OECD Fruit and Vegetables Scheme

Online sales of fruit and vegetables in Europe

A Joint Study by Freshfel Europe and the OECD Fruit and Vegetables Scheme

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FOREWORD. The OECD Fruit and Vegetables Scheme's perspective on internet sales of fruit and vegetables

Challenges for the Fruit and Vegetables Scheme's national inspection services

The OECD Fruit and Vegetables Scheme's National Designated Authorities expressed growing concerns on the challenges posed by internet sales. In the case of Europe, although the same rules and regulations should apply to internet sales as to traditional channels (e.g. supermarkets), this is not always the case. For example, EU Regulation 543/2011 on the marketing of fresh fruit and vegetables (Article 6) entails that all the required information shall be legible and conspicuous at the retail level. Article 5 requires that in the case of distance sales, this information shall be available before the purchase is concluded. However, inspectors in Member countries have witnessed this is not the case in the majority of internet sales of fruit and vegetables. Several national studies and publications have tended to confirm that the share of "distance selling" of fruit and vegetables compared to traditional sales channels is increasing. This presents a challenge to national inspection services, notably in terms of guaranteeing fair competition among traders and full information to the consumer, as well as to the possibility of performing physical inspections.

In order to face those challenges, the OECD Fruit and Vegetables Scheme established a Sub-Working Group (SWG) composed by Belgium, France, Germany, Kenya, the Netherlands and Spain. A survey conducted within the Sub-working group helped refine some major concerns as regards to internet sales of fruit and vegetables e.g., to identify the contractors and the time when an e-sale is concluded and to identify owners and location of stocks. Identifying owners and location of stocks might require transnational cooperation. The survey also highlighted the heterogeneity of the measures taken by the respondent authorities to enforce compliance with national legislation regarding internet sales of fruit and vegetables.

Elaboration of a business model to address the challenges posed by internet sales of fruit and vegetables

The SWG elaborated a framework for a systematic study of the nature and extent of internet sales (see Box 1 below).

Box 1. Development of a model for internet sales, to base the OECD survey

The SWG identified key criteria to distinguish who are the contractors and the time at which the sale is concluded. Based on the discussions, the OECD in collaboration with the SWG developed two models of internet sales:

- **Model 1** covers **online platforms connecting the consumers** (business or private person) with the physical sellers (whichever operator from producers to growers, importers, exporters, retailers)
- **Model 2** covers **online platforms** (run by a physical seller) **contracting directly** with the consumers (business or private person)

Models 1 and 2 consist of "sub-models" when crossing the types of sellers, consumers and delivery systems. Each sub-model is reflected in a separate column.

The outcome of a preliminary survey among the SWG members confirmed that Models 1 and 2 and their sub-models capture well the diversity of models in place in the EU responding countries. The SWG highlighted the following EU regulations under which the models defined above may fall as regards internet sales of fruit and vegetables:

- **For Model 1**, where the sale is completed between the consumer and the physical seller via an online platform that only connects the contractors:
  - *applicable on fruit and vegetables sales:*
    - EU marketing standards Regulation No. 543/2011
    - EU Regulation No. 2017/625 on provisions on official controls and other official activities
    - EU Regulation No. 1169/2011 on food labelling standards. EU Regulation No. 882/2004 on official controls to ensure compliance with feed and food laws, and animal health and animal welfare rules
  - *applicable on e-commerce*:
    - EU Regulation No. 543/2011, EU Regulation No. 2017/625 on official controls and other official activities Regulation
    - Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce).
- **For Model 2**, where the sale is completed between the consumer and the physical seller that manages the platform:
  - *applicable on fruit and vegetables sales:*
    - EU marketing standards (Reg. (EU) No. 543/2011
    - EU food labelling standards (Reg. (EU) No 1169/2011)
  - *applicable on e-commerce*:
    - No 2011/83/UE of 25 October 2011 on consumer rights
    - provisions on marketing standards in the case of distance contracts in EU Regulation No. 543/2011
    - provisions on official food controls in case of distance contracts EU Regulation No. 2017/625.

The outcome of the survey also refined the challenges pointed out by the National authorities of the OECD Fruit and Vegetables Scheme. From the examples of websites dealing with online sale for fruit and vegetables illustrating Models 1 and 2, it showed heterogeneous or missing information concerning important criteria for control by National Inspection Services. This includes the time the contract was completed, the terms and conditions for missing products, or the location where the orders are prepared. The survey results showed the need to inform sellers on the regulation in force and to harmonise inspections. It also showed that a more in-depth study is needed to understand the supply chains currently in place for the various models across countries, the challenges these supply chains pose in terms of compliance with regulation, and the need to harmonise an efficient control method across countries.

Implementation of an in-depth study in collaboration with FRESHFEL Europe

OECD contacted the European Fresh Produce Association, hereafter FRESHFEL Europe, to work together on understanding the structure of the fresh fruit and vegetables market in Europe. The objective was: 1) to screen the EU market through the business model designed by the OECD; 2) to have the model tested on a large scale; and 3) to complement the data gathered by the OECD survey at the national level. FRESHFEL agreed to undertake an extended screening of national online markets based on the model provided by OECD.

FRESHFEL Europe performed the following study, the “Study”, based on the framework provided by OECD. FRESHFEL Europe benefitted from the feedback of the members of the sub-working group on internet sales and of the OECD Fruit and Vegetables Scheme. The Study underwent some subsequent revisions and was approved by the Scheme.

The “Study” is twofold: i) it checks the structure of the online-market in selected countries; and ii) it checks the legally binding information provided on websites.

- Assessment of the structure of the online-market in selected countries:
  - The study was completed for seven EU countries. The first five countries – Belgium, France, Germany, the Netherlands and Spain – were chosen to enable some links with the results of the OECD survey. Two other EU countries – Hungary and Romania – were added to extend the study to countries of Central Europe.
  - The study was based on a simple but extensive online search through a defined set of key words that lead to 50-100 search results per country. FRESHFEL classified each finding according to the model developed by OECD. This screening enables comparisons between countries as well as a country breakdown per category of the OECD model.
  - While the study lacks completeness with regard to the entire EU territory, it allows for an initial overview on the existing business models currently operating in the mentioned seven countries. It shows a wider range of existing models in those countries than the range perceived from the outcome of the OECD survey. FRESHFEL also addressed customer behaviour at the national level through the model ranges available at this level. FRESHFEL also draws from the study initial conclusions concerning regulators and the fruit and vegetables industry.
- Assessment of the information particulars provided on websites against EU No. 543/2011 in the case of Apples:
  - In EU marketing standards Regulation No. 543/2011, Article 5 (1) requires that the information **particulars required by marketing standards, in general shall be shown legibly and obviously** on one side of the packaging, either indelibly printed directly onto the package or on a label which is an integral part of the package or affixed to it. In addition, Article 5 (2) specifies that in the case of distance contracts within the meaning of Article 2(1) of Directive 97/7/EC of the European Parliament and of the Council, conformity with the marketing standards shall require that the **information particulars shall be available before the purchase is concluded**.
  - However as in B2C contracts the purchase is on the level of retail, article 6 (1) may be taken into account. There it is specified, that products may be presented for sale provided the retailer displays prominently, adjacent to and legibly the information particulars relating to **country of origin** and, **where appropriate, class and variety** or commercial type in such a way as not to mislead the consumer. Thus, in the context of this research, online-offers have been checked for compliance with article 6 (1).
  - It deals with “apple” only, to have a better basis for comparison between countries. Apples are covered by a specific marketing standard, the indication of the class is required and for apples, the indication of the variety is obligatory. For each country, FRESHFEL checked whether the websites displayed the country of origin, the class and the variety of the apples proposed and if the information was easily accessible by the customers.
  - FRESHFEL Europe reflects on marketing standard requirements from industry perspective.

FRESHFEL Europe concludes the Study with assumptions from the industry on the end-user perspective and with policy and follow-up recommendations to tackle European fragmentation in the fruit and vegetable online sales market. This section reflects the perspective of the European fruit and vegetables industry.

The OECD Fruit and Vegetables Scheme approved the Study as such, as a valuable basis for the National Inspection Services and a useful tool for the Fruit and Vegetables national stakeholders, and acknowledged that the conclusions reflect the perspective of the private European fruit and vegetables sector.

Online sales of fruit and vegetables in Europe. A Joint Study by Freshfel Europe and the OECD Fruit and Vegetables Scheme

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1. Introduction

What we know: A unique European situation

Online sales of fruit and vegetables have been extensively covered in reports by sectoral trade journals and mass media all over the world. News about Amazon Fresh were unsettling as it could threaten traditional retailers in the Western Hemisphere. Online offers are seen throughout the world and often generate consumer excitement. Nonetheless, little has been known on the real situation in European countries and no contextual classification of the current fruit and vegetable online sales situation has been taken place so far.

On the basis of a first evaluation on the interpretation of marketing standards for online sales of fruit and vegetables initiated at the 32nd International Meeting Quality Control of Fruits and Vegetables, held in Bonn Germany on 26 March 2019, the European Fruit and Vegetable Association (hereafter Freshfel Europe) undertook research on how widespread the uptake of fruit and vegetables online offers was and its impact on the current regulatory situation. First findings were sobering. Contrary to common media perception, fruit and vegetables online sales differed significantly between regions. While the uptake in Asian countries, such as the People’s Republic of China (hereafter “China”) and India, and the United States showed promising growth, little was known about the commercial situation in the European Union. Basic research offered definitions of different business models, but the quantitative area showed large knowledge gaps for this market, but which were found for the big market leaders and innovators in, for example, China and India. As such, this makes it difficult to research and analyse the actual state of play in the European Union. In China, fresh food e-commerce (fruits, vegetables, seafood, and dairy) is currently growing at an annual average rate of about 50% for a market currently worth EUR 60 billion. Market forecasts preview a market share of roughly 20% of fresh food e-commerce in 2020. This development seems to be driven by a dynamic supplier and e-commerce platform ecosystem for online fruit and vegetable purchases as well as functioning online/offline integration. In addition, operators seem to focus strongly on innovating around the cold chain to maintain the freshness, quality and safety of food up to its delivery to the customer.[1]

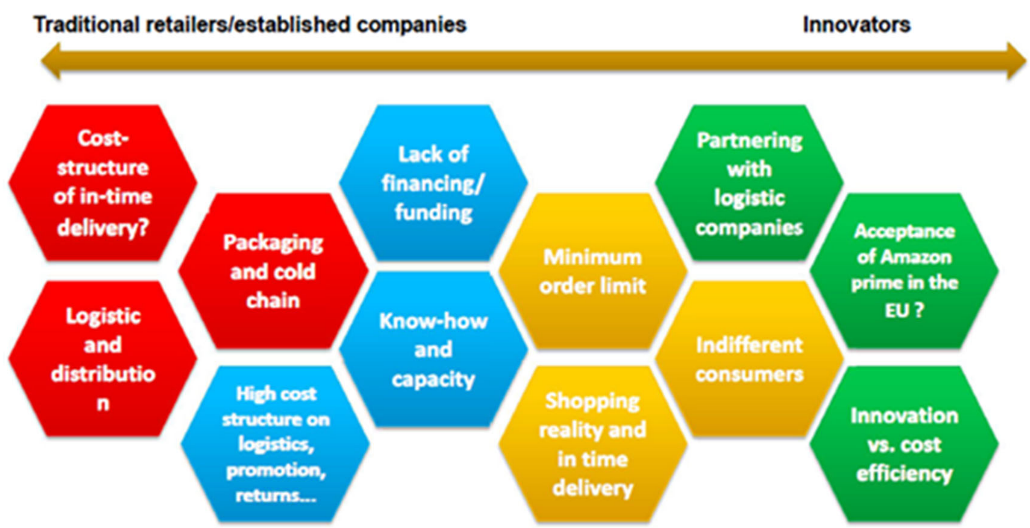
Illustrating the European market situation was difficult, as no qualitative or quantitative studies on fresh produce online commerce have been conducted. Therefore, the initial findings prepared for the 32nd International Meeting Quality Control Fruit and Vegetables were largely based on qualitative research and first retailer interviews with its members. Freshfel learned the following:

- The fruit and vegetable e-commerce market / business models for online purchases have been classified into four categories:
  - Retail-led click and collect models and/or Online-to-Online (O2O) models
  - Online pure players and vertical B2C

[1] Dr. Zhen Liu, Wageningen University and Research, “Food E-Commerce and logistics - Insights from development in China”, presentation given at Asia Fruit Logistica 2018, in Hong Kong, 5 May 2018.

  - Integrated B2C marketplaces such as Amazon
  - Add-on models such as “Hello Fresh”
- Retailers reported that the uptake of home delivery/online orders of fresh fruit and vegetables was marginal for the following key reasons:
  - The current EU shopping infrastructure is designed for convenience with a high density of shops and proximity for the consumer
  - Challenges for an efficient cost-modelling regarding distribution structures
  - The dense shop-infrastructure and the current non-profitable cost-situation prevent “same day delivery”, which is currently considered as the main advantage in comparison to in store shopping by the retailers interviewed
  - Retailers further claimed that European consumers prefer the haptic experience when purchasing fruit and vegetables
- Availability of resilient figures on fruit and vegetables online commerce in the European Union is scarce
  - Some studies have found that in the United Kingdom and France online groceries are leading in the EU with regard to online grocery uptake [2]
  - Growth of in-store purchases reportedly continued
- Pressure to create online-offers in the European Union is currently created by the rise of (non-traditional) competitors and not by demand.

Figure 1. Factors affecting current developments of the EU fruit and vegetables online sales market



While exploding urbanisation, long working hours, changing lifestyles, and the lack of a comprehensive retail infrastructure is spurring innovation as well as growing demand and supply in Asian countries and the United States, current EU consumer habits and shopping infrastructure seem to thwart market

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[2] Galante, Nicolo; Garcia-Lopez, Enrique, Monroe Sarah; McKinsey Study: The future of online groceries in Europe, 2013, https://mck.co/2X2y6bb (28.07.2020)

developments. The European online fruit and vegetables sales sector seems to be fragmented, locally organised, and small in size.

What we do not know: No data - no results

While initial research has led to several assumptions, it is clear that without solid quantitative research, the picture will remain blurry with regard to offer, size, supply chains and existing differences in the EU-28 markets. Moreover, initial research revealed that many regulatory aspects have not been taken into account given that policy makers were unaware of the market structure. Operators are currently working in an unclear regulatory environment as most laws apply to aspects of the general food chain, but do not take into account the specifics of the online-sales market.

To create a better understanding of the current market structure in Europe, OECD initiated a first categorisation of the existing online-shop systems for fruit and vegetables sales. A survey conducted with members of the OECD fruit and vegetables scheme brought limited results. A key challenge remained the missing data-set for deeper analysis, and its creation was essential to gain an understanding of the reality of the market structures. Freshfel Europe and OECD therefore conducted a two-tier examination to identify the current online sales market structure. Step 1: Gathering data knowledge on the existing landscape of web shops and classification. Step 2: Data analysis and evaluation, to allow first conclusions.

Through simple qualitative research, the data collection offered a preliminary perspective on the current supply situation that did not match with the first analysis made in March 2019. The European offer differs significantly from its Chinese or US equivalent markets with regard to structure and overarching philosophy. In contrast to first assumptions, the EU market offer is characterised by fragmentation, highly localised structures, often rather old-fashioned website models, and partially in-transparent supply chains. To date, no market leader has emerged from the diverse European offers. While this study cannot draw conclusions on consumer behaviour and future trends due to the lack of comprehensive data with respect to the entire EU territory, it allows for a first overview on the existing business models currently operated in seven EU MS states/OECD Fruit and Vegetables Scheme members. This will allow drawing initial conclusions for regulators and the fruit and vegetables industry.

This report will explain the methodology used for the data gathering and analysis, and then proceed with the individual country analysis. Secondly, the results will be put into context to compare the different country findings to identify similarities and differences. A closer review is also undertaken on compliance with marketing standards and labelling. The report will end with specific policy recommendations and identification of grey areas where improvement is needed; it will also review the “emotional” aspect of fruit and vegetables online commerce and its potential “impact” on regulators.

2 Market survey

Methodology

Selection of the countries for the study

Next to the key element of membership in the OECD Fruit and Vegetables Scheme the comparability of findings played a crucial role in selecting the sample countries for the study. As all EU countries operate with the same legal provisions with regard to food safety and quality as well as with regard to information to be provided online, comparing EU countries allowed the highest comparability and facilitated the analysis of the websites. In addition, the common legal starting point allowed a facilitated approach to the development of recommendations with respect to legal provisions and key points for inspections. With the mindset "to start somewhere" and given the limitations in time and capacity, the assumption was made, that remaining in the West European geographic area would likely allow to draw a relatively homogenous picture of results with regard to the online market structure and therefore allow for simple policy conclusion. Therefore, the following sample countries were chosen: Belgium, France, Germany, the Netherlands and Spain. As a first mid-term evaluation in September 2019 showed a very divergent picture amongst the five selected countries, a second decision was taken to create a more complete picture by including two more countries from a different geographical area of the European Union into the study in order to understand better if there is a comparable level of (a heterogeneous) market structure in all geographic regions. The choice to add Hungary and Romania to the study was based again on the membership structure of the OECD Fruit and Vegetables Scheme as well as its geographical location in Central Europe. First results show a very heterogeneous picture of the structure of the European Fruit and Vegetables online markets, but also strong geographical gap with regard to the size of local Fruit and Vegetables online sales markets.

Definition of the online shop-categories

The classification into six categories was pre-defined by the OECD Fruit and Vegetables Scheme, which was fitting for most cases found. In some rare cases, an additional category needed to be created as individual findings differed from the categories suggested by the OECD. This has been marked in the data-sets.

Creation of the data-set

The creation of the data-set for the seven countries of this study was based on a simple "Google" search using a defined set of key words. Given the research conducted in 2019 by Freshfel, the underlying assumption was made that given the lack of uptake by the consumer, the offer had to be limited, given the potential lack of economic profitability. Therefore, it was assumed, that findings would not to exceed 50-100 search results per country, thus ensuring the search would not be an infinite process. Therefore, and in context of the aim for this study to create a first overview and analysis, the decision was taken, that the first 100 search results per country were enough to define the market structure. If during a search findings went beyond the benchmark of 100, this was noted in the individual country reports. The way the search was conducted, moreover allowed some flexibility to expand the search where necessary. This was the case for one country only. Most of the searches stopped earlier than the benchmark, confirming the assumption of a certain limitation in the offer.

Comparability of the search by defining common key word

In order to allow comparability of the results, a set of key words were defined, which were translated into the language of the respective countries. In most cases, the key words had to be adapted to national language usage and habits.

- buy fruit and vegetables online
- fruit and vegetable delivery
- fruit and vegetables click and collect
- fruit and vegetables organic online.

The application of the key words followed the sequence from 1 to 4 in all cases. Surprisingly, in many cases, the first set of key words “buy fruit and vegetables online” covered most of the online-shop offers in each country, while key words 2 to 4 only served to complete the picture and as a verification variable. While using the same key words for each country examined, this posed the risk of missing out national difference or typical national key words used for the search. This was the case with France, where the mid-term evaluation revealed that instead of “click and collect”, French users call the model “drive”. The dataset on France was corrected by adding this national specificity into the key word search. Although this search cannot be considered as complete, it does serve as a beginning to continue to reflect upon national specifics that may change the picture of the country.

Evaluation of the findings

During the first-tier review and evaluation of findings in early September 2019, it was found that in most of cases the first set of key words (buy fruits and vegetables online) had the most results; the other key words proposed only had supplementary effects on the search. In most cases, the first findings were easily documented and classified. After a certain amount of findings, results became less valuable as they were repetitions and/or the findings were no longer reliable (opaque pages, no transparency on origin of the product or who is behind). The decision was taken to assess the evaluation with the “eye of the consumer”. In other words to look at the core findings, as a consumer would never look on Google results page 10, but rather try to find a fast solution among the first pages or, if not successful, he’d rather change the key words for the search. As such, the evaluation focussed on the first 50 core findings to allow better comparability of the results among the countries. In most cases, the first 50 search results were easily brought together. There were two exceptions. In the case of Romania and Hungary, the search was exhausted after 30-40 findings. In this case, a first conclusion was that there are big differences with regard to the existence of online offers that will need extra attention in the analysis. In all five West European countries the findings exceeded at the least the benchmark of 50 – and in four cases 90 findings. The decision was taken not to lower the benchmark but to continue with the evaluation of the 50 core findings and to rate the lower number of findings from Hungary and Romania against the benchmark.

Limits of the methodology

This report will cover only the current market situation of European fruit and vegetable online sales from a supply-perspective. It is not able to cover the current consumer uptake as this would have required a larger-scale examination of consumer habits across Europe based on professional quantitative interviews. As this exceeds the capacity and budget of the current research undertaken, the consumer uptake will remain a blind spot of the current knowledge base. This further limits the possibilities to evaluate the supply-structure as a result of consumer demand and to identify and prioritise policy actions with regard to consumer protection aspects.

Structure of the study

The study is structured into two main parts. The first part of the study is dedicated to explore the structure of the online market in the selected countries. This first part will include the country evaluation and analysis of the datasets as well as the country comparisons with regard to the general business structure as well as the delivery model.

The second part of the study will be dedicated to explore the state of play with regard to information provided on the products with regard to requirements of the EU Marketing Standard Regulation 543/2011.

Country evaluations

General introduction

The country evaluations are structured by general description of the market structure followed by an analysis based on the quantitative data collected. The general descriptions are used to identify the individual characteristics of the online-sales market for each sample country and to highlight a certain bias in the market structure. The observations and descriptions are based on the quantitative data and the qualitative review of the websites found. Nevertheless, the descriptions have been limited to a certain range of criteria and observations in order to avoid too much detail. There is a bias towards a specific business model. These points were further amended by the description of trends that might differ from country to country.

The main feature of the European fruit and vegetables online sales market can be described as heterogeneous. While reviewing the selected sample countries, little commonalities with regard to an overarching structure were found. Each country showed a specific bias in the amount and direction of its online offer.

Table 1. Country –specific bias and trends

Country	Bias / trend
Belgium	Retail-dominated / Online B2B models
France	“Drive” /Click-and-collect
Germany	Organic/Demeter - Altruistic consumption
Hungary	Still in trial phase
Romania	Small but organic
Spain	“Fruiteria” gone online vs. Agricultural suppliers
Netherlands	Retail and convenience

While the overall trend with regard to the business model and supply structure differed for all countries, fragmentation, highly localised offers and small-sized companies dominate the critical mass of the quantitative data. Amongst the findings were family businesses, family farms, start-ups, corner-shops, and even citizen initiatives. In some cases, the business models had to be amended to better grasp the specific market models. While most online shops seemed to have started from scratch, all other business models followed a progressive approach of existing business models by amending an online-channel. Most of the results were characterised by a high personalisation of content of the web shops through blogs, news articles, the presentation of team members, etc., and sometimes amateurish appearance of the webs hops. Surprisingly, and different from the Asian fruit and vegetables sales market, no dominant player or supershop was found at the local, national or European levels. Even established retail brands have been ranked relatively low among the Google findings and many of their web shops appeared static. The search results of fruit and vegetables online offers are dominated by niche-models.

The analysis revealed some commonalities to all seven countries:

- In general, the online-offer addresses private consumers. Although in most of the countries at least two or three different B2B suppliers were identified, yet they did not weigh dominantly in the overall findings. This may be a consequence of B2B purchasing habits, based on wholesale market supplies and physical control of the quality purchased. Only in Belgium did a more significant number of web shops target hotels, restaurants, cafés and small corner shops. Therefore, consumer protection rather than B2B online sales must be a priority for future regulatory review.
- While many web shops aimed to increase transparency of their supply chain, the overall impression was confusing. Due to a lack of structure or (regulatory) guidance, identifying owners, business models and the delivery structure remained challenging for all seven sample countries. In particular, identifying the supply structure and the type of product (organic vs. conventional) for pure online players remained blurry. While this may not reflect a regulatory non-compliance, it creates a general mistrust for the consumer. In particular, with regard to food safety and hygienic conditions, the internet allows a certain anonymity, which may prevent consumers from purchasing fruit and vegetables online. Additionally, the semi-professional appearance of many web shops did not support trust building.
- Extremely popular in all seven countries has been the offer of pre-selected mixture of fruit and/or vegetables – so-called fruit baskets. Mainly coming from online-shops and agricultural suppliers, nearly all had neither origin, class, dispatcher nor any other kind of labelling. While single fruit or vegetable offers often provided at least a description or reference to their potential origin, mixtures seem to operate outside any regulatory space. While in the case of agricultural suppliers, most of the products within one mixture would originate from one farm; more often no further information was disclosed on pure online-shops. This might need further review from a regulatory perspective as clients ordering fruit/vegetable baskets often buy products without pre-information.
- Most of the fruit and vegetables online-sales target clients at the national level and do not regularly cross national borders. This might be a result of the dense agricultural structure within Europe that allows for short transportation distances and local consumption. Nevertheless, there might be cross-border fruit and vegetables trade, e.g. in bordering regions as well as web shops targeting two or more countries. Closer review will be needed concerning this factor.
- In all seven sample countries, pure online-shops often dominated the core-findings, but would not be reflected in the overall structure. This might be a result of high technology-savvy operators with better-developed Google ad skills. Most often, the web shops appeared anonymous and lacked general information.
- No general assumptions can be drawn by geographic regions as each of the sample countries provided a unique profile. There is neither a strong North-South nor East-West division, except in terms of quantity of the results. However, even the Hungary-Romania comparison revealed big differences in the web shop models despite similar numbers of findings.

Despite individual market characteristics, a common (regulatory) guideline could help overcome common weaknesses and allow for higher transparency and trust of online-fruit and vegetables supply chain.

Belgium: Retailer driven / delivery to doorstep models, but niche models finding their way

General description

The market research in Belgium posed a specific challenge, as it had to be conducted in Flemish and French in order to be able to review the market structure of the entire country. This posed in particular the challenge to exclude repetitions in the findings, as an online shop may have occurred in French and in Flemish in the findings. In total, **86 online-shops** are active in Belgium. The highly diversified structure of the fruit and vegetable online business forced the **extension of categories by three additional ones,** as many of the findings did not only target private consumers but **also professional clients (HORECA: Hotels, restaurants, cafés).** Whereas it appeared that, most countries operate in a rather traditional environment when it comes to B2B fruit and vegetable (online?) sales, this finding contrasts to the other sample countries. HORECA categories have the opportunity in Belgium to purchase fresh fruit and vegetables online through direct access to the website.

A further Belgium specific finding was the existence of **(non-professional) volunteering cooperatives and citizen initiatives**, distributing fresh fruit and vegetables via collecting points. Only the Netherlands showed a similar finding. This category also means additional work for policy makers with regard to consumer protection, as it has to be clarified in which legal environment these initiatives operate.

Thirdly, and surprising, Belgium is the only country among the sample countries on pure **online retailers, which deliver to collecting points.**

In order to reflect this highly diversified market structure, three additional categories were added:

- Suppliers to retailers/HORECA
- Cooperatives/Citizen initiatives
- Online-retailers with collecting points

Despite the risk of duplication of web shops in French and Flemish, the study found, that only a few websites offered both languages. Most of the websites operate either in French or in Flemish, which allows a first conclusion on the limitation of delivery areas within one region rather than delivery coverage for the entire country.

Table 2. Keyword search for Belgium

English	Flemish	French
Buy fruits and vegetables online	Groente en fruit online bestellen	Acheter fruit et legumes en ligne
Fruit and vegetable delivery	Groente en fruit levering aan huis	Fruits et legumes livraison
Fruit and vegetables click and collect	Groente en fruit afhalen	fruits et legumes click and collect
Fruit and vegetables click and collect	Groente en fruit click en collect	fruits et legumes cliquer et collecter
Fruit and vegetables organic online	Biologische groente en fruit online	Fruits et legumes biologiques en ligne

Note: Most of the searches for each of the keywords have been exhausted after 6-7 pages, both, in Flemish and French. The overall figure of 86 findings reflects an exhausted research.

Evaluation of all findings

The Belgian overall supplier base is composed of roughly 31 agricultural producers (33%) supplying to a collecting point (25%) and/or to deliver at doorstep (8%). Additionally, and unique among the examined countries, some agricultural producers (3 suppliers) offered HORECA categories the possibility to order online and be delivered to the doorstep as well. Only one of these agricultural producers concentrated on only B2B clients, while the other two shops fall into an "as well as" category, supplying B2B as well as B2C. Five agricultural web shops also offered a click-and-collect model as a delivery model.

The web search found 22 retail models, of which 7 shops offered delivery at a collecting point only, 9 shops offered delivery at doorstep only, and 6 shops offered both. In total, with all combination possibilities, retailers describe roughly 1/3 of the Belgian supply structure.

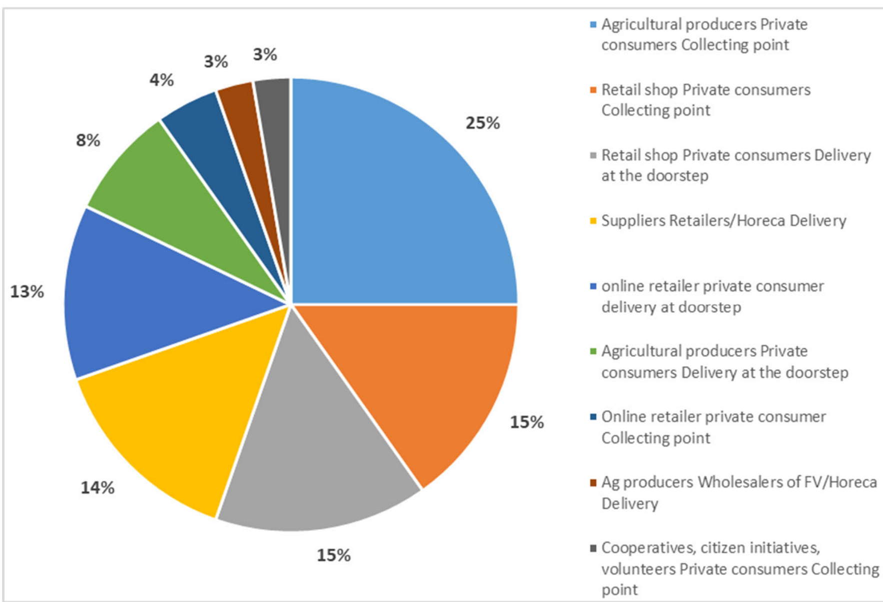
The HORECA category is unique to Belgium, together with the 3 agricultural suppliers; in total 19 online offers have been found in this country, which comprises about 17% of the entire online-offer in Belgium.

The last numerically relevant category is the category of pure online suppliers (17%). In total 20 pure online shops were found, of which 4 only delivered to collecting points and one shop offered both solutions.

A last specificity of the Belgian market structure was the finding of 3 citizen initiatives delivering to collecting points and supplying private consumers, which describes roughly 3% of the online offer.

Interestingly, the aspect of organic offer did not play a significant role among the findings. Organic offer would only show up with dedicated key word search. The online offer is therefore shaped by mostly conventionally produced fruits and vegetables.

Figure 2. Belgium: Supplying structure overview with regard to offers found in the search



Evaluation of 50 first findings

The review of the first 50 findings shows significant adaptations of the result. While in the overall picture agricultural producers were the biggest group with a total of 36% of all offers, a closer revision reduces this to 24% of the total (17% delivering to a collecting point, 7% delivering to doorstep; 27% if AG-HORECA-category added). So the **biggest group of supplies is comprised of 39% retailing offers**, f**ollowed by agricultural suppliers (24%), HORECA suppliers (21%) and the smallest category are pure online shops with 16%**. In conclusion, retail offers have the highest visibility in online searches and are found more easily as agricultural producers, which as HORECA suppliers and pure online shops do play a comparably subordinated role in the online-offer of Belgium. The condensed emergence of retail offers in the search results also suggests the availability of a professionalised online marketing system and related budget to rank first in online-searches. In the closer review with the top-50 findings shows, that citizen initiative disappear from the radar and can be considered as a niche-offer.

Figure 3. Market share comparison - aggregated

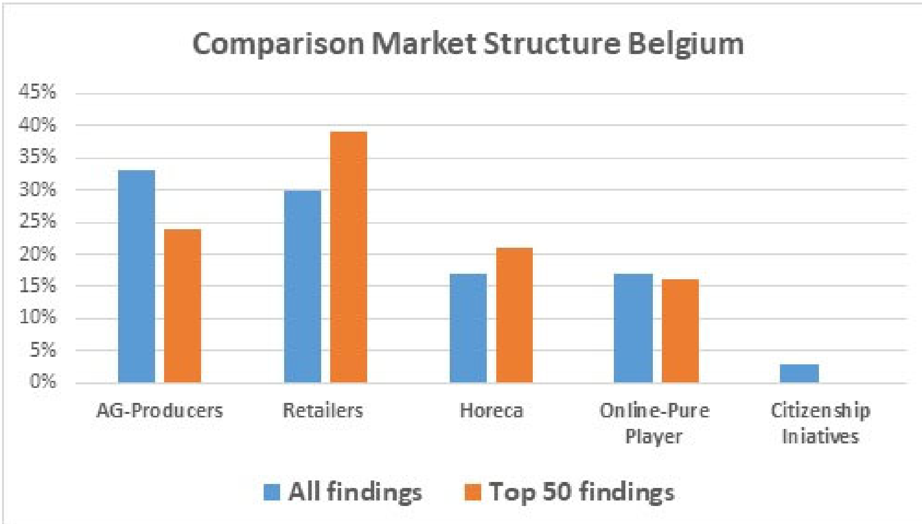
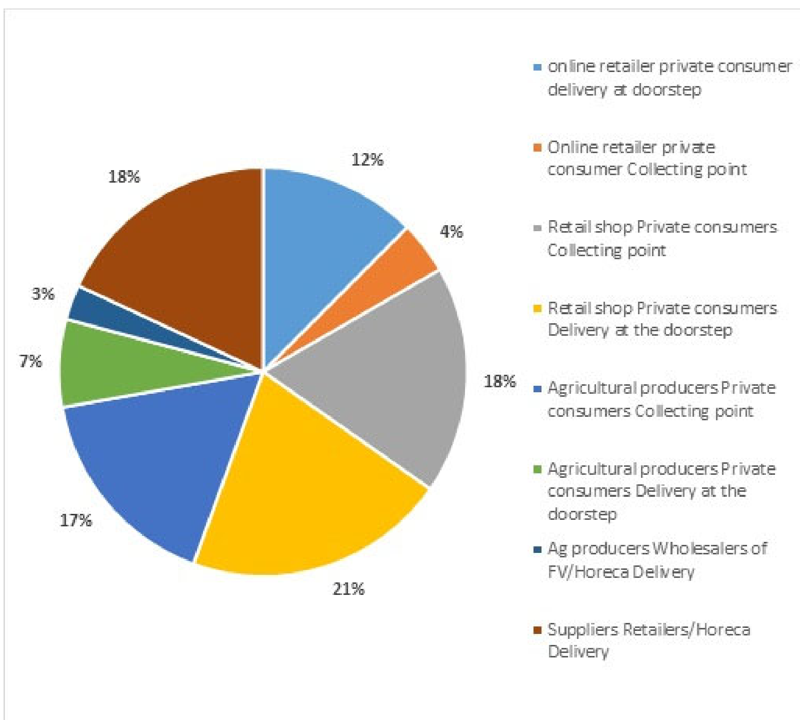


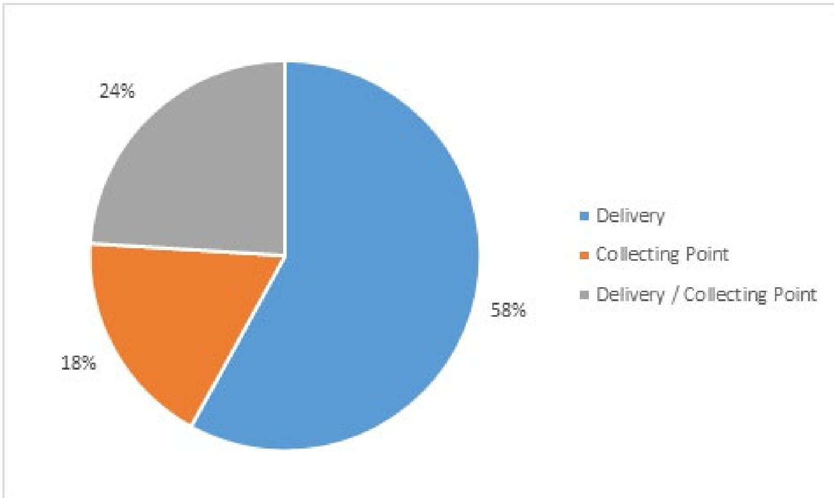
Figure 4. Belgium: Supplying structure Top 50



Delivery structure

While in the overall analysis, the market share between delivery options and collecting points looked relatively even, the TOP 50 analysis revealed a dominating delivery offer (58%), followed by hybrid delivery and collecting possibilities (24%), and only 18% pure collecting point options.

Figure 5. Belgium: Delivery options Top 50



Preliminary conclusions

- While agricultural producers play a significant role in the overall supply structure, their role diminishes in the core analysis towards a retail dominance. Retail in the case of Belgium is not necessarily related to big retail chains but highly localised corner shops, which allow both delivery and pick-up options.
- Unique to Belgium is the relatively big supply-structure for HORECA, which might need a separate review than the classical B2C supply chains.
- Organic offers do not play a significant/outstanding role in Belgian online supplies, but a couple of results are available among the Top 50-86 findings.
- Delivery at doorstep models and/or hybrid offers characterise the core structure of the TOP-50 findings, while in the overall review, the delivery model is more balanced and individualised.
- The overall findings show that most of the offer is delivered by small-sized, non-branded retailers / online-shops/ agricultural producers with a highly localised focus.

France: Highly localised offers and collecting points/drive models

General description

Similar to the planning of the research and the evaluation of the findings, national specifics have to be taken into account for the French model. The first-tier search revealed roughly 97 findings, of which the majority were delivery-only models. Based on earlier assumptions on the high popularity of click-and-collect-models, the surprising trend towards delivery models necessitated a review of the methodology. An internal evaluation found that most of the "click-and-collect-model" are used with the wording "Drive". To gain a more precise overview, an additional national specific key word search was included. By adding the key word search “fruit et legume drive”, a completely new picture revealed a specific market structure. **The data set was amended by 53 additional findings, up to 150** – but the search remained non-exhaustive, which allows conclusions on more existing “drive”-based online-shops in France. The amendment of the data posed an additional difficulty for the evaluation, as the core evaluation was supposed to be done from the perspective of the consumer with the first 50 core findings. In order, to respect the overarching methodology and comparability of the country searches, no rearrangement of the data was done. The non-exhaustive search and additional findings will be reflected in the general evaluation. This decision was a result of the results of the key-word searches, which already brought roughly 50 results for “acheter fruit et légumes en ligne” et “fruits et légumes livraison”, which already took click-and-collect models into account.

While no additional category needed to be added, the characteristic of the French online markets became evident immediately. The characteristics of local quality, agriculture from the neighbourhood and the region, organic agriculture and quality awareness were at the heart of most websites. Most of these stood out by not only by a very localised offer but also highly personalised and transparent origin/farm/producer descriptions.

A second specific characteristic was the highly localised retail-offer. Other than in, for example, the Netherlands and Germany, was the offer not dominated by big chains, but instead by traditional corner shops extending their offer online – with a highly localised delivery option.

Thirdly, the organisation of “Drive” showed a specific structure. A dedicated website called www.drive-fermier.fr serves as a general organiser of the market, where consumers can find their specific local “Drive”-supplier, which in turn organises 9 000 agricultural producers. This offer is amended by “Drive”-models that are not connected to the network - from either retailer or agricultural producers.

Delivery model for professional/B2B clients with only two results play a minor role and will not be further reviewed in this evaluation.

Table 3. Keyword search for France

English	French
Buy fruits and vegetables online	Acheter fruit et légumes en ligne
Fruit and vegetable delivery	Fruits et legumes livraison
Fruit and vegetables click and collect	fruits et legumes click and collect
Fruit and vegetables click and collect	fruits et légumes cliquer et collecter
Fruit and vegetables click and collect	Fruit et legumes drive
Fruit and vegetables organic online	Fruits et légumes biologiques en ligne

For most of the keywords, the findings of results ended after 9-10 pages of Google search results, with many repetitions and fewer results. With the amendment of the additional key word search and an additional 53 results of drive models, the search cannot yet be considered exhaustive, as the search was finalised artificially.

Evaluation of all findings

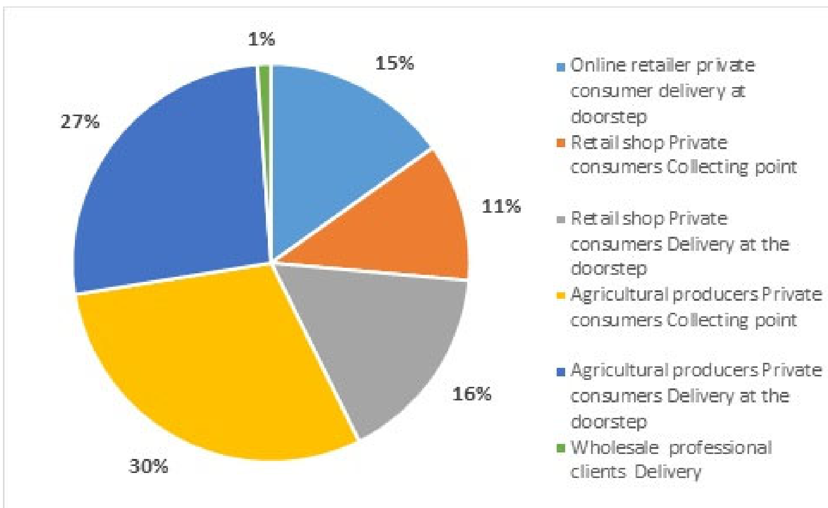
The French fruit and vegetables online sales market is strongly dominated by agricultural producers who deliver either to doorstep or collecting points. Interestingly, of the roughly 100 online-shops found, only seven agricultural producers offered hybrid delivery models - delivering to doorstep or to a collecting point. Most of the agricultural producers present in the French online market do make a decision for one delivery option. In total, agricultural delivery at doorstep and agricultural delivery to a collecting point describe together 57% of the French online offer. Majority of the online offers were limited to regional delivery and with a highly localised offer. Websites often introduced the farmers and production method of the offer.

Other than, for example, in Germany, the emphasis on local, “French” production was more dominant than the emphasis on organic, while both aspects do play a significant role in the online offer.

The second biggest group - retailers delivering either to doorstep or to a collecting point - (namely to the shop itself and collect station) describes roughly 27% of the market. Similar to Spain, the offer is designed by highly localised, small-sized, non-branded retailers, who would deliver to a locally limited market area. Of course, big retail chains are among the findings as well - but the offer beyond the branded retailers like Auchan or Carrefour is highly fragmented and localised

Online retailers with a market share of 15% comprise the last significant group. Often, they offered either a specific offer on organic supplies and in many cases served as hub for office fruit and vegetables supplies and delivery of fruit baskets. Professional clients such as HORECA do not play a significant role with regard to the French market with only 2 findings in total. The assumption can be made that with regard to quality and freshness, professional HORECA categories will prefer to use the daily offer of wholesale markets.

Figure 6. France: Overview of supply structure with regard to offers found in the search



Review of the first 50 findings

In the closer review, the picture changes only slightly. Agricultural producers remain the dominant supplier of the French market comprising 51% of all key findings. As described in the introduction, the first 50 results are extracted without the country specific key word search “fruit et legume drive”. With this in mind, the core analysis will only deliver a partial picture on the online-sales market in France. For example, only 10% of the agricultural suppliers out of the total 51% in the core findings would deliver to a collecting point, while in the overall findings it plays a more dominant role. This shows that click and collect models in France are only requested under the specific key word “drive” and cannot be found otherwise. The number of retail shop offer remains stable within the core group of 50 with a market share of 1/3 of the market; but also here without the specific search using the key word “drive”, the offer remains strongly dominated by delivery to doorstep option. In the analysis of the core findings, pure online shops gain significance, which can be the result of a more professional IT management and use of Google AdWords resulting in better visibility in the top findings. In the case of France, core findings and overall findings do not differ much, but the differences become more evident about the delivery models.

Figure 7. Market share comparison France: Aggregated data

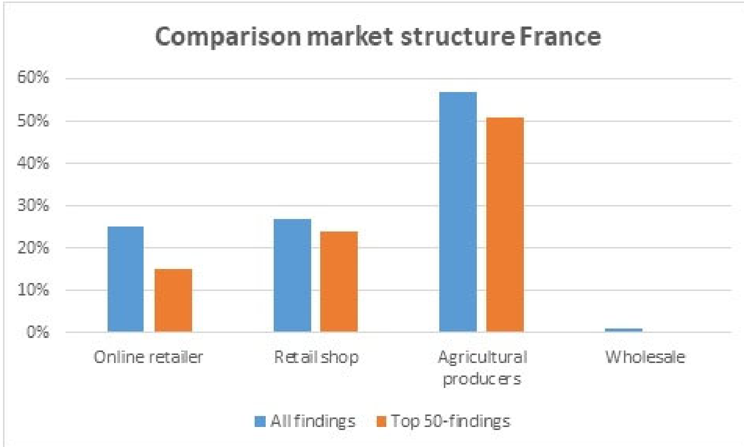
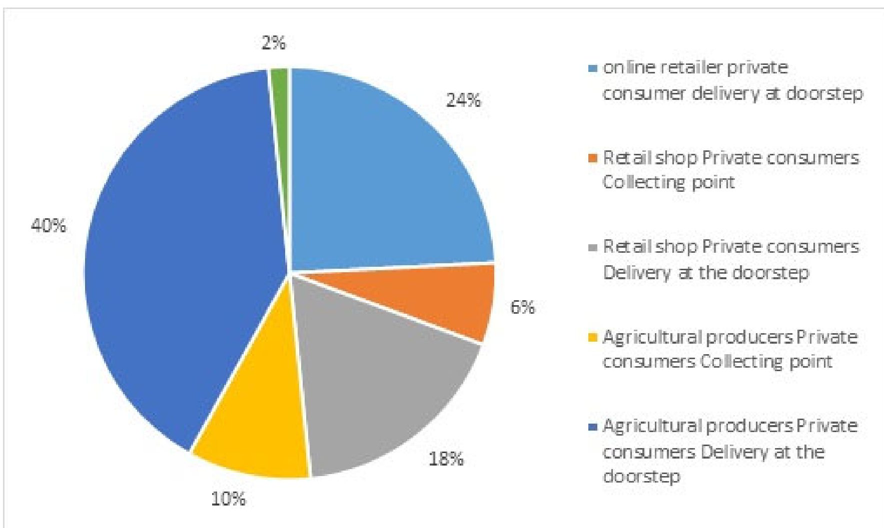


Figure 8. Top 50 aggregation: Core market France



Delivery structure

Given the specific market structure with regard to the "Drive" model, in the case of France it is worth looking at both the total and the core findings. While collecting points do not play an important role in the first 50 findings, they are the leading delivery option in the French online-sales delivery structure with a market share of 40% followed by 34% delivery at doorstep-options and 26% of hybrid models. In the top-50 findings, the majority of delivery options are destined to doorsteps directly. The comparison proves that in this specific case including the keyword "drive" in the web search was a good step to gain a better picture and to take into account national specifics.

Figure 9. Delivery structure France: Total findings

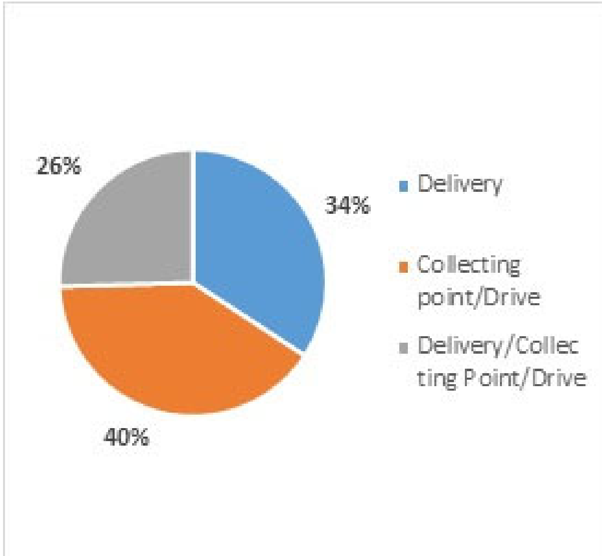
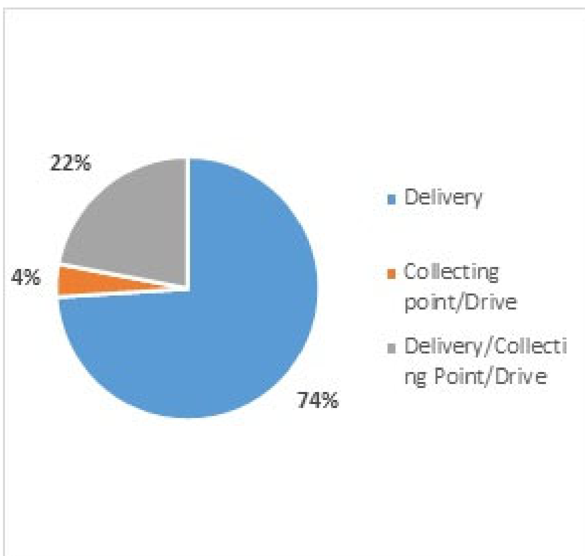


Figure 10. Delivery structure France: Top 50 findings



Preliminary conclusions

- French online fruit and vegetables offer is dominated by agricultural suppliers with a strong emphasis on local production, proximity to nature and origin, and organic farming.
- France has developed its own "language" system for click-and-collect models called "Drive".
- Drive is not only commercial, but seeks to connect the consumer with the .
- The search with the key word "drive" was not exhaustive, thus we assume that an even broader market share may function with "click-and-collect-models" than is reflected in this report.

- Independent of a retail or agricultural supplier, the market is highly localised and fragmented, with rather small and medium-sized companies shaping the market.
- Big retail chains/brands do contribute to the online availability of fruit and vegetables but do not invest in strong online marketing tools to be appear higher in Google search rankings.
- In the broader picture, pure online players do not play a significant role as it can be assumed that most orders, in particular given the well developed structure and offer of "Drive", orders, will be done with a targeted search rather than using the key words used for this study.
- While B2B does not play a significant role in the overall supply, "Rungis Wholesale Market" was one of the findings, a unique finding among all 7 sample countries and therefore worthy to be reviewed with regard to structure and functioning.

Germany: Home game for organics - Fruit is political!

General description

In total, 99 results were found with the key word search. For the analysis, 139 results were used. Similar to the example of France, where the Drive-Fermier website organises the click-and-collect model, www.oekokiste.de organises 40 organic agricultural producers throughout Germany - which have not been listed in the results, but are included for the review of the overall market structure.

Without going into deeper analysis, it became quickly evident that the German online fruit and vegetable offer is not dominated by big retail chains or companies but rather by agricultural suppliers with an emphasis on organic quality. Many websites placed a strong emphasis either on organic or "Demeter" quality as well as on veganism. Therefore, official certification is an essential part of the website structures, in order to prove the webshop is trustworthy. Most online-offers were either "Bioland" or "Demeter" certified.

What further distinguishes the German offer from, for example, France or Belgium, was that no specific key word search on "organic fruit and vegetables" was needed to receive organic results. The results gave the impression as if consumers would deviate to online-offers when it comes to organic/Demeter, as the local supply infrastructure does not seem to fulfil this demand. An important question in this regard is: What is the difference of the organic/Demeter offer to the possibility to purchase organic/Demeter in supermarkets? Why do Germans order weekly organic fruit baskets, if the allegedly same quality is available in a supermarket? Most websites had strong descriptions of their way of production and production concept. It appears the online-purchase/offer is often connected to a sustainable/political/environment lifestyle. Interestingly, many of the agricultural suppliers and online shops offered delivery throughout Germany without local limitation, which stands against the initial "organic/local" orientation. Moreover, to identify the delivery structure and avoid long-distance deliveries was often complicated and confusing. On the other hand, French websites often had a "first glance" overview on the radius of delivery. German consumers have to dig deep into websites to know if the web shop delivers locally. Moreover, first findings were covering delivery throughout Germany.

The pure online retailer offer often followed an altruistic or selfless cause by offering so-called waste fruit and vegetables or "ugly" fruits. Some of the online-shops, such as Etepetete-bio, stood-out by their strong coverage throughout Germany and a highly professionalised distribution structure, while others remained non-profit oriented and localised. What many web shops had in common was a subscription for the delivery of weekly fruit and vegetable mixtures/baskets. This offer was further amended by pure-online-players offering mixtures of fruits for offices. In both cases, compliance with marketing standards/labelling requirements were inadequate. While for single fruit/vegetable pieces labelling is correct, most of the mixtures are missing adequate information.

Interestingly, online-pure players (most of the time the first ones in the Google results) offered mainly conventional fruits and vegetables - with a "perceived" lack of transparency on ownership of the web shop and how the fruit is handled. While in most cases, the labelling seemed to be correct, pages were often anonymous and without clarity on distribution, sourcing and storage structures.

Click-and-collect models do not play a significant role for the German online-sales market. First experiments were done in the past by bigger retailers - but these have failed. In general, the German online-offer by retailers is limited. Other than, in France, no localised "corner-shop"-offer could be found.

Table 4. Keyword search for Germany

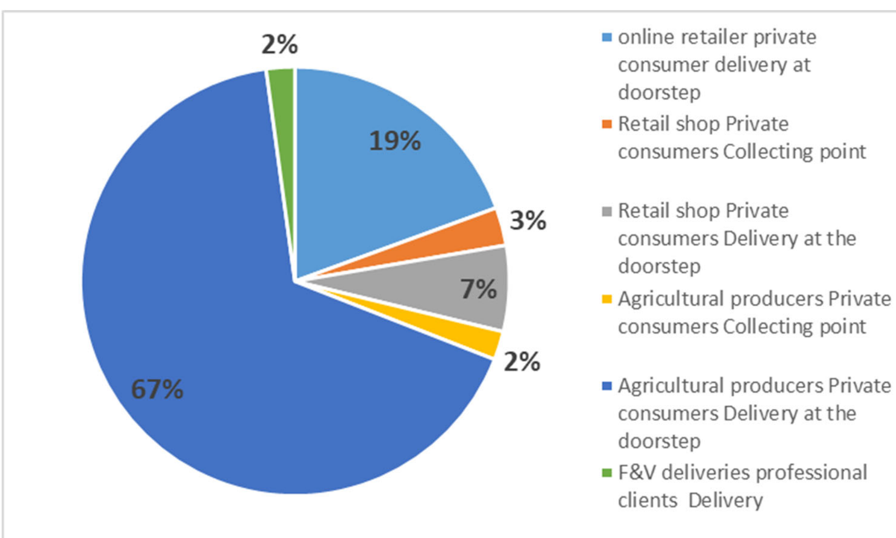
English	German
Buy fruits and vegetables online	Obst und Gemüse online kaufen
Fruit and vegetable delivery	Obst und Gemüse liefern lassen
Fruit and vegetables click and collect	Obst und Gemüse click and collect
Fruit and vegetables organic online	Bioobst und -gemüse online kaufen

Note: The search can be considered as roughly exhausted. In most of the cases, the results began to repeat after 7-8 pages and less new results were found

Evaluation of all findings

Similar to the French online sales structure, the German market is strongly dominated by agricultural producers targeting private consumers (69%). Only 2% provide the possibility to deliver to a collecting point, while most deliver to doorstep. The second-biggest group - other than in the previous sample countries - are pure online retailers (19%). Retail shops make-up 10% of the online-offer. Targeting B2B clients seems to play a minor role, representing 2% of all findings. Interestingly, retail brands play a subordinate role and are not among the top-ranked results for the specific key word search. While the core-analysis of the TOP 50-findings will give more detail, the relatively high representation of pure online players can be led back to good IT-knowledge and usage of Google Ad-Word tools.

Figure 11. Germany: Supplying structure



Evaluation of the 50 first findings

The core-analysis of the TOP-50 findings corrects the first impression to a stronger online-shop bias among the core results. While online-retailers market share is growing by up to 48%, the market share among the agricultural suppliers decreased to 40%. This might be similar to other countries, a result of tech-savvy operators of pure online players with a higher technological professionalism than the agricultural suppliers, which are often organic, small-scale or family businesses with limited reach but high altruistic ambitions. Nevertheless, agricultural suppliers remain among the most important players in the German online offer.

Figure 12. Comparison of market structure in Germany

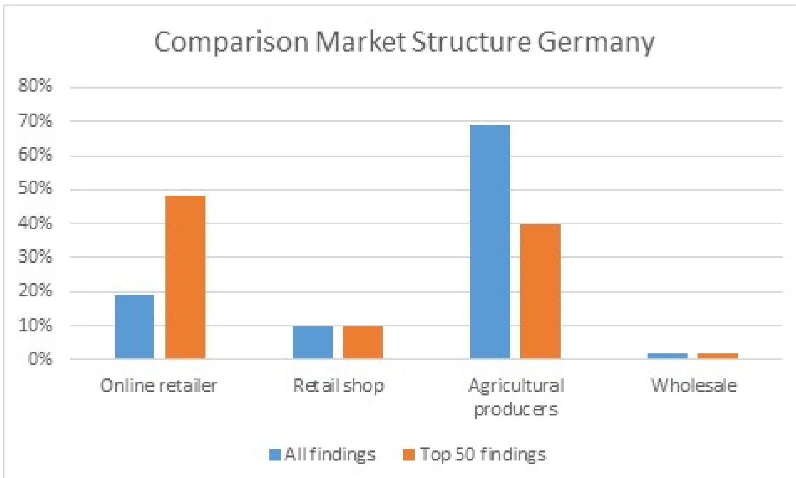
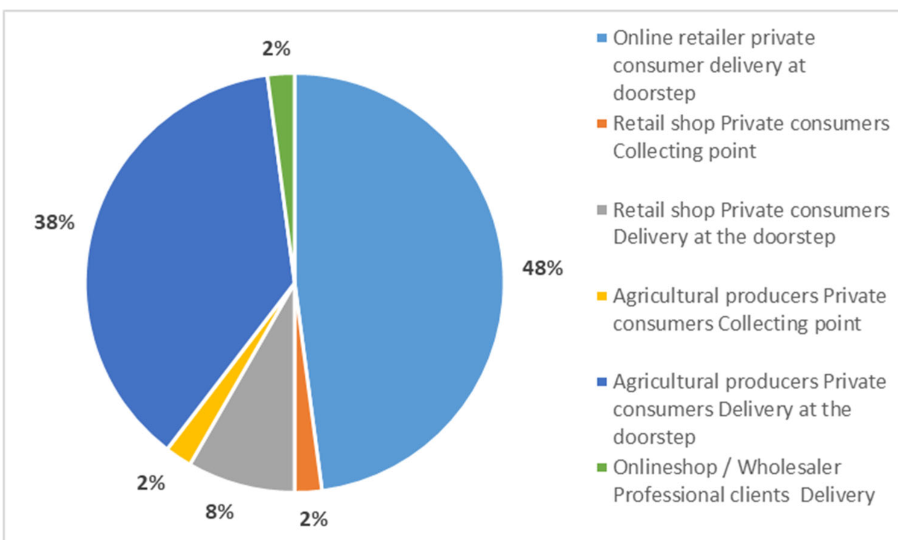


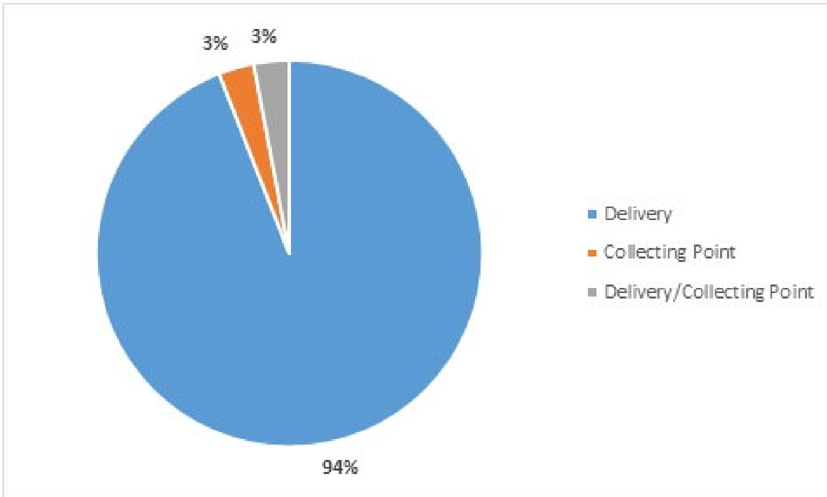
Figure 13. Top 50 aggregation: Core market Germany



Delivery structure

As the German market proved to be a relatively homogeneous market, only the overall findings were used to analyse their delivery structure, which showed a strong bias with 94% of all offers delivered to doorstep. With 6% delivering to collecting points, this delivery model plays only a subordinate role in Germany.

Figure 14. Germany all findings: Delivery structure



Preliminary conclusions

- Retailer - neither big chains nor small-sized, localised corner shops have a significant role in the online sales market.
- The market is shared between pure online players offering conventional fruit and vegetables and agricultural suppliers, focusing on organic and Demeter supplies, often beyond the EU Organic legislation, and certified by independent certification bodies.
- Fruit and vegetable baskets (organic/non-organic) are highly popular in the offers, but often lack sufficient labelling of origin, class and dispatcher.
- Agricultural websites show a high degree of professionalism when it comes to transparency, production conditions and certification in order to target clients who look for an alternative to the conventional offers found in supermarket.
- Offers of both categories are often accompanied by altruistic causes, such as fighting food waste and environmental protection.
- Pure online players in Germany show a high degree of professionalism with regard to positioning in search rankings, but usually remain anonymous with regard to ownership, sourcing and distribution structures; they often deliver throughout Germany.
- Generally, the number of web shops offering delivery throughout Germany was relatively high and might need further review as longer transport delay might need different conditions for the product.
- Like Belgium and France, some online shops provided a high level of professionalism with regard to branding and structure (e.g. a strong presence on social media and TV advertisement).

Hungary: Experimenting with business models

General description

Hungary was added to the study to allow for a broader regional review of the fruit and vegetables online-sales landscape, as the initial selection focused on Western European countries only. During the online-search it became evident that the Hungarian online-sales landscape for fruit and vegetables differs significantly from the other sample countries. In total, only 28 offers were found online, using all different key word-combinations. A main challenge was to fully understand ownership, business-model and target groups of the web shop, as often the latter lacked general information.

Despite the small size of the supply side, a variety of business models could be found. Some pages only allowed access to the product after registrations, while others were operated by professional importers with an undefined target group as well as by small-sized local corner shops offering home delivery. Organic products appeared on a few offers.

None of the results showed the same professional level of website and payment design as other sample countries in this study. Most pages had a complicated usability, and little background information about the origin of the product or the farmer. The organic offers showed a low level of professional and remained limited to a local distribution area. Even bigger retail chains did not use the delivery option as a marketing tool and access to it on the website was complicated. Many shops did not offer online shopping, but only via request.

As non-relevant for the analysis can be considered: B2B online sales. While some websites seem to target professional clients, they did not allow online purchase options and none of the results found targeted B2B clients.

Table 5. Keyword search for Hungary

English	Hungarian
Buy fruits and vegetables online	Gyümölcs és zöldég vársárlás online
Fruit and vegetable delivery	Gyümölcs- és zöldségszállitás
Fruit and vegetables click and collect	Gyümölcs és zöldség személyes átvétel
Fruit and vegetables organic online	Organikus gyümölcs és zöldség vásárlas online

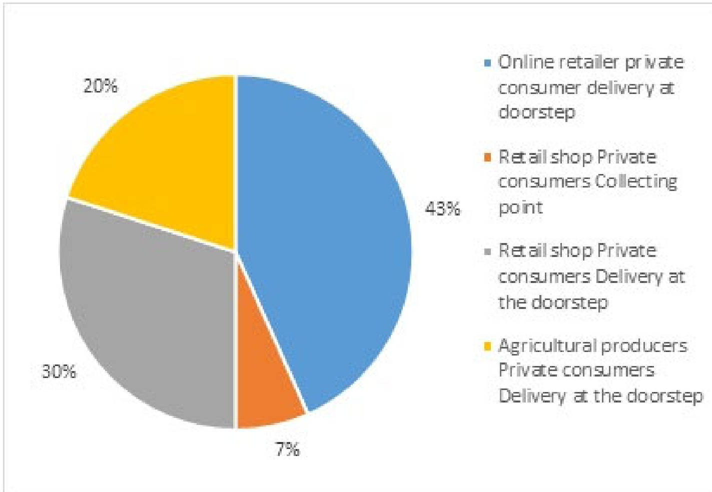
Interestingly for the keyword-search on “fruit and vegetable delivery”, no significant results were found. It may be that the in Hungary other key words are used to look for online-offers. In the first review, no additional key words were found.

With 28 findings, the review for Hungary can be considered exhaustive. As this number is below the Top-50 benchmark, the analysis can be considered as the core-review of the Hungarian market structure.

Evaluation of all findings

In total, 28 relevant web shops were found. No results were found for two categories: Web shops targeting B2B clients and agricultural producers delivering to collecting points. The biggest group of suppliers at 43 % comes from pure online players, which could be described as “early mover” websites. Some of the offers, such as www.abc-online.hu, offered a bigger range of online-groceries while others such as www.gyumolcskiraly.hu targeted fruit and vegetables only. Most websites did not appear up-to-date with regard to design and functionality, and ownership of the websites remained opaque. Interestingly, retail chains and small corner shops with a tendency towards home delivery comprise the second biggest group (37%). Only two corner shops offered the possibility of “click-and-collect”. The third group (20%) is comprised of agricultural producers and seems to be in a very early stage of maturity. In total, 9 agricultural suppliers were found, most family businesses with a focus on organic production, while retailers and the online-shops usually offered conventional fruit and vegetables. The latter moreover unified a common approach to education, while none had included any official certification on organic production as proof of origin.

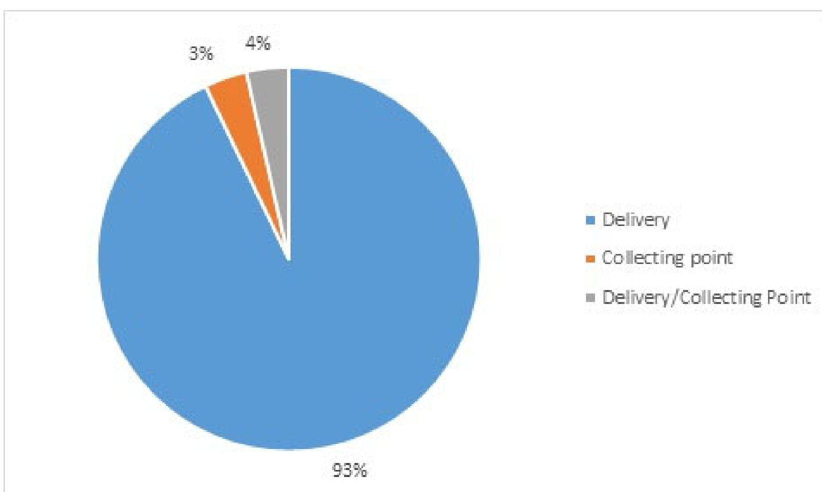
Figure 15. Hungary: Supply structure



Delivery structure

With regard to delivery structures, the Hungarian offer is by far based on home delivery (93%, 26 search results). Collecting points (*személyes atvettel*) had only three results (two hybrid and one click-and-collect model). Most of deliveries are limited within a local radius, mainly in the area of the capital.

Figure 16. Hungary all findings: Delivery structure



Preliminary conclusions

- In comparison to the other sample countries and with regard to the results found, the Hungarian online sales offer for fruit and vegetables is nascent.
- For the majority of findings, compliance with EU regulation (EU) 543/2011 was not present.
- Most web shops appeared semi-professional and it seems that knowledge on regulatory requirements was low.
- While current pure online players are the largest group, it seems that agricultural suppliers and the organic movement / organic agriculture are starting to build a new supply and education channel. Nevertheless, this can be considered to be at the trial stage; in particular with regard to organic as only 2 or 3 offers were found online[3].
- Due to the infancy of the fruit and vegetables online-market, organic online offers did not provide sufficient certification and labels, and operated on a "trust"-only level.
- While most of the agricultural supplier pages seemed to be very personal and lovingly maintained, pure online players and the retailers websites seemed to lack updates.
- Many online-shops were not transparent with regard to ownership, origin and handling conditions. The fine print often did not help to identify the ownership of the web shops.
- While some retail chains offered fruit and vegetables online, their websites often looked orphaned and needed to be updated with a more modern design and usability.
- The key word search was cumbersome and suggests that these may need a review with key words more adapted to language use in Hungary.

Netherlands: Retail and convenience

General description

The evaluation of the Dutch online-sales market showed some surprising results. With a relatively strong demographic structure of 17 million inhabitants (in comparison: Belgium has 11.5 million) and a strong fruit and vegetables trade market, the overall number of 57 web shops found was lower than expected. With regard to the characteristics, the Netherlands showed differences to neighbouring countries. While in Germany the online supply circulated around the "organic topic" and in Belgium it was characterised by the small dominance of retail offers but a highly diversified rest-offer, the Dutch market is strongly dominated by online retailers, while agricultural producers play a subordinate role. The market seems to be oriented towards convenience and easing the shopping experience, and is less political or ideological as the offer in Germany, France or Romania. The role of pure online players differs from the results from the other countries: the first results for the Netherlands were not dominated by technology-savvy pure online players but by retail-chains and brands. Still, pure online players do play a significant role in the Dutch market offer.

Similar to Spain, results for organic could only be found on request by using the key word search. Only ten results relate to organic offer. Also of less importance than in neighbouring countries: organic certification.

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[3] When looking for the key words "fruit and vegetable organic online", next to web shops, many newspaper articles as well as information on local organic markets and civil society cooperations were found. Many of the pages had a rather educational focus, which leads to the conclusion that organic supplies do only start to gain more attention and show currently a lower level of maturity than e.g. the Germany or the French organic online offer.

In line with first expectations, 13% of the findings comprised web shops with a B2B orientation, which exceeds the results of all other countries. This is similar to Belgium's classified HORECA category. A second common feature with Belgium is the existence of the additional category of "Citizen Initiatives"– only those two countries have this category.

Interestingly, compliance with the EU Marketing Standard Regulation 543/2011 seemed to be challenging. Even big retail chains failed to show all the necessary information and in particular referenced the country of origin to the declaration on the packaging.

Table 6. Keyword search for the Netherlands

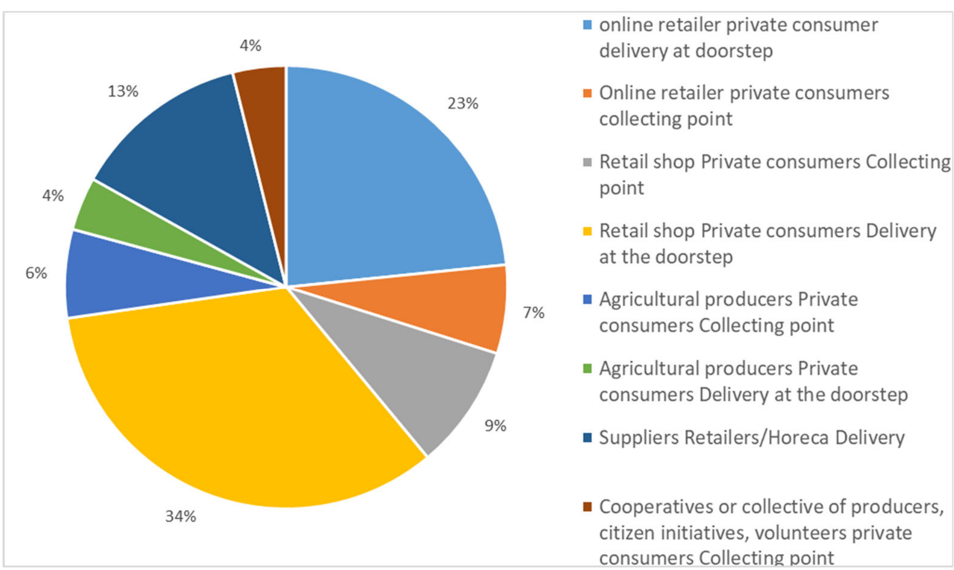
English	Dutch
Buy fruits and vegetables online	Groente en fruit online bestellen
Fruit and vegetable delivery	Groente en fruit levering aan huis
Fruit and vegetables click and collect	Groente en fruit click en collect
Fruit and vegetables organic online	Groente en fruit afhalen

Note: Most of the key word searches were exhausted after 6-7 pages. The overall result of 57 web shops can be considered as an exhaustive search.

Evaluation of all findings

The Dutch online-sales market is strongly dominated by the retail-sector. Online-retailers (30%) and retail shops (43%) account for 75% of the Dutch online-sales market – which is unique among the sample countries the second biggest category is comprised of B2B suppliers, with roughly 13%. Agricultural suppliers account for 10%, the lowest rate amongst all sample countries. Similar to the results in Belgium, 4% of the online offer was comprised of citizen initiatives and cooperatives.

Figure 17. The Netherlands: Supply structure



Evaluation of the Top 50 findings

The core-analysis confirmed the overall findings and sharpened the overall picture for the Dutch retail market. While the agricultural results remained low with 10%, the retailers' position (from 43% to 46%) in the supply structure was reinforced with little reduction of relevance of online shops, from 30% to 26%. B2B suppliers gain some relevance with 15%.

