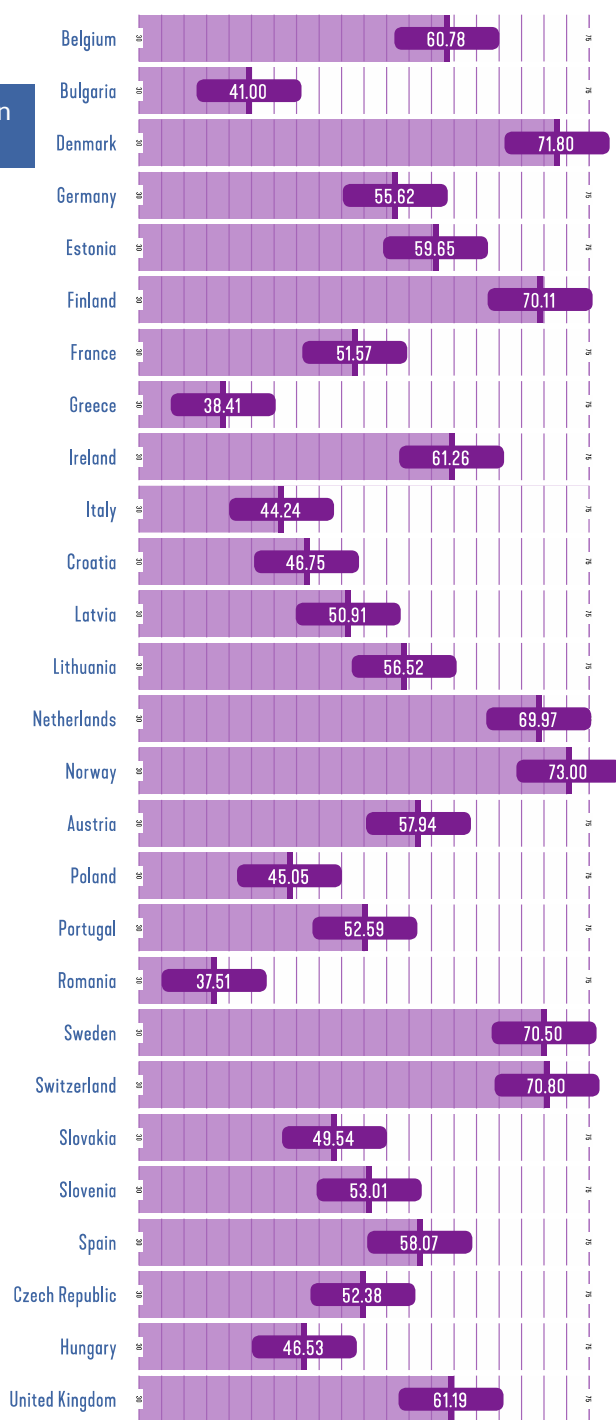# ATLAS DENTAL

European Markets /// Structures, Challenges and Scenarios

**Experience the latest
trends live at the 38th IDS
from 12–16 March 2019 in Cologne**

GFDI mbH study illustrates numerous
aspects of the digitisation megatrend

Presented by Dr Bernd Rebmann (HSG)
CEO of REBMANN RESEARCH

GFDI

Country	DESI-Index
Belgium	60.78
Bulgaria	41.00
Denmark	71.80
Germany	55.62
Estonia	59.65
Finland	70.11
France	51.57
Greece	38.41
Ireland	61.26
Italy	44.24
Croatia	46.75
Latvia	50.91
Lithuania	56.52
Netherlands	69.97
Norway	73.00
Austria	57.94
Poland	45.05
Portugal	52.59
Romania	37.51
Sweden	70.50
Switzerland	70.80
Slovakia	49.54
Slovenia	53.01
Spain	58.07
Czech Republic	52.38
Hungary	46.53
United Kingdom	61.19

Source: European Commission[2] /// Graphic: REBMANN RESEARCH /// As of: 2019

Digital aspects of the study

- Index overviews and maps facilitate comparisons of countries

Study conclusions:

- Digital-based equipment changes the workflow

- Networking, digital services on the rise (e-government, electronic patient file (EPF)/electronic health record (EHR))

- Digitisation harbours enormous saving potential (resources, time, personnel,…)

- Digital processes and IoT devices enable the achievement of better treatment/process quality, greater market/price transparency, simpler communication (e.g. paperless e-prescriptions/e-referrals)

- Digital data facilitates statistical evaluations/benchmarking

Developments due to increasing digitisation in the dentists/practices area

CURRENT

Diagnostics and treatment in the dental practice

Digitisation in individual areas (e.g. practice management, digital X-raying)

Prosthetics: Classic workflow requires several patient consultations

Administrative and settlement tasks are still realised by the practice team in a large number of practices

Orders: Dental technology in case of regional lab partners and surgery requirements/equipment in case of depot sales force

FUTURE

Diagnostics already realised increasingly in the patient's home, care also possible through remote treatment/do-it-yourself kits (e.g. aligners in orthodontics)

Networking and data exchange (incl. with external stakeholders) increasing

Digital workflow requires increasingly fewer consultations

Digital data enables outsourcing of administrative and settlementtasks (factoring)

Digital data, online transmission and IoT equipment expand options, online trade/globalisation is increasing

Developments due to increasing digitisation in the dental laboratory area

CURRENT

Product orientation towards dental customers

Frequently still one-stop providers for everything

Lab supports fixed regional practice partners

Still extensive manual production

Stable prices

FUTURE

Patients obtain information, compare services and are increasingly involved in the selection of the lab partner and dental product

Labs increasingly integrate suppliers (large labs/foreign labs, industry) in the manufacturing process

Digital workflow/digital data enable location-independent cooperation, supplemented by industrial production centres and large labs

Digital data enables CAD/CAM production and 3D printing → New knowledge required

Increasing globalisation/market transparency driving prices down

Developments due to increasing digitisation in the manufacturer/trade area

CURRENT

Product supplier

Sales primarily through classic depot trade

Product orientation towards dental and lab customers

Individual processes are digitized

Corporate consