

ECONOMIC FOOTPRINT ANALYSIS OF HUAWEI IN THE NETHERLANDS

REPORT

seo • amsterdam economics

AUTHORS

PROF. DR. ERIK BROUWERS, MIRKO HARTGERINK & ELÈNE LENDERS

COMMISSIONED BY

HUAWEI TECHNOLOGIES NETHERLANDS B.V

AMSTERDAM, APRIL 25

SEO note 2025-24

Information & Disclaimer

SEO Amsterdam Economics has not performed any research on the obtained information and data that would constitute an audit or due diligence. SEO is not responsible for errors or omissions in the obtained information and data.

Copyright © 2025 SEO Amsterdam.

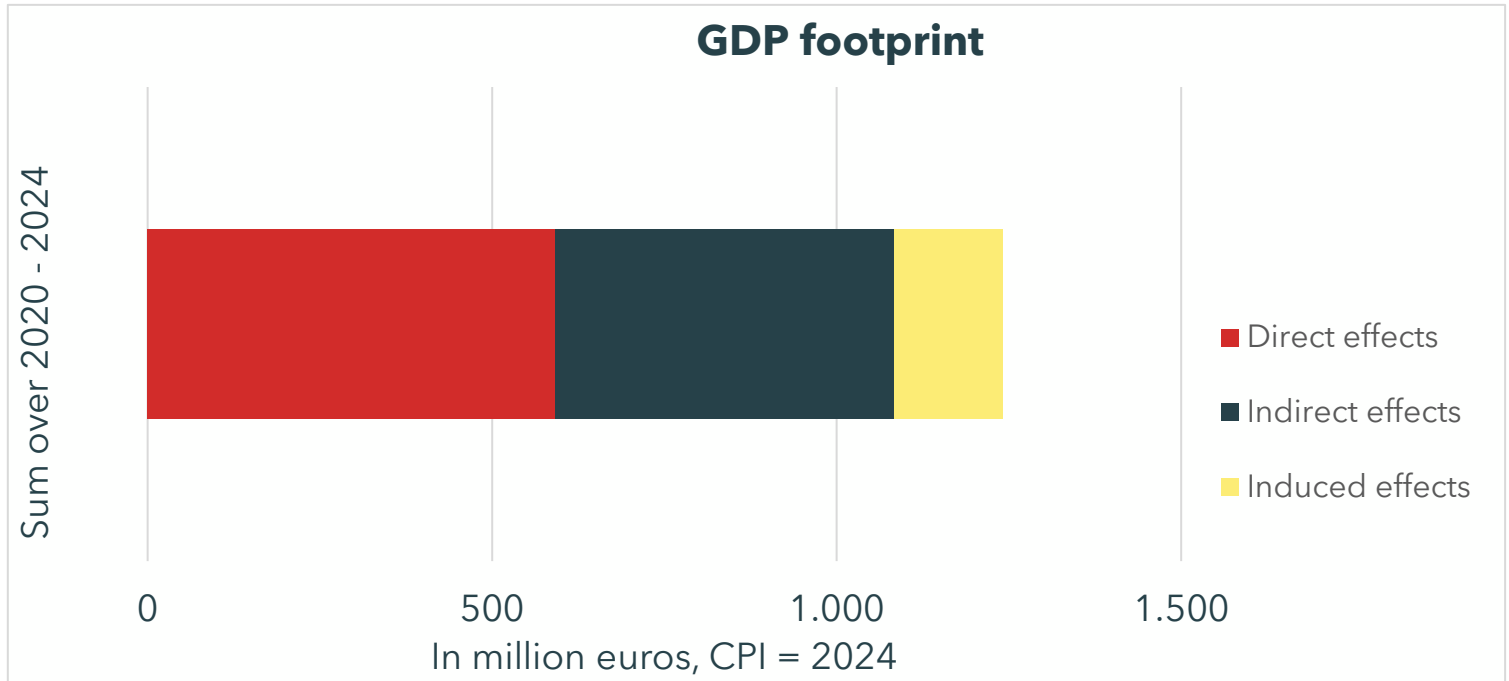
All rights reserved. Data from this report may be used in articles, studies and syllabi, provided that the source is clearly and accurately mentioned. Data in this report may not be used for commercial purposes without prior permission of the author(s). Permission can be obtained by contacting: secretariaat@seo.nl.

Roetersstraat 29
1018 WB, Amsterdam
The Netherlands

+31 20 399 1255
secretariaat@seo.nl
www.seo.nl/en/

The economic footprint of Huawei in the Netherlands

(2020 - 2024)



363 FTE



982 FTE



286 FTE

Average gross employment

(2020-2024 in hundreds FTEs)



1 : 0.31

Huawei revenue : Dutch GDP



1 : 4.5

Huawei FTE : total FTEs in the Netherlands

Summary

Huawei is a global player in the ICT and smart devices sector which operates in the Netherlands. This report provides an analysis of the economic footprint of Huawei's activities in the Netherlands.

Results

Huawei Technologies Netherlands B.V. commissioned SEO Amsterdam Economics to conduct an independent study of its economic footprint in the Netherlands. This report presents the results of that study and quantifies Huawei's contribution to the Dutch gross domestic product (GDP) and employment from 2020 to 2024. The analysis reveals that Huawei's total contribution to the Dutch economy over this five-year period is approximately €1.241 billion in GDP. In terms of employment, the company supports, on average, 1,630 full-time equivalent (FTE) jobs per year. These outcomes are broken down into three components: direct, indirect, and induced effects. The results were derived using an input-output model based on national economic data from Statistics Netherlands (CBS).

Direct effects reflect the value added and employment generated by Huawei's own operations in the Netherlands. In total, the direct effect in value added between 2020 and 2024 was 591 million euros. On average, Huawei directly employed 363 employees in the Netherlands. Indirect effects arise from Huawei's purchases from domestic suppliers and the subsequent purchases made further down the supply chain. These amount to 492 million euros in value added and supported an average of 982 full-time employees. Induced effects refer to additional economic activity driven by spending of wages and capital returns – such as dividends – distributed by Huawei and its suppliers. These effects contributed 158 million euros in value added, with induced employment averaging 286 FTEs.

Methodology

This report uses an input-output framework to estimate Huawei's economic footprint in the Dutch economy. Within this framework, we consider direct, indirect and induced effects. For the indirect and induced effects, we account for the knock-on impact of expenditures along the supply chain. The estimates are based on data provided by Huawei and have not been independently audited by SEO.

Table of Contents

Summary	3
1 Introduction	5
1.1 Background	5
2 Methodology	6
2.1 Input-output analysis	6
2.2 Data collection and assumptions	8
3 Results	10
3.2 Additional impact of Huawei	11
Literature	13

1 Introduction

Huawei is a global company operating in the information and communications technology (ICT) industry. It has been present in the Netherlands for over 20 years. In this report, we assess Huawei's economic footprint in the Netherlands from 2020 until 2024.

1.1 Background

Huawei in the Netherlands

Founded in 1987, Huawei is a global leader in information and communications technology (ICT), infrastructure, and smart devices. The company has operated in the Netherlands for over twenty years, with two offices in Rijswijk, a research and development office in Amsterdam, and a European logistics centre in Waalwijk. The Waalwijk site forms part of the Huawei Europe Supply Center. The Hungarian distribution centre, also part of the European Supply Center, is the largest outside China and processes products that are then imported into Europe, Central Asia and North Africa.

Huawei Technologies Netherlands B.V. commissioned SEO Amsterdam Economics to quantify its economic footprint of Huawei in the Netherlands.

The economic footprint of Huawei in the Netherlands

This report examines the economic footprint of Huawei in the Netherlands. It provides insight into the footprint in terms of GDP and employment. Furthermore, the report provides a breakdown of Huawei's contribution in the Netherlands in terms of direct, indirect and induced effects.

In Section 2, we outline the input-output modelling methodology used to examine the economic footprint. Furthermore, we describe the data collection process and the assumptions made to arrive at the estimated footprint. In Section 3, we present and discuss the results of the analysis. In addition to the quantitative results, we highlight other activities that, while not explicitly modelled, also contribute to Dutch society.

2 Methodology

We analyse Huawei's economic footprint using an input-output framework, based on data provided by the company. The model only incorporates Huawei's impact upstream in the supply chain.

2.1 Input-output analysis

What is the input-output framework?

To examine Huawei's footprint in the Netherlands, we use an input-output framework. This well-established macroeconomic method captures the relationship between industries. As a result, it enables an analysis of the demand for goods and services required to carry out Huawei's activities in the Netherlands.

Central to an input-output analysis is the Leontief matrix, developed by Nobel laureate Wassily Leontief. This matrix maps the economic relationships between sectors. The core idea is that, in order to produce a good within a country, inputs from other sectors are required. These supplying sectors, in turn, also need inputs to produce their goods, and so the chain continues. The Leontief matrix summarises these iterations in a matrix (Leontief, 1941). As such, it helps to analyse the footprint of Huawei's expenditures on goods and services upstream in the Dutch supply chain.

Limitations of the input-output framework

There are limitations to the input-output framework described above. Its most important limitation is the assumption of fixed technology. As a result, it is less suitable for analysing the impact of a company's innovations. It also does not account for changes in the behaviour of other economic participants. For example, if Huawei were to discontinue its activities in the Netherlands, the model assumes that suppliers would not seek out other market opportunities. Additionally, the framework assumes that prices remain constant.

A final limitation of the Leontief input-output framework is its focus on final demand. Implicitly, the model answers the question: what supply is required to meet additional demand? As such, it does not consider the economic benefits generated from the usage of Huawei's products and services by other businesses. Instead, it assumes that Huawei serves only end-consumers.

The limitations outlined above mean that the results presented in this note do not measure Huawei's overall impact, but rather represent its economic footprint in the Netherlands.

Outcome of the input-output framework

We consider two different economic outcomes to assess Huawei's economic footprint in the Netherlands. These economic outcomes are ...