Figure 18. Comparison of all findings vs. top 50 findings

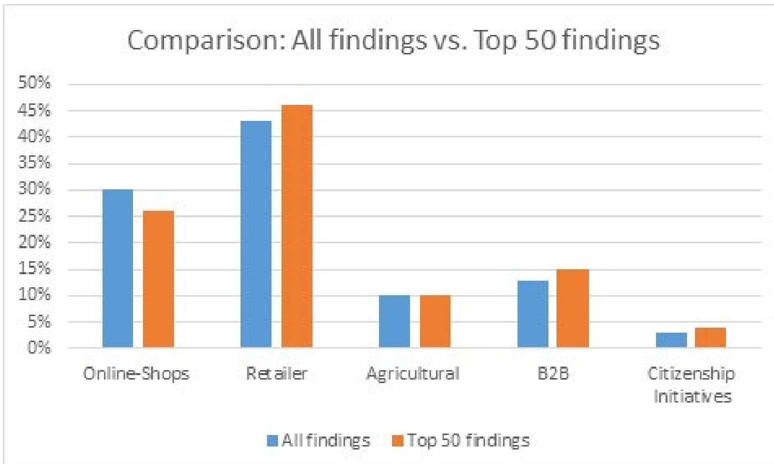
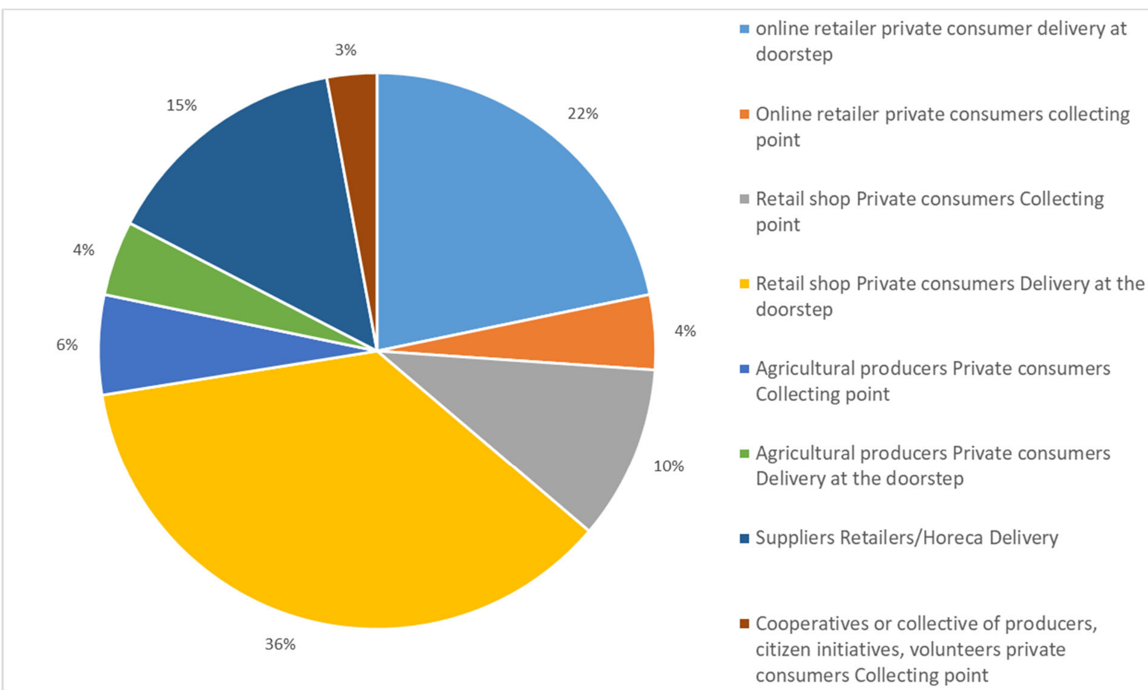


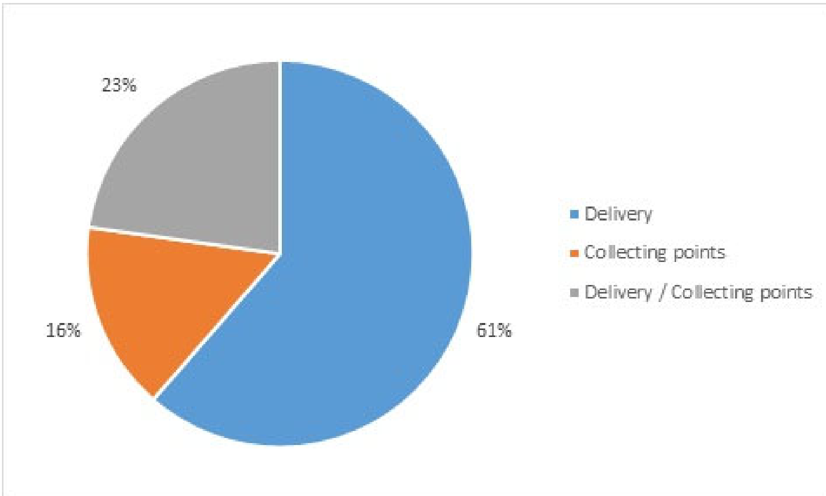
Figure 19. The Netherlands Top 50 findings: Market structure



Delivery structure

As Dutch online sales is relatively small with regard to the findings, no core-review was done for the top-50 findings as compared to the 57 overall findings. In general, the delivery to doorstep models dominate the delivery structure with 61%, followed by hybrid models representing 23% of the market share. Finally yet importantly, collecting-point options (16%) are still significant within the market structure.

Figure 20. The Netherlands: Delivery structure



Preliminary conclusions

- The Dutch market offers a highly diversified market structure with a strong bias towards retail offers, although there is a variety of online shops, B2B offers with a variety of delivery options from hybrid models to delivery models or collecting point models. This makes the Dutch market challenging to structure and to overlook.
- Classification of the web shops into pure online players, retailers or other systems has been challenging as proper descriptions/self-classifications were often missing on the websites.
- Nevertheless, the web shops were characterised by professionalism and usability.
- Dutch retail-chains together with online-shop seem to provide a high-level knowledge of IT and Google Ads to rank higher in the findings.
- Agricultural, local and regional suppliers do not play a role in the Dutch online offer.
- Organic supplies can be found with a dedicated key word search only and classification of the organic quality /certification was applied here only partially.
- Dutch web shops showed significant gaps with regard to EU marketing standards regulation 543/2011 and descriptions were often incorrect or incomplete.

Romania

General description

The Romanian fruit and vegetables online offer strongly resembles the Hungarian market with regard to size and availability. In total, 31 results were found. Taking into account the population of both countries

(Hungary 9.6 million, Romania 19.9 million.), the Romanian online market is smaller in proportion to the demographics. Similar to the Hungarian search, the online key word search was challenging. Many of the results were scattered over the first few pages of Google results, but identification was challenged by many irrelevant in-between results. Pages of Moldovan origin – despite Romanian language - were not taken into account. Two pages had blocked content, which was not encountered elsewhere. Key difference with regard to Hungary were the overall professionalism, user friendliness and quality of the website structures.

Interestingly, local production and organic agriculture seem to have a much more developed online-sales environment compared to the Hungarian market. The first findings revealed a trend towards local and/or organic production - without specific key word-search on organic production. The websites made a professional and up-to-date impression and were well maintained with details on the farm/production conditions and personal information. Similar to many of the Western European sample countries, “blogging” was used to create additional content and inform consumers, and to motivate changes towards a more plant-based diet and environmental protection. Similar to the Hungarian pages, the organic quality was not proven by a certified seal or label, nor by the inclusion of the European organic logo.

With regard to the distribution structure, the offer centred on three main areas: Bucharest, Timişoara and Cluj-Napoca.

Compliance with the EU marketing standards regulation (EU) 543/2011 was inadequate, even for professional retail-chains. Many online shops offered already selected mixtures of vegetables and fruits without significant labelling of origin, dispatcher and class. Similar to France and Spain, the retail offer in Romania was comprised of small corner shops rather than retail brands.

Similar, to the Hungarian market structure, B2B does not play a role in the current situation.

Table 7. Keyword search for Romania

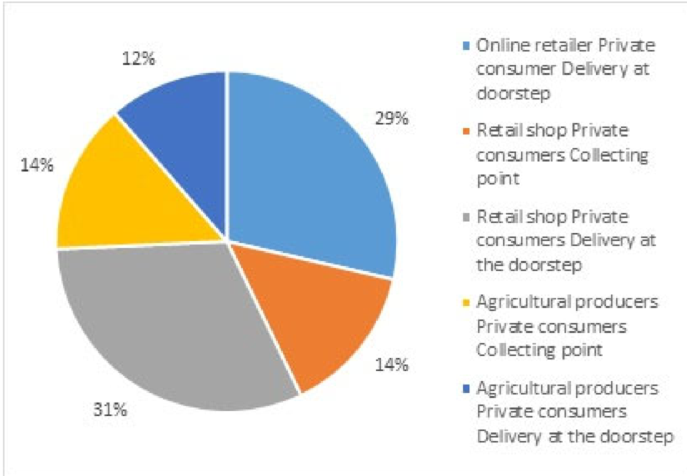
English	Romanian
Buy fruits and vegetables online	Cumparare fructe și legume online
Fruit and vegetable delivery	Liverare de fructe și legume la domiciliu
Fruit and vegetables click and collect	Fructe și legume clic și colectați
Fruit and vegetables organic online	Fructe și legume click and collect

Note: The search results for Romania can be considered as complete.

Evaluation of all findings

While the number of findings resembles the Hungarian structure, the Romanian market structure shows a more professional and diversified picture with regard to market offer and delivery options. The biggest group is comprised by the Romanian retail market with a total market share of 46%, of which 14% consists of collecting-points. The second biggest group are online-shops (29%), followed by agricultural producers offering both delivery and collecting point options (25%).

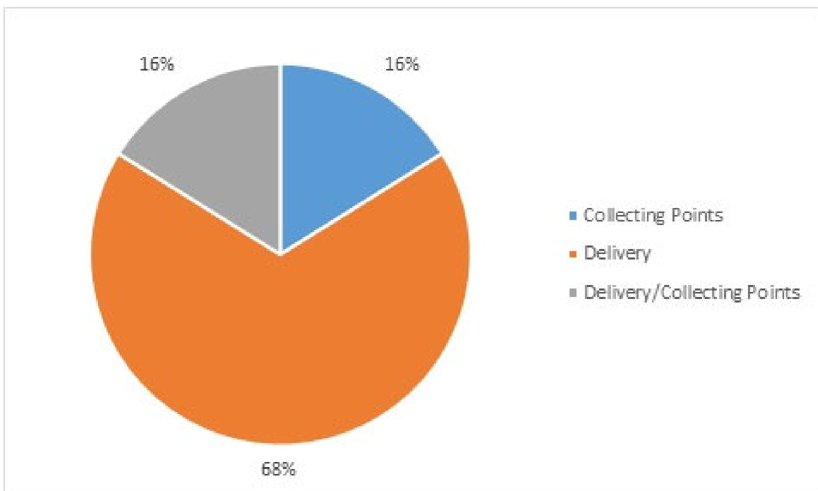
Figure 21. Romania overall findings: Supply structure



Delivery structure

While the overall majority of online offers have delivery options (68%), there is also a significant offer of collecting point models (16%) dominated by agricultural producers and hybrid models (16%), which are mainly offered by small corner-shops.

Figure 22. Romania all findings: Delivery structure



Preliminary conclusions

- Despite the small online offer, those websites found had a professional appearance, well maintained content, and a functioning purchasing system.
- In particular, organic supplies have been developing as an online supply channel. While these pages resemble in style and content those from France and Germany, it lacked systematic labelling of organic quality through any national or European certification.
- Online offer centres around three urban areas: Bukarest, Timişoara, Cluj-Napolca.

- From the retail perspective, small corner shops dominate the online offer.
- Despite first expectations due to infrastructural constraints and distances with regard to the size of the country, the majority offered delivery to doorstep rather than the delivery to a collecting point.

Spain: Separation of supply structures into urban areas and rural areas

General description

While the majority of the sample countries provided a limited number of online-offers, the search for Spain with 100 findings can be considered as non-exhaustive and was stopped at the threshold set. It can be assumed that many more results could have been found. This might not at last be a result of the strong fruit and vegetables production in Spain, which is seeking for new supply channels. In line with the findings from many other sample countries, the online-offer resembled the overall offline supply structure, which is in Spain very diversified, localised and fragmented.

Interestingly, the supply structure differed with regard to the area of delivery. Urban areas such as in Madrid or Valencia showed a strong aggregation of small-corner shop retail - so-called “Fruterias” - gone online. Agricultural producers and cooperatives dominated the offer in more rural areas. This phenomenon of structural supply separation was not observed in the other countries. Furthermore, Spain was the only sample country with a unique range of hybrid models - offering delivery at doorstep and collecting-point models. Additionally, big retail brands did not play a dominant role among the first search results. The first big retailer was ranked 24 and the biggest retail brand of Spain was ranked 76.

A second peculiarity of the Spanish fruit and vegetables online sales market are online shops that only focus on one commodity or product, such as citrus from a specific local area. In general, the results gave the impression similar to French models that regional or local production is considered as a value-added to the marketing of the product and is strongly communicated.

Organic supplies would need a specific keyword search and would not rank among the general search results. Nevertheless, many results were found with the specific key word search. This suggests that conventional fruit and vegetable products but also a strong availability for organic products if searched dominate the overall online offer.

In general, similar to France, Spain provides for an overall professional appearance of the web shops with regard to usability and transparency of the webpages. Most pages were well maintained, routinely updated, had blog-posts and personalised content, and tried to explain the origin and ownership of the products.

Table 8. Key-word search for Spain

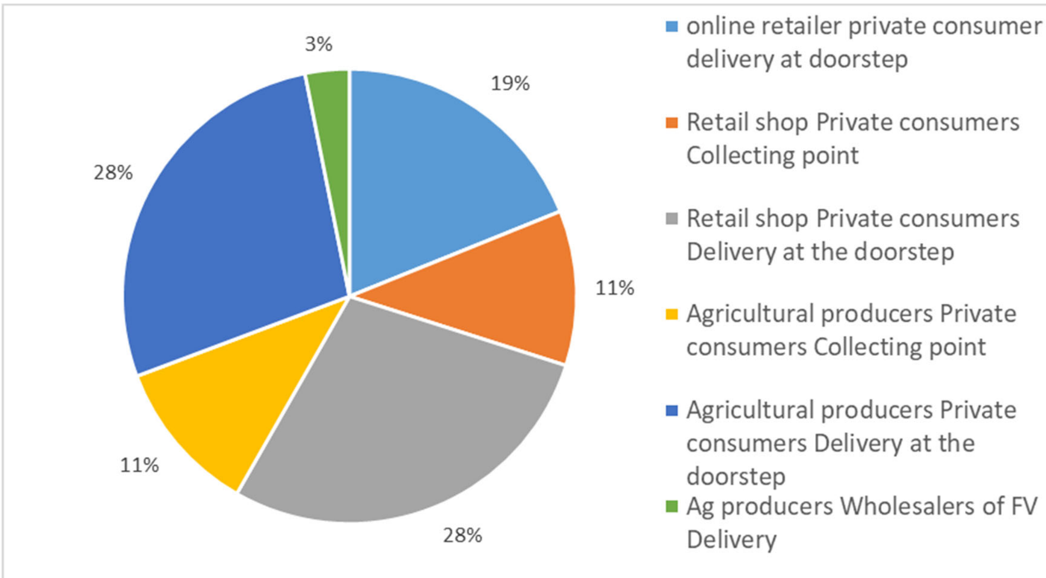
English	Spanish
Buy fruits and vegetables online	Comprar fruta y hortaliza online Comprar fruta y verdura online (for falsification non-exhausted)
Fruit and vegetable delivery	Reparto de fruta y hortaliza
Fruit and vegetables click and collect	Click/pedido y recogida de fruta y hortaliza
Fruit and vegetables organic online	Fruta y hortaliza organica online

Almost 80% of the results in Spain were found with the key word search on “Comprar fruty y hortaliza online”, which could be amended with “Comprar fruta y verdura online” as a final step. The second largest findings resulted from the key word search on organic purchases. “Reparto de fruta y hortaliza”; in most cases, this led to professional wholesalers who would not sell online, but use the webpage as an online-presence.

Evaluation of all findings

Overall, the Spanish online-offer is strongly divided by retailers offering either or both delivery models with 39% of the market share, and 39% of agricultural suppliers also offering either or both delivery models. Nineteen per cent of the results still amounted for pure online shops. While in percentage B2B online business amounted to 3% of the results, in total figures 4 of 103 results were found for this business segment, which is similar to the other sample countries.

Figure 23. Spain all findings: Supply structure



Evaluation of the 50 first findings

While in the overall findings online-shops ranked third in the online-offer, the importance of pure online players increases with a market share of 29% in the closer review of the first findings. This might be strongly connected with a better technology-affinity of online-shop operators and better handling of Google Ad's. Agricultural suppliers lose importance in the closer review with market share of 29%, i.e. 10% less than in the overall findings, which shows that most shops are not ranked among the very first results of the Google search. The retail sector is stable with a 40% market share among the Top-50 findings. Similar to the other sample countries, the B2B online business has only a marginal market share of 2%, the equivalent of one B2B online shop out of 50 results.

Figure 24. Comparison market structure: All findings vs. Top-50 findings

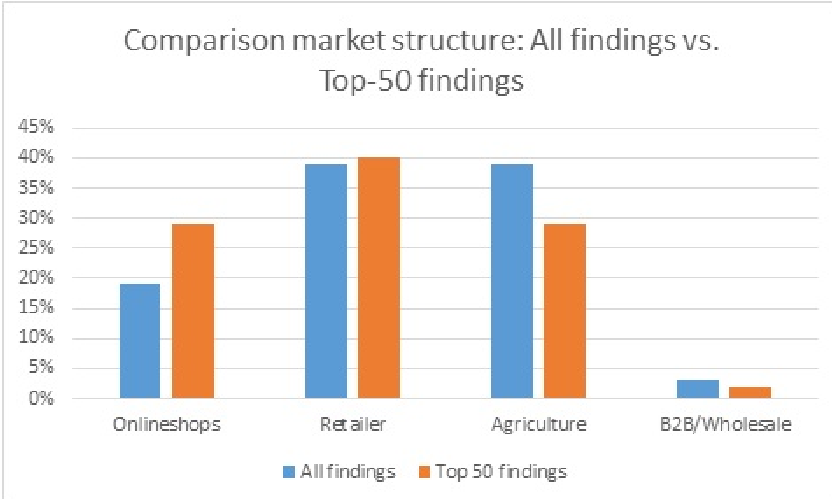
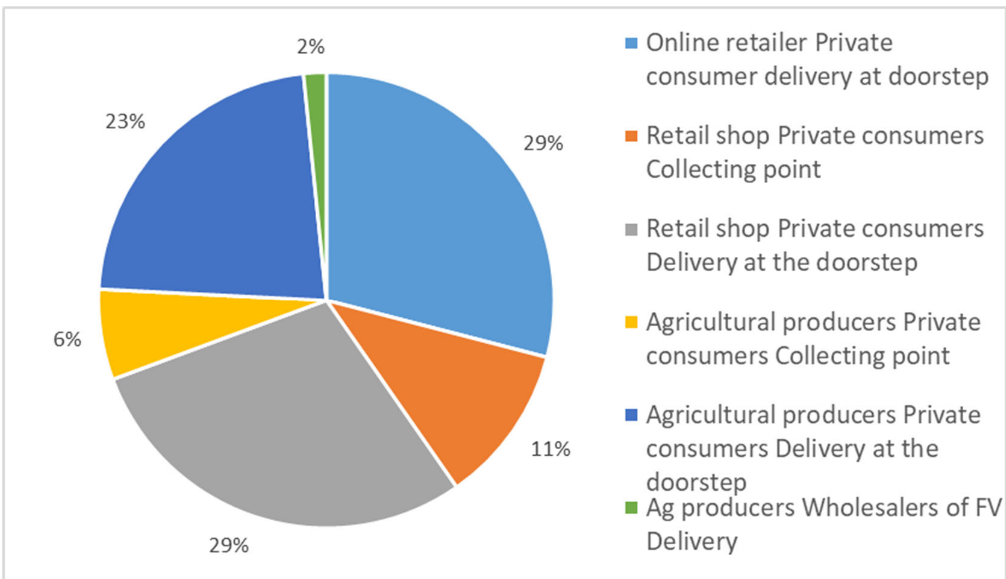


Figure 25. Spain Top-50 findings: Market structure



Delivery structure

An interesting grid emerges when reviewing the Top-50 and overall findings. The main delivery option in Spain is “delivery to doorstep” with a market share of 70% to 80% and hybrid models offering delivery to doorstop or collecting points. Hybrid models could be found also for agricultural supplies and retailers. Single click-and-collect models (2 online-shops in total) do not play a significant role at all.

