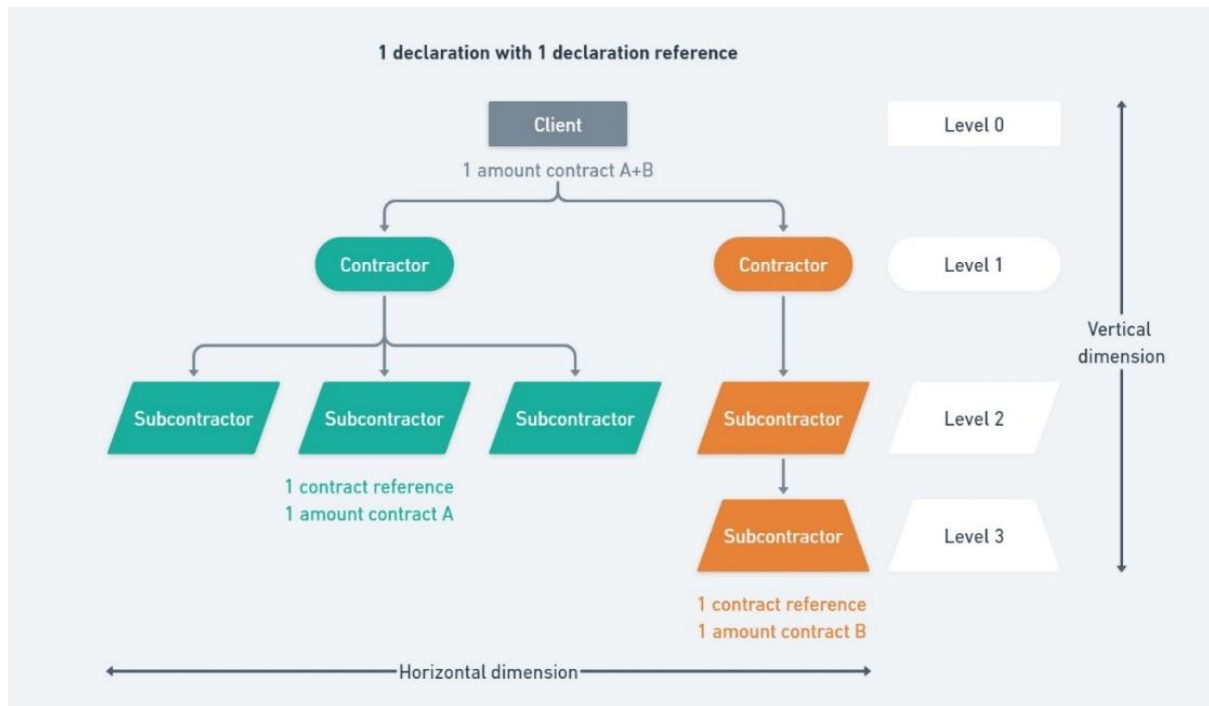
2 The declaration of works is an electronic declaration submitted by the main contractor to the Belgian National Social Security Office (NSSO) before the start of the work. The contractor must declare all information associated with the construction site, contractors, and subcontractors to the NSSO. The main contractor is also responsible for declaring any changes made to the main contract. One has to make a declaration of work in immovable property in following cases: any ‘client – contractor contract’ of € 5 000 or more (excluding VAT) with at least 1 subcontractor; any ‘client – contractor contract’ of € 30 000 or more (excluding VAT) with or without subcontractors.

3 Along with the supply of ready-mixed concrete, works in immovable property fall under article ‘30bis’ of the Act of 27 June 1969. In addition, declaration of works is mandatory for works ‘30ter’: works falling under the joint committee for guarding and/or supervisory services, and companies carrying out certain activities in the meat sector. This paper only analysed data from declaration of works in immovable property (article 30bis).

4 A contractor who fails to comply with the obligation to declare works owes the NSSO a sum equal to 5% of the total amount of the undeclared works, excluding VAT. A subcontractor who fails to signal in writing to the contractor that he is using one or more other subcontractors shall himself owe to the NSSO a sum equal to 5% of the total amount of the works, excluding VAT, which he has entrusted to his subcontractor or to his subcontractors. If the sum claimed from the contractor was caused by a fault of a subcontractor, this sum will be reduced by the amount actually paid to the NSSO by the subcontractor concerned for this fault (RSZ, 2023).

5 For an exact definition of the concepts ‘client’, ‘contractor’, and ‘subcontractor’, see footnotes in the Dutch and French executive summary.

below shows what a declaration of works can look like and what is meant with the ‘vertical’ and ‘horizontal’ dimension of a declaration/subcontracting chain.⁶



The paper focusses on four different aspects. First, we investigate what an average subcontracting chain looks like. Second, the vertical dimension is examined, namely how long subcontracting chains are. Third, its horizontal dimension is looked at in more detail, namely how wide subcontracting chains are. Fourth, the country of establishment of the companies active in a subcontracting chain is analysed. Throughout the analysis, the entire group of declarations of works is looked at, although a special focus is put on ‘declarations above the threshold’, meaning those subcontracting chains with an amount of € 500 000 or more. Although this threshold is arbitrary, it allows for an analysis of larger works in immovable property (mainly B2B). Moreover, for works in immovable property, attendance registration is mandatory (*Checkinatwork*) for construction sites where works are carried out provided that the total amount excluding VAT equals or exceeds € 500 000.

Results indicate that the average size of a subcontracting chain remains limited, at least for the total group of declarations, with 5.6 (sub)contractors involved. However, the number grows to **an average of 17 (sub)contractors in subcontracting chains above the threshold of € 500 000**. There is a clear difference between chains in general and chains above the threshold. Out of the former, 62% of subcontracting chains have a maximum of 3 (sub)contractors in the chain, while for the latter, the share is only 17%. On the contrary, **30% of subcontracting chains above the threshold of € 500 000 have 20 or more (sub)contractors in the chain** as opposed to 5% of subcontracting chains in general. **The largest chain reported in the declarations of works consisted of 188 (sub)contractors in total.**

The average length of a subcontracting chain is 2.2 levels (1 level of contractors + 1.2 levels of subcontractors) in general and 2.8 levels (1 level of contractors + 1.8 levels of subcontractors) for subcontracting chains with an amount of € 500 000 or more. Furthermore, more than 75% of subcontracting chains in general have only one tier of subcontractors (maximum level 2), while this is the case for 35% of chains above the threshold. In general, 16% of subcontracting chains have two tiers of

⁶ The term ‘declaration’ is used interchangeably with ‘subcontracting chain’ or ‘chain’ throughout this paper.

subcontractors, and 3% have 3 or more tiers of subcontractors. On the contrary, **of the chains above the threshold, 39% have two tiers of subcontractors, and 20% have 3 or more tiers of subcontractors. The longest chain reported in the declarations of work consisted of 7 tiers of subcontractors.**

The horizontal dimension provides information about the number of subcontractors active at each vertical level. **Overall, 74% of subcontractors are active on level 2 (the first tier of subcontractors) and 23% on level 3, while regarding subcontractors active in chains above the threshold, only 57% are active on level 2 and 34% on level 3.** It can also be noted that the average number of subcontractors active on a certain level per declaration is higher for chains above the threshold. For instance, **on average 3.4 subcontractors are active on level 2 and 5.1 on level 3 in general, while it concerns 9.4 subcontractors on level 2 and 9 subcontractors on level 3 in declarations with an amount of € 500 000 or more.** The maximum number of contractors in one declaration amounts to 35. Moreover, levels 2 until 5 are particularly ‘wide’ with a maximum of over 80 subcontractors at each level.

A final interesting indicator analysed is the country of establishment of the company. Almost all contractors are established in Belgium (98% in total and 97% for chains above the threshold). However, for subcontractors, the share of foreign companies is much larger. **Of all subcontractors active in the total group of chains, 20% is foreign, and in chains with an amount of € 500 000 or more, 22% is foreign.** When the subcontractors are foreign, it concerns mostly Polish companies. Furthermore, **the further down the contracting chain, the higher the share of foreign subcontractors.** In total, on the first tier of subcontractors (level 2), 9% of subcontractors are foreign (of which 4% Polish), while it amounts to 31% foreign subcontractors on the third tier of subcontractors (of which 20% Polish), and even 41% foreign subcontractors on the fourth tier of subcontractors (of which 25% Polish). Interestingly, whereas non-Belgian companies at the top levels in the chain (clients and contractors) are mainly established in neighbouring countries (the Netherlands, Germany, France, and Luxembourg), non-Belgian companies at the bottom levels in the chain are mainly Polish, as well as Slovakian and Slovenian to a lesser extent. Finally, the share of subcontracting chains above the threshold with foreign subcontractors is higher than in general. **In total, 26% of subcontracting chains have at least one foreign subcontractor, while it concerns 55% of subcontracting chains above the threshold.**

Samenvatting

Een onderaannemingsketen bij bouwwerken ontstaat wanneer een hoofdaannemer één of meerdere onderaannemers inschakelt om specifieke taken uit te voeren via hun eigen personeel of door delen van hun werk verder uit te besteden aan andere onderaannemers. Deze praktijk stelt (hoofd)aannemers in staat beroep te doen op expertise waarover zij niet beschikken, bouwopdrachten flexibel te organiseren alsook kosten te beheersen. Onderaanneming kan echter ook leiden tot verschillende problemen en mistoestanden, zoals mindere kwaliteit van de opgeleverde werken, geen duidelijk zicht op wie de bouwwerken uitvoert en wie welke verantwoordelijk draagt, en slechtere arbeidsomstandigheden voor werknemers onderaan de aannemingsketen (soms zelfs leidende tot arbeidsuitbuiting). Deze problemen en mistoestanden, dewelke recentelijk nog tot uiting zijn gekomen in de Borealis-zaak en bij de instorting van de school in opbouw in Antwerpen, zijn veelal het gevolg van het grote aantal niveaus van onderaannemers in de onderaannemingsketen. Het beperken van onderaannemingsketens wordt daarom dikwijls beschouwd als een noodzakelijke oplossing voor deze mistoestanden.

Ondanks de aandacht voor dit onderwerp in het publieke, politieke en wetenschappelijke debat, dit zowel op Belgisch als Europees niveau, is er, voor zover wij weten, nog geen onderzoek gepubliceerd over de gemiddelde omvang en het profiel van onderaannemingsketens in de bouwsector. In deze paper wordt tegemoetgekomen aan deze leemte door **de omvang en het profiel van onderaannemingsketens bij ‘werken in onroerende staat’⁷ in België in kaart te brengen**. In deze paper worden twee onderzoeksvragen besproken:

- 1) Wat is de *samenstelling* van onderaannemingsketen bij werken in onroerende staat in België, zowel verticaal (lengte) als horizontaal (breedte)?
- 2) Wat is het *profiel* van onderaannemingsketens bij deze werken?

Om deze onderzoeksvragen te beantwoorden, worden administratieve gegevens uit de ‘aangifte van werken’⁸ van toepassing op werken in onroerende staat lopende in 2022 geanalyseerd. De aangifte van werken is verplicht in bepaalde gevallen, onder andere bij werken in onroerende staat.⁹ **De gegevens die in deze paper worden geanalyseerd, hebben enkel betrekking op de gerapporteerde aangiften van werken. Ondanks dat er sancties zijn bepaald wanneer werken niet of laattijdig gemeld worden, kan de werkelijkheid dus afwijken van de gerapporteerde gegevens in deze paper.**¹⁰ Daarom moeten

7 Werken in onroerende staat worden juridisch gedefinieerd als volgt: zijnde alle werken die betrekking hebben op het bouwen, het verbouwen, het afwerken, het inrichten, het herstellen, het onderhouden, het reinigen en het afbreken, geheel of ten dele, van een uit zijn aard onroerend goed alsmede elke handeling die zowel erin bestaat een roerend goed te leveren en het meteen op zodanige wijze aan te brengen aan een onroerend goed dat het onroerend uit zijn aard wordt (RSZ, 2023).

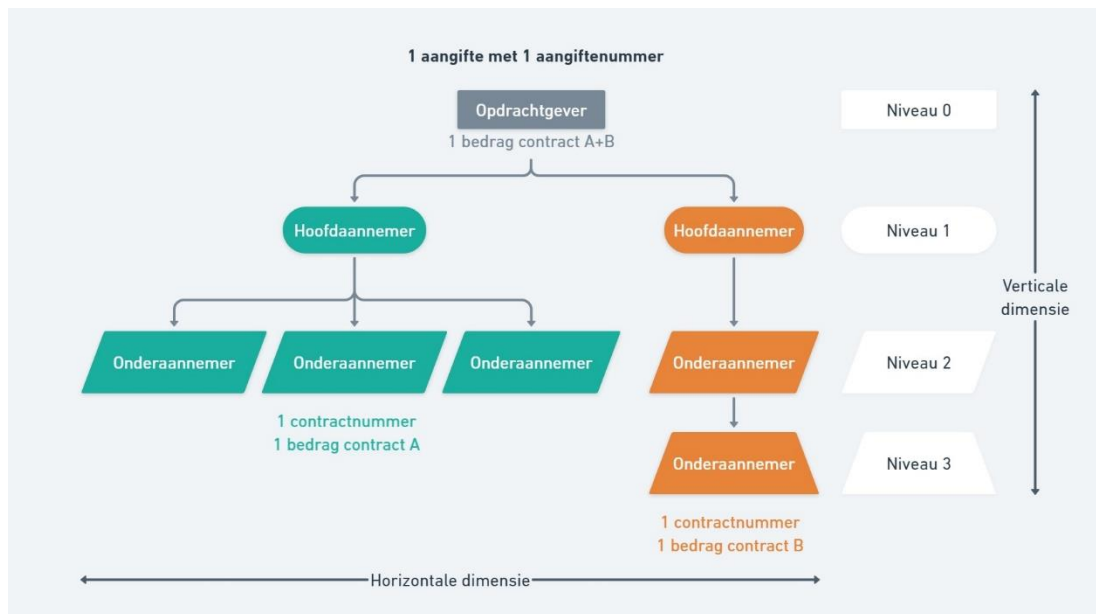
8 De aannemer, op wie de opdrachtgever beroep heeft gedaan, moet alvorens alle bedoelde werken aan te vatten aan de Rijksdienst voor Sociale Zekerheid (RSZ), alle inlichtingen verstrekken die nodig zijn om de belangrijkheid van de werken te ramen en er de opdrachtgever en, in voorkomend geval, in welk stadium ook, de onderaannemers van te identificeren. Indien tijdens de uitvoering van de werken andere onderaannemers tussenkomen, moet deze aannemer voorafgaandelijk de RSZ hiervan verwittigen. Daartoe moet iedere onderaannemer die op zijn beurt een beroep doet op een andere onderaannemer, voorafgaandelijk de aannemer hiervan schriftelijk in kennis stellen. Voor werken in onroerende staat moet men aangifte doen van elke overeenkomst ‘opdrachtgever – aannemer die aangifte doet’ vanaf € 5 000 (zonder btw) met minstens 1 onderaannemer; of elke overeenkomst ‘opdrachtgever – aannemer die aangifte doet’ vanaf € 30 000 euro (zonder btw) met of zonder onderaannemer.

9 Samen met de levering van stortklaar beton vallen werken in onroerende staat onder artikel ‘30bis’ van de wet van 27 juni 1969. Daarnaast is een aangifte van werken verplicht voor werken ‘30ter’: werken die vallen onder het paritair comité voor bewakings- en/of toezichtsdiensten, en bedrijven die bepaalde activiteiten uitoefenen in de vleessector. In deze paper werd alleen data geanalyseerd van aangifte van werken in onroerende staat (artikel 30bis).

10 De aannemer die de verplichting om werken aan te geven niet naleeft, is aan de RSZ een som verschuldigd die gelijk is aan 5% van het totale bedrag van de werken, exclusief BTW, die niet gemeld werden. De onderaannemer die nalaat om aan de aannemer schriftelijk te signaleren dat hij een beroep doet op één of meerdere andere onderaannemers is zelf aan de RSZ een som verschuldigd die gelijk is aan 5% van het totale bedrag van de werken, exclusief BTW, die hij toevertrouwd heeft aan zijn onderaannemer of aan zijn onderaannemers. Indien de som die van de aannemer gevorderd wordt, veroorzaakt werd door een fout van een onderaannemer, wordt deze som verminderd met het bedrag dat door de betrokken onderaannemer voor deze fout daadwerkelijk betaald werd aan de RSZ (RSZ, 2023).

de gerapporteerde resultaten gelezen worden als een eerste inschatting van de werkelijke omvang en het profiel van onderaannemingsketens bij werken in onroerende staat in België.

De administratieve gegevens over aangiften van werken in onroerende staat bevatten algemene informatie voor elke aangifte (aantal betrokken ondernemingen, bedrag van contract(en)) alsook specifieke informatie voor elke onderneming (opdrachtgever¹¹, hoofdaannemer¹² of onderaannemer¹³) die bij de aangifte betrokken is (bijvoorbeeld het niveau waarop de onderneming actief is (niveau 0 voor opdrachtgevers, niveau 1 voor hoofdaannemers, niveau 2 en lager voor onderaannemers), het land van vestiging van de onderneming en de activiteit(en) die de onderaannemer uitvoert). Onderstaande figuur laat zien hoe een aangifte eruit kan zien en wat bedoeld wordt met de verticale en horizontale dimensie van een aangifte/ onderaannemingsketen.¹⁴



Deze paper richt zich op vier verschillende aspecten. Vooreerst analyseren we de algemene samenstelling van de onderaannemingsketen. Vervolgens wordt de verticale dimensie onderzocht, namelijk hoe lang onderaannemingsketens zijn. Nadien wordt de horizontale dimensie van naderbij bekeken, namelijk hoe breed onderaannemingsketens zijn. Ten slotte wordt het land van vestiging van de ondernemingen die actief zijn in een onderaannemingsketen geanalyseerd. Doorheen de analyse worden alle aangiften van werken bekeken maar wordt er ook specifieke aandacht besteed aan aangiften met een bedrag van € 500 000 of meer. Hoewel deze drempel arbitrair is, maakt dit een analyse van grotere werken in onroerende staat mogelijk (voornamelijk B2B). Bovendien is bij werken in onroerende staat een aanwezigheidsregistratie op de werf verplicht (*Checkin@work*) wanneer het totale bedrag gelijk is aan of hoger is dan € 500 000 (exclusief BTW).