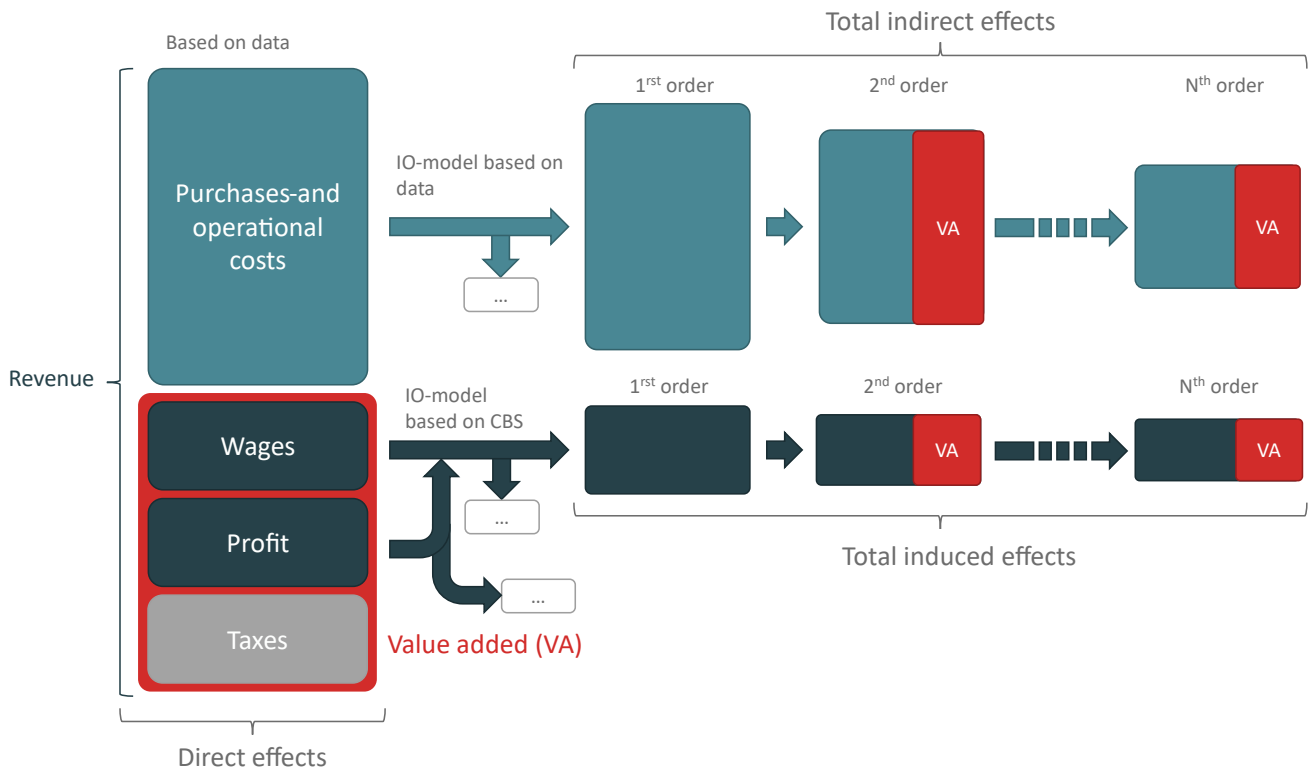
- ... **value added:** the additional value generated using the inputs. It can be defined as the difference between the value of a firm's or industry's output and the cost of expenditure needed to produce the products (excluding labour and capital costs). Value added is used to cover various other expenses, such as wages and investment. At the aggregate level, value added corresponds to gross domestic product (GDP).
- ... **employment:** labour is required to produce goods and services. The amount of labour is measured in terms of full-time equivalents (hereafter: FTEs), which indicate the number of hours of work needed for production. The number of FTEs required to sustain production can be derived by using information on labour productivity in each sector.

Breakdown of the outcomes

We can break down the economic footprint - value added and employment - into three distinct effects. Direct effects reflect the value and employment generated by Huawei’s own operations in the Netherlands. Indirect effects arise from Huawei’s purchases from domestic suppliers, as well as subsequent purchases along the supply chain. Induced effects account for additional economic activity driven by the spending of wages and capital returns, such as dividends, distributed by Huawei and its suppliers. Each layer of the footprint - direct, indirect, and induced - represents a different channel through which Huawei contributes to the Dutch economy. Huawei’s overall footprint is the sum of these three layers of impact.

Figure 1 illustrates the breakdown of Huawei’s economic footprint into direct, indirect, and induced effects. The red segment highlights the concept of value added, which refers to the difference between the value of a company’s output and the cost of intermediate inputs used to produce that output. The indirect effect of value added reflects the profit, taxes, and wages generated by supplying sectors that provide inputs to the directly affected sector. The induced effects of value added capture the net economic contribution (wages, profits, and taxes) from worker spending.

Figure 1 Huawei’s economic footprint is composed of direct, indirect and induced effects.



Source: SEO Amsterdam Economics (2025)

2.2 Data collection and assumptions

To estimate the model, we use data from both Huawei and Statistics Netherlands. We describe the data used below.

Data provided by Huawei

Huawei has provided SEO with the data required to estimate its economic footprint.¹ First, Huawei's activities that generate revenue in the Netherlands are carried out through the following entities:

- Huawei Technologies Netherlands B.V.
- Digital Power
- Sparkoo

We received the annual reports of these entities for the years 2020 to 2023, 2022 to 2023 and 2022 to 2023, respectively.² As these reports do not cover the full period from 2020 to 2024, we have made additional assumptions to calculate the economic footprint for the missing years.

