



paper

# Education and labour market in the security domain

update for the years 2017 and 2018

In cooperation with



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# Inhoud

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# 1. Introduction

The aim of this report is to shed light on the nature and magnitude of the labour force in the security domain with a particular focus on the education of those employed in security related occupations. This study was commissioned by The Hague Security Delta (HSD). HSD sees access to talent as a crucial prerequisite for improving security and growth of the security sector.

This study is an update of a previous study whose most recent data related to 2016<sup>1)</sup>. This study provides an update for the years 2017 and 2018<sup>2)</sup>. It focuses on new developments in the security domain labour market since the publication of the previous study. Also, this study extends the previous one by analysing the results at the regional level. For a general understanding of the characteristics of the security domain labour force, readers should first consult the previous study. The present study can then be consulted to gain an understanding of the most recent developments.

The following questions are of particular interest in this study:

- Regarding the labour force: – How many persons are employed in a security related occupation? – In which industries do they work? – What is the educational background of these persons?
- Regarding education and labour market: – How many persons are enrolled in educational programmes in the field of security? – Do they find jobs easily? – In which industries do they find jobs?
- And finally: – Are there any signs for future discrepancies between education and the 'needs' of the labour market in the security domain?

These insights are important for both the educational institutes, employers, and students orienting themselves on educational programmes and labour market opportunities.

In this study security is defined rather broadly. It comprises the traditional forms of security expressed in occupations like armed forces, police officers and security guards. But it includes also more general security occupations like lawyers and judges and the corresponding educational programmes; occupations and programmes that contribute to 'security' at a more institutional level. Also, a large number of ICT-occupations and educational programmes are classified as related to security. More and more elements of these occupations and educational programmes are dedicated to security to guarantee the integrity of ICT-systems and protect against cybercrime and fraud. Finally, occupations and programmes in the field of social work and town and traffic planning are included in the security domain. This kind of work also contains elements of security e.g. one of the perspectives of designing a city or a neighbourhood is (social) safety.

To give some distinction in this broadly defined security field, occupations and educational programmes are further classified as 'primary security' and 'secondary security'. This indicates if a large part of the occupation and education is dedicated to security (at least

<sup>1)</sup> <https://www.cbs.nl/en-gb/publication/2018/16/education-and-labour-market-in-the-security-domain>

<sup>2)</sup> Link to full results: <https://www.cbs.nl/en-gb/custom/2020/07/education-and-labour-in-security-domain-2013-2018>

half) or only a smaller part (10-50 percent). And occupations and educational programmes are detailed by type (Engineering, Organisation and governance, Security, Legal and Social work).

It is helpful to briefly define some English language terms for the different levels of Dutch Education. Education at mbo level is referred to as 'upper secondary vocational' education. This is the lowest level of post-secondary education. Education at hbo is referred to as 'higher professional' education. This is higher level vocational education. Education at wo level is referred to as university education. This refers to the highest level of education i.e. non-vocational bachelor's and master's degrees.

Chapter 2 provides an overview of the labour market of the security domain in 2018. This provides a basis for chapter 3 in which more detail and additional information on trends is provided. Chapter 4 concludes with some general observations.

## 2. Key results

This chapter provides an overview of the characteristics of the security domain labour market based on the most recent available data (2018).

### 2.1 Labour force size and type

- In 2018 over 1.1 million employed persons or 13 percent were employed in a security related occupation. Almost 11 percent of all employed persons worked in an occupation classified as secondary security. The remaining more than 2 percent worked in an occupation classified as primary security.
- Compared to employed persons in other occupations, employed persons in security related occupations more often have a full-time job, are more often employee with a permanent contract, often fall into the middle age range (25-45) and are more often highly educated.
- Utrecht has the highest share of the working population employed in security jobs (15 percent) and Zeeland has the lowest share (10 percent). The largest total number of persons employed in security jobs was found in Zuid-Holland.

### 2.2 Relevant branches of industry

- The number of employed persons in a security related occupation is relatively large in the Information and communication sector (49 percent of all persons employed in this sector in 2018) and in Public administration and services (48 percent).
- In 2018 43 percent of all security occupations were in Health and social work (22 percent) or in Public administration and services (21 percent).
- Occupations classified as primary security were concentrated in the Public

administration and services (54 percent of these occupations) and in Renting and other business support (12 percent). Part of this latter branch are the private security firms and firms supplying facility management.