11 Onder opdrachtgever dient te worden verstaan: eenieder die de opdracht geeft om tegen een prijs werken uit te voeren of te laten uitvoeren; in het algemeen valt de opdrachtgever – natuurlijke persoon die louter voor privédoeleinden handelt niet onder de bepalingen van artikel 30bis, noch onder deze van artikel 30ter (RSZ, 2023).

12 Onder aannemer (hoofdaannemer) dient te worden verstaan: a. eenieder die zich ertoe verbindt om tegen een prijs werken uit te voeren of te laten uitvoeren voor een opdrachtgever; het komt aan deze aannemer toe om de werkmeldingen te doen. De wet van 8 december 2013 (BS van 20/12/2013) preciseert het volgende: "wordt met de aannemer gelijkgesteld: a) iedere aannemer die zijn eigen opdrachtgever is, dat wil zeggen de bedoelde werken (werken in onroerende staat) zelf uitvoert of laat uitvoeren voor eigen rekening om daarna dat onroerend goed geheel of gedeeltelijk te vervreemden; b) iedere aannemer die de bedoelde werken (werken in onroerende staat) voor eigen rekening uitvoert. B. voor wat de inhoudingen op facturen betreft, is het tevens elke onderaannemer ten opzichte van de volgende onderaannemers (RSZ, 2023).

13 Onder onderaannemer dient te worden verstaan: eenieder die er zich toe verbindt, hetzij rechtstreeks, hetzij onrechtstreeks, in welk stadium ook, tegen een prijs het aan de aannemer toevertrouwde werk of een onderdeel ervan uit te voeren of te laten uitvoeren of daartoe werknemers ter beschikking te stellen (RSZ, 2023).

14 De term 'aangifte' wordt in deze samenvatting door elkaar gebruikt met 'onderaannemingsketen' of 'keten'.

Uit de resultaten blijkt dat de omvang van een onderaannemingsketen gerapporteerd in een aangifte van werken in onroerende staat beperkt is tot gemiddeld 5,6 hoofd/onderaannemers. Dit aantal groeit echter tot **gemiddeld 17 hoofd/onderaannemers in onderaannemingsketens met een bedrag van € 500 000 of meer**. Er is een duidelijk verschil merkbaar tussen ketens in het algemeen en ketens boven de drempel van € 500 000. Van de eerste groep heeft 62% van de onderaannemingsketens maximaal 3 hoofd/onderaannemers in de keten, terwijl dit bij de laatste groep slechts 17% is. Daarentegen **heeft 30% van de onderaannemingsketens met een bedrag van € 500 000 of meer 20 of meer hoofd/onderaannemers in de keten**, tegenover 5% van de onderaannemingsketens in het algemeen. **De grootste keten die in de aangiften van werken werd gemeld, bestaat in totaal uit 188 hoofd/onderaannemers**. Het maximumaantal hoofdaannemers in één aangifte bedraagt 35. Bovendien zijn de niveaus 2 tot en met 5 bijzonder 'breed' met een maximum van meer dan 80 onderaannemers op elk niveau.

De gemiddelde lengte van een onderaannemingsketen is 2,2 niveaus (1 niveau van hoofdaannemers + 1,2 niveaus van onderaannemers) in het algemeen en 2,8 niveaus (1 niveau van hoofdaannemers + 1,8 niveaus van onderaannemers) voor onderaannemingsketens met een bedrag van € 500 000 of meer. Verder heeft meer dan 75% van de onderaannemingsketens in het algemeen amper één niveau van onderaannemers (maximaal niveau 2), terwijl dit slechts het geval is voor 35% van de ketens boven de drempel. Over het algemeen heeft 16% van de onderaannemingsketens twee niveaus van onderaannemers en 3% heeft drie of meer niveaus van onderaannemers. Daarentegen **heeft 39% van de ketens boven de drempel twee niveaus van onderaannemers en 20% zelfs drie of meer niveaus van onderaannemers**. **De langste keten die in de aangiften van werken werd gemeld, bestaat uit 7 niveaus van onderaannemers**.

De horizontale dimensie geeft informatie over het aantal onderaannemers dat op elk verticaal niveau actief is. **Over het geheel genomen is 74% van de onderaannemers actief op niveau 2 (het eerste niveau van onderaannemers) en 23% op niveau 3, terwijl van de onderaannemers die actief zijn in ketens boven de drempel, slechts 57% actief is op niveau 2 en 34% op niveau 3**. Er kan ook worden opgemerkt dat het gemiddelde aantal onderaannemers dat actief is op een bepaald niveau per aangifte hoger is voor ketens boven de drempel. **Zo zijn er gemiddeld 3,4 onderaannemers actief op niveau 2 en 5,1 op niveau 3 in het algemeen, terwijl het gaat om 9,4 onderaannemers op niveau 2 en 9 onderaannemers op niveau 3 in aangiften met een bedrag van € 500 000 of meer**.

Een laatste interessante indicator die werd geanalyseerd is het land van vestiging van de onderneming. Bijna alle hoofdaannemers zijn gevestigd in België (98% in totaal en 97% voor ketens boven de drempel). Bij onderaannemers is het aandeel van buitenlandse ondernemingen echter veel groter. **Van alle onderaannemers die actief zijn in de totale groep ketens is 20% buitenlands, en in ketens met een bedrag van € 500 000 of meer is 22% buitenlands**. Als de onderaannemers buitenlands zijn, gaat het vooral om Poolse ondernemingen. Verder valt op dat **hoe lager in de onderaannemingsketen, hoe hoger het aandeel buitenlandse onderaannemers**. In totaal is op het eerste niveau van onderaannemers (niveau 2) 9% van de onderaannemers buitenlands (waarvan 4% Pools), terwijl het op het derde niveau van onderaannemers 31% buitenlandse onderaannemers betreft (waarvan 20% Pools), en zelfs 41% buitenlandse onderaannemers op het vierde niveau van onderaannemers (waarvan 25% Pools). Interessant is dat, terwijl niet-Belgische ondernemingen op de hoogste niveaus in de keten (klanten en hoofdaannemers) voornamelijk gevestigd zijn in buurlanden (Nederland, Duitsland, Frankrijk en Luxemburg), niet-Belgische ondernemingen op de laagste niveaus in de keten voornamelijk Pools zijn, en in mindere mate ook Slowaaks en Sloveens. Tot slot is het aandeel van onderaannemingsketens boven de drempel met buitenlandse onderaannemers hoger dan in het algemeen. **In totaal heeft 26% van de onderaannemingsketens ten minste één buitenlandse onderaannemer, terwijl dit bij 55% van de onderaannemingsketens boven de drempel het geval is**.

Résumé

Dans le secteur de la construction, on parle de chaîne de sous-traitance lorsqu'un entrepreneur engage un ou plusieurs sous-traitants pour effectuer des tâches spécifiques par l'intermédiaire de leur propre personnel ou en sous-traitant des parties de leur travail à d'autres sous-traitants. Cette pratique permet aux contractants de faire appel à une expertise qu'ils ne possèdent pas, d'organiser les projets de construction de manière flexible et de contrôler les coûts. Toutefois, la sous-traitance peut également entraîner divers problèmes et abus, tels qu'une dilution de la responsabilité et une réduction de la transparence, une qualité moindre des travaux livrés et des conditions de travail moins bonnes pour les travailleurs en bas de la chaîne (allant parfois jusqu'à leur exploitation). Ces problèmes et abus, qui se sont manifestés plus récemment dans l'affaire Borealis et dans l'effondrement de l'école en construction à Anvers, sont principalement dus au grand nombre de niveaux de sous-traitants dans la chaîne de sous-traitance. La limitation des chaînes de sous-traitance est donc souvent considérée comme une solution nécessaire à ces abus.

Malgré l'attention accordée à ce sujet dans le débat public, politique et universitaire, à notre connaissance, aucune recherche n'a encore cartographié la taille moyenne et le profil des chaînes de sous-traitance dans le secteur de la construction. Ce rapport comble cette lacune **en cartographiant la taille et le profil des chaînes de sous-traitance dans 'les travaux immobiliers'¹⁵ en Belgique**. Deux questions de recherche sont abordées dans ce rapport :

- 1) Quelle est *la composition* des chaînes de sous-traitance dans les travaux immobiliers en Belgique à la fois verticalement et horizontalement ?
- 2) Quel est *le profil* des chaînes de sous-traitance dans ces travaux ?

Pour répondre à ces questions de recherche, les données administratives relatives à la « déclaration de travaux »¹⁶ applicable aux travaux immobiliers en cours en 2022 sont analysées. La déclaration de travaux est obligatoire dans certains cas, entre autres les travaux immobiliers¹⁷. Il convient toutefois de garder à l'esprit que **les données analysées dans le présent rapport ne concernent que les déclarations rapportées de travaux. La réalité peut donc différer des données déclarées, bien que des sanctions soient prévues lorsque les travaux ne sont pas déclarés ou ne sont pas déclarés à temps**.¹⁸ Par conséquent, les résultats présentés doivent être considérés comme une première estimation de la taille et du profil réels des chaînes de sous-traitance dans les travaux immobiliers en Belgique.

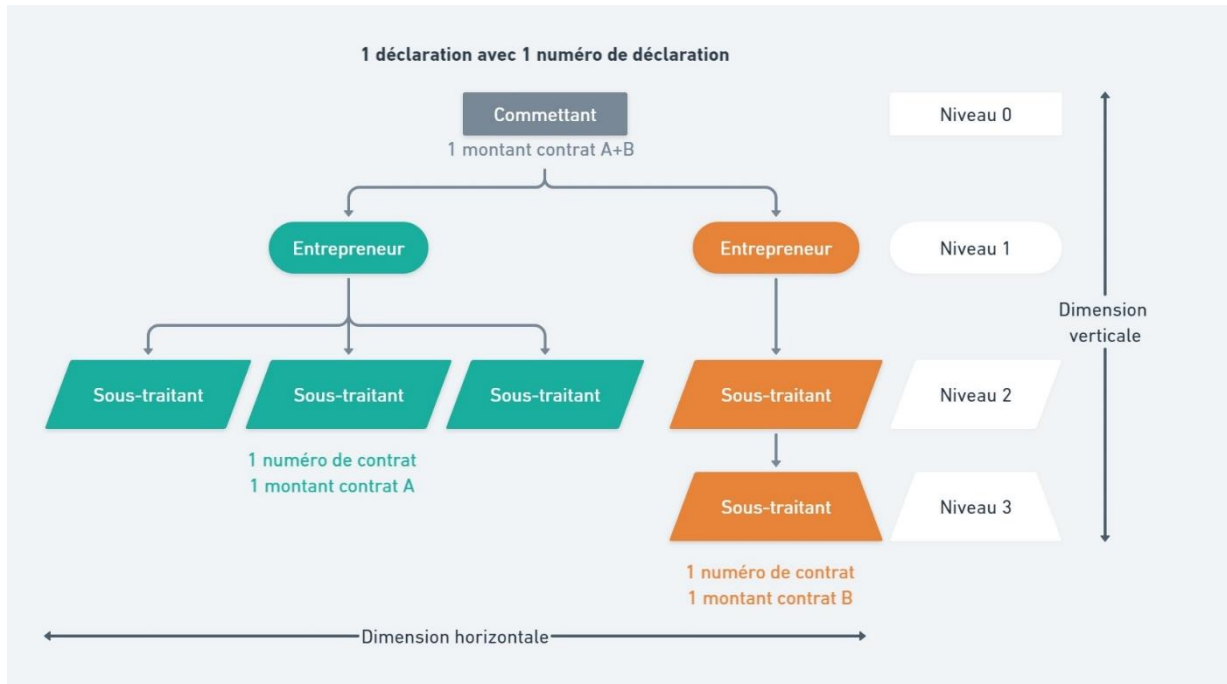
15 Les travaux immobiliers sont légalement définis comme suit : soit tout travail de construction, de transformation, d'achèvement, d'aménagement, de réparation, d'entretien, de nettoyage et de démolition de tout ou partie d'un immeuble par nature ainsi que toute opération comportant à la fois la fourniture d'un bien meuble et son placement dans un immeuble de manière telle que ce bien meuble devienne immeuble par nature (ONSS, 2023).

16 Avant de commencer tous travaux visés, l'entrepreneur à qui le commettant fera appel devra communiquer à l'ONSS toutes les informations nécessaires destinées à en évaluer l'importance et à en identifier le commettant, et, le cas échéant, les sous-traitants, à quelque stade que ce soit. Si au cours de l'exécution des travaux, d'autres sous-traitants interviennent, cet entrepreneur devra, au préalable, en avvertir l'ONSS. A cette fin, chaque sous-traitant qui fera à son tour appel à un autre sous-traitant, devra préalablement en avvertir par écrit l'entrepreneur. La déclaration pour les travaux immobiliers doit être communiquée pour chaque contrat « donneur d'ordre / commettant – entrepreneur déclarant » à partir de 5 000 euros (hors TVA) avec au moins 1 sous-traitant ; ou chaque contrat « donneur d'ordre / commettant – entrepreneur déclarant » à partir de 30 000 euros (hors TVA) avec ou sans sous-traitant.

17 Outre la livraison du béton prêt à l'emploi, les travaux immobiliers relèvent de l'article 30bis de la loi du 27 juin 1969. En outre, une déclaration de travaux est obligatoire pour les travaux « 30ter » : les travaux qui relèvent de la commission paritaire de gardiennage et/ou de surveillance, et les entreprises exerçant certaines activités dans le secteur de la viande. Ce rapport n'a analysé que les données des déclarations de travaux dans l'immobilier (article 30bis).

18 L'entrepreneur qui ne se conforme pas à l'obligation de déclarer les travaux est redevable à l'ONSS d'une somme équivalente à 5 % du montant total des travaux, la TVA non comprise, qui n'ont pas été déclarés. Le sous-traitant qui omet de signaler par écrit à l'entrepreneur l'appel fait à un ou plusieurs autres sous-traitants est lui-même redevable à l'ONSS d'une somme égale à 5 % du montant total des travaux, hors TVA., qu'il a confiés à son ou ses sous-traitants. Si la somme réclamée à l'entrepreneur résulte d'une faute d'un sous-traitant, cette somme est diminuée à concurrence du montant qui a été effectivement payé à l'ONSS, pour cette faute, par le sous-traitant en question (ONSS, 2023).

Les données administratives sur les déclarations de travaux dans les travaux immobiliers en Belgique fournissent des informations générales pour chaque déclaration (nombre d'entreprises impliquées, montant du ou des contrats) et des informations spécifiques pour chaque entreprise (commettant/donneur d'ordre¹⁹, entrepreneur²⁰ ou sous-traitant²¹) impliquée dans la déclaration. Par exemple, le niveau auquel l'entreprise est active (niveau 0 pour les commettants/donneurs d'ordre, niveau 1 pour les entrepreneurs, niveau 2 ou moins pour les sous-traitants), le pays d'établissement de l'entreprise et l'activité/les activités exercée(s) par les sous-traitants. La figure ci-dessous montre à quoi peut ressembler une déclaration de travaux et ce que l'on entend par les dimensions verticale et horizontale d'une déclaration/chaîne de sous-traitance.²²



Ce rapport se concentre sur quatre aspects différents. Tout d'abord, nous analysons la composition globale de la chaîne de sous-traitance. Ensuite, nous examinons la dimension verticale, à savoir la longueur des chaînes de sous-traitance. Puis, la dimension horizontale est examinée, à savoir la largeur des chaînes de sous-traitance. Enfin, le pays d'établissement des entreprises opérant dans une chaîne de sous-traitance est analysé. Tout au long de l'analyse, toutes les déclarations d'entreprises sont prises en compte, mais une attention particulière est accordée aux déclarations dont le montant est égal ou supérieur à 500 000 euros. Bien que ce seuil soit arbitraire, il permet d'analyser des travaux immobiliers plus importants (principalement B2B). De plus, pour les travaux immobiliers, un enregistrement des présences sur le chantier est obligatoire (*Checkinetwork*) lorsque le montant total est égal ou supérieur à 500 000 euros (hors TVA).

19 Par commettant / donneur d'ordre (maître d'ouvrage) il y a lieu d'entendre : quiconque donne ordre d'exécuter ou de faire exécuter des travaux pour un prix ; de manière générale, le commettant personne-physique qui agit à des fins strictement privées n'est pas concerné par les dispositions de l'article 30bis, ni par l'article 30ter (ONSS, 2023).

20 Par entrepreneur il y a lieu d'entendre : a. Quiconque s'engage, pour un prix à exécuter ou à faire exécuter des travaux pour un commettant/donneur d'ordre ; il incombe à cet entrepreneur d'effectuer les déclarations de travaux. La loi du 8 décembre 2013 (MB 20/12/2013) précise que : « est assimilé à l'entrepreneur : • Tout entrepreneur qui est son propre commettant, c'est-à-dire qui effectue ou fait effectuer pour son propre compte des travaux visés (travaux immobiliers, afin d'aliéner ensuite en tout ou en partie ce bien immobilier). • Tout entrepreneur qui effectue pour son propre compte des travaux visés (travaux immobiliers) ». b. pour les retenues sur factures, c'est aussi chaque sous-traitant par rapport aux sous-traitants suivants (ONSS, 2023).

21 Par sous-traitant il y a lieu d'entendre : quiconque s'engage, soit directement, soit indirectement, à quelque stade que ce soit, à exécuter ou à faire exécuter pour un prix, le travail ou une partie du travail confié à l'entrepreneur, ou à mettre des travailleurs à disposition à cet effet (ONSS, 2023).

22 Le terme 'déclaration' est utilisé de manière interchangeable avec 'chaîne de sous-traitance' ou 'chaîne' dans le présent résumé.

Les résultats montrent que la taille d'une chaîne de sous-traitance rapportée dans une déclaration de travaux immobiliers est limitée à une moyenne de 5,6 entrepreneurs/sous-traitants. Toutefois, ce nombre augmente pour atteindre **une moyenne de 17 entrepreneurs/sous-traitants dans les chaînes de sous-traitance dépassant le seuil de 500 000 euros**. Il existe une nette différence entre les chaînes en général et les chaînes au-dessus de ce seuil. Dans le premier cas, 62 % des chaînes de sous-traitance ont un maximum de 3 entrepreneurs/sous-traitants dans la chaîne, alors que dans le second cas, la part n'est que de 17 %. En revanche, **30 % des chaînes de sous-traitance dépassant le seuil de 500 000 euros comptent 20 entrepreneurs/sous-traitants ou plus dans la chaîne**, contre 5 % des chaînes de sous-traitance en général. **La plus grande chaîne déclarée dans les déclarations de travaux comprenait 188 entrepreneurs/sous-traitants au total**. Le nombre maximum d'entrepreneurs dans une déclaration s'élève à 35. En outre, les niveaux 2 à 5 sont particulièrement 'larges', avec un maximum de plus de 80 sous-traitants à chaque niveau.

La longueur moyenne d'une chaîne de sous-traitance est de 2,2 niveaux (1 niveau d'entrepreneurs + 1,2 niveau de sous-traitants) en général et de 2,8 niveaux (1 niveau de entrepreneurs + 1,8 niveau de sous-traitants) pour les chaînes de sous-traitance dont le montant est supérieur ou égal à 500 000 euros. En outre, plus de 75 % des chaînes de sous-traitance en général n'ont qu'un seul niveau de sous-traitants (niveau 2 maximum), alors que ce n'est le cas que pour 35 % des chaînes au-dessus du seuil. En général, 16 % des chaînes de sous-traitance ont deux niveaux de sous-traitants, et 3 % ont trois niveaux de sous-traitants ou plus. Par contre, **parmi les chaînes au-dessus du seuil, 39 % ont deux niveaux de sous-traitants, et 20 % ont trois niveaux ou plus de sous-traitants**. **La chaîne la plus longue déclarée dans les déclarations de travaux comprenait sept niveaux de sous-traitants**.

La dimension horizontale fournit des informations sur le nombre de sous-traitants actifs à chaque niveau. **Dans l'ensemble, 74 % des sous-traitants sont actifs au niveau 2 (premier niveau de sous-traitants) et 23 % au niveau 3, tandis que parmi les sous-traitants actifs dans les chaînes au-dessus du seuil, seuls 57 % sont actifs au niveau 2 et 34 % au niveau 3**. Il convient également de noter que le nombre moyen de sous-traitants actifs à un certain niveau par déclaration est plus élevé pour les chaînes au-dessus du seuil. Par exemple, **en moyenne, 3,4 sous-traitants sont actifs au niveau 2 et 5,1 au niveau 3 en général, alors qu'il s'agit de 9,4 sous-traitants au niveau 2 et de 9 sous-traitants au niveau 3 dans les déclarations d'un montant égal ou supérieur à 500 000 euros**.

Un dernier indicateur intéressant analysé est le pays d'établissement de l'entreprise. Presque tous les entrepreneurs sont établis en Belgique (98 % au total et 97 % pour les chaînes au-dessus du seuil). Toutefois, pour les sous-traitants, la part d'entreprises étrangères est beaucoup plus importante. **Sur l'ensemble des sous-traitants actifs dans le groupe total des chaînes, 20 % sont étrangers, et dans les chaînes d'un montant de 500 000 euros ou plus, 22% sont étrangers**. Lorsque les sous-traitants sont étrangers, il s'agit principalement d'entreprises polonaises. En outre, on constate que **plus on descend dans la chaîne, plus la part des sous-traitants étrangers est élevée**. Au total, au premier niveau de sous-traitance (niveau 2), 9 % des sous-traitants sont étrangers (dont 4 % de Polonais), tandis qu'ils sont 31 % au troisième niveau de sous-traitance (dont 20 % de Polonais), et même 41 % au quatrième niveau de sous-traitance (dont 25 % de Polonais). Il est intéressant de noter que, si les entreprises non belges situées aux niveaux supérieurs de la chaîne (commettants/donneurs d'ordre et entrepreneurs) sont principalement établies dans les pays voisins (Pays-Bas, Allemagne, France et Luxembourg), les entreprises non belges situées aux niveaux inférieurs de la chaîne sont principalement polonaises, ainsi que slovaques et slovènes dans une moindre mesure. Enfin, la part des chaînes de sous-traitance au-dessus du seuil avec des sous-traitants étrangers est plus élevée qu'en général. **Au total, 26 % des chaînes de sous-traitance ont au moins un sous-traitant étranger, alors que cela concerne 55 % des chaînes de sous-traitance au-dessus du seuil**.

1. Introduction

A subcontract is a “commercial contract (for the provision) of services or a commercial contract (for the provision) of labour, works and materials between a main contractor and a providing or supplying contractor” (Cremers & Houwerzijl, 2021: 6).²³ Subsequently, a subcontracting chain can arise when the supplying contractor engages one or more subcontractors who bring their own personnel or engage other legal entities (ELA, 2023).²⁴ Like in many other sectors, subcontracting has been a growing trend in the construction sector in recent decades (Buckley et al., 2016). Considering its volatile, seasonal, and flexible nature, it is no surprise subcontracting has played an important role in this sector. It can help construction companies to access specialised expertise and know-how, become more efficient, and help remedy labour shortages (ELA, 2023; Andriescu et al., 2024). In Belgium as well, subcontracting in the construction sector has gained in importance. While in 2011, payments to subcontractors accounted for 21.3% in total turnover in the construction sector, this share reached 27.9% in 2020.²⁵ In the subsector construction of buildings, this share even went up from 34.7% in 2011 to 40.6% in 2020.

Subcontracting in itself is not a problem per se, although it can be the cause of several problems, especially when the subcontracting chain becomes too long.²⁶ For example, it is found that subcontracted workers are more vulnerable to occupational safety and health (OSH) risks, because of longer hours, intensity of work, economic stress, and their concentration in higher-risk segments of the supply chain (James et al., 2015). Furthermore, the occurrence of undeclared work and labour exploitation increases because of long and complex subcontracting chains (van Nierop et al., 2021). Subcontracting often finds itself entwined in both legal and illegal exploitation of workers and social dumping (Borelli, 2022). In general, subcontracting chains cause a lack of transparency and accountability, as the direct (social) responsibility and liability of the contractor is considerably reduced (Houwerzijl & Peters, 2008). The longer the chain becomes, the more difficult it is to establish legal responsibility for labour standards and employment rights (Cremers & Houwerzijl, 2021). Particularly at the lower levels of the subcontracting chain, it is challenging to identify the ‘actual employer’ and protect workers’ rights (ELA, 2023). Finally, enforcement becomes harder with long subcontracting chains (Andriescu et al., 2024). Two recent incidents in Belgium illustrate the problems referred to. First, in June 2021 a school building under construction collapsed in Antwerp, causing five deaths and nine injured. While the contractor communicated a number of 43 subcontractors in the chain, it appeared that the subcontracting chain consisted of at least 249 subcontractors (Nuyts & Dumon, 2022).²⁷ Second, in July 2022, more than 50 underpaid and undocumented workers have been found working on a construction site at the port of Antwerp. They received € 650 per month, which is just a quarter of what

23 Heinen et al. (2017: 19) define ‘subcontracting’ as “a business practice, where a main or principal contractor of an investor or client hires additional individuals or companies called subcontractors to help complete a project. The main or principal contractor is still in charge and must oversee hires to ensure project is executed and completed as specified in contract. Companies or individuals may also be foreign companies or workers.”

24 “A subcontracting chain emerges, if a principal contractor, contracted by an investor, or the investor himself hires one or more subcontractors, who either contribute by bringing their own employees or by subcontracting another legal entity like a temporary work agency. This in theory endless chain resembles a logistical as well as value chain of economic nature. Every link has its own contract commitment to one of the other links.” (Heinen et al., 2017: 20).

25 Eurostat [sbs_is_sc_r2] and [sbs_na_con_r2]

26 A recent report of the Commission (2024) on the application and implementation of Directive (EU) 2018/957 identifies several challenges related to the use of subcontracting chains: “First, companies at the top of long and complex subcontracting chains may have a limited control over the lower chain levels. [...] Second, the lack of transparency and accountability in long subcontracting chains may make enforcement of the applicable rules very difficult due to problems in identifying the liable company. [...] Third, in some Member States, the application of collective agreements may provide a different protection to posted workers in subcontracting chains. [...] Fourth, some companies in subcontracting chains can turn out to be letterbox companies.”

27 The question arises whether there was a deliberate underreporting or not. From journalistic research, it appears that several other issues were at stake at the construction site in question, for instance the use of unrecognized subcontractors and problems with the obligatory attendance registration *Checkinatwork* (Nuyts, 2022).

they should have been paid. Consequently, there are voices to limit the subcontracting chain,^{28,29} and in some Member States this is already the case. For instance, Spain has adopted legislation imposing a maximum of four subcontracting tiers in the construction sector. Belgium, France, and Italy impose a maximum number of subcontracting tiers in relation to public contracts (Andriescu et al., 2024).

1.1 Research questions

Despite the attention given to this topic in public, political, and scholarly debate, to our knowledge, no research has yet mapped the average size and profile of subcontracting chains in the construction sector. For instance, in a recent study supporting the monitoring of the application and implementation of Directive (EU) 2018/957 it is stated that “empirical evidence about the size (number of tiers) and profile of subcontracting chains is missing. Although such data is available in a number of Member States, it has never been systematically analysed” (Andriescu et al., 2024: 195). This paper addresses this research gap by mapping the size and profile of subcontracting chains for works in ‘immovable property’³⁰ in Belgium. Two research questions are discussed in this paper:

- 1) What is the *composition* of subcontracting chains for works in immovable property in Belgium, both vertically and horizontally?
- 2) What is the *profile* of subcontracting chains for these works?

1.2 Methodology

In order to answer these research questions, administrative data were analysed from the ‘declaration of works’ (DOW)³¹ for works in immovable property ongoing in 2022 (‘article 30bis’ of the Act of 27 June 1969’).³² Hence, it should be kept in mind that the analysis in this paper only builds on the *reported* declarations of works, while in reality there could also be undeclared (parts of) subcontracting chains, also keeping in mind that it concerns self-reporting. However, sanctions are in place for non-reporting or late reporting of the declaration of works.³³ Therefore, the results should be considered as an estimate of the size and characteristics of subcontracting chains for works in immovable property in Belgium.³⁴

The methodology itself is a descriptive analysis of the different variables which are reported in the declaration of works (see *appendix 1*). Seeing that it is a descriptive analysis, it allows us to answer certain ‘what’ and ‘how’-questions, namely what does a subcontracting chain look like and how is it organised, but not ‘why’-questions. For example, if it is found that a subcontracting chain is long/wide/consists of many/little foreign companies, these phenomena can only be outlined. It is not possible to explain, based on this analysis, *why* they occur, although certain speculations are possible.

28 See the “who’s the boss” campaign of the European Federation of Building and Woodworkers (EFBWW) (<https://www.limitsubcontracting.eu/>). Recently, several MEPs argued that the European Commission should put forward a legislative initiative limiting the length of subcontracting chains (Danielsson et al., 2024).

29 A recent report of the Commission (2024) on the application and implementation of Directive (EU) 2018/957 states that “a regards the identified challenges, adopting good practices would help Member States and/or social partners to increase transparency and liability in subcontracting chains. These good practices include limiting the number of levels in subcontracting chains [...]”.

30 “Works in immovable property” are legally defined as follows “Being all works relating to the building, remodelling, finishing, furnishing, repairing, maintaining, cleaning and demolishing, in whole or in part, of an immovable property in its nature, as well as any operation including the supply of a movable property as well as its placement in an immovable property so that this movable property becomes immovable by nature” (RSZ, 2023 – own translation).

31 For more information about ‘the declaration of works’ see following ‘[Good practice fiche](#)’.

32 The authors would like to thank the NSSO and Smals for providing data on the declaration of works. A special thank goes out to Annelies Borghgraef (NSSO), Isaia Jennart (NSSO), and Tom Van Dijk (Smals).

33 A contractor who fails to comply with the obligation to declare works owes the NSSO a sum equal to 5% of the total amount of the works, excluding VAT, that were not declared. A subcontractor who fails to signal in writing to the contractor that he is using one or more other subcontractors shall himself owe to the NSSO a sum equal to 5% of the total amount of the works, excluding VAT, which he has entrusted to his subcontractor or to his subcontractors. If the sum claimed from the contractor was caused by a fault of a subcontractor, this sum will be reduced by the amount actually paid to the NSSO by the subcontractor concerned for this fault (RSZ, 2023).

34 Enforcement statistics may give an idea about the extent to which these rules are respected.

To get a grasp of these Belgian data which are discussed in this paper, it is first important to briefly describe the Belgian legislation concerning ‘declaration of works’³⁵.

Box 1: Belgian legislation regarding ‘declaration of works’

The declaration of works (DOW) is an electronic declaration submitted by the main contractor to the Belgian National Social Security Office (NSSO) before the start of the work. The contractor must declare all information associated with the construction site, contractors and subcontractors to the NSSO. The main contractor is also responsible for declaring any changes made to the main contract. The information to be declared must include: start / end of the work on the construction site; start / end of activities of each contractor and subcontractor; identification of each contractor and subcontractor; and description of the works.

Works which should be declared are the following³⁶ (Sociale Zekerheid, 2024a):

- **Works ‘30bis’:**
 - Working in immovable property, except for certain activities from agriculture, horticulture, and forestry that are explicitly excluded from the scope.³⁷
 - The declaration of works in immovable property depends on the size of the subcontracting chain, as it is only obligatory for any agreement starting from € 5 000 (excluding VAT) with at least 1 subcontractor, or any agreement starting from € 30 000 (excluding VAT) with or without subcontractors (Sociale Zekerheid, 2024c).³⁸ In appendix 2, examples are provided about when a declaration should (not) be made.
 - Moreover, from 1 April 2014, for works in immovable property attendance registration is mandatory (*Checkinatwork*)³⁹ for sites where works are carried out, provided that the total amount excluding VAT equals or exceeds a specific threshold amount depending on the start date of the work (Sociale Zekerheid, 2024d). This threshold amounted to € 800 000 for works which commenced from 1 April 2014 until 29 February 2016, and € 500 000 for works which commenced after 29 February 2016. This attendance registration should be done at the start of the works or during the works (Sociale Zekerheid, 2024f). When this is not done, sanctions can be imposed.⁴⁰
 - The supply of ready-mixed concrete.⁴¹

These works ‘30bis’ should be reported to the NSSO, and some also to Constructiv (the social welfare fund for the construction sector) and the Federal Public Service Employment, Labour, and Social Dialogue. The data analysed in this paper only cover **declarations of works in immovable property (article 30bis)**.

- **Works ‘30ter’:** works falling under the joint committee for surveillance and/or monitoring services, and companies engaged in certain activities in the meat sector.

These works ‘30ter’ should be reported to the NSSO.

The declaration of works must be made by the contractor whom the client has engaged (Sociale Zekerheid, 2024b).

There is also the withholding obligation for works ‘30bis’ and ‘30ter’. This means that clients, contractors, and subcontractors carrying out the activities described under article 30bis and 30ter must check whether their (sub)contractors have social or tax debts (Sociale Zekerheid, 2024e). If that is the case, they must withhold a certain percentage of the invoice amount and transfer it to the NSSO (for social debts) or the Federal Public Service Finance (for tax debts). Furthermore, at the basis of the declaration of works lies the concept of joint and several liability. Applying the withholding obligation is a way to avoid this joint and several liability. To verify the correct application of the withholding obligation a view on the chain of subcontractors is needed, which must be declared in the declaration of works.

35 The contractor called upon by the client shall, before commencing all the said works, provide the NSSO with all the information necessary to estimate the importance of the works and to identify the client and, where appropriate, at any stage, the subcontractors. If other subcontractors intervene during the execution of the works, this contractor must inform the aforementioned NSSO in advance. To this end, any subcontractor who in turn engages another subcontractor must give prior written notice to the contractor (RSZ, 2023).

36 A detailed list of the works which should be declared can be found at https://www.socialsecurity.be/site_nl/employer/applics/ddt/documents/pdf/Bericht_aan_de_aannemers_en_opdrachtgevers_N.pdf?v=2

37 This does not only mean temporary and mobile construction sites (Sociale Zekerheid, 2024f). Rather, it concerns construction, renovation, finishing, repair, maintenance, cleaning, and demolition. Some examples are marine works, central heating maintenance, building cleaning, grounds maintenance, laying of cables, and terracing.

38 However, these special conditions do not apply to cleaning activities. As of 1 January 2024 (Program Law of 26 December 2022), all cleaning activities must be declared.

39 For more information see https://www.international.socialsecurity.be/working_in_belgium/en/checkinatwork.html

40 See for the responsibilities and sanctions per role:

https://www.socialsecurity.be/site_nl/employer/applics/checkinatwork/documents/pdf/sancties_N.pdf

41 As referred to in article 1(a), fourth paragraph, twenty-eighth indent of the Royal Decree of March 4, 1975, establishing and determining the designation and jurisdiction of the Joint Committee for the construction industry and determining its number of members.

Box 2: Belgian legislation regarding subcontracting in public procurement⁴²

Regarding public procurements, there is a restriction of the subcontracting chain in Belgium following the Royal Decree of 14 January 2013 which entered into force on 1 July 2017.⁴³ In the fight against social dumping, the number of levels of subcontractors is either restricted to two or three, depending on the category of work assignments as well as whether it concerns a risk sector (Vlaamse Overheid, 2024). As a result, there can be a contracting authority (client), an economic operator (contractor), and two/three levels of subcontractors.⁴⁴ Hence, there is a restriction in the vertical chain, but not the horizontal chain (Embuild, 2024).