From the annual reports, we used the following data:

- Revenue
- Total cost of sales, selling, distribution and administrative expense
- Employee benefits
- Depreciation and amortisation

Box 1 From employee benefits to societal impact

Laptops of employees who leave Huawei, or those replaced after three years, are donated to people who cannot afford their own devices. This is done through *Allemaal Digitaal*, an alliance with the industry association NLdigital and the Alliance for Digital Inclusion (Alliantie Digitaal Samenleven). Each year, 200 laptops are donated, already providing more than 10,000 people in lower-income groups access to the digital world.

Source: Huawei.

In addition to the annual reports, Huawei provided an allocation of its expenditure across Dutch sectors. This enables us to calculate the indirect effect of Huawei's activities in the Netherlands. Furthermore, Huawei also indicated which portion of its total expenditure is spent in the Netherlands, and which portion is spent on imported goods and services.

Finally, Huawei supplied information on the number of employees (in FTEs) and a breakdown of employee benefits. This allows us to estimate the induced effects that result from spending by Huawei's employees.

Data from third parties

To estimate the model, we require additional information on the Dutch economy. This information is provided by Statistics Netherlands. More specifically, we use the input-output tables published by Statistics Netherlands (2021 and 2024) for the years 2020 to 2023. These tables provide information on the linkages between different Dutch industries. We can subsequently use this information to calculate the Leontief matrix.

¹ This data has not been audited by SEO Amsterdam Economics.

² The annual report of Sparkoo refers to the period from 24th of September 2021 (the date of incorporation) to 31st of December 2022. In this case we allocated the revenue uniformly over the relevant days in 2021 and 2022.

In addition to the input-output tables, we also used data on labour productivity in Dutch sectors (Statistics Netherlands, 2024a), share of consumption over sectors for the year 2020 (Statistics Netherlands, 2023b), and the percentage of savings of net income of Dutch citizens (Statistics Netherlands, 2024b).

- Input-output tables published by Statistics Netherlands for 2020–2023. The 2023 table served as the basis for projections for 2024.
- Statistics Netherlands compensation and labour volume data by industry for 2024.

Extrapolation for missing data

The annual reports for the three entities do not cover 2024. To include this year in the analysis, we made the following assumptions:

- **Revenue:** Huawei has provided us with revenue data for Huawei Technologies Netherlands B.V. and Digital Power up to the third quarter of 2024. We extrapolated this to the fourth quarter by assuming that revenue in for Q4 equals the average of the previous three quarters. For Sparkoo, Huawei provided a projected revenue growth estimate.
- **Total cost of sales, selling, distribution, and administrative expense:** We assume that these costs vary in proportion to changes in revenue. Accordingly, to estimate these costs for 2024, we multiplied the level of these costs by the percentage change in revenue.
- **Employee benefits:** We estimate the employee benefits for 2024 by assuming that the average benefit per employee is equal to the average over previous periods.³
- **Depreciation and amortisation:** We estimate depreciation and amortisation by considering the average percentage of depreciation and amortisation in terms of revenue generated. We multiplied this average with the estimated revenue to obtain the depreciation and amortisation for 2024.
- **Input-output table:** The input-output table for 2024 has not been published by Statistics Netherlands. Therefore, we use the input-output table for 2023 as a proxy for 2024.
- **Employee expenditure:** Statistics Netherlands only provides the expenditure over different sectors for 2020. It is assumed in our analysis that these shares do not change over time.

³ We do not assume that employee benefits grow at a given rate. The reason for this is that the average employee benefits fluctuate over the previous periods.

3 Results

Huawei's total GDP footprint in the Netherlands for the period 2020-2024 amounts to 1.2 billion euros. This means that for each euro earned by Huawei in the Netherlands, a total of 31 cents was contributed to Dutch GDP. Furthermore, Huawei's activities supported an average of 1,630 full-time equivalents (FTEs) annually in the Netherlands.