- The concentration of occupations classified as primary security in the Public administration and services has, however, decreased in 2018 (54 percent) compared to 2016 (57 percent).
- Some branches have more variation in the share of employed persons across provinces than others. For example, a wide variation is seen in the health and social work branches, in which the share of security jobs is greater in the northern provinces of Drenthe, Groningen, Overijssel and Friesland. For example, 32 percent of all security occupations in Drenthe are found in the health and social work branch whereas the national average is 22 percent.

### **2.3 Background of employed persons**

- In 2018, 58 percent of all employed persons in a security occupation had a security related education. In 2013 this was only 54 percent. In 2018, the share is highest in Overijssel (63 percent) and lowest in Flevoland (53 percent).
- In 2018 more than half (52 percent) of the employed persons in a security occupation classified as primary security was educated at upper secondary vocational level.
- For the occupations classified as secondary security 63 percent of the employed persons were educated at university level or higher professional level.
- In 2018 only 22 percent of all employed persons with a security related education actually worked in a security occupation.

### **2.4 Students in security related programmes**

- In school year 2018/'19 133 thousand participants in education (11 percent) were enrolled in a security related programme.
- Overall the number of participants in security related programmes at the higher professional and university level increased from 75 thousand participants in school year 2013/'14 to 104 thousand participants in school year 2018/'19. However, at upper secondary vocational level the number of students decreased from 37 thousand to 29 thousand over the same period.
- The decrease in number of upper secondary vocational students in security related programmes was particularly pronounced for upper secondary vocational legal education; the number of students on these programmes decreased by 86 percent between school years 2017/'18 (almost 2 thousand) and 2018/'19 (around 250 participants). In contrast, the number of students in higher professional legal education in security related programmes increased by 45 percent (15 thousand to 22 thousand participants) over the same period.
- Over time the number of participants in security related programmes in Engineering increased from almost 40 thousand participants in school year 2013/'14 to just over 54 thousand participants in school year 2018/'19. However, at upper secondary vocational level the number of students in Engineering slightly decreased over the same period.

## 2.5 Work after study

- From all the participants of school year 2015/'16 who ended their upper secondary vocational education in October 2016, 80 percent had a paid job directly upon finishing their education. For the participants in a security related upper secondary vocational programme this was 76 percent.
- 29 percent of the participants who found a job after ending their education in a security related programme in school year 2015/'16, found a job in the sector Renting and other business support. Other important sectors were the Wholesale and retail trade (13 percent), Other specialised business services (13 percent) and Public administration and services (10 percent).
- The median hourly wages for starters with an upper secondary vocational education in security in 2016 were 11 percent lower than the median for those with any upper secondary vocational education, whereas the hourly wages for starters with a higher professional education in security were 3 percent higher than the median hourly wage. Those with a university education in security earn only 0.4 percent more than the median for those with a university education.
- Hourly wages varied per province. Generally, wages seem to be higher than the national median in Noord-Holland and Zuid-Holland. The level of education was however an important determinant of hourly wages per province. For example, those with security education at university level in Zeeland earned appreciably less than the national median but those with higher professional education earned slightly more than the national median.

## 2.6 Discrepancies

- Based on this study, discrepancies between education and the 'needs' of the labour market in the security domain cannot be determined. This is discussed in more detail in chapter 4 of the previous report.

# 3. Detailed results

This chapter provides details on any substantial changes that have occurred between 2016 and 2018 and provides more detail on the labour market at the level of provinces.

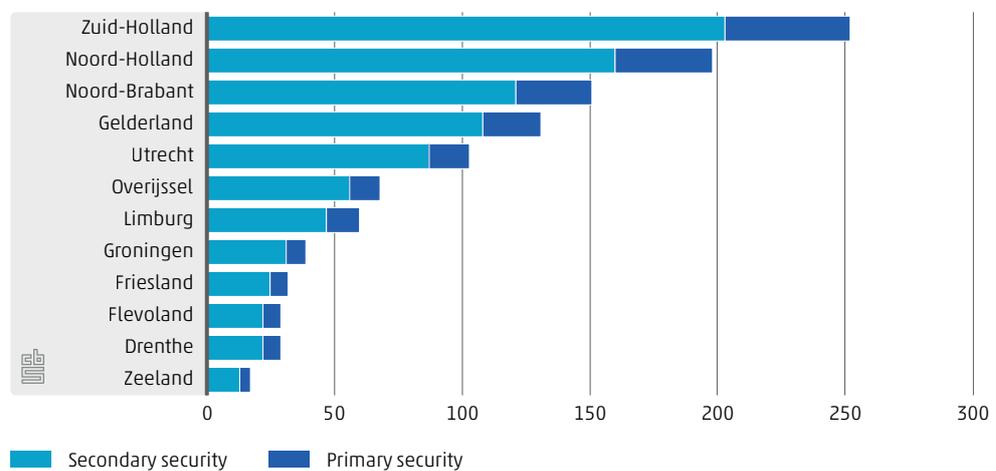
## 3.1 Employed persons in a security occupation