The data which are analysed in this paper, concern the **declaration of works (DOW) relating to works in immovable property ongoing in 2022** (see *box 1* above).⁴⁵ The data file of the declaration of works contained 620 297 data lines, each with 12 variables. Each line represents a company⁴⁶ in a certain declaration⁴⁷; each company can appear multiple times in the dataset (as it can be active in multiple declarations). The 12 variables are the role of a company, level, private or not, country of establishment, amount, activity 1-4, and an anonymised reference of the declaration, the contract, and the company. A complete overview of the data specifications can be found in *appendix 1*. However, certain elements are of importance to sufficiently understand the analysis which follows. A company can take on three different roles: client, contractor, or subcontractor. Clients are always active on level 0, contractors on level 1, and subcontractors on levels 2-8. Hence, the maximum number of tiers of subcontractors found in the data is seven.⁴⁸ A visual representation can help to understand what a subcontracting chain looks like and how it is depicted in the database of the declaration of works. *Figure 1* represents one declaration, so one subcontracting chain (see also *appendix 1* to see how this figure can be distilled from the data file). Each of the companies in the declaration has its own company reference and its own country of establishment. At level 0, there is the client who in this case is a non-private client (so the client has a company number or is a natural person who has works carried out for non-private purposes), meaning that all companies in the declaration have the value 'F' (false) for the variable 'Private client'. At level 1, there are two contractors. The green contractor subcontracts to three subcontractors, which are all on level 2. These four green companies all have the same contract reference and the same amount of this contract. The orange subcontractor subcontracts to 2 subcontractors, one on level 2 and one on level 3. These three orange companies all have the same contract reference and the same amount of this contract. The amount of the contract which is provided at level 0 (client) is the sum of all amounts in the declaration, so the sum of the amounts of the green contract and the orange contract. All subcontractors (from level 2 onwards, so here the 5 subcontractors) have specified one to four activities. In sum, this subcontracting chain consists of 8 companies in total of which 1 client, 2 contractors, and 5 subcontractors (horizontal dimension). The widest level is level 2 with 4 subcontractors active at this level. The declaration ranges until level 3, meaning that there are two tiers of subcontractors involved in this declaration (vertical dimension).

42 Furthermore, recent legislation includes joint and several liability of employees, limitation of the subcontracting chain, recording of attendance and joint and several liability for social security contributions in the moving sector, and this could potentially be expanded to other sectors in the future. It concerns the law of 15 May 2024 (15 MEI 2024. – Wet houdende wijziging van het sociaal strafrecht en diverse arbeidsrechtelijke bepalingen), and the article concerned is Article 147 "It is prohibited for a subcontractor to subcontract the entire execution of the agreement that he has concluded with his own co-contractor. It is also prohibited for a subcontractor to retain sole coordination of the execution of the agreement." See https://www.ejustice.just.fgov.be/cgi/article.pl?language=nl&sum_date=2024-06-21&lg_txt=n&pd_search=2024-06-21&s_editie=2&numac_search=2024202958&caller=sum&2024202958=9&view_numac=2024202958f

43 Koninklijk besluit tot bepaling van de algemene uitvoeringsregels van de overheidsopdrachten/Arrêté royal établissant les règles générales d'exécution des marchés publics.

44 Furthermore, a complimentary link is possible (level 3 or 4 in the vertical chain), but only under 2 circumstances: 1) unforeseeable circumstances at the time of submission of the tender; or 2) prior approval of the public authority (Embuild, 2024).

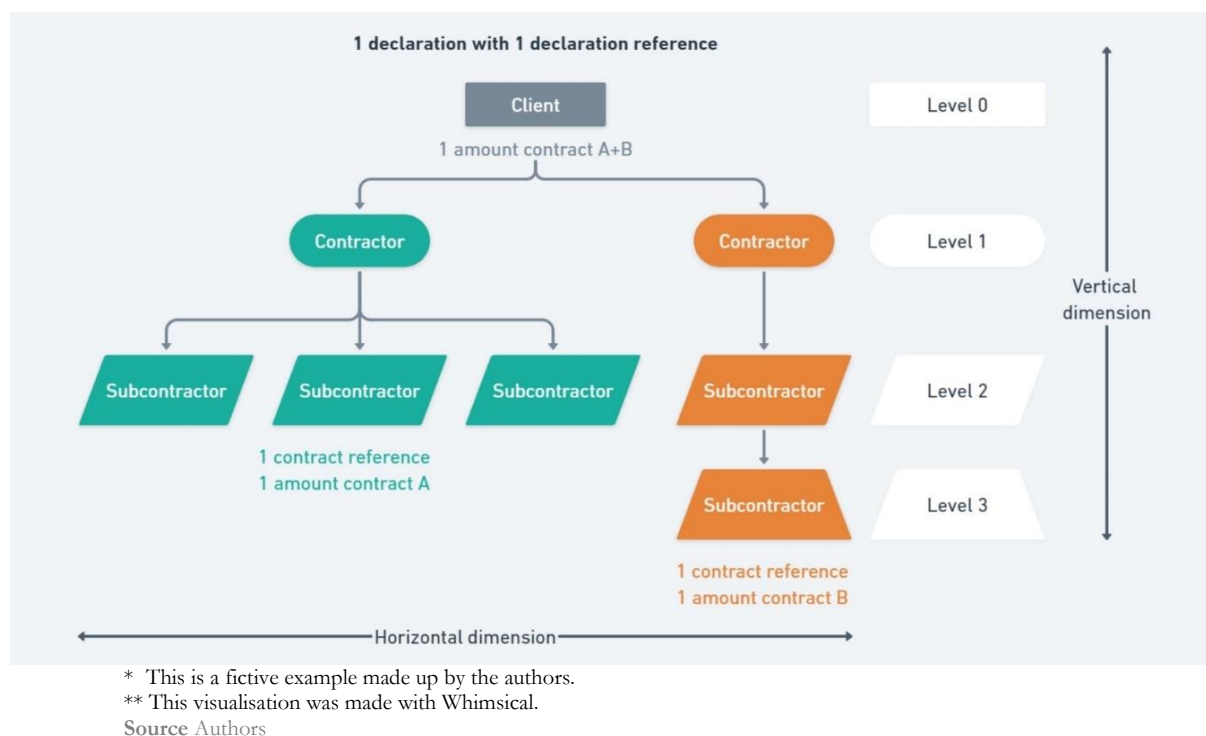
45 For example, it can include a declaration made in 2020 with an end date of 2024 where there are still activities going on (A. Borghgraef, personal communication, 19 July 2024). Therefore, it is still possible that contracts and/or subcontractors are added to declarations after 2022 as there can still be activities later on (T. Van Dijk, personal communication, 11 March 2024).

46 The term 'company' is used to refer to clients, contractors, and subcontractors.

47 The term 'declaration' is used interchangeably with 'subcontracting chain' or 'chain' throughout this paper.

48 In the database of the declaration of works, certain chains with more than 7 tiers of subcontractors could be found. However, due to technical issues with the program and to ensure reliability of the data, these contracts were not included in the data. Seeing that it only concerned 400 contracts out of the more than 143 178 contracts, this does not affect the findings. However, it is important to note that declarations of works in immovable property with more than 7 tiers of subcontractors do exist (A. Borghgraef, personal communication, 28 February 2023).

Figure 1. Example subcontracting chain in database declaration of works



The declarations of works applicable to reference year 2022 are analysed in detail in *Chapter 2*. This chapter consists of four main parts to attempt to reply to the research questions above. First, the size of the subcontracting chain is analysed in general to get an idea of what an ‘average’ subcontracting chain looks like. Second, the vertical structure is investigated by looking at the number of tiers in a subcontracting chain. Third, the number of (sub)contractors in a declaration can tell us more about the horizontal structure of a subcontracting chain. Fourth, the profile of subcontracting chains is looked at in more detail by focussing on the country of establishment of companies active in the declaration. Throughout the analysis, the global picture of all declarations is provided, as well as a special focus on declarations with an amount of contract of € 500 000 or more. Although this threshold is arbitrary, it allows for an analysis of larger works in immovable property (mainly B2B). Moreover, for works in immovable property, attendance registration is mandatory (*Checkin@work*) for construction sites where works are carried out provided that the total amount excluding VAT equals or exceeds € 500 000.

2. Mapping subcontracting chains for works in immovable property in Belgium

As previously mentioned (see *Chapter 1*), the data analysis which is performed in this chapter provides information about the total number of declarations of works, but focusses specifically on declarations with a total amount of contracts of € 500 000 or more. In tables or figures where both groups are provided, colours will make the distinction visually clear between the total group (yellow) and the subcontracting chains with an amount of € 500 000 or more (blue and double border in tables). *Section 2.1* provides a general overview of the size of subcontracting chains and gives an idea of what an ‘average’ subcontracting chain looks like. Next, in *section 2.2*, the vertical dimension of the subcontracting chain is analysed, namely analysing how long they can get and how many tiers of subcontractors are active. The horizontal dimension of a declaration, how wide a subcontracting chain can get, is investigated in *section 2.3*. Finally, there is a special focus on the country of establishment of companies active in the subcontracting chain in *section 2.4*. These four sections lead to interesting insights in the composition and profile of subcontracting chains for works in immovable property in Belgium.

2.1 General analysis of an average subcontracting chain

In total, the 620 297 data lines contained 94 479 unique declarations, 104 988 unique contracts, and 131 690 unique companies.⁴⁹ Of these total numbers, the group of declarations above the threshold (\geq € 500 000) consists of 7 370 unique declarations (almost 8% of all declarations), 11 661 unique contracts, and 42 816 unique companies. A breakdown by unique roles, meaning client, contractor, or subcontractor, is provided in *Table 1*. Already, it is obvious that the ratio between the different roles differs greatly between the total group of declarations and the group of declarations with an amount of € 500 000 or more, as there are much more subcontractors compared to clients in the latter. In the total group of declarations there are 65 514 unique clients and 56 360 unique subcontractors, while for subcontracting chains above the threshold there are 4 654 unique clients and 33 777 unique subcontractors. This could indicate that in this group of chains more unique subcontractors are employed, possibly implying that the subcontracting chains are bigger in declarations above the threshold. However, this is discussed in more detail in *sections 2.2* and *2.3*. Additionally, *Table 1* demonstrates that there are more unique roles than there are unique companies (comparison between the last two rows). Consequently, several companies take on a double role in different declarations. In total, there are 317 companies with a double role: 69 companies are contractor and subcontractor, and 248 are client and subcontractor. For declarations above the threshold, there are 4 companies with a double role: 1 is contractor and subcontractor, and 3 are client and subcontractor.

Table 1. Number of unique roles in the declarations of works, 2022

Role	Total declarations (N = 94 479)	Declarations above threshold (N = 7 370)
Unique clients	65 514	4 654
Unique contractors	10 133	4 389
Unique subcontractors	56 360	33 777
Total number of unique roles	132 007	42 820
<i>To remember: number of unique companies</i>	<i>131 690</i>	<i>42 816</i>

Source Database declaration of works 2022 from NSSO

⁴⁹ When the term ‘companies’ is used in this paper, it always refers to clients, contractors, and subcontractors. Even though clients can also be entities without a company number (for instance natural persons), they are included under the umbrella term ‘companies’.

When the amounts of the contracts per subcontracting chain are summed up, it is possible to get an idea about the total amount involved in a chain. For the total group of declarations (N = 94 479), the average amount is € 305 856 while the median is € 30 000⁵⁰. For declarations above the threshold (N = 7 370), the average is € 3 039 366 whereas the median is € 1 058 191.

The averages per declaration are interesting indicators to get an idea of what an ‘average’ subcontracting chain in the declaration of works looks like. *Table 2* shows that an average declaration consists of 5.57 (sub)contractors, and that there are on average 4.68 subcontractors involved in a subcontracting chain. However, for chains with an amount of € 500 000 or more, these indicators lie much higher. On average, a declaration in this group consists of 17 (sub)contractors and has 16.46 subcontractors in the chain.

Table 2. Averages per declaration of works, 2022

Average...	Total declarations (N = 94 479)	Declarations above threshold (N = 7 370)
number of companies (excl. clients)	5.57	17.00
number of contractors	1.11	1.58
number of subcontractors	4.68	16.46

Source Database declaration of works 2022 from NSSO

After analysing the averages per declaration, it is interesting to look at the distribution of the total number of declarations by number of companies present in the chain. *Figure 2* gives an overview of the number of companies in the subcontracting chain excluding the client, so only taking into account the number of contractors and subcontractors. At first glance the total number of declarations are highly concentrated on the left, more specifically with 2 or 3 (sub)contractors in the declarations, while the declarations with an amount of more than € 500 000 are much more evenly spread out.

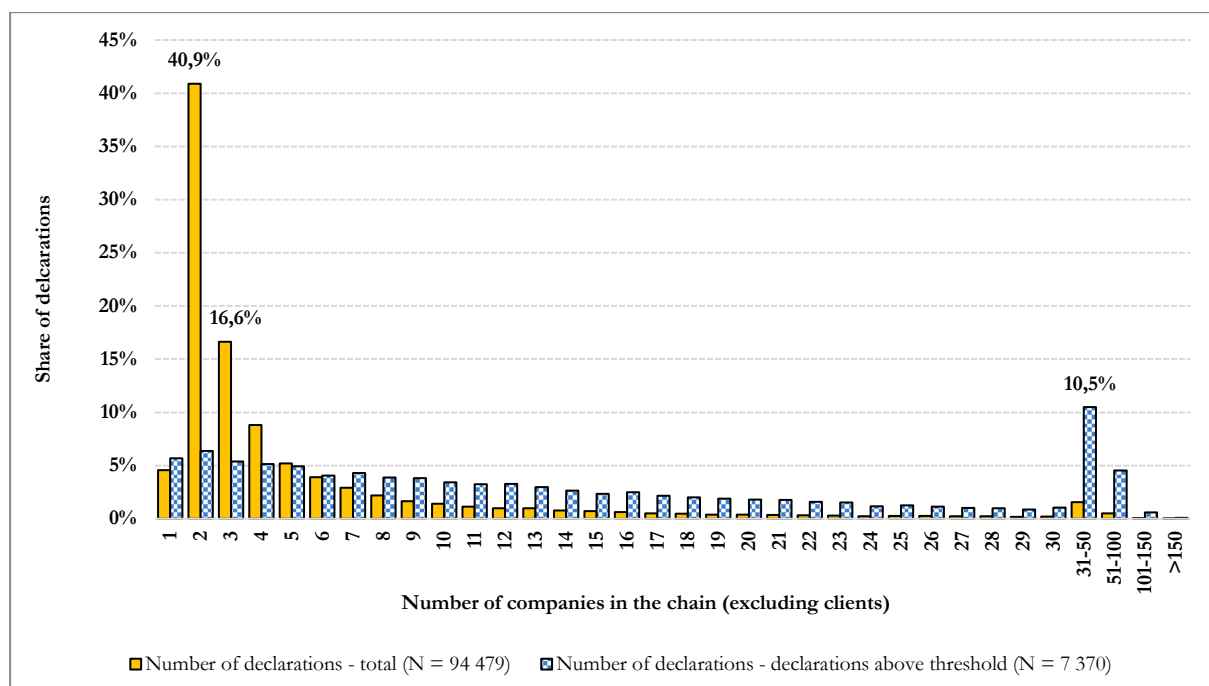
Of the total group of declarations, 40.9% has only 2 companies in the chain (excluding the client) and another 16.6% has only 3 companies in the chain (excluding the client). Declarations with one, two, or three (sub)contractors make up 62.1% of all subcontracting chains compared to 17.4% of subcontracting chains above the threshold. This demonstrates that the latter group are much larger chains with plenty of (sub)contractors.

For example, declarations with 20 (sub)contractors or more make up 5.1% of the total group of declarations compared to 29.9% of declarations above the threshold. One can even go further and look at chains which have at least 50 (sub)contractors. This is the case for 589 declarations out of the total of 94 479 declarations, or 0.6% of all declarations. However, out of the 7 370 declarations above the threshold, 405 declarations have 50 or more (sub)contractors, or 5.5%. Hence, as could be expected and was already evident from *Table 2*, declarations with an amount of € 500 000 or more are clearly much more considerable. By looking at this indicator, the total number of (sub)contractors in a subcontracting chain, it can be concluded that subcontracting chains above the threshold are (much) larger. Finally, it is interesting to note that the largest chain reported in the declarations of works consisted of 188 (sub)contractors in total.⁵¹

⁵⁰ As mentioned in box 1 in section 1.2, the declaration for working in immovable property (Works ‘30bis’) is only obligatory for any agreement starting from € 5 000 (excluding VAT) with at least 1 subcontractor, or any agreement starting from € 30 000 (excluding VAT) with or without subcontractors (see appendix 2). So the median of € 30 000 is not really a surprise.

⁵¹ This is lower than the number of subcontractors found in the subcontracting chain involved in the collapse of a school building under construction in June 2021 in Antwerp (Belgium), where at least 250 subcontractors were active (see introduction; Nuyts & Dumon, 2022). This illustrates once more that the database of the declaration of works solely presents the reported declarations, which could deviate from reality.

Figure 2. Distribution declarations of works by number of companies (excluding the client), 2022



* How to read this figure? Of the total number of declarations (yellow bars) (N = 94 479), 40.9% has 2 companies in the declaration excluding the client. Of the declarations above the threshold (blue bars) (N = 7 370), 10.5% has between 31 and 50 companies in the declaration excluding the client.