Huawei's economic footprint in the Netherlands.

Between 2020 and 2024, Huawei contributed an estimated total of 1.2 billion euros to Dutch GDP.⁴ Table 1 provides a breakdown of Huawei's economic footprint in the Netherlands. Of the 1.2 billion euros, 591 million euros was generated directly through Huawei's operations. An additional 492 million euros resulted from Huawei's expenditures in the Netherlands, the indirect effect. The remaining 158 million euros reflects induced effects, representing the economic activity supported by the spending of Huawei's employees and capital owners.

Table 1 Breakdown of the footprint of Huawei in terms of value added (in million euros, CPI = 2024)

	2020	2021	2022	2023	2024*	Total over 2020-2024
Economic footprint	266	253	342	207	174*	1.241
<i>Direct effects</i>	103	129	139	118	102*	591
<i>Indirect effects</i>	136	95	172	53	36*	492
<i>Induced effects</i>	27	28	31	36	35*	158

Source: SEO Amsterdam Economics (2025)

Note: (*) Projections based on data provided by Huawei

Huawei's employment footprint follows a similar structure. Over the five-year period, the company supported an average of 1,630 full-time equivalent (FTE) jobs annually. Table 2 provides a breakdown of this effect. Of the 1,630 FTEs supported on average, 363 are directly employed by Huawei. Huawei's expenditures in the Netherlands support an additional 982 FTEs, while employee consumption accounts for an additional 286 FTEs.

Table 2 Breakdown of the footprint of Huawei in terms of gross employment (in FTEs)

	2020	2021	2022	2023	2024*	Average over 2020-2024
Economic footprint	2,095	1,601	2,307	1,159	989*	1,630
<i>Direct effects</i>	371	393	372	354	323*	363
<i>Indirect effects</i>	1,468	948	1,650	495	348*	982
<i>Induced effects</i>	257	260	285	310	318*	286

Source: SEO Amsterdam Economics (2025)

Note: (*) Projections based on data provided by Huawei

⁴ Stated in 2024 price levels.

Discussion of the results

The results presented above reflect Huawei's economic footprint in the Netherlands. They demonstrate that Huawei's economic activities generate value for the wider Dutch economy. This is evident from the relationship between both direct, indirect, and induced effects, which highlight Huawei's embeddedness in the Dutch economy.

Looking more closely at the footprint in terms of GDP and employment, we observe that Huawei outperforms its suppliers in terms of value added per employee. While Huawei generates nearly 600 million euros in direct value added with an average of only 363 employees, the indirect effects per GDP (in millions) is almost half of the number of people employed.

The results presented above capture Huawei's economic footprint in the Netherlands. The direct effects reflect the company's direct activities in the Netherlands.

Finally, we estimated that for each euro Huawei earns in the Netherlands, it contributes a total of 31 cents to Dutch GDP. In terms of employment, our analysis shows that each Huawei employee corresponds to 3.5 jobs elsewhere in the Dutch economy.

3.2 Additional impact of Huawei

The input-output framework captures the ripple effect of Huawei through its expenditures across the supply chain. However, Huawei's impact extends beyond purely economic outcomes. Through its corporate social responsibility policy (CSR), Huawei strives to align with Sustainable Development Goals, such as digital inclusion, environmental protection, and a healthy ecosystem. Box 2 below illustrates the key themes through which Huawei actively contributes as part of its CSR efforts.