The distribution of jobs in the security domain across branches of industry is relatively constant over time. The largest branches, in terms of the number of security jobs (both primary and secondary) are, in order, Health and social work, Public administration and services and Information and communication and this order remained relatively constant since 2013. There is slightly more variation over time in the percentage of security workers within a branch. For example, between 2016 and 2018, the share of security workers in the 'electricity and gas supply' branch has become greater than the share of security workers in

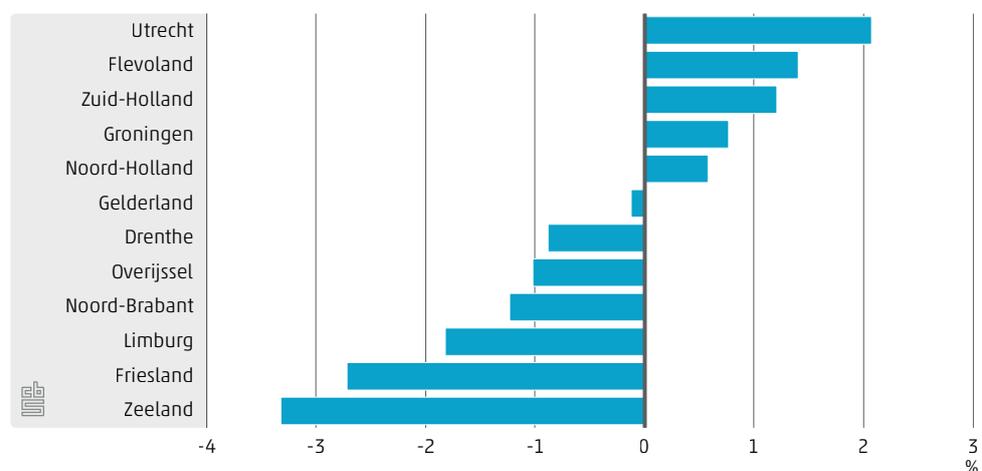
the 'Health and social work' branch<sup>3)</sup>. But again, the situation remains relatively constant over time.

Zuid-Holland has the greatest number of security jobs, both in terms of primary and secondary security jobs. Generally, the distribution of security jobs mirrors the distribution of economic activity in the Netherlands, and this is illustrated in Figure 3.1.1. The provinces Zuid-Holland and Noord-Holland are economically large and populous, whereas this is less so for Drenthe and Zeeland. Figure 3.1.2 shows the provinces in which security jobs make up a larger or smaller share of the total jobs relative to the national average. The information in figure 3.1.2 complements that in figure 3.1.1. For example, we know from 3.1.1 that Zeeland is small in terms of the absolute number of security jobs. Figure 3.1.2 shows that Zeeland is also the smallest in terms of the share of these jobs in the total number of jobs in Zeeland. Another example is Utrecht. Although this province ranked fifth in terms of the absolute number of jobs (see figure 3.1.1), Utrecht had the largest share of security jobs of all provinces.

### 3.1.1 Distribution of security jobs across provinces (x 1,000)



### 3.1.2. Difference between the share of security jobs in total jobs from the national average per province



<sup>3)</sup> The situation in 2016 is shown in figure 3.1.1 of the previous report.

## 3.2 Education

The previous section showed several aspects of the security domain labour market, which remained generally constant over time. This section considers the education of persons in a security occupation and shows more apparent development over time.

Generally, we see that the share of students following security related courses increased between school year 2013/'14 (9.3 percent) and school year 2018/'19 (10.6 percent). Figure 3.2.1 provides more detail on this trend, which is mainly due to the increase in students studying at higher professional level, although there is also a slight increase at university level. Upper secondary vocational security education decreased however (from 7.1 percent in school year 2013/'14 to 5.7 percent in school year 2018/'19). This reduction was particularly severe between school years 2015/'16 and 2018/'19.