Source Database declaration of works 2022 from NSSO

An assumption that could be made is that declarations with higher amounts tend to have more subcontractors involved in the subcontracting chain. Conversely, the more subcontractors involved in a subcontracting chain, the larger the project is likely to be in terms of the contract amount. To test this assumption, the correlation coefficient⁵² is calculated between the number of (sub)contractors active in the chain and the amount of the declaration (see also *appendix 4* for the accompanying scatterplots). For the total group of declarations, the correlation coefficient amounts to 0.07, and for the declarations above the threshold it amounts to 0.02. Even when excluding the outliers (subcontracting chains with an amount of more than € 50 million were disregarded), the correlation coefficient equals only 0.29 for the total group and 0.14 for the subcontracting chains above the threshold. These low positive correlations indicate that the relationship between both variables (amount of the contract/declaration and number of (sub)contractors) is not very strong. Therefore, it is not the case that the higher the amount of the contract/declaration, the more (sub)contractors are active, or the other way around. Hence, there are also many subcontracting chains with a high amount and few active (sub)contractors, or chains with many active (sub)contractors but not a high amount.

A variable which is present in the database of the declarations of works is whether the client in the declaration is private or non-private. It should be kept in mind that when a client is private, the client does not have a company number, while it does have this number if it is a non-private client.⁵³ Clearly, there is an important difference between the total group of subcontracting chains and the subcontracting chains above the threshold in this regard. The total group of chains consists almost half-half of declarations with a private client (48.5%) and a non-private client (51.5%) (*Figure 3*). On the contrary, chains with an amount

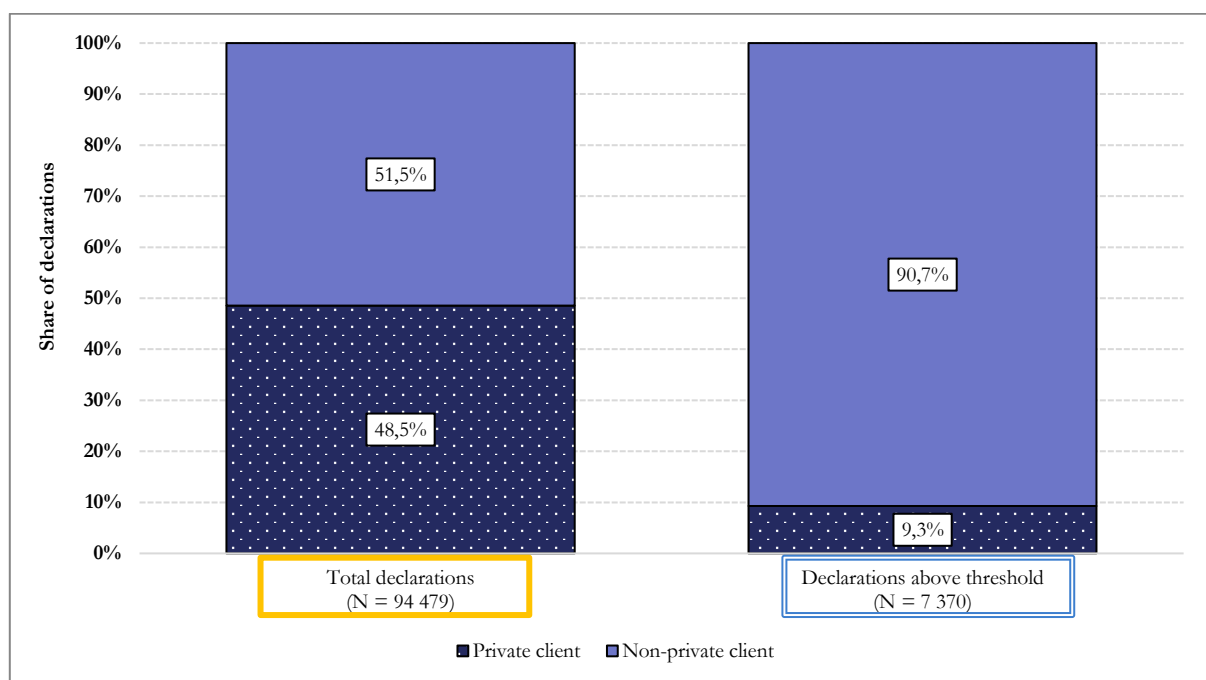
⁵² A correlation coefficient measures the strength of the relationship between two variables. The coefficient ranges from -1 to +1. If the correlation is -1, it means that the two variables move in exactly the opposite direction; whereas if it amounts to +1, they will move in exactly the same direction.

⁵³ There is also a small group of non-private clients who do not have a company number but are actually natural persons. It occurs when a natural person has works carried out for non-private purposes. In this case, the variable 'Private' will be false as well. Although this is a marginal group (very few people commission something on their own behalf for a company), it should be mentioned to be complete (A. Borghgraef, personal communication, 19 July 2024).

of € 500 000 or more generally have a non-private client (90.7%) as opposed to a private client (9.3%). This might not be too surprising following the findings from above. Seeing that for declarations above the threshold the subcontracting chains are typically larger (as the average number of active companies is bigger and the amount is higher), these projects could take on large proportions in which the client is often a company. Therefore, it is straightforward that the client is a non-private client in more than 9 out of 10 cases.

It is possible that these non-private clients are public authorities and that the declaration concerns a public procurement. If this is the case, Belgium has limited the vertical subcontracting chain to two (or three) levels of subcontractors (see *box 2* in the introduction). However, the administrative data provided do not allow for the selection of these declarations of works. Consequently, the extent of compliance with this requirement under Belgian law cannot be verified and thus requires an additional data request and further research.

Figure 3. Distribution declarations of works by type of client, private versus non-private, 2022



* How to read this figure? Of the total group of declarations (N = 94 479), 51.5% has a non-private client, while for the group of declarations above the threshold (N = 7 370), this share is 90.7%.

Source Database declaration of works 2022 from NSSO

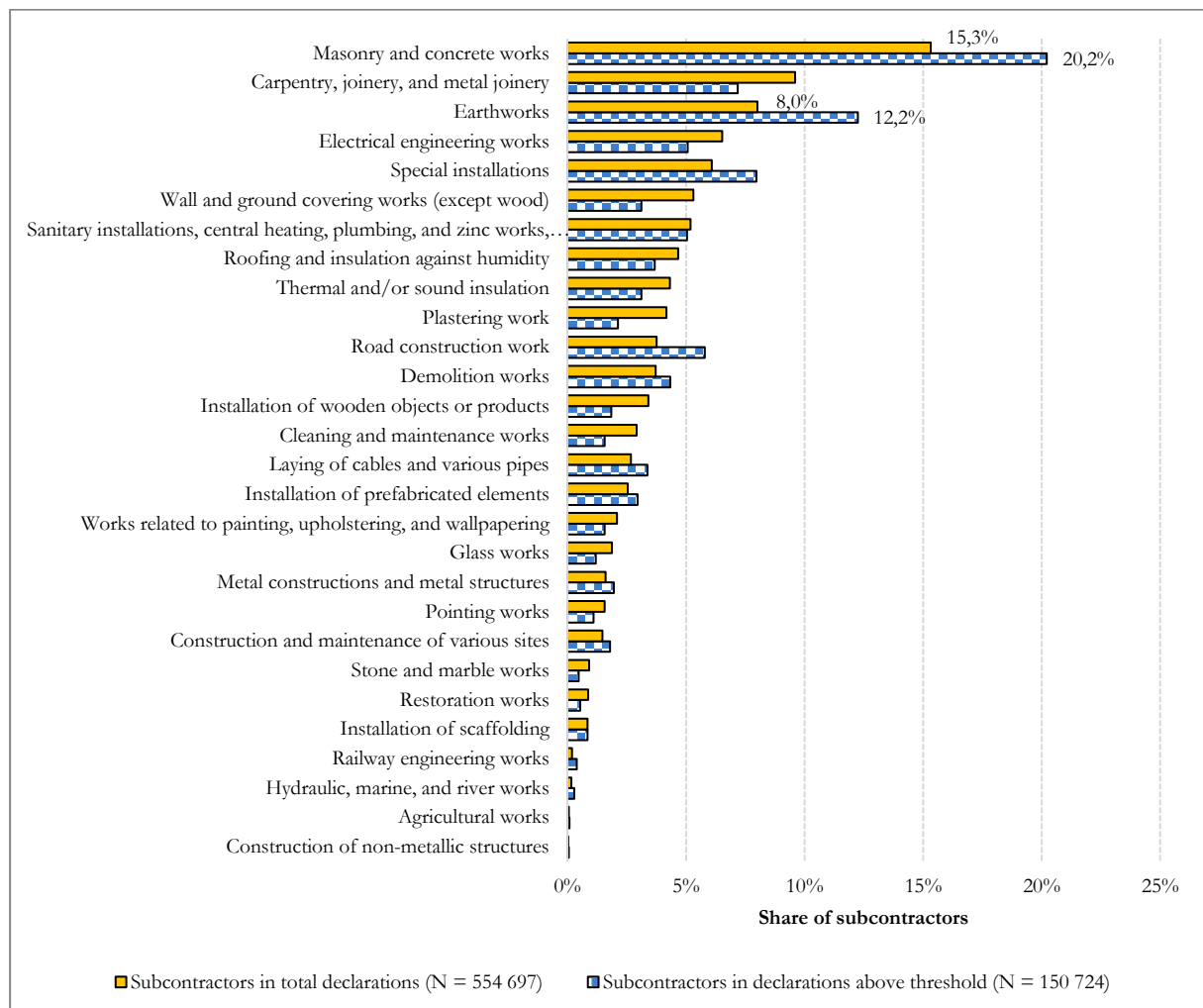
A final variable of interest is the activity which is performed in the declaration (see *appendix 3* for an overview of all possible activities for declarations of works in immovable property). As can be recalled from *Chapter 1*, only subcontractors can indicate an activity. They can report between one and four activities for each declaration they are active in. Therefore, subcontractors can possibly be counted multiple times when analysing the sector of activity: for each activity they indicate and this for each declaration they are active in. Of the total number of subcontractors in all declarations (N = 420 816), only one in five indicated a second activity, around 7% a third activity, and 2% a fourth activity. Similar numbers can be found for declarations above the threshold. Therefore, most subcontractors only indicate one activity per declaration.

Figure 4 indicates that for both groups of subcontracting chains, the most important activity is masonry and concrete works (15.3% for declarations in total and 20.2% for declarations above the threshold). This implies that one out of five subcontractors which are active in chains above the threshold perform activities in the masonry and concrete works. Other sectors of activity which are frequent among chains with an

amount of € 500 000 or more are earthworks; special installations; carpentry, joinery, and metal joinery; and road construction works.

For most sectors of activity, the share of subcontractors is rather similar for the total group of declarations and the declarations above the threshold. However, the two sectors where the difference between the share of subcontractors is highest are earthworks, and masonry and concrete works. Subcontractors active in the total group of subcontracting chains ‘only’ perform earthwork in 8.0% of cases, while this share is 12.2% for subcontractors active in subcontracting chains above the threshold. Similarly, masonry and concrete works are performed by 20.2% of subcontractors active in declarations with an amount of € 500 000 or more as opposed to 15.3% of subcontractors active in the total group of declarations. Hence, earthworks and masonry and concrete works are performed more often in chains above the threshold.

Figure 4. Distribution subcontractors by type of activity, 2022



* How to read this figure? Of all the subcontractors present in the total number of declarations (N = 554 697), 15.3% is active in the sector of masonry and concrete works. For subcontractors present in declarations above the threshold (N = 150 724), 20.2% is active in the sector of masonry and concrete works.

** The total number of subcontractors in the total group of declarations (N = 554 697) is higher than the number of unique subcontractors (N = 56 360) and the same goes for the number of subcontractors in declarations above the threshold (N = 150 724 in this figure, versus N = 33 777 unique subcontractors). This is the case for two reasons. First, a subcontractor can be present in multiple declarations. For example, subcontractor X can be present in declaration A and declaration B. Therefore, all these instances of subcontractor X are taken into account and one subcontractor can be counted multiple times. Second, in each declaration a subcontractor can indicate one to four activities. For example, in declaration A, subcontractor X indicates activities 1, 2, and 3. In declaration B, subcontractor X indicates activities 2 and 4. As a result, in this example, subcontractor X is counted five times, namely performing one time activity 1, two times activity 2, one time activity 3, and one time activity 4.

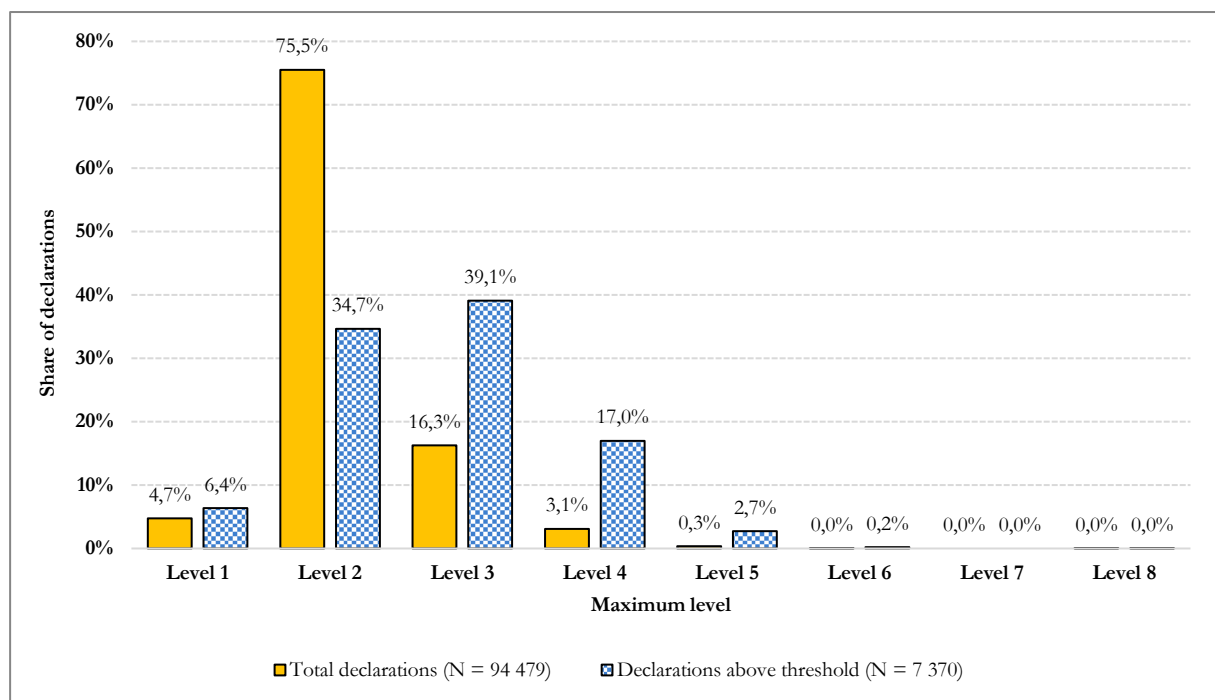
Source Database declaration of works 2022 from NSSO

2.2 Vertical structure of the subcontracting chain

In this section, the length of subcontracting chains is looked at in more detail. To do this, the indicator of number of levels and maximum level is analysed. Nevertheless, it should be reiterated that in the data received, the maximum level is 8, indicating that the maximum number of tiers of subcontractors is 7.⁵⁴ The declarations can be distributed by their maximum level. This indicates the length of the declarations (vertical dimension). *Figure 5* presents this distribution for both groups of subcontracting chains. More than three in four declarations have level 2 as their maximum level. This means that there is only one tier of subcontractor(s) present in the subcontracting chain.⁵⁵

A different conclusion can be made for subcontracting chains with an amount of € 500 000 or more. The distribution of this group of chains is clearly more spread out. The majority of these chains (39.1%) have level 3 as their maximum level, meaning that two tiers of subcontractor(s) are present in the subcontracting chain. Moreover, 19.9% of chains above the threshold have maximum level 4-8, meaning at least 3 tiers of subcontractors (as opposed to 3.4% of chains in total). Nonetheless, more than one third of declarations above the threshold (34.7%) only has level 2 as its maximum level, equalling one tier of subcontractors. When comparing both groups, declarations above the threshold clearly have longer subcontracting chains. Whereas only 19.7% of total declarations have level 3 or higher as their maximum level, this is the case for 59.0% of declarations with an amount of € 500 000 or more.

Figure 5. Distribution declarations of works by maximum level, 2022



* How to read this figure? Of the total number of declarations (yellow bars) (N = 94 479), 75.5% has a maximum level of 2, meaning that there is a client (on level 0), contractor(s) (on level 1), and one level of subcontractor(s) (on level 2) present in the subcontracting chain. Of the declarations above the threshold (blue bar) (N = 7 370), 39.1% has a maximum level of 3, meaning that there are 2 tiers of subcontractor(s) present in the subcontracting chain in addition to the client and contractor(s).

Source Database declaration of works 2022 from NSSO

⁵⁴ In the database of the declaration of works, certain chains with more than 7 tiers of subcontractors could be found. However, due to technical issues with the program and to ensure reliability of the data, these contracts were not included in the data. Seeing that it only concerned 400 contracts out of the more than 143 178 contracts, this does not affect the findings. However, it is important to note that declarations of works in immovable property with more than 7 tiers of subcontractors do exist (A. Borghgraef, personal communication, 28 February 2023).

⁵⁵ Nevertheless, this does not say anything about the width of this level; there could still be many subcontractor(s) active at this level. However, as will be seen in section 2.3 (horizontal dimension), this does not appear to be the case as there are on average 3.44 subcontractors active on level 2 (first tier of subcontractors).

One could wonder what the average maximum level is, representing the average length of a subcontracting chain. For the total group of subcontracting chains, the average amounts to 2.19 while for chains above the thresholds, the average is 2.76. This could already be estimated based on *Figure 5* as this is where most declarations are located. It implies that an average declaration has around one tier of subcontractors (maximum level of 2.19 lies close to level 2), whereas chains with an amount of € 500 000 or more have approximately two tiers of subcontractors (maximum level of 2.76 lies close to level 3).