Box 2 Huawei generates societal impact through its corporate social responsibility policy**Education and talent**

Many of Huawei's social initiatives focus on facilitating education and talent development. Examples of Huawei's contributions include:

- Free *StorySign* app, which helps deaf children learn to read through play. The app uses smart AI, including advanced image recognition and optical character recognition (OCR), to scan children's books and instantly translate the text into sign language. *StorySign* was developed by Huawei in collaboration with experts and representatives from Deaf communities in Europe and Australia
- Another example is the education of children between 12 and 16 years by the *Smart Bus*, a mobile classroom that travels to schools and delivers engaging, interactive lessons. Inside the bus, children work on their digital skills and learn how to navigate the digital world. This programme was established by Huawei and Ins!ght (Education to Empower) and reached 1,828 pupils in 2022.
- Through interest-free study loans, *TechMeUp* enables people who want to retrain for a career in ICT to enrol in a private IT programme. For this initiative, Huawei collaborated with Kredietbank Nederland, a social, non-profit credit provider. Students repay the loans in instalments and without interest, but only once they have secured employment. To date, 50 study loans have been issued, with 20 students having graduated and 15 already employed in the IT sector.
- Huawei supports the development of network infrastructure in schools and universities across the Netherlands. Education and talent development are further key motives for some of Huawei's social initiatives. One example is the global talent programme *Seeds for the Future*, which selects promising students for training, competitions, and activities focused on digital technology. In one such competition, a team of students was awarded a trip to China for developing an app that provides insights into local water quality. As part of Huawei's CSR policy, the programme aims to inspire students to think innovatively, and to stimulate cultural exchange, diversity, and entrepreneurship. Since 2014, the initiative has supported more than 200 Dutch students, serving as a platform to launch their digital careers and awarding a total of €400,000 in scholarships.

Health

In 2020, during the COVID-19 pandemic, Huawei donated 800,000 face masks to Dutch hospitals at a time of shortage, in collaboration with the Ministry of Health, Welfare and Sport (VWS). In addition, Huawei supplied video conferencing equipment to help doctors, nurses, caregivers, and patients remain connected.

Sustainability

As one of the Netherlands' largest investors, Huawei serves telecom carriers, enterprises, and consumers. The company plays a key role in enabling digital transitions by advancing 5G and 5.5G mobile networks, AI, and cloud computing, while also developing smart energy and traffic infrastructure to power this transition. Through its annual delivery of photovoltaic (PV) inverters, Huawei Netherlands has contributed to the production of 13.7 billion kWh of green electricity in the Netherlands, reducing carbon emissions by 6.2 million tons.

Source: Huawei

Literature

- Leontief, W. W. (1941). The structure of American economy, 1919-1929: An empirical application of equilibrium analysis. Cambridge, MA: Harvard University Press.
- Statistics Netherlands. (2023a). Gebruiktabellen 2021-2023. <https://www.cbs.nl/nl-nl/maatwerk/2024/28/tabellensets-nationale-rekeningen-2023>
- Statistics Netherlands. (2023b). Bestedingsaandeel; bestedingscategorieën, huishoudenskenmerken: 2015, 2020. <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/83679NED/table?ts=1628848426375>
- Statistics Netherlands. (2024a). Beloning en arbeidsvolume van werknemers; bedrijfstak, nationale rekeningen. <https://opendata.cbs.nl/#/CBS/nl/dataset/85919NED/table>
- Statistics Netherlands. (2024b). Bruto nationaal inkomen groeit met 8,1 procent in 2023. <https://www.cbs.nl/nl-nl/longread/de-nederlandse-economie/2024/bruto-nationaal-inkomen-groeit-met-8-1-procent-in-2023?onepage=true#c-3--Beschikbaar-inkomen-Nederlandse-huishoudens>
- Statistics Netherlands. (2021). Gebruiktabellen 2015-2020. <https://www.cbs.nl/nl-nl/maatwerk/2021/27/tabellensets-nationale-rekeningen2020#:~:text=De%20tabellensets%20zijn%20nu%20beschikbaar%20als%20download%20in,tabellen%20samen%20te%20stellen.%20NB.%20Tabel%20-%20202>
- Statistics Netherlands. (2025). Consumentenprijzen; prijsindex 2015=100. <https://www.cbs.nl/nl-nl/cijfers/detail/83131NED>