Figure 26. . Spain Delivery Models: All findings

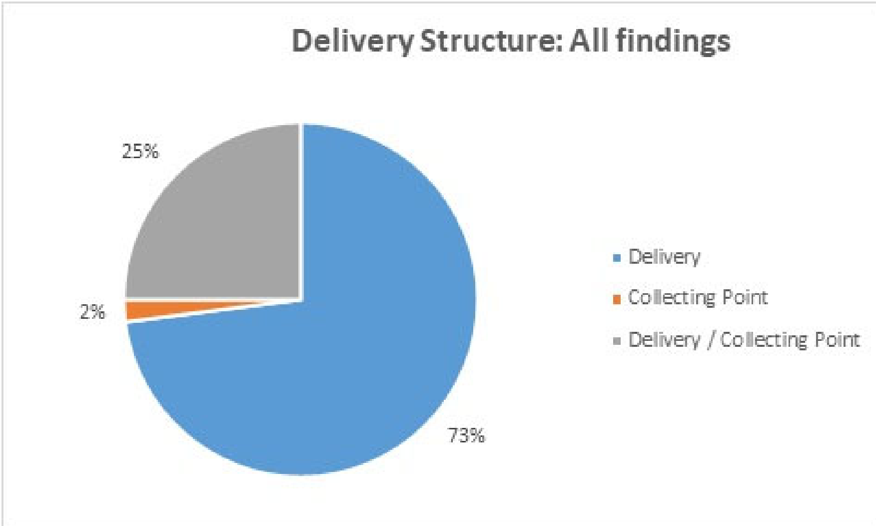
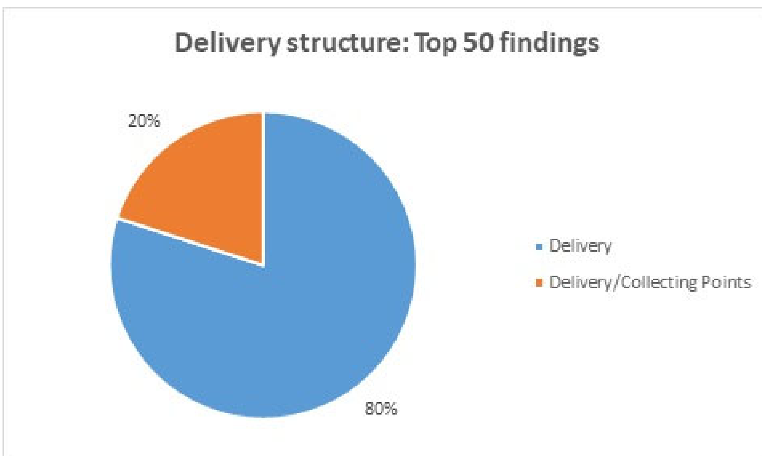


Figure 27. Spain Delivery Structure: Top 50 findings



Preliminary conclusions

- The Spanish online offer is characterised by a division of suppliers between urban areas (small corner-shops, so called "Fruterias" gone online) and rural areas (agricultural suppliers).
- Pure online-shops do not initially seem to dominate the overall market structure, but appear more dominant in the closer review, resulting from greater technology affinity.
- Click-and-collect models as "stand-alone" models do not play a role in the delivery structure.
- The online offer of fruit and vegetables is dominated by conventionally produced fruit and vegetables; a highly diversified offer of organic fruit and vegetables would only appear on specific requests.

- In general, the Spanish market structure is shaped by a highly localised and fragmented market structure; big brands or retail chains or highly professionalised online shops do not play a major role (1) in the search results and (2) in the overall offer.

Country comparisons

General remarks

A significantly lower number of results of web shops were found for Romania and Hungary. As such, this study works with percentage comparisons rather than the cleared numbers in order to allow for a deeper analysis of the structural differences. The market size itself will be addressed in the section comparing "Developed vs. Less developed markets - Geographic differences".

The stacked pillar model in 100%-visualisation allows for the most detailed comparison, given that

- Romania and Hungary did not reach the benchmark of 50 online-shops.
- The results in figures cannot be compared equally among the total findings or the 50 core findings, as some of the results represent hybrid models that add complexity to the analysis.

Therefore, delivery models and market structure will be reviewed separately.

General comparison

Market structure

Reviewing the overall evaluation, the diversity of online suppliers among the seven sample countries becomes more evident. The amount of pure online-shops ranges between 17% and 30% (with the exception of Hungary with 40% resulting from the early stage of market maturity and online/tech-start-ups as early movers compared to more traditional business models). In all seven countries, pure online shops were amongst the very first findings, which becomes more evident when reviewing the Top 50 results (ranging amongst all sample countries with a market share between 25% to 50%). While this does not necessarily reflect the overall market structure, online-pure players will always be amongst the very first results for the "eye of the consumer" and therefore should have priority for regulatory review.

With the exception of Germany, which has a relatively low percentage of the market share amongst traditional retail models (roughly 10%), all other sample countries provide a strong retail-organised online offer, either with delivery or click-and-collect models, representing roughly 1/3 of the European online fruit and vegetables offer. The Top-50 results confirm these assumptions with a stronger bias towards delivery models.

With regard to agricultural suppliers, two results stand out. The very low percentage of agricultural suppliers in the Netherlands with roughly 8% to 10% of the total market share and Germany with a very high agricultural supplier share representing 2/3 of the entire online-offer. In total, agricultural suppliers represent 43% of the entire online fruit and vegetables sales market. The strong dominance of agricultural suppliers is somewhat diminishing in the Top-50 analysis with a stronger bias towards stronger retailer and online shop. This is not at last a result of a higher level of professionalisation and market entry history.

With 43%, agricultural suppliers still represent the largest group, but will not consequently be the first choice of the consumer in the online choice that shows a dominance towards pure online layers and retail models.

B2B suppliers represent the smallest group within the European fruit and vegetables sales market with 5% to 7% of total market share. These overall figures might be misleading as predominantly B2B suppliers are mostly present in Belgium and the Netherlands. As explained above, the classification of B2B suppliers was challenging, as supply structures were often opaque and highly diversified. A closer review is needed. First reviews of the web shops gave the impression of being "First Mover" models trying a new approach, while delivery models in the Netherlands and Belgium appeared focused on specialised HORECA-categories.

With less than 1%, citizen initiatives were a surprising additional category identified during the research phase, but with minor relevance for the overall market structure. It was only present in Belgium and the Netherlands.

Figure 28. Country comparison: All findings in %

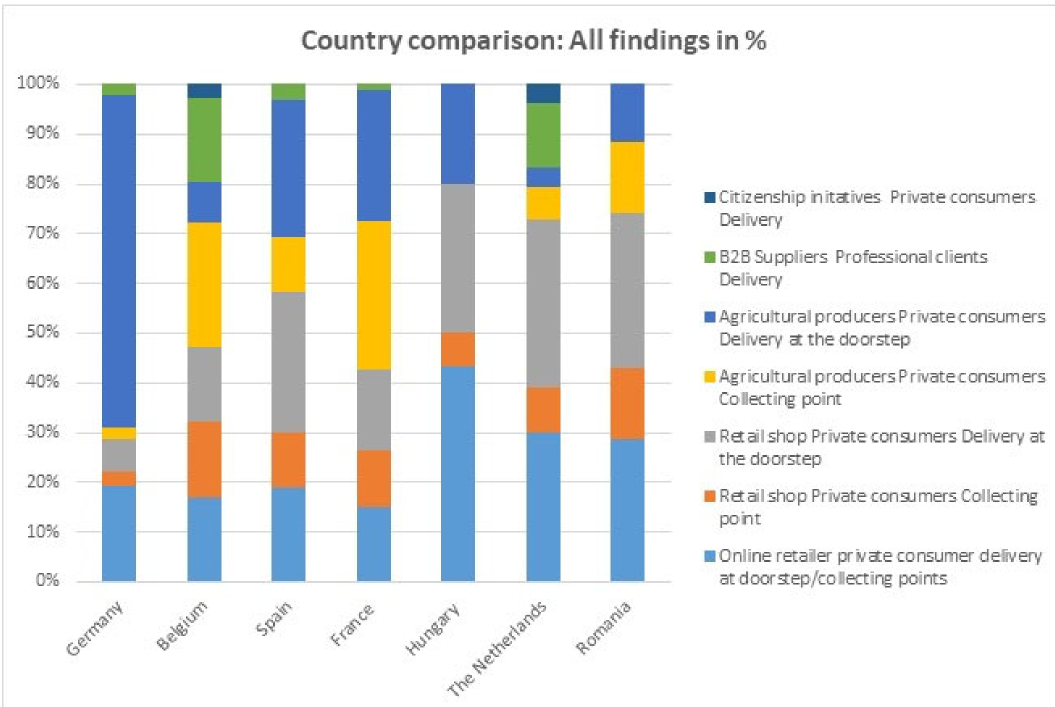


Figure 29. Overall findings: Market structure

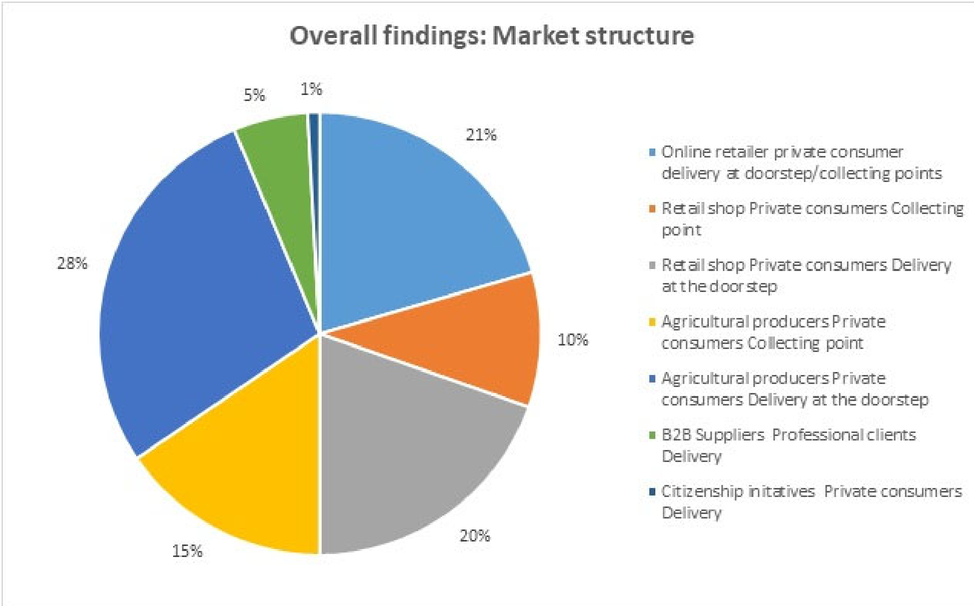


Figure 30. Core findings: Country comparisons, %

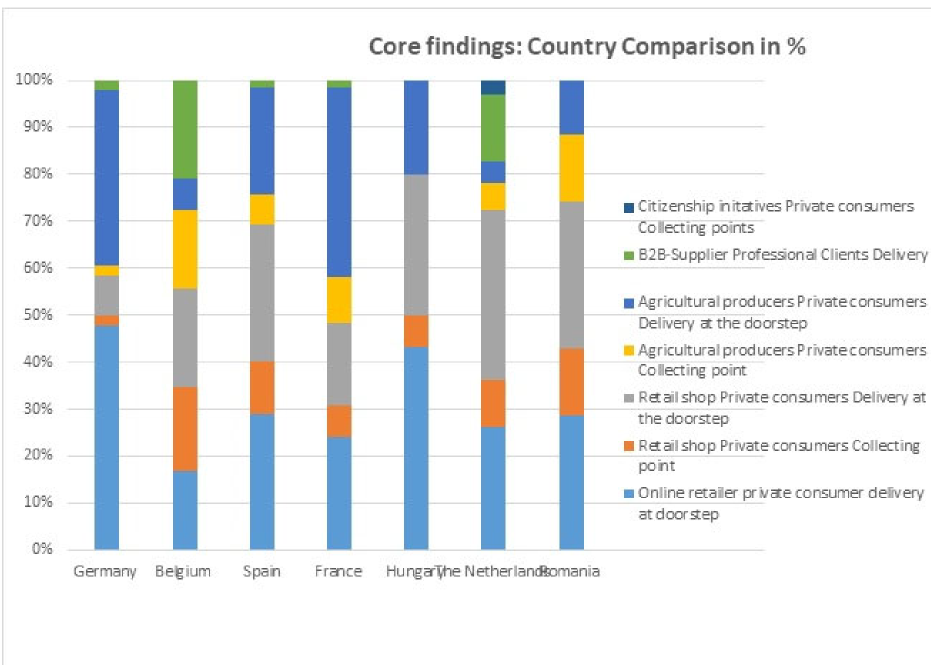
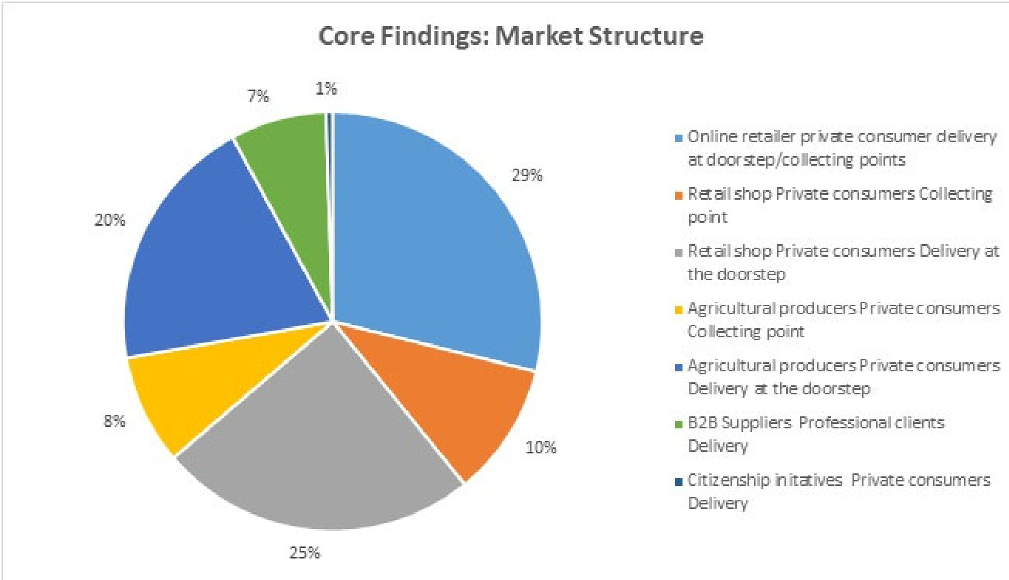


Figure 31. Core findings: Market structure



Delivery structures

The results from all findings together with the Top-50 core-findings show a continued bias towards classic-delivery models. In particular, the core-findings with 68% show that hybrid and simple collecting point models are still a niche market, low in Google search results and often connected to rather less professionalised operators such as small corner shops and agricultural suppliers. With regard to the two remaining categories (hybrid models, collecting point models), no real general trend is observable. While collecting point models comprise a significant part of the online-market in Romania, Belgium and France, they do not play a significant role for the German, Spanish, Hungarian and Dutch markets. A similar situation can be observed for hybrid offers, which strongly differ country by country. Most of the hybrid offers are found in Spain, France, Belgium and the Netherlands, but these would not necessarily rank high among the first core search results. In general, a 60% to 40% ratio can be observed between classic delivery models and collecting point/hybrid models.