2.3 Horizontal structure of the subcontracting chain

The analysis of the horizontal structure of the subcontracting chain focusses on the width of the chain by looking at how many companies are active at each level of the chain. The average number of subcontractors at level 2, 3 and 4 appears to be particularly high (*Table 3*). For example, the average number of subcontractors present at level 2 amounts to 3.44, at level 3 to 5.07, and at level 4 to 4.82. For declarations with an amount of € 500 000 or more, these averages are even higher. On average 9.37 subcontractors are present at level 2, 9.00 at level 3, and 6.10 at level 4. For clarity, it should be mentioned that these numbers of subcontractors are not linked to only one contractor; we look at the total number of subcontractors active on a certain level. Keeping *Figure 1* in *section 1.2* in mind, it is possible that the average number of 9.37 subcontractors on level 2 in declarations above the threshold are working under 2 (or more) contractors on level 1. These indicators in *Table 3* clearly highlight that subcontracting chains above the threshold have a higher average number of (sub)contractors at each level. Hence, declarations with an amount of € 500 000 or more are wider than declarations in general.

Table 3. Average number of companies at each level, 2022

	Total declarations (N = 94 479)	Declarations above threshold (N = 7 370)
Average number of companies at...		
level 0 (client)	1.00	1.00
level 1 (contractor)	1.11	1.58
level 2	3.44	9.37
level 3	5.07	9.00
level 4	4.82	6.10
level 5	3.58	3.61
level 6	3.96	5.29

* Although there are also subcontractors active at level 7 and 8, their numbers are very small, and the averages are therefore not depicted in this table. In the total group of declarations (N = 94 479), only 6 subcontractors are active at level 7 and 2 subcontractors at level 8. In the declarations above the threshold (N = 7 370), only 5 subcontractors are active at level 7 and 1 at level 8.

Source Database declaration of works 2022 from NSSO

In addition to the indicator of averages per declarations (*Table 3*), the maxima per declaration provide interesting information as well. *Table 4* indicates that the largest chain in the declarations of works consists of 188 (sub)contractors in total.⁵⁶ The maximum number of contractors in one declaration amounts to 35. Moreover, levels 2 until 5 are particularly ‘wide’ with a maximum of over 80 subcontractors at each level.

⁵⁶ This is lower than the number of subcontractors found in the subcontracting chain involved in the collapse of a school building under construction in June 2021 in Antwerp (Belgium), where at least 250 subcontractors were active (see introduction; Nuyts & Dumon, 2022). This illustrates once more that the database of the declaration of works solely presents the *reported* declarations, which could deviate from reality.

Table 4. Maxima per declaration of workers, 2022

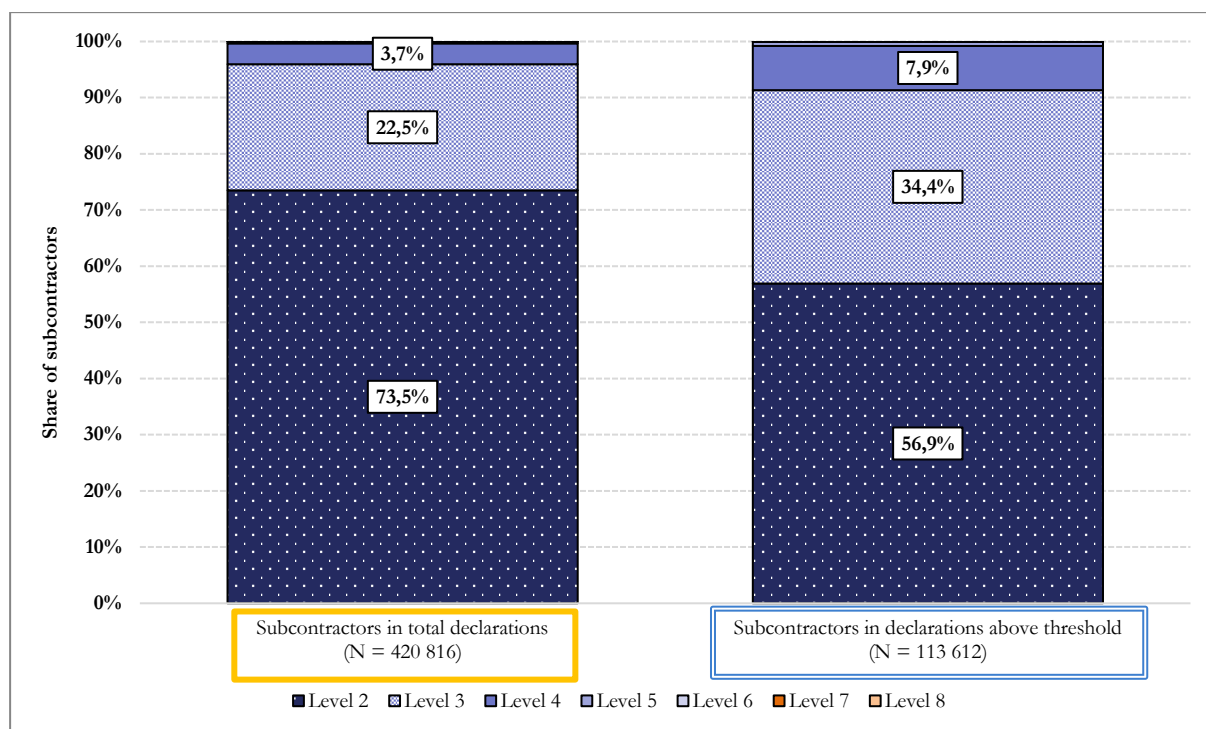
Maximum...	Total declarations (N = 94 479)
number of companies (excl. client)	188
number of contractors	35
number of subcontractors	187
number of companies at...	
level 0 (client)	1
level 1 (contractor)	35
level 2	81
level 3	134
level 4	95
level 5	87
level 6	20

* Although there are also subcontractors at level 7 and 8, their numbers are very small, and the maxima are therefore not depicted in this table.

Source Database declaration of works 2022 from NSSO

Instead of analysing the horizontal dimension using the declaration as an indicator (average and maximum number of companies per declaration), one can also use the subcontractors themselves as indicators. It is possible to analyse on which level subcontractors are active in all the declarations. For both groups of subcontracting chains, *Figure 6* indicates that most subcontractors are active on level 2 (73.5% of subcontractors in general and 56.9% of subcontractors active in a chain above the threshold). However, this is not surprising, seeing that this is the first tier of subcontractors, and for a majority of subcontracting chains in general, this is the maximum level, where the chain ends (see *Figure 5* in *section 2.2*). Furthermore, 22.5% of subcontractors active in the total group of chains are present at level 3 and 3.7% at level 4. In chains with an amount of € 500 000 or more, more than one in three subcontractors operates at level 3 (34.4%) and 7.9% at level 4.

Figure 6. Distribution subcontractors by level, 2022



* How to read this figure? Of all the subcontractors present in the total number of declarations (N = 420 816), 73.5% is located at level 2 and 22.5% at level 3. For subcontractors present in declarations above the threshold (N = 113 612), 56.9% is located at level 2 and 34.4% at level 3.

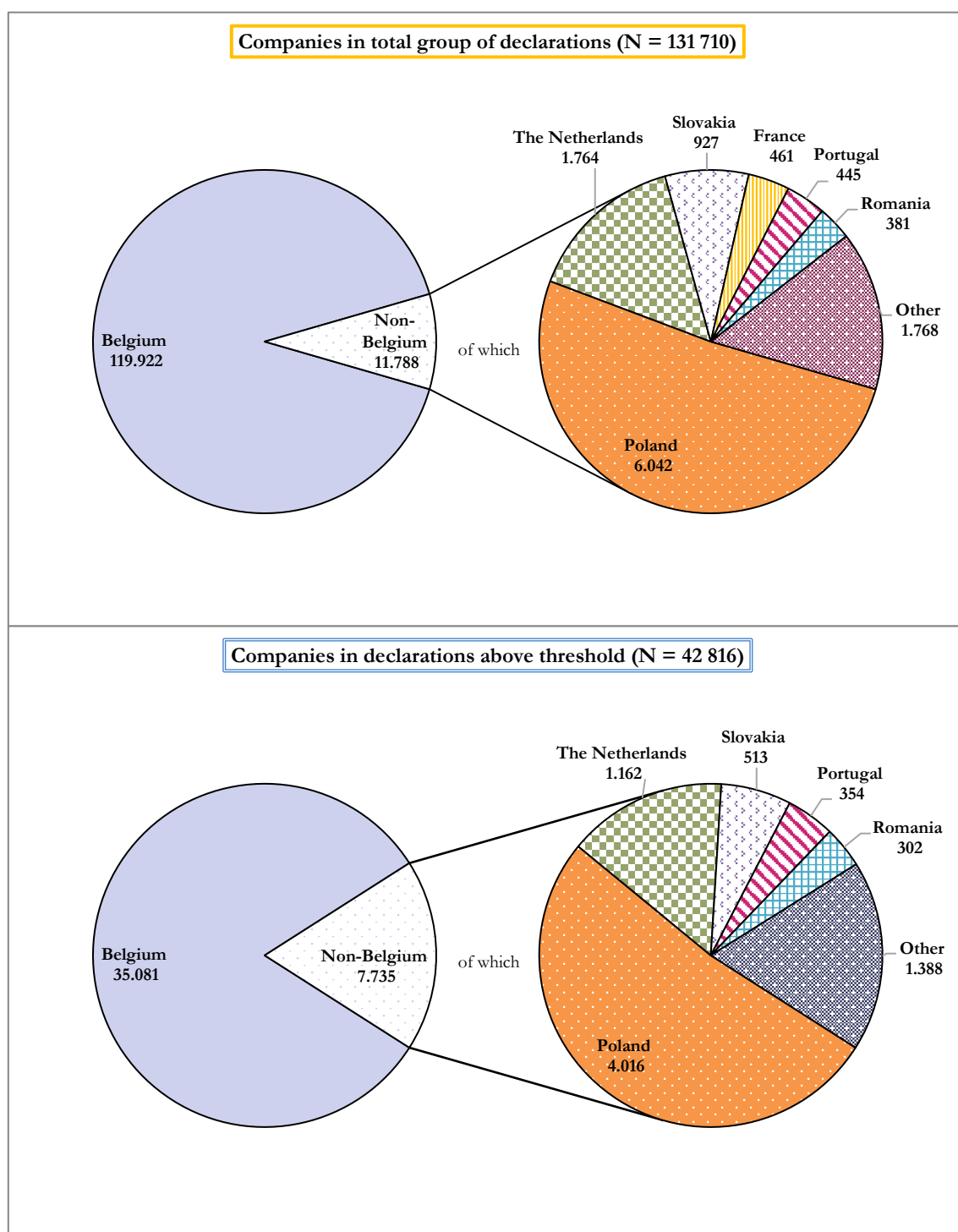
** The total number of subcontractors in the total group of declarations (N = 420 816) is higher than the number of unique subcontractors (N = 56 360), and the same goes for the number of subcontractors in declarations above the threshold (N = 113 612 in this figure, versus N = 33 777 unique subcontractors) seeing that a subcontractor can be present in multiple declarations. For example, subcontractor X can be present at level 2 in declaration A, at level 4 in declaration B, and level 3 in declaration C. Therefore, all these instances of the location of subcontractor X in the chain are taken into account and one subcontractor can be counted multiple times.

Source Database declaration of works 2022 from NSSO

2.4 Country of establishment

The country of establishment of a company is an interesting variable to get an idea of the profile of subcontracting chains. This variable is based on the address which was provided by the company in the declaration of works. For both declarations in general and declarations above the threshold, most companies are located in Belgium, although the share of the pie of non-Belgian companies is clearly bigger for declarations above the threshold than declarations in general (*Figure 7*). Of the group of companies not located in Belgium, most originate from Poland, followed by the Netherlands and Slovakia. Furthermore, Portugal and Romania, as well as France (only for declarations in general), are countries of establishment of importance for both the total group of declarations and those with an amount of € 500 000 or more.

Figure 7. Country of establishment of companies in total group of declarations (top) and in declarations above the threshold (bottom), 2022



* How to read this figure? Of all the companies in the total group of declarations (N = 131 710), 119 922 have Belgium as country of establishment, while 11 788 do not. Out of these 11 788 non-Belgian companies, 6 042 have Poland as country of establishment.

** The number of companies mentioned in this figure for the total group of declarations (131 710) is slightly higher than the number of unique companies in this total group of declarations (131 690; see *section 2.f*). This is the case because 20 companies indicated two different countries of establishment in different declarations. None of these companies are active in declarations above the threshold.

Source Database declaration of works 2022 from NSSO

Although the figures above provide a first glimpse of the country of establishment of companies, a relative distribution is valuable as well to get a more detailed look. Of the total group of companies, the majority has Belgium as a country of establishment (*Table 5*). However, this share is remarkably lower for declarations with an amount of € 500 000 or more than for the total group of declarations, namely 81.9% versus 91.1% respectively. In addition, while ‘only’ 4.6% of companies in the total group of declarations is located in Poland, this is the case for 9.4% of companies in declarations above the threshold. Furthermore, out of all the companies in the total group of declarations, 1.3% is located in the Netherlands, whereas 2.7% of companies active in declarations above the threshold is established in the Netherlands.

Of the group of companies which are not located in Belgium, more than half are established in Poland, both for the total group of companies (51.3%) as for declarations above the threshold (51.9%). The second biggest group of non-Belgian companies are those established in the Netherlands, as they make up 15.0% of non-Belgian companies in both the total group of declarations and those above the threshold. Relatively speaking, Slovakian companies are more common in the total group of declarations (7.9% of all non-Belgian companies) compared to declarations above the threshold (6.6%). On the contrary, Portuguese and Romanian companies are slightly more common in declarations with an amount of € 500 000 or more.

Table 5. Country of establishment of companies reported in the declaration of works, 2022

	Total declarations	Declarations above threshold
All companies	<i>N</i> = 131 710	<i>N</i> = 42 816
Belgium	91.1%	81.9%
Poland	4.6%	9.4%
The Netherlands	1.3%	2.7%
Other	3.0%	6.0%
Non-Belgium companies	<i>N</i> = 11 788	<i>N</i> = 7 735
Poland	51.3%	51.9 %
The Netherlands	15.0%	15.0 %
Slovakia	7.9%	6.6%
France	3.9%	3.5%
Portugal	3.8%	4.6%
Romania	3.2%	3.9%

* How to read this table? Of all the companies in the total group of declarations (*N* = 131 710), 91.1% are established in Belgium and 4.6% in Poland. Of the group of companies which are not established in Belgium (*N* = 11 788), 51.3% are established in Poland and 15.0% in the Netherlands.

Source Database declaration of works 2022 from NSSO

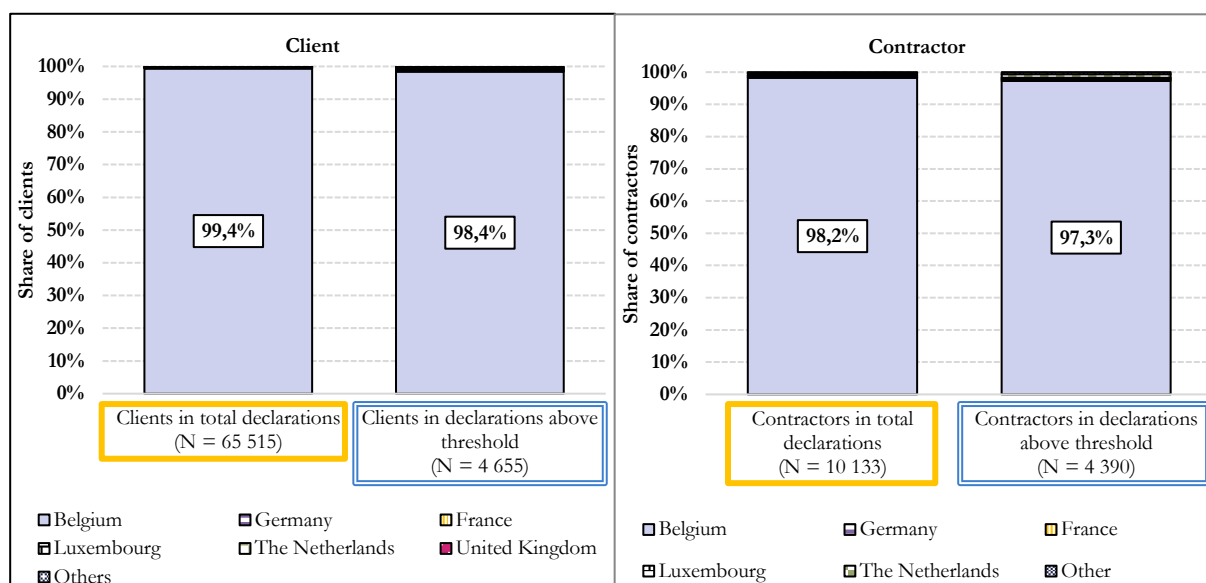
Although the general overview of the country of establishment of companies in the declarations of works is certainly useful, it can be expected that this variable differs depending on the role of a company. Hence, the combination of country of establishment and role is looked at below. Almost all clients and contractors are located in Belgium. It concerns 99.4% of clients and 98.2% of contractors who are active in the total group of declarations (*Figure 8*). The same is true for clients and contractors active in declarations above the threshold with almost similar shares of 98.4% and 97.3% of Belgian clients and contractors respectively.

The group of non-Belgian clients mainly concerns clients established in Belgium’s neighbouring countries. However, seeing that this group is rather small, their breakdown is not pictured in the figure below. Out of the non-Belgian clients active in the total group of declarations (*N* = 412), 30.8% has the Netherlands as country of establishment, 15.3% France, and 15.0% Germany. Out of the non-Belgian clients active in

declarations above the threshold (N = 75), most originate from the Netherlands (24.0%) and Luxembourg (21.3%). Even though foreign clients might seem odd, they are not an exceptional phenomenon.⁵⁷

Regarding non-Belgian contractors, the same trend as with non-Belgian clients can be seen, namely the common occurrence of neighbouring countries. Nonetheless, again considering the small size of this group, their breakdown is not pictured in the figure below. Out of the non-Belgian contractors active in the total group of declarations (N = 180), 36.1% is located in the Netherlands, 16.1% in Germany, and 13.3% in Luxembourg. The group of non-Belgian contractors active in declarations above the threshold (N = 118) primarily consists of Dutch contractors (39.8%), German contractors (12.7%), and French contractors (11.9%).