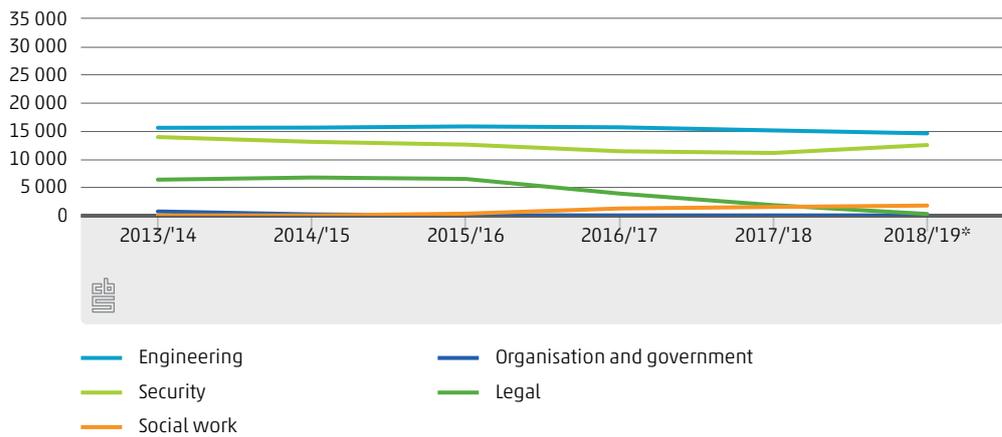
An important element of this reduction in upper secondary vocational education is the decrease of the number of students in upper secondary vocational legal courses. The number of participants in school year 2014/'15 was over 6,700 but this dropped to 263 in school year 2018/'19. This decrease is principally due to such courses no longer being offered. The popularity of higher professional legal courses has however risen drastically between school year 2017/'18 and 2018/'19. In between school years 2013/'14 and 2017/'18, the number of participants rose slightly from just over 14 thousand to almost 15 thousand, followed by a substantial jump to almost 22 thousand in school year 2018/'19.

Another interesting trend relates to engineering. The number of participants in upper secondary vocational level engineering decreased slightly (circa 15.5 thousand in school year 2013/'14 to circa 14.5 thousand in school year 2018/'19). The number of participants in engineering courses at higher professional and university level however increased substantially between school year 2013/'14 and 2018/'19. The number of participants in higher professional education increased from almost 19 thousand to almost 30 thousand and participants in university education increased from just over 5 thousand to circa 10 thousand. To a small extent, the increase in higher professional education in engineering can be attributed to new master's level courses at higher professional level: previously only bachelor's courses could be followed.

In general, we see a trend towards more highly educated security workers and that education of security workers is more often security related. The share of employed persons who are highly educated has increased from 54 percent in 2013 to 58 percent in 2018. However, we also see that only 22 percent of all employed persons with a security related education actually worked in a security occupation, and this percentage has stayed relatively constant over time. In other words, while those working in security were more often educated to work in security, the share of those educated in security and working in security has not increased.

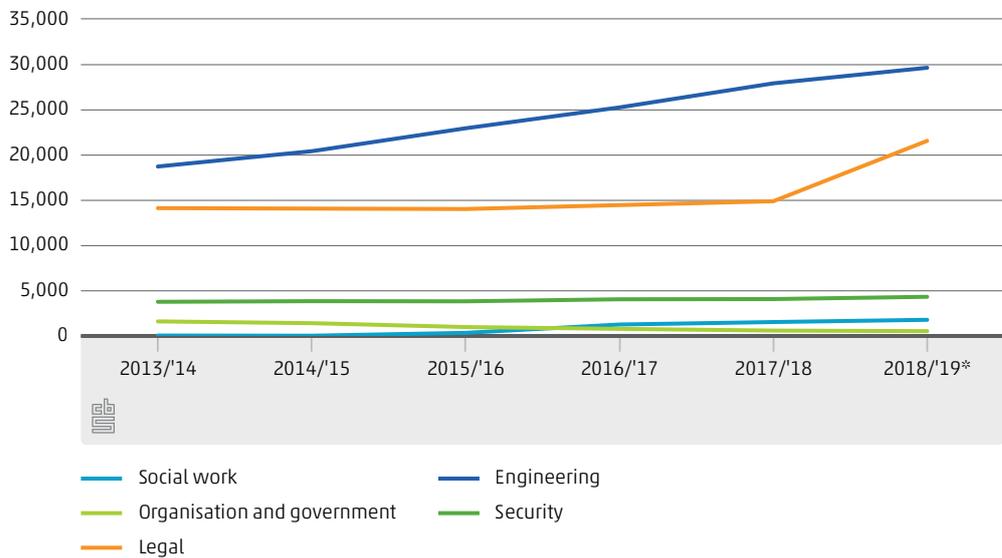
### 3.2.1a Participants in security related programmes (Upper secondary)