Figure 32. Delivery structure: all findings by country

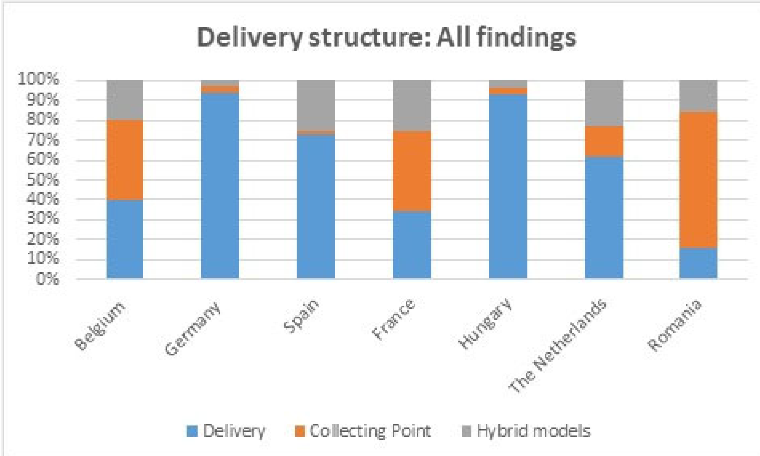


Figure 33. Delivery structure: All findings

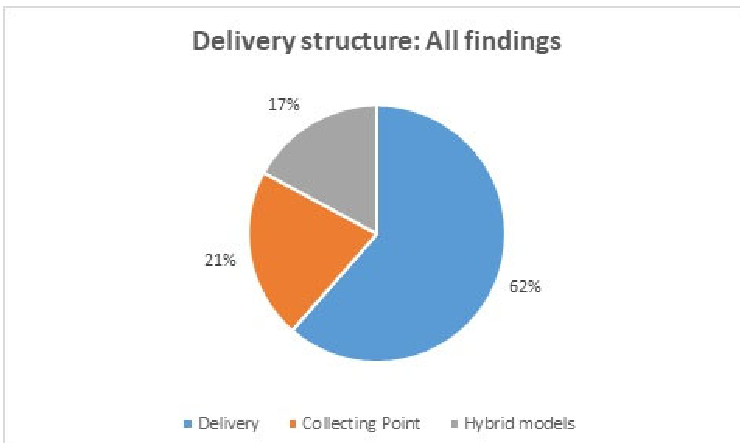


Figure 34. Delivery structure: Top 50 findings by country

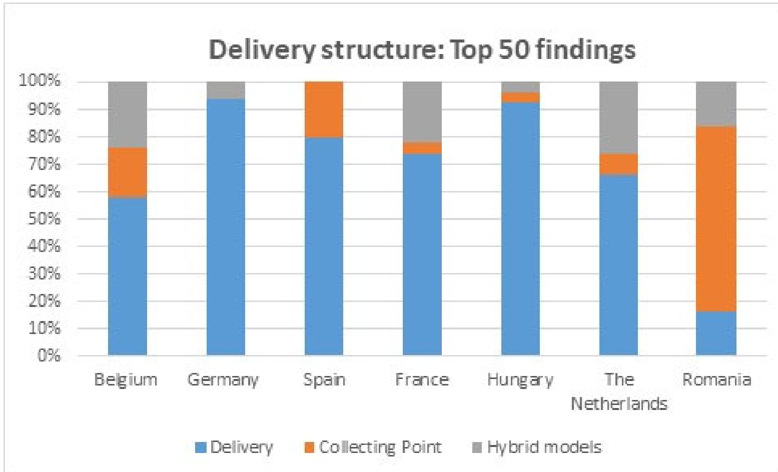
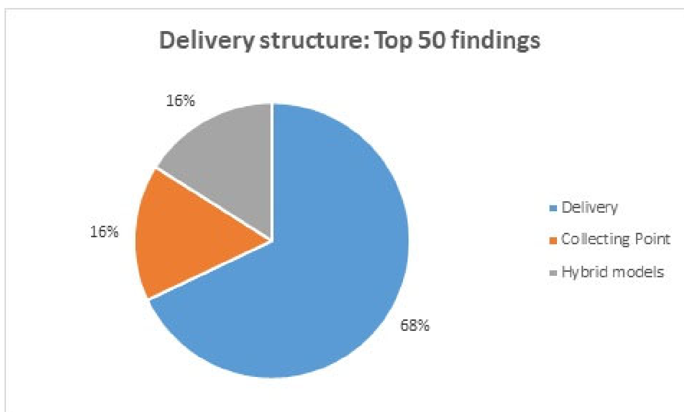


Figure 35. Delivery structure: Top 50 findings



Developed vs. Less developed markets: Geographic differences

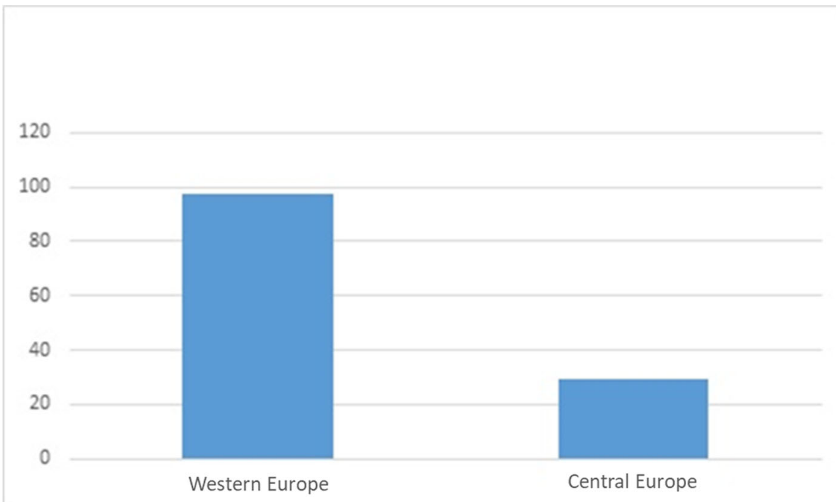
General remarks

Although no specific characteristics could be found which would highlight strong regional differences or even trends, it is worth comparing Western European countries with the EU-member states from Central Europe to illustrate regional differences in the market maturity. While this has been already reflected in the overall size of the results (Romania 32, Hungary 28), which was far below the smallest market in Western Europe (The Netherlands 57), the market structures of Romania and Hungary showed many differences. While both online-offers, even though limited in size, were located near urban areas like Bucharest, Cluj-Napoca and Budapest, the Romanian offer in general showed more professionalised structures than the Hungarian one. In Hungary, organic offers do not play a significant role. Online-retailers and retail shops, despite their rather outdated web shop appearances, dominate the fruit and vegetables online sales market. Romania showed a bias towards organic offer with more personalised content and blog entries, targeting a specific consumer segment. While market maturity stage in Romania and Hungary resembles, the market structure does not. This allows the conclusion, that market structure of the online offer independent from geographical location, is highly diversified.

Size of the market, market structure

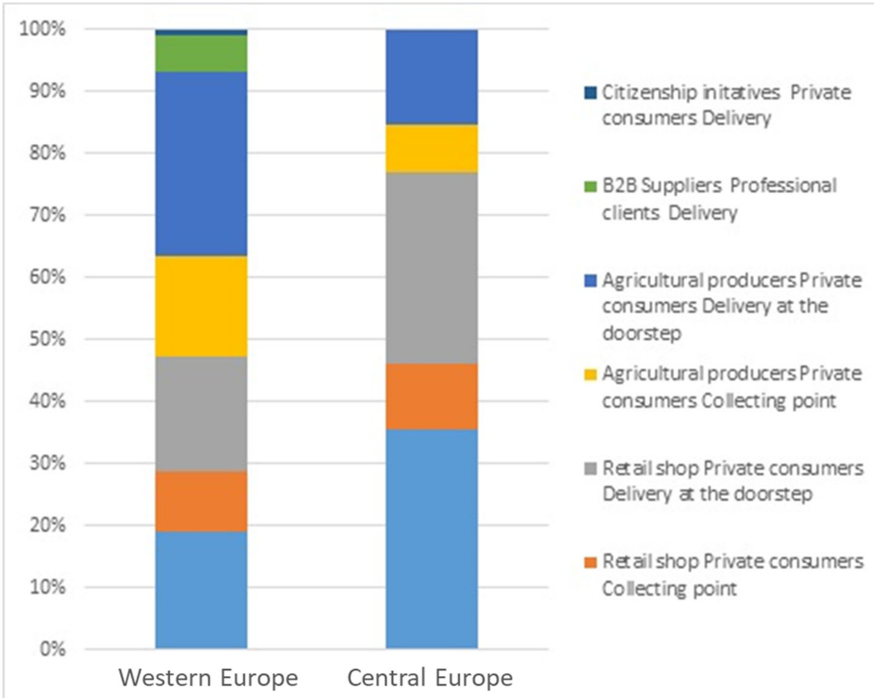
On average, the online fruit and vegetables offer in Western European countries with an average of 97.6 web shops is significantly higher than in Central European countries, with an average offer of 29.5 web shops. This may have manifold reasons, for which further research is needed. This includes expanding the study to all EU-MS to have the full picture of online-suppliers, as technological innovators such as in Estonia and in the Baltics as well as a different consumer behaviour for countries such as Slovakia or Slovenia may change the market picture significantly. The comparison in this study therefore can only give an idea of expected size and structural differences.

Figure 36. Western Europe vs Central Europe: MS average market size (number of web shops)



The illustration below, based on average calculations of Western vs. Central Europe, show a more diversified picture of fruit and vegetables online offer in Western Europe. The strongest group of suppliers in the five sample Western European countries are agricultural suppliers (delivery models) with roughly 30% and together with collecting point models up to 50%, while in Hungary and Romania they comprise only about 25% of the entire online-offer. The other 40% of suppliers in the Western European countries consist of 20% online-shop and 20% retail shops. The Central European market structure is strongly shaped by retail and online-shop models, with 75% of the entire online-offer. Citizen initiatives and B2B models do not exist at present in Hungary and Romania.

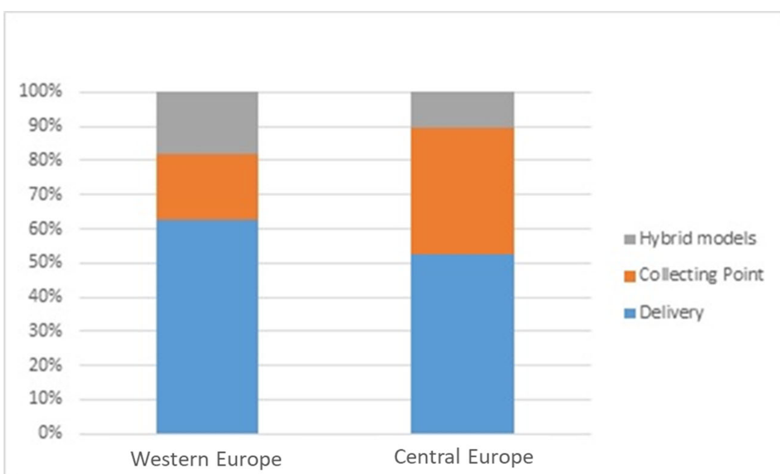
Figure 37. Western Europe vs. Central Europe: Types of offers



Delivery models

Similar to the above analysis, average accumulations of both regions have been taken to allow better comparability. Interestingly, the overall comparison shows a more equal distribution (50:50) between delivery models vs. hybrid/collecting point models in the Central European countries vs. a stronger bias to classic delivery models (60:40) in the Western European countries.

Figure 38. Delivery models: Western Europe vs. Central Europe



Conclusion and maturity of the market

While conclusions need to be drawn carefully, some differences in the market structures between Western and Central Europe could be identified. In particular, the difference in market size compared to the population size ratio as well as the size of agricultural production, shows that the Central European countries are still building their online-offer and that often traditional purchasing options continue to dominate. This is underscored by the strong accumulation of online offers around urban centres, while Western European countries also show strong coverage in more rural areas. Online offers in that regard are often used to connect agricultural suppliers with the region and allow a new visibility of local production. The web shops found in the Hungary and Romania showed many differences to web shop with regard to their level of professionalism and will likely serve as experimental pioneering examples to build on in the future.

From the figures as well as from the overall appearance of the web shops, preliminary conclusions cannot be drawn on lower compliance rates with regulatory requirements or certification (e.g. organic certificates), which are unstructured in both regions. Neither the figures nor the overall appearance of the web shops allows preliminary conclusions on compliance with regulatory requirements or certification. In both geographic regions, the appearances of the majority of web shops equalled and showed similar unstructured characteristics.

3 Screen checks. Information provided online in accordance with legal requirements

Methodology

Legal provisions in the European Union (EU)

Within the European Union, provisions on information for the online-client with regard to the marketing standards are specified in regulation (EU) no. 543/2011. Article 5 (1) requires, that the information particulars required by marketing standards, in general shall be shown legibly and obviously on one side of the packaging, either indelibly printed directly onto the package or on a label which is an integral part of the package or affixed to it. In addition, article 5 (2) specifies that in the case of distance contracts within the meaning of Article 2(1) of Directive 97/7/EC of the European Parliament and of the Council, conformity with the marketing standards shall require that the information particulars shall be available before the purchase is concluded.

However as in B2C contracts the purchase is on the level of retail, article 6 (1) may be taken into account. There it is specified, that products may be presented for sale provided the retailer displays prominently, adjacent to and legibly the information particulars relating to country of origin and, where appropriate, class and variety or commercial type in such a way as not to mislead the consumer. Thus, in the context of this research, online-offers have been checked for compliance with article 6 (1). In addition, the research was focused on apples, to allow a good comparability of the countries examined. Apples are covered by a specific marketing standard, the indication of the class is required and for apples, the indication of the variety is obligatory.

Screen checks for labelling

As the question on marketing standards and labelling of origin for goods sold online, based on Commission Implementing Regulation (EU) 543/2011, was the initiator for this report, a special focus was placed on compliance with Article 6.1. As indicated in section “evaluation of the findings”, the evaluation focused on those pages the average consumer would easily find. To reflect this approach, screen checks for Art. 6.1 were conducted with the first ten websites found in each country. On the website itself, screen checks were conducted specifically on the product “apple”, as this product required the coverage of all categories of marketing standard and would allow better comparability of the results. In cases, where no apple was amongst the online offer, this website has been replaced to the one following websites after in the ranking. Websites that offered fruit baskets including apple also remained among the tested cases. In most cases, the entire web shop applied a systemic approach to depict the marketing standards or it did not so at all.

No differences were discovered in depicting marketing standards product by product on the same webpage.

Criteria for the screen checks

In a first sample review, prepared for the presentation at the 32nd International Meeting Quality Control of Fruits and Vegetables in Bonn/Germany, big differences with regard to compliance to marketing standards 543/2011 have been discovered all across Europe. The sampling exercise gave reason to review the current compliance situation in the countries selected for the study in more detail. In order, to better map the findings a score system has been developed, to allow better comparability of the results.

For the three big categories: Compliance with Origin, Class and Variety labelling allowed only yes- or no-answers. In this case, "Yes" has been classified with Code "1" and "No" with Code "0". As explained in the chapter "Methodology", for the screen checks the first ten findings – or depending on the availability of the product "apple" in the sampled web shop also web shops among the Top-20 findings, have been taken for a closer review. In many of the cases, the first ten web shops had offered apples but in total, for most countries, synoptically the first twenty relevant web shops have been checked. Full compliance would mean in this case: 10 out of 10 points. If displayed correctly, an "organic" or "bio" label has been considered as equal to "classification".

Table 9. Accessibility: Effort taken to find the information

Description of effort taken	Score
Next to the product of interest	1
An additional "cursor"-click/action needed, to access marketing standard information	2
More than two clicks/action to access marketing standard information	3
No information displayed/accessible	4

Next to the compliance with the marketing standards required, the point on accessibility of the information was discussed many times. Therefore, a second score system was developed to allow a systemic approach to evaluate the data. The score system works in the following way: Based on this scoring system, a ranking was designed for calculation. The best rank would be 1.0 (lowest sum of accessibility divided by 10 findings), and the worst-case scenario would be 4.0 (highest sum of accessibility divided by 10 findings).

Overall results of the screen checks: country comparisons

The results of the screen checks revealed a range of different approaches and interpretations of the current Article 6.1 requirements, which mirrors the fragmentation and diversity of the online offer and the varying level of professionalism among the various operators. Surprisingly retailers seem to be more challenged when displaying the requested information, while small-scale online-shops showed a higher compliance ratio. In particular, the way of displaying the information has been confusing. For example, "variety" labelling was many times done within the header of the product, while class-labelling had to be searched laboriously with one or two more clicks.

Interestingly, it seems that for web shop operators, despite the three criteria (origin, class, variety) belonging to a single Article of legislation, they do not seem to belong together in the display method. The information was rarely disclosed together, e.g. in a box next to the product, but rather split throughout the page (e.g. variety as a headline, origin next to the product, and the class revealed with an extra click).

For all sampled websites for all countries tested, fruit and vegetables baskets did not comply at all with the requirements of Regulation 543/2011. In all cases, no information on origin, class or variety for the product "apple" was given.

In some cases access to a product and information was only given after a login or sign-up. This has been scored with a 4 with regard to accessibility to information.

Accessibility to information

Accessibility to information surprisingly did not differ so much from country to country in terms of scoring, with France showing the best result with 1.2 points and Belgium the worst accessibility with 2.6 points. Often the necessary information – even though partially applied – was accessible next to the product or only one more click away. Nonetheless, the approach to display the information differed from webshop to webshop, which hardened the overall assessment. The most streamlined results and fastest accessibility of marketing standards information on first sight has been provided by France, which reached the highest rank with regard to accessibility of information. Interestingly, next to Germany, Hungary and Romania, despite a rather low coverage of webshops, showed the most transparent and accessible data. Only Belgium stands out with regard to a rather weak accessibility scores where often times among the first ten findings no information was displayed at all. The result further shows that the larger the size of the market or the bias towards one business model do not necessarily allow for a conclusion on the professionalisation level. In total, the average accessibility score of marketing standard information is around 1.8, which reflects an overall strive to deliver transparent information on the product in line with the regulatory requirements.

Table 10. Ranking accessibility

Country	Origin	Class	Variety	Accesibility
France	10	8	10	1.2
Germany	7	8	7	1.8
Romania	7	2	6	1.8
Hungary	5	2	7	1.9
The Netherlands	7	1	8	1.9
Spain	4	1	7	2
Belgium	3	0	5	2,6

Origin labelling

With regard to origin labelling, France showed as only country full compliance with the origin-labelling requirement. French operators in most of the cases displayed the origin right away next to the product, while in other cases the products originated from one local farm. In these cases, the origin was not displayed next to the product but has been reflected in the accessibility score, which included one or two additional clicks to identify. Germany, Romania and the Netherlands show a relatively good scoring of origin for most of the goods, followed by mediocre result for Hungary with 5 out of 10 displays. Surprisingly, Spain, as one of the main horticultural producers showed a relatively low number of origin labels for apple followed by Belgium with the lowest compliance of web shops. In total, the origin labelling only reached a medium score of 43 out of 70 possible scores. In most cases, the information was displayed either next to the product, below the heading or findable by scrolling downwards. With regard to the accessibility, origin labelling was often the easiest to identify among the three categories but overall, it seems to be rather challenging to provide the origin of the goods before the delivery.

Table 11. Ranking Origin labelling

Country	Origin
France	10
Germany	7
Romania	7
The Netherlands	7
Hungary	5
Spain	4
Belgium	3
Total Score	43/70

Class labelling

The category of class labelling showed least compliance among the three sample categories with only 22 overall displays in 70 sample websites and seems to be the most difficult in terms of compliance. Many times, finding the information needed an extra effort by opening new windows within the page or to find "additional information" tabs to be opened. For the search, specific attention has been given to products that could fall into a class category such as citrus or apple, in order to verify the compliance as not in all case applicable. Interestingly, the gap between the two good students in class: Germany, France, and the rest of the tested countries, has been exceptionally large. This result will need further assessment for reflection with regard to the need of more educational information availability for web shop operators or other underlying reasons. With 22 out of 70 overall scores, class labelling showed the lowest compliance rate amongst the tested categories and seem to be the most challenging to reach.

Table 12. Ranking Class labelling

Country	Class
Germany	8
France	8
Hungary	2
Romania	2
Spain	1
The Netherlands	1

Country	Class
Belgium	0
Total Score	22/70

Variety Labelling

Variety in many cases was displayed as “heading of the product”. Interestingly, most web shops rather displayed the variety of the goods available than the origin which is reflected as well in the highest overall score with 50/70 possible points. All tested countries rank between 10-5 with no big gap amongst each other. Rarely web shops applied description like “red apple” or “green apple”, but rather brought in most cases to the detailed information on variety. In particular, France and The Netherlands showed the strongest compliance on variety labelling, followed by relatively good scores of Spain, Germany and Hungary. Finally yet importantly, Belgium complied in five cases.

Table 13. Ranking Variety labelling

Country	Variety
France	10
The Netherlands	8
Hungary	7
Germany	7
Spain	7
Romania	6
Belgium	5
Total Score	50/70

Screen check results by country

Screen check Belgium

The screen check for Belgium showed sobering results. In all ten test cases, accessibility to the actual product has been rather complicated. Depending on the nature of the web shop, sometimes no fruit at all was displayed or only allowed the order of a complete fruit basket, mostly without pictures of the product. In only three cases, the origin of the apple was recognisable. In all three cases, the origin was not displayed next to product, but had to be found through additional research and clicks. In five cases, the variety of the product has been available. Labelling of class has not been conducted at all. Overall, Belgium scores 2.6 on average regarding the accessibility of the data. Firstly, most of the webpages did not display at all information on marketing standards and those who at least fulfilled criteria of information, did not design an accessible approach to the information. Some websites even limited review of the product through a login/registration or offered to submit a list of goods instead of offering a choice.