Figure 8. Country of establishment of clients (left) and contractors (right), 2022



* How to read this figure? Of the total number of clients in the total group of declarations (N = 65 515), 99.4% is located in Belgium, while of the total number of clients in declarations above the threshold (N = 4 655), 98.4% is located in Belgium.

Source Database declaration of works 2022 from NSSO

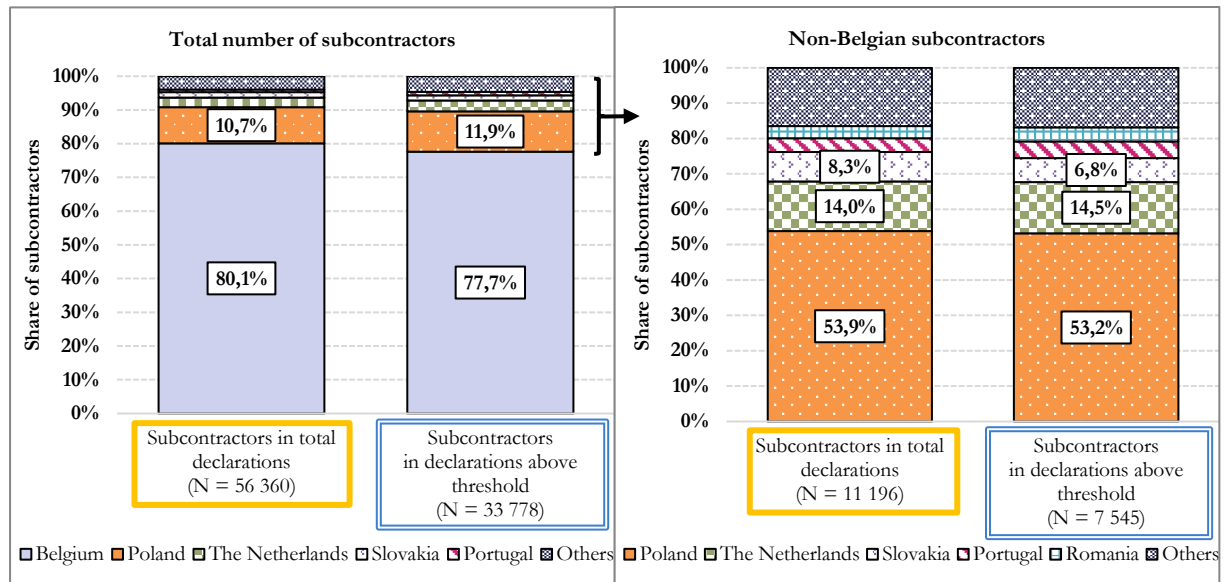
For subcontractors, *Figure 9* provides a breakdown between the total group of subcontractors (left panel) and the non-Belgian subcontractors (right panel, which is an enlargement of the non-Belgian part of the bars on the left panel). In general, the majority of subcontractors are still Belgian (80.1% of the total group of subcontractors and 77.7% of the subcontractors reported in declarations above the threshold), although the share of Polish subcontractors is prominent as well. More than one in ten subcontractors is established in Poland, and for subcontractors active in declarations above the threshold this share is even almost 12%. When the group of non-Belgian subcontractors is analysed (right panel), Poland as a country of establishment is indeed remarkable. More than 53% of non-Belgian subcontractors are Polish, both in general and in declarations with an amount of € 500 000 or more. Moreover, countries such as the Netherlands and Slovakia stand out with a high share. Around 14% of non-Belgian subcontractors are Dutch and 8.3% are Slovakian in the total group of declarations, whilst the group of non-Belgian subcontractors active in declarations above the threshold consist of 14.5% Dutch subcontractors and 6.8% Slovakian subcontractors.

Hence, this figure of subcontractors paints a completely different picture than the previous figure of clients and contractors. While almost all clients and contractors are Belgian companies, this is less the case for subcontractors (even though the large majority of subcontractors are still Belgian). Furthermore, the non-

⁵⁷ For instance, a Dutch nursing home group has a new nursing home built on Belgian territory: the client is the Dutch nursing home group, while the (sub)contractors can be Belgian or non-Belgian.

Belgian clients and contractors were mostly located in neighbouring countries. This is certainly not the case for non-Belgian subcontractors, which are for the most part Polish companies. Going from level 0 (client; left panel *Figure 8*) to level 1 (contractor; right panel *Figure 8*) and then to levels 2-8 (subcontractors; *Figure 9*), it is clear that the share of non-Belgian companies increases. This prompts the question whether the lower one goes in the subcontracting chain, the more non-Belgian companies can be found. This is analysed below.

Figure 9. Country of establishment of subcontractors, total group of subcontractors (left) versus group of non-Belgian subcontractors (right), 2022



* How to read this figure? Of the total number of subcontractors in the total group of declarations (N = 56 360), 80.1% is established in Belgium and 10.7% in Poland (left panel). Out of the subcontractors which are not located in Belgium (19.9% of subcontractors (=100%-80.1%)) (N = 11 196), 53.9% is located in Poland and 14.0% in the Netherlands (right panel).

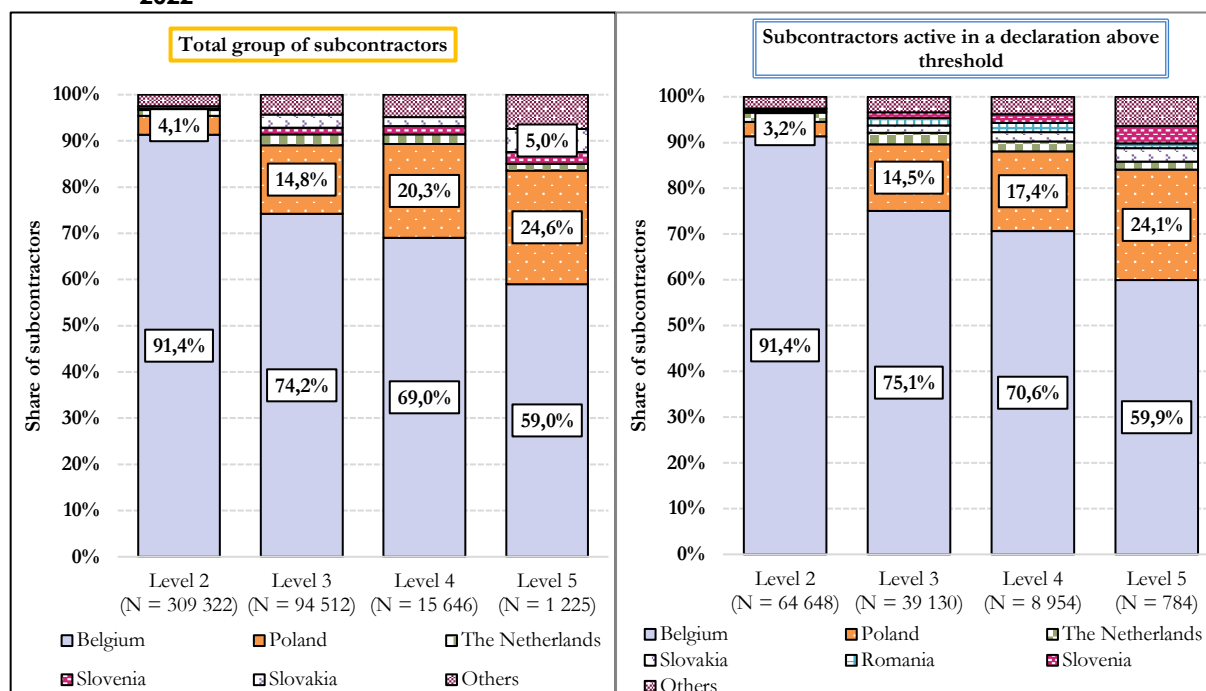
Source Database declaration of works 2022 from NSSO

The distribution of companies active at level 0 and level 1 is already pictured above (*Figure 8*), as it concerns clients and contractors at these levels respectively. Therefore, *Figure 10* only visualises the distribution of subcontractors at level 2 until level 5. Although subcontractors are also present at level 6 until level 8, their numbers are too limited to give a representative overview of the distribution by country.

At first glance when looking at *Figure 10*, it seems that the above assumption is indeed true: the lower in the subcontracting chain (vertical dimension), the more non-Belgian subcontractors can be found. While subcontractors at level 2 are still mainly Belgian subcontractors in more than nine out of ten cases, this share drops to 59.0% at level 5. The share of Polish subcontractors, on the other hand, increases with the level. While there are 'only' 4.1% Polish subcontractors at level 2, their share grows to 14.8% at level 3, 20.3% at level 4, and 24.6% at level 5. Other countries of establishment which become more important the lower one goes in the subcontracting chain are Slovakia and Slovenia. At level 2, 0.5% of subcontractors are Slovakian, while their share grows to 5.0% at level 5. Furthermore, only 0.3% of subcontractors have Slovenia as their country of establishment at level 2, while it concerns 2.5% of subcontractors at level 5.

Overall, this analysis of country of establishment by role and level shows that the majority of companies are located in Belgium, especially regarding clients and contractors who are almost exclusively Belgian. However, the lower in the subcontracting chain, the more non-Belgian companies can be found. Moreover, while non-Belgian companies at the top of the chain are primarily established in neighbouring countries (the Netherlands, France, Germany, and Luxembourg), non-Belgian companies at the bottom of the chain are mainly Polish, as well as Slovakian and Slovenian.

Figure 10. Country of establishment of subcontractors at levels 2-5, total group of subcontractors (left) versus group of subcontractors active in a declaration above the threshold (right), by level, 2022



* How to read this figure? Of all subcontractors active on level 3 (N = 94 512), 74.2% are Belgian subcontractors while 14.8% are Polish subcontractors (left panel). Of all subcontractors active on level 3 in declarations above the threshold (N = 39 130) 75.1% are Belgian and 14.5% are Polish (right panel).

** Levels 6-8 are not pictured in this figure because of the small number of subcontractors active at these levels. In total, 103 subcontractors are active on level 6, 6 on level 7, and 2 on level 8. In declarations above the threshold, 90 subcontractors are active at level 6, 5 at level 7 and 1 at level 8. Picturing these subcontractors would not give a representative view.

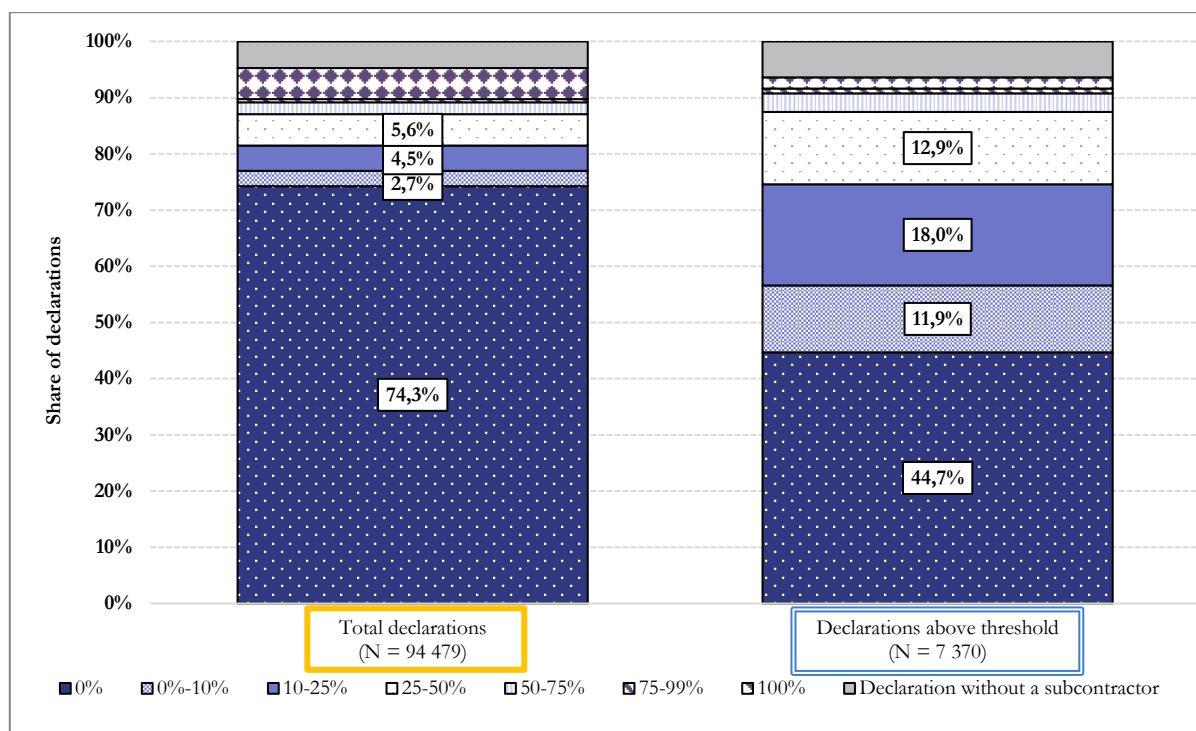
Source Database declaration of works 2022 from NSSO

Instead of looking at the variable of country of establishment at company level, this variable can also be analysed at declaration level. It can be interesting to get an idea of how many subcontractors⁵⁸ in one declaration are non-Belgian. This gives an idea about whether almost all declarations have non-Belgian subcontractors in the chain, or it only concerns certain (large) subcontracting chains in which a lot of non-Belgian subcontractors are active.

Figure 11 indicates that in almost three out of four declarations zero non-Belgian subcontractors are active (74.3%). However, this is certainly not the case for declarations above the threshold, where 'only' 44.7% of declarations do not encompass non-Belgian subcontractors. This indicates that 25.7% of subcontracting chains have at least one non-Belgian subcontractor, while for chains above the threshold, 55.3% have a minimum of one foreign subcontractor active in the subcontracting chain. The next three big groups of declarations with an amount of € 500 000 or more have between 0% and 10% of non-Belgian subcontractors (11.9% of declarations above the threshold), between 10% and 25% (18.0% of declarations above the threshold), and between 25% and 50% (12.9% of declarations above the threshold). Therefore, it appears that declarations above the threshold typically have more non-Belgian subcontractors active in the chain than declarations in general. For instance, while 13.8% of total declarations have more than one in four non-Belgian subcontractors in the chain, this is the case for 19.1% of declarations above the threshold. Nevertheless, the share of declarations in which more than half of the subcontractors active are non-Belgian, only amounts to 8.2% in the total group of declarations and 6.1% of declarations above the threshold.

⁵⁸ Only subcontractors are taken into account in the analysis which follows (and not clients and contractors), considering that more than 97% of clients and contractors are Belgian (see Figure 8).

Figure 11. Share of non-Belgian subcontractors in the declarations of works, 2022



* How to read this figure? Of all declarations (N = 94 479), 74.3% has zero non-Belgian subcontractors in the chain (0%), and 2.7% of declarations has between 0% and 10% non-Belgian subcontractors in the chain. Of the declarations above the threshold (N = 7 370), 44.7% has zero non-Belgian subcontractors in the chain (0%), and 11.9% of declarations has between 0% and 10% of non-Belgian subcontractors in the chain.

Source Database declaration of works 2022 from NSSO

Finally, a link can be made between the country of establishment of the subcontractor and the activity performed by the subcontractors. Consequently, it can be seen whether certain activities are performed by subcontractors from specific countries.

Each of the 28 activities (see *appendix 3*) is performed for the majority by Belgian subcontractors. In the total group of declarations, 70% or more subcontractors are Belgian for each of the 28 activities. In the declarations with an amount of € 500 000 or more this is not the case for the installation of scaffolding where out of the 1 284 subcontractors performing this activity, 62.5% is Belgian and 30.1% is Polish. Additionally, this is not the case in the construction of non-metallic structures.⁵⁹

When only taking into account the non-Belgian subcontractors, Polish subcontractors are almost always the most common ones for every activity. This is not surprising however, considering that the majority of non-Belgian subcontractors are Polish (see *Figure 9*). For certain activities, subcontractors from the Netherlands stand out as well. More than half of the non-Belgian subcontractors who perform road construction works (N = 2 032) are Dutch (53.4%).⁶⁰

In addition to starting from the type of activity, one can take the country of establishment of the subcontractor as a starting point. It can then be seen that Belgian subcontractors mainly perform masonry and concrete works, both in the total group of declarations (14.7% of Belgian subcontractors performs this activity) as in those above the threshold (19.1%) (*Table 6*). This activity is also most common for Polish, Slovakian (only in total), Slovenian (only declarations above the threshold), Portuguese, and Romanian

⁵⁹ However, only 88 subcontractors perform this activity, therefore making it less representative. Of these 88 subcontractors, 69.3% are Belgian, 14.8% Polish, and 5.7% Dutch.

⁶⁰ Similar findings are found in two other sectors but seeing that the total number of non-Belgian subcontractors performing these activities is on the low side, this result might not be representative. It concerns almost half of the non-Belgian subcontractors who perform hydraulic, marine, and river works (N = 96) who are Dutch (47.9%), and more than half of the non-Belgian subcontractors performing railway engineering works (N = 67) who are Dutch (53.7%).

subcontractors. However, for Slovakian subcontractors active in declarations with an amount of € 500 000 or more, the main type of activity shifts towards carpentry, joinery, and metal joinery, while for Slovenian subcontractors, thermal and/or sound insulation is performed by about one in five Slovenian subcontractors in total declarations.

As already noted above, Dutch subcontractors are important for road construction works, and it seems that this is indeed the most important activity for Dutch subcontractors. It can also be noted that French subcontractors are mainly active in electrical engineering works.

The most notable difference between the share of an activity performed in the total group of declarations and in declarations above the threshold occurs in Portugal. About one in four Portuguese subcontractors is active in masonry and concrete works in general (24.0%). Nevertheless, out of the Portuguese subcontractors active in declarations above the threshold, 43.6% is active in this sector. This indicates that in declarations with an amount of € 500 000 or more, Portuguese subcontractors are employed especially for this activity. Similar findings, albeit to a lesser extent, can be found for the masonry and concrete works sector in Poland and Romania.

Table 6. Most important activity performed by subcontractors established in some of the most common countries of establishment, 2022

	Total declarations		Declarations above threshold	
	N	Share of subcontractors performing this activity	N	Share of subcontractors performing this activity
Belgium	477 431	14.7% Masonry and concrete works	126 197	19.1% Masonry and concrete works
Poland	42 136	22.6% Masonry and concrete works	12 929	29.9% Masonry and concrete works
The Netherlands	7 805	13.9% Road construction work	3 299	14.1% Road construction work
Slovakia	6 790	16.0% Masonry and concrete works	1 301	17.6 % Carpentry, joinery, and metal joinery
Slovenia	3 711	22.8% Thermal and/or sound insulation	1 090	33.9% Masonry and concrete works
France	3 279	22.3% Electrical engineering works	1 053	18.7% Electrical engineering works
Romania	3 088	28.7% Masonry and concrete works	1 494	35.1% Masonry and concrete works
Portugal	2 938	24.0% Masonry and concrete works	1 138	43.6% Masonry and concrete works

* How to read this table? There are 477 431 Belgian subcontractors active in the total group of declarations, of which 14.7% performs masonry and concrete works. There are 42 136 Polish subcontractors active in the total group of declarations, of which 22.6% performs masonry and concrete works.

Source Database declaration of works 2022 from NSSO

appendix 1 Data specifications

Data on the declaration of works were provided by the NSSO through Smals. It concerns the declarations of works in immovable property which were applicable to reference year 2022. The data file contained 620 297 data lines, each with 12 variables. Each line represents a company in a certain declaration; each company can appear multiple times in the dataset (as it can be active in multiple declarations). The 12 variables are the following:

- **Role:** this can either be client, contractor, or subcontractor.
- **Level:** this is the indication of the level within the tree structure, and it ranges from 0 to 8:
 - Level 0 is always the level of the client.
 - Level 1 is always the level of the contractor (the main contractor who has the obligation to declare the data).
 - Levels 2-8 are the levels of the possible subcontractor(s).
- **Private client:** T(true) or F(false). When the value is 'True', it concerns a declaration with a private client, meaning clients who have works performed as natural persons for private purposes. When it concerns a client with a company number (company registration number, CBE number), or a natural person who has works carried out for non-private purposes⁶¹, the value is False. Private households may be the client of an activity falling within the scope of article 30bis (see *box 1* in *section 1.2*). However, the obligations under 30bis do not apply to them. This means that as a private client, one is not obligated to verify and apply the withholding obligation or to make any declaration or registration.⁶²
- **Country:** the ISO-code of the country of establishment of the company based on the address of the company in the declaration.
- **Amount contract (in €) (excluding VAT)**
 - At level 0, this is the sum of all the underlying related contracts in the declaration.
 - At level 1, this is the specific amount of the contract for that contractor.
 - From level 2 onwards, this is the amount of the related contract in which the subcontractor is declared.
- **Activity 1:** this variable ranges from 1 to 28 and is only applicable to subcontractors (levels 2-8). This variable is a code indicating which activity the subcontractor performs on the site. A minimum of 1 and a maximum of 4 activities must be indicated for each subcontractor. The meaning of the 28 possible codes can be found in *appendix 3*.

⁶¹ The latter is a marginal group, seeing that very few people commission something on their own behalf for a company. For these natural persons as well, the obligations under 30bis do not apply (A. Borghgraef, personal communication, 19 July 2024).

⁶² For example, Mrs. Smith is having an apartment building constructed (3 floors, new construction in Brussels). She is contracting a construction company to coordinate and subcontract all the work for her. This will cost approximately € 1 million. These works must be reported in the declaration of works by the construction company (contractor), with Mrs. Smith as the client (no CBE number available), and registrations must be made in *Checkinatwork* if the work is above € 500 000 (see *box 1* in *section 1.2*).

- **Activity 2** (see above)
- **Activity 3** (see above)
- **Activity 4** (see above)
- **Declaration:** This is an anonymised reference of the declaration. As a result, levels 1-8 can be linked to the accompanying declaration at level 0. Each line with the same declaration reference belongs to the same declaration.
- **Contract:** This is an anonymised reference of the contract. Of course, this is not present at level 0 (client), as there might be several contracts in one declaration. As a result, levels 2-8 can be linked to the accompanying contractor at level 1. Each contractor and subcontractor with the same contract reference is part of the same contract.
- **Company:** This is an anonymised reference to the company. Each line with the same company reference is the same company. It is of course possible that a single company is active in multiple declarations.

Seeing that this explanation of the variables in the dataset might be quite complicated, an example can be useful. *Table a1.1* provides a fictive extract of the database as it was received in Excel-format from the NSSO (with colours added by the researchers). It represents one declaration of works, as it can be seen that all these companies have the same declaration reference (6692457 in this example).

Table a1.1 Example subcontracting chain in database declaration of works, fictive extract of Excel database

Role	Level	Private client	Country	Amount contract	Activity 1	Activity 2	Activity 3	Activity 4	Declaration	Contract	Company
Client	0	F	BE	385 425.80					6692457		4065055
Contractor	1	F	BE	364 528.20					6692457	6692557	4416898
Contractor	1	F	BE	20 897.60					6692457	6692561	5538426
Subcontractor	2	F	BE	364 528.20	04				6692457	6692557	751260
Subcontractor	2	F	BE	364 528.20	02	04	09	20	6692457	6692557	1778670
Subcontractor	2	F	IT	364 528.20	02				6692457	6692557	6150959
Subcontractor	2	F	BE	20 897.60	04	10			6692457	6692561	4908589
Subcontractor	3	F	PL	20 897.60	04	17	20		6692457	6692561	35061

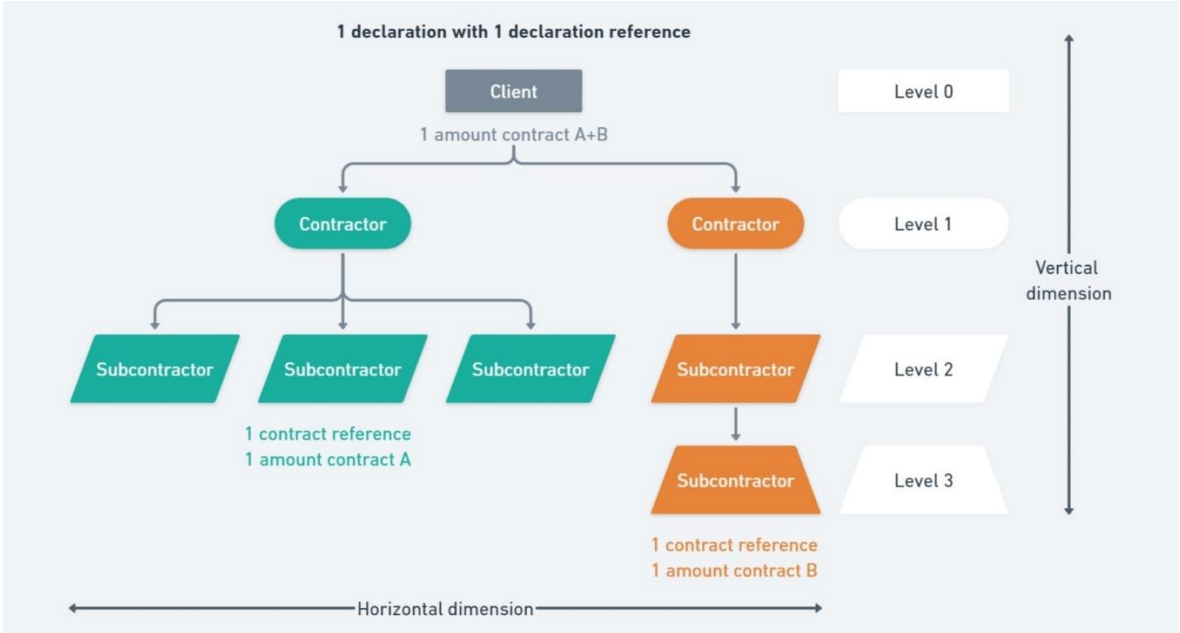
* This is a fictive example made up by the authors. The colours were added by the authors to make the link with the visual representation in *Figure a1.1* easier to comprehend.

Source Authors

How can one make sense of this extract of the database? A visual representation of this subcontracting can be found in *Figure a1.1*. The figure represents one declaration, as provided in *Table a1.1*. Each of the companies in the declaration has its own company reference (for instance 4065055 for the client) and its own country of establishment. In this example, the client and contractors are Belgian companies, as well as three of the subcontractors, while one subcontractor is an Italian company, and one is a Polish company (*Table a1.1*). At level 0, there is the client who in this case is a non-private client, meaning that all companies in the declaration have the value 'F' (false) for the variable 'Private client'. At level 1, there are two contractors. The green contractor subcontracts to three subcontractors, which are all on level 2. These four green companies all have the same contract reference (6692557) and the same amount of this contract (€ 364 528.2). The orange subcontractor subcontracts to 2 subcontractors, one on level 2 and one on level 3. These three orange companies all have the same contract reference (6692561) and the same amount of this contract (€ 20 897.6). The amount of the contract which is provided at level 0 (client) is the sum of all amounts in the declaration, so the sum of the amounts of the green contract and the orange contract (€ 385 425.8 = € 364 528.2 + € 20 897.6). All subcontractors (from level 2 onwards, so here the 5

subcontractors) have specified one to four activities. In sum, this declaration consists of 8 companies in total of which 1 client, 2 contractors, and 5 subcontractors (horizontal dimension). The widest level is level 2 with 4 subcontractors active at this level. The declaration ranges until level 3, meaning that there are two layers of subcontractors involved in this declaration (vertical dimension).

Figure a1.1 Example subcontracting chain in database declaration of works



* This is a fictive example made up by the authors. See *Table a1.1* for the Excel data which were provided to the authors from the NSSO, to understand how this tree structure can be deduced from these data.

** This visualisation was made with Whimsical.

Source Authors

appendix 2 Declaration for working in immovable property (article ‘30bis’)

As mentioned in *box 1* in *section 1.2*, the declaration for working in immovable property (Works ‘30bis’) depends on the size of the subcontracting chain, as it is only obligatory for any agreement starting from € 5 000 (excluding VAT) with at least 1 subcontractor, or any agreement starting from € 30 000 (excluding VAT) with or without subcontractors (Sociale Zekerheid, 2024c).⁶³ The examples provided in the table below make these thresholds more clear.

Table a2.1 Example of when (not) to declare works in immovable property

Value of agreement (excl. VAT)	Number of subcontractors	To declare?
€ 35 000	0	Yes
€ 15 000	2	Yes
€ 15 000	0	No
€ 5 075	0	No
€ 5 075	1	Yes
€ 3 000	0	No
€ 3 000	1	No
€ 3 000	2	Yes

Source Sociale Zekerheid, 2024c

Works that are dangerous due to the presence of asbestos should also be mentioned in the declaration ‘30bis’ (Sociale Zekerheid, 2024c). The declaration must be made before the start of the works. If the works concern a temporary or mobile construction site, or if they involve asbestos removal, then the declaration must be made at least 15 calendar days before the start of the works. Asbestos removal works, where employees are exposed to asbestos, must always be reported to the local Directorate for Supervision of Well-being at Work.

⁶³ However, these special conditions do not apply to cleaning activities. As of 1 January 2024 (Program Law of 26 December 2022), all cleaning activities must be declared.

appendix 3 Activity codes in the declaration of works in immovable property (article '30bis')

In the data received from the NSSO concerning the declaration of works in immovable property valid for reference year 2022, subcontractors must indicate a minimum of 1 and a maximum of 4 activities which they perform on site. The table below provides an overview of all the possible activities.

Table a3.1 Activity codes in the declaration of works in immovable property (article '30bis')

01	Hydraulic, marine, and river works
02	Earthworks
03	Demolition works
04	Masonry and concrete works
05	Laying of cables and various pipes
06	Pointing works
07	Carpentry, joinery, and metal joinery
08	Roofing and insulation against humidity
09	Thermal and/or sound insulation
10	Installation of prefabricated elements
11	Installation of wooden objects or products
12	Glass works
13	Plastering work
14	Works related to painting, upholstering, and wallpapering
15	Restoration works
16	Stone and marble works
17	Wall and ground covering works (except wood)
18	Sanitary installations, central heating, plumbing, and zinc works, laying of pipes and tubes
19	Installation of scaffolding
20	Metal constructions and metal structures
21	Road construction work
22	Construction of non-metallic structures
23	Railway engineering works
24	Electrical engineering works
25	Construction and maintenance of various sites
26	Agricultural works ⁶⁴
27	Cleaning and maintenance works
28	Special installations

Source Database declaration of works 2022 from NSSO

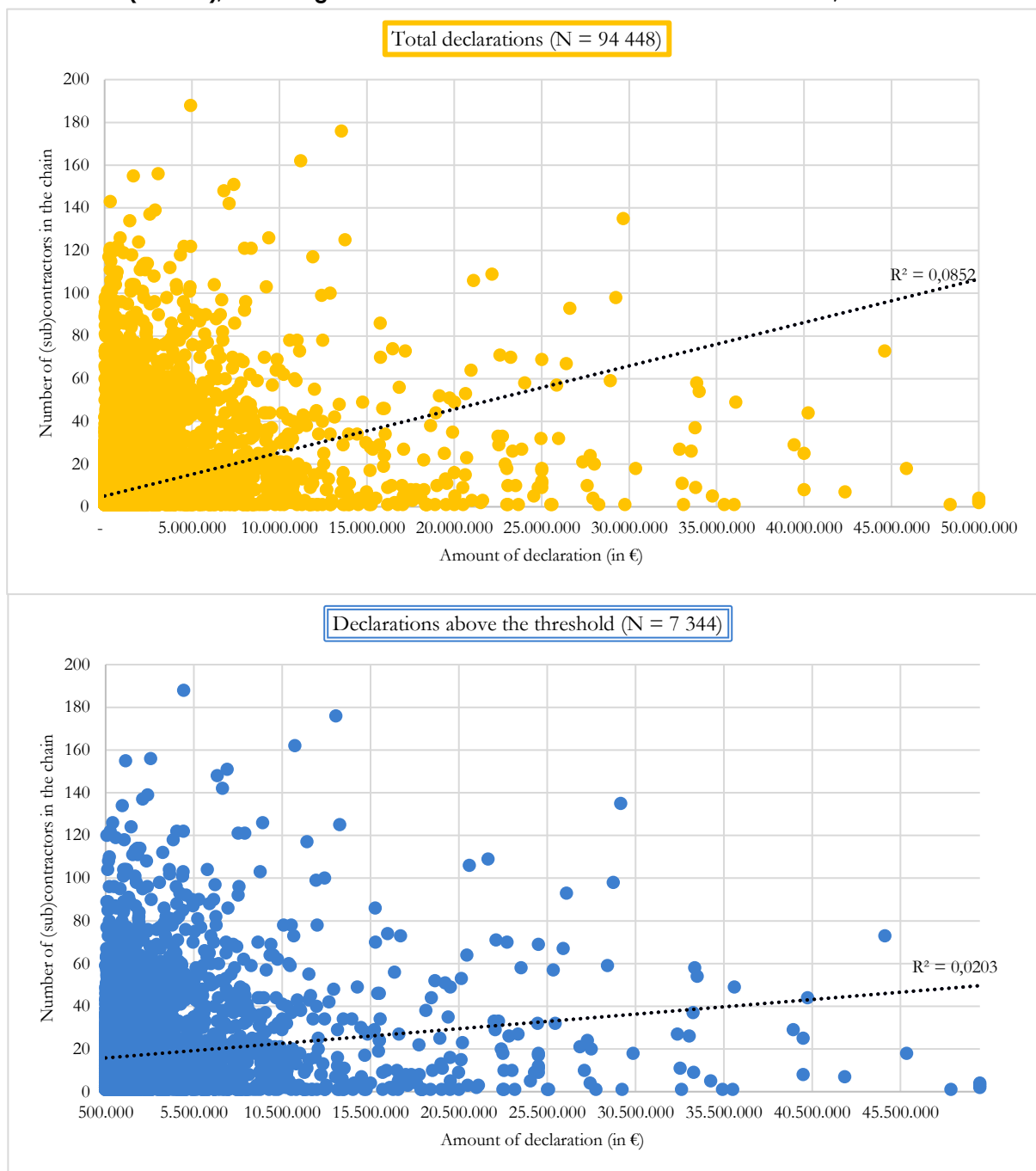
⁶⁴ Agricultural works are excluded from the scope of works in immovable property since 1/04/2019 (RSZ, 2023).

appendix 4 Correlation between the amount of the declaration and the number of (sub)contractors

One might expect there is a positive relationship between the number of (sub)contractors in a subcontracting chain and the amount of the declaration of works, namely the higher the amount, the more (sub)contractors active in the chain, and the other way around. However, this does not appear to be the case. The correlation coefficient between both variables amounts to only 0.07 in general and 0.02 for chains above the threshold. Even when excluding the outliers, namely chains with an amount of over € 50 million, the correlation coefficient remains on the low side (0.29 in general and 0.14 for chains above the threshold).

Figure a4.1 shows the accompanying scatterplots of these correlation. They make it clear that indeed, there are also subcontracting chains with a high amount and few active (sub)contractors (bottom right of the figure), or chains with many active (sub)contractors but not a high amount (top left of the figure).

Figure a4.1 Relationship between number of (sub)contractors active in the subcontracting chain and amount (in €), total group of declarations (top) and declarations above the threshold (bottom), excluding declarations with an amount of € 5 million or more, 2022



Source Database declaration of works 2022 from NSSO

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