Participants Upper secondary



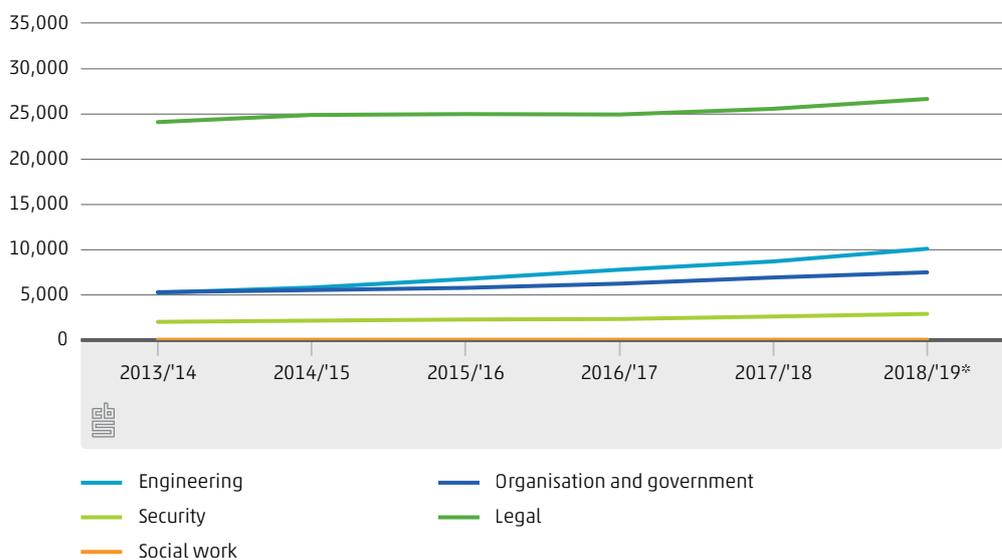
### 3.2.1b Participants in security related programmes (Higher professional)

Participants Higher professional



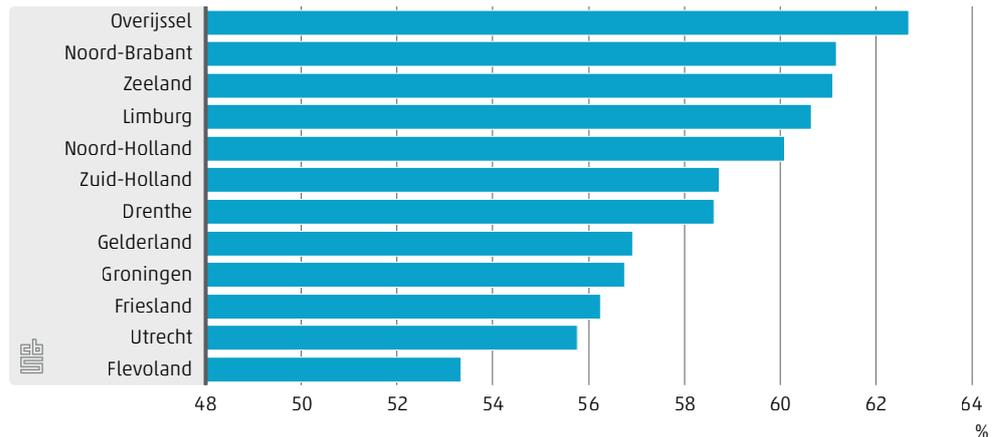
### 3.2.1c Participants in security related programmes (University)

Participants University



It is interesting to consider the share of security workers who have security educations per province. This is shown in figure 3.2.2. The share was highest in Overijssel and lowest in Flevoland. It is also interesting to compare figure 3.2.2 to figure 3.1.2. This shows that the provinces of Utrecht and Flevoland had a greater share of security jobs than the national average. These provinces also had the lowest share of security workers with a security education. This suggests that it may be difficult to find staff with relevant education in the security domain in these provinces.

### 3.2.2 Share of all security workers who have a security education per province



### 3.3 Education and labour market

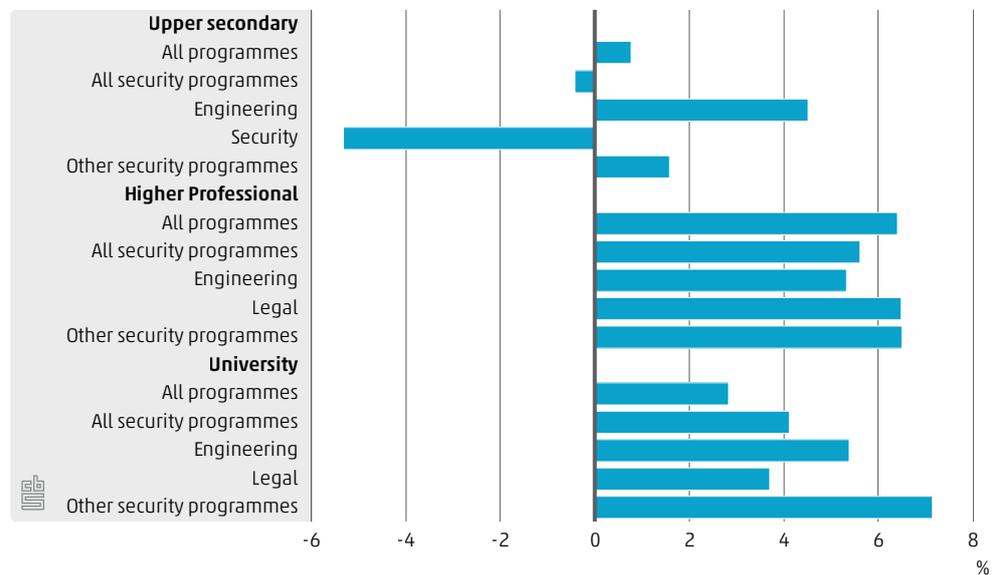
This section expands on the previous section by considering how successful graduates were on the labour market. We do so by considering how many graduates found work and how much they earned. These topics are discussed in that order in this section.

The share of graduates of different programmes who found work after study was marginally lower for security related programmes than the overall share. For example, 83 percent of graduates in upper secondary vocational security related programmes of school year 2015/'16 found work within one year, whereas the share for all upper secondary vocational programmes in that year was 85 percent. This difference was smaller for higher professional programmes and was effectively zero for university programmes. Over time the general trend is that more graduates are finding work. This trend is particularly pronounced for university graduates from engineering programmes; 72 percent of the university graduates in security related programmes of school year 2015/'16 found work immediately and 89 percent within one year.

Where graduates from security related programmes found work (in terms of branches) remained predominantly constant over time. Some trends do exist though, for example that the branch 'information and communication' has become a relatively more important destination for graduates than 'public administration and services' between 2016 and 2018.

Wage growth<sup>4)</sup> is a particularly interesting indicator because it is related to the functioning of the labour market. Figure 3.3.1 shows wage growth for different types of education one year after graduating. It shows that wage growth was positive for all programmes in higher professional and university education. The overall wage growth for all security programmes in upper secondary vocational education was negative however, as wage growth was negative for some programmes in upper secondary vocational education. Specifically, the wages of graduates of Security education at upper secondary vocational level dropped from circa €12.40 to circa €11.70 between October 2015 and October 2017 for employed persons one year after graduating. Higher professional education generally showed the highest wage growth although wage growth for security graduates was slightly lower than the median for higher professional education. In contrast, for university education, graduates of security programmes benefited from greater wage growth.

### 3.3.1 Growth in median hourly wage (October 2015 - October 2017) per type of education one year after graduating



We can also consider the hourly wage of people who followed an education in security at a given level with the median hourly wage for all courses at that level. In other words, if a student wishes to study at upper secondary vocational level, would he be better off studying a security related programme? Figure 3.3.2 shows that this is not the case for upper secondary vocational education, but it is the case for higher professional and university education. There is, however, the exception that legal programmes at higher professional and university education had lower hourly wages than the median for all programmes at that level.

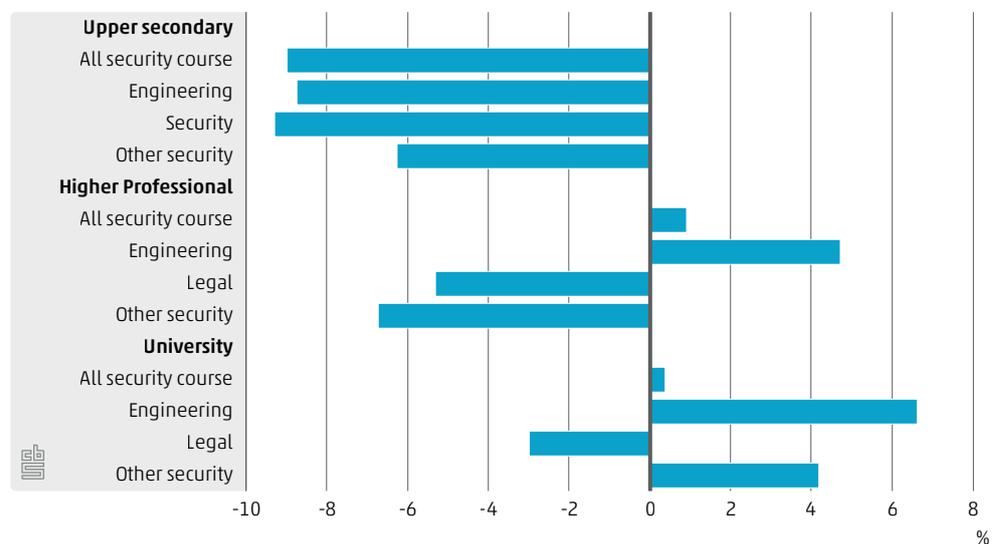
Also regional differences between wages and the national median hourly wage are of interest. The largest differences were found at the level of labour market regions for Groot Amsterdam and Gorinchem. In Groot Amsterdam, graduates from upper secondary vocational education earned 129 percent of the national median directly after graduating

<sup>4)</sup> Wages are measured as the median wages of employees. The self-employed are thus not included.

in a Security programme, whereas in Gorinchem, earnings were only 71 percent of the national median under the same circumstances.

It is also interesting to consider differences in regional variations depending on level of education. For example, in Zeeland, those with a university education in security related programme earned 88 percent of the national hourly wage for those with a university education one year after graduating. However, those with an upper secondary vocational education in security related programme earned 99 percent of the national hourly wage for those with an upper secondary vocational education. Therefore, both location and level of education and the interaction of these two factors seem to play an important role in determining wages.

### 3.3.2 Percentage difference between hourly wage one year after graduating per type of education and the national median for the level of education (October 2017)



## 4. Conclusions

This study complements and expands upon the 2017 study of the security domain education and labour market. Specifically, this study provides an update on much of the data provided in the first study by adding the years 2017 and 2018. This study expands on the previous study with data and analysis of wages and provides more detail by considering regional effects.

The general conclusion is that the labour market in the security domain is constant over time. Nonetheless, there are several interesting trends over time, particularly in education, which are important to take note of, such as the decrease in upper secondary vocational legal education and the increase in higher professional legal education. There are also substantial differences between local labour markets.

Based on the data and analysis in this report, it is not possible to draw conclusions regarding how well the labour market is functioning. It is for example not possible to say if businesses are able to find sufficient numbers of properly qualified staff or if people searching for work in the security domain are able to find employment with which they are satisfied. It is however possible to conclude that there are substantial regional differences in the security domain labour market. It is therefore possible to say in general terms that the extent to which the labour market is functioning well depends on local conditions.

## Explanation of symbols

Empty cell	Figure not applicable
.	Figure is unknown, insufficiently reliable or confidential
*	Provisional figure
**	Revised provisional figure
2018–2019	2018 to 2019 inclusive
2018/2019	Average for 2018 to 2019 inclusive
2018/19	Crop year, financial year, school year, etc., beginning in 2018 and ending in 2019
2016/17–2018/19	Crop year, financial year, etc., 2016/17 to 2018/19 inclusive

Due to rounding, some totals may not correspond to the sum of the separate figures.

## Colophon

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