Screen check France

The overall results for the French screen check show a very positive compliance, with labelling of origin in ten out of ten cases and the designation of variety in ten out of ten cases. With displaying the class, French web shops also reached the highest score with eight out of ten tested web shops. Further, French web shop scored positive with regard to the accessibility of the information. In nearly all cases, the information was displayed next to the product or easily accessible with one more additional cursor click.

Screen check Germany

Germany ranks amongst the highest scored countries out of the tested sample countries, but also show some cases of incompleteness. Some web shops showed incomplete origin labelling, in particular those, which provided apple as part of fruit in fruit boxes and not as single item. Interestingly, in particular bigger retailers would not give one origin but many different ones, depending on the availability of the product. The overall accessibility score in Germany reaches 1.8, which hints on a relatively easy access to the marketing standards information and ranks right after France. Again, suppliers of fruit baskets (either simple online-shops as well as new business models such as etepete-bio, a web shop rescuing food waste) had only insufficient information on the product available.

Screen check Hungary

Despite its early maturity market stage, the compliance with regard to marketing standards is in no way inferior to the more developed markets. With 5/10 matches in the category origin labelling and 7/10 with regard variety labelling, Hungary scores higher with regard to compliance than most of the other tested countries in these categories. Class labelling with only 2 out of 10 seem to be less of importance or less known. In two cases, the retailer with no labelling included disclaimer warnings and referred to the labelling of the product at the day of delivery. In most of the cases, the info was displayed next to the product selected, which results in a relatively high score of 1.9 for accessibility.

Screen check Netherlands

Although the Netherlands scores rather average with regard to compliance with marketing standards. Seven webpages mention the origin and only one the class, while variety information, mainly given with the title name of the product, has been covered 8 times. Interestingly, some pages would give origin and even dispatcher information for the Dutch origin and but not for foreign origins. In some cases, where the product is guaranteed to be an import, nonetheless only the packer was mentioned. With regard to the accessibility of information, the Netherlands scores in the first half of the ranking, as in most of the cases, most relevant information has been displayed directly next to the product. In some cases, product information was only available by specific login or was not available specifically when apples were part of a fruit box.

Screen check Romania

Romania's result show a similar trend with regard to compliance with the marketing standards as in Hungary, with 7/10 origin labelling, 2/10 classification and 6/10 variety information. Labelling of marketing standards in Romania is characterised either by easily accessible information, but mostly incomplete with regard to the class labelling or in some cases no information at all. In particular, retail chains showed limitations on the availability of information with regard to origin and class.

Screen check Spain

Despite Spain being one of the European countries with the largest supply structure, the results from the screen checks rather placed Spain in last part of tested candidate countries. With only 4 out of 10 origin labels, and only 1out of 10 class labelling ranks in the last part of the chart. Only with regard to variety (7 out of 10) Spain remains in the midfield. The overall accessibility of information also remained rather modest in many cases.

Discussion: Reflections from industry perspective on marketing standard requirements online

A key element, when discussing fruit and vegetable online sales is the time span between order and delivery time. While at the classic retail level, the product is immediately available for the client, there are strong differences for the delivery times among the different web shop classifications. While many click-and-collect models of pure retailers operate with same-day-delivery possibilities, most web shops have a longer processing time from order to delivery. Some (agricultural) operators work with fixed delivery days of once or twice a week. Some online-shops and retailers need at least two days' notice before delivery can take place. Currently, except maybe for one or two operators, no web shop offers same-day delivery.

This is relevant as fruit and vegetable trade is strongly dependent on weekly, seasonal and weather development.

While most of the trading relationships are established and reliable, fruit and vegetable production is strongly dependent on harvest conditions, weather, and many other aspects of production as well as constraints tied to delivery and logistical conditions. Retailers can plan to source from an origin, but may need to deviate to another origin from one week to the next in order to ensure supply. This becomes challenging for established retailers with a large set of suppliers inside and outside the European Union. The high diversity and fragmentation of products as well as the shift of product day by day adds to the complexity of compliance. In many cases, origin can be predicted maximum one week in advance in line with the current operational conduct. The big timespans from order to delivery in fruit and vegetable online sales may be a first explanation, why in particular origin labelling online is challenged so much, and even more the labelling of the class of the product.

A second layer of complexity is added, when one or several regional agricultural suppliers operate web shops. In these cases, the origin might be clear by common sense, but often is not displayed next to the product. In practice, this would also mean non-compliance with Marketing Standard Regulation 543/2011. Moreover, most agricultural web shop operators are often organic producers who strongly comply with European law on organic production. It is highly likely that these operators do not know the labelling conditions for fruit and vegetables, as their attention is given to other aspects of production and sales.

Thirdly, fruit and vegetables baskets, no matter from which operator, seem to operate in all cases outside the Marketing Standard Regulation with no reference to origin, class or variety of the products composing the basket.

On the other hand, Marketing Standard Regulation (EU) 543/2011 leaves some space for a broader interpretation of certain aspects such as the momentum of “retail-stage”. While many argue that the consumer would want to know all the information beforehand when ordering online, others argue that the conduct of the purchase contract is only fulfilled when the consumer receives the goods. Consequently, the retail level would be at the doorstep or collecting point.

However, Article 6.1 is interpreted, it is obvious that the current law on labelling for fruit and vegetables is designed for in-store-purchases, but does not match the current conduct of operators with regard to online sales. Therefore, some aspects for labelling have to be rethought:

- In light of the long timespan from order to delivery, is there a need to adjust the operations to, for example, a limited time range to deliver in order to allow the display of origin, variety and class?
- Does the current law need to be amended by specific conditions for fruit and vegetable online sales, for example by allowing a variety of origin to be displayed?
- Given the diverse and fragmented structure of fruit and vegetable online sales, is there a need for a more diversified regulatory approach to address different sourcing models?
- As consumer protection is used as a strong argument for compliance with article 6.1, regulators should also reflect whether consumers expect the same level of detailed information (or even more detail) for fruit and vegetable e-commerce purchases as compared to retail-purchases. Do consumers who purchase at an agricultural producer in the region really need that that producer complies with article 6.1? Would the producer need other labelling parameters for the web shop?
- Is there a need for stronger unification on displaying modalities, to allow the consumer an easier access to origin, variety and class information?

While acknowledging the complexity of the Marketing Standard Regulation (EU) 543/2011 going beyond article 6.1 requirements and covering article 6.2. requirements for displaying the packer/dispatcher and net weight, as well as specific provisions at the retail stage for citrus, kiwi and many others, this exercise has been focusing on the principle of compliance with article 6.2 will need to have additional reviews, as it adds on complexity for the labelling exercise online.

4 Evaluation

Assumptions from the industry: The end-user perspective - Transparency and Trust

Not much is known on the real quantitative uptake of fruit and vegetable online sales, as consumer studies have been so far focusing more on the general uptake of online grocery purchasing. Food retail in the EU is still very much shaped by in-store purchases.

As indicated in the beginning, this study cannot cover the consumer perspective and a dedicated adoption study would be needed to understand the constraints and conditions of the consumer to really change its purchasing habits. Nevertheless, this section will share some observations coming from the research phase, which can be summarised as “emotional aspect” of online purchase and may be important for reflecting upon regulatory aspects.

1. **Status of food safety and quality as decisive aspect for a purchase decision based on the “look and feel” at POS:**

Fruit and vegetables are as any other food category sensitive products regarding their appearance at the point of sale. Look and feel do matter as much as hygienic conditions. While the consumer cannot control the conditions nor the handling of the product in local shops, he/she has direct access to the product at the point of sale and can decide directly, if this “look and feel” is appealing. While handling in an offline or an online shop may not differ too much, the absence of direct contact to the produce creates an additional layer in-between seller and buyer/consumer. So, in this case, the “look and feel” does matter not only for the product itself but also for the surrounding shopping conditions. With that regard, the overall impression of the current web shop offer was rather sobering. Many web shops worked with outdated webpage systems, appeared as if they were abandoned since a long time or non-functional. Some webpages only allowed order after requesting access. Online pure players often did not reveal much information on the operator, origins of the products or how they are handling and storing the product. While this is not a legal requirement to be revealed, the current situation is not helping to build trust in online-delivery either. Serious reflection is needed among operators, regulators and consumers, how a trustful and transparent togetherness can be created online with that regard. First ideas could be, to create additional requirements for transparency on storage and packing conditions and sourcing. Secondly, simpler webpage structures and clearly defined information on the operators, easily accessible, may help to break the barrier to online-purchase of fruit and vegetables.

2. **The offer is created by the competitor not by demand:**

One of the key reasons, why fruit and vegetable online sales does not yet feel authentic in EU countries, is that the offer has not yet been demanded by the consumer, but created under the pressure of the global success of multinational companies such as Walmart, JD.com or Amazon Fresh, which have enormous global success in other regions of the world, shaped by a different habitual approach to online shopping given differences in lifestyle and living conditions of the consumers (stronger urbanisation, shop coverage, long working hours…). As the current in-store purchase rate is stable in the EU and still growing, a certain lack of compassion and engagement is observable among the current web shop operators. Websites are often chaotic, complex or not thought until the end. Often systems appear only as copy from competitors or a hasty cobbling together. There is a strong need among competitors to re-reflect food and fruit and vegetable online shopping to make it more attractive to the consumer.

3. **Don't play with the trust of altruistic clients:**

A third and crucial aspect of fruit and vegetables online purchase in EU countries is the trend towards "altruistic" consumption. A big part of the fruit and vegetables online offer is characterised either by organic products or with a strong emphasis to local consumption. While in Germany and France, there is already a trend towards visible official labelling on the websites with regard to the status of organic production, but the same cannot be confirmed for the other sample countries. Many of the websites advertise with catchwords such as "bio" and "local" and explain their way of production, often highly personalised, but without proofing the legal implementation of just this. While likely, the offer available online is complying with the organic production rules at EU level, nevertheless traceability of the facts leaves much to be desired. In order to help consumers, find trustable web shops which suit their demand for organic or local produce, there is a strong need to create guidelines on how to display this on websites, including the legal confirmation in an easy and understandable way. For the labelling of the "local component" the challenge will be moreover, to find a good definition of "local" and "regional", in order not to dazzle the consumer by using buzzwords and then sending produce through half of the country.

Policy and follow-up recommendations to tackle European fragmentation in the fruit and vegetable online sales market

1. **Expansion of the study to all 28 EU-MS:**

While the review of the seven sample countries gave already valuable input into the market structure in the EU, the fragmentation and diverging maturity levels, approaches and direction taken, still need better classification. In order to strengthen a harmonised regulatory approach with regard to EU fruit and vegetables online sales and to allow easy cross-border transactions, the holistic picture will be needed, to identify priority steps and areas of concerns.

2. **Supply chain mapping and case studies:**

In order to better understand the operational side of fruit and vegetables online commerce, it is strongly recommended to conduct case studies with selected operators, to understand better the logistical side, IT management as well as the sourcing management. If the business models and the supply chains are fully clarified, regulators will better grasp the operations of the operator and allow more practically oriented policymaking. It is expected, on basis of the current results that show a strong fragmentation and diversification of the online market, that the case study exercise will reveal a broad range of very diverging operational activities and supply chains. This may require a very flexible application of law making in order to cover a diversified range of supply chains.

3. **Conduct a dedicated consumer analysis study:**

While this study could only review the offer side, there is strong inexperience on the consumer perspective. According to European retailers, who have been interviewed for the 32nd International Meeting Quality Control of Fruits and Vegetables in Bonn in March 2019, the uptake of the online-offer is currently not outpacing in-store purchases nor is it reaching a level which would trigger new investments or more innovative approaches. As these interviews have been done before structuring the market, at this point no agricultural suppliers have been interviewed nor pure online-retailers. So in March 2019, the assumption on the slow uptake has been done on a very limited review of only a part of the relevant players. So therefore, it is essential to identify 1) the current consumer behaviour and uptake in figures; and 2) constraints to the online-purchase (if there are), in order to better understand, in which direction the market will develop. This consumer review must also try to understand better if there are national differences with regard to the consumer behaviour affecting the development of the fruit and vegetable online business. Finally yet importantly, the study could also review the consumers need with regard to information displayed at the website, when ordering online.

4. **Respecting national peculiarities:**

Already this first study revealed many national peculiarities such as the French “Drive model” or the German dedication to “organic”. These consumer habits and market structure need to be taken into account when creating the regulatory framework.

5. **Special attention to fruit and vegetables mixtures/baskets:**

Regardless of the sample countries, fruit baskets lacked any kind of labelling of origin, class and variety. In particular, pure-online operators delivering to offices or professional organisations, did not mark the above-mentioned aspects on their webpages at all. Often these webpages did further not reveal much on the sourcing method of the product nor the ownership of the web shop, which does not contribute to trust building between operator and client. While also the agricultural suppliers lagged labelling of origin, class and variety in compilations, eventually the overarching origin of the product has been clarified by “common sense “.

6. **No one size fits all approach:**

Given the diversity in the supplier structure, new regulatory requirements and the review of already existing ones should be done carefully. Different requirements and backgrounds in the supplier structure need to be taken into account. The review showed that the same conditions applied to retailers might not match to the supply chain of a single agricultural supplier selling online. Why e.g. would a farmer have to put the origin labelling next to the product, if he is not only the selling party but also the source of production? This diversity needs to be reflected in any upcoming regulatory steps.

7. **Rethinking requirements of EU Regulation 543/2011:**

In light of the current conduct of fruit and vegetables online sales, it is appropriate to rethink the application of Art. 6.1 of EU Regulation 542/2011. It neither matches the current conduct of delivery timespans, which does not allow displaying the origin at purchase level, nor does it seem appropriate for agricultural suppliers, who are producing their own goods.

8. **Acknowledgment of diverging professionalism and pioneering spirit:**

The diverging range of maturity of the fruit and vegetables online sales market in Europe, as well as the broad diversity of offer and displaying the offers, highlights, that other than stationary retail, online fruit and vegetables sales is shaped by a “learning by doing” spirit. Many of the operators may have never collected experience in the field of fruit and vegetables sales nor in e-commerce. Agricultural suppliers may know the side of production, but not the regulatory side of fruit and vegetables online sales. New regulation therefore needs to be formulated and designed in the easiest and most accessible way as possible and should not kill founding spirit from the start. Current regulation insofar gives traditional branded retailers an advantage by experience, while the big group of operators is characterised by SME retailers, small start-ups and agricultural suppliers.

9. **Creation of consumer-friendly website template:**

In order, to create a more accessible way that is easier to control, it is recommended to define framework data for the look and structure of fruit and vegetables web shops, which allow simpler adoption by semi-professional and/or non-experienced web shop operators, to create a functional and regulatory compliant webpage. It is further recommended, to create easy accessible and understandable guidelines on regulatory requirements and practicability. This should also include overviews on current state of play of organic certifications, needed as a proof for compliance.

10. **Information on delivery mode to address transport sustainability:**

While in most countries, the local delivery option indeed was limited to a local radius around the supplier organisation, especially in Germany web shops offered German wide delivery event though not having a branch at the spot who could do the delivery. While this does not need limitation, clear information should be given at the website, to allow the consumer an informed choice.

5 Conclusion

This study is a pioneering step towards a better understanding of the current online fruit and vegetables sales offer in Europe. It has dived into the existing market structure without assuming in advance on the outcome. It can provide a first overview on the overarching supplier structure as well as national differences. It further can help to better understand the current state of play on compliance with EU Regulation 543/2011 on marketing standards and can give a preliminary overview on side-observations about transparency, traceability and trust. Nevertheless, to complete the picture, a full consumer analysis will be needed. Only with the perspective of the consumers, the picture of the current fruit and vegetables market can be completed and allow regulators and industry a better understanding of where the market may head to in comparison to booming online fruit and vegetables sales markets such as in China, India or the U.S.

Interestingly, the study revealed no common European market structure, but a much-diversified picture of the European fruit and vegetables online sales market. While the range of players remained within limits and did not need too much amendment, the bias of each national market diverged strongly. While Belgium was the only country with a bigger market share of B2B suppliers, its online-retail structure did not resemble e.g. the Netherlands, which was despite a bigger population size, smaller and much stronger retail-shaped. France showed a strong bias to “Drive”/Click-and-collect models” with a strong localised offer. Spanish operators built on modernisation of “Fruiterias” online. Germany showed a strong offer of organic and Demeter fruit and vegetables. Romania seems to be building in this niche-direction as well, despite the dominance of the retail sector in the online-sphere. Hungary seems yet to decide the future direction and showed the least maturity with regard to online fruit and vegetables markets.

Despite national specifics, no significant regional bias could be identified in the study. Indeed, the Central European EU-MS Romania and Hungary showed a smaller offer than the Western European EU-MS, but with regard to market structure and compliance to the EU marketing standards Regulation 543/2011, they were in no way inferior to the other MS. Despite small commonalities, also no South-North axis regarding the market structure could be identified. The study revealed further a strong dominance of retailers and online-shops in the core-findings and a growing level of agricultural suppliers in the broader review. Interestingly, despite a strong concentration of the European retail market, many small-sized retailers seized their opportunity online and created online-shops. Often big retail brands ranked further back in the search results than small corner shop retailers with local delivery.

All examined web shops, irrespective whether branded retailer or pure online player, had difficulties to implement the marketing standards. While some of the countries such as France scored high in origin and variety declaration, they still showed weaknesses about the declaration of class. Given the current conduct of fruit and vegetables online sales - the limited foreseeability/predictability of origins for the delivery timespan as well as the growing rate of agricultural suppliers, it is highly recommended to reconsider this conduct in favour of a more feasible regulation.

At the current state of fruit and vegetables online-commerce, it seems that there is no market leader yet in Europe. Professionalised branded retailers dominate neither the offer and search results nor start-ups. When reviewing the rankings, it can be seen that agricultural supplier rank lower in the search results, which could be a result of a lack of experience with Google Ads and a later start of the online-business than the established retailers. It further seems, that the internet provides a good platform for offer, which addresses clients who are not - as thought an early assumption - interested in convenience, but rather in alternative offer such as organic or local production, but have not the resource to drive to the farm 20 km away.

Beyond the mere figures, the current market seems to be in a waiting position rather than in an innovator mind-set, which is reflected in the “look and feel” of the webpages as well as in the absence of market leaders. While some add-on models such as “Hello Fresh” or “Etepete bio” seem to explore the road of innovation, the big crowd of online offers rather follows a traditional approach. Therefore, it is hard to predict, where the European market will develop soon, which will further challenge the regulators work in creating policy, which protects the consumer but allows dynamism and innovation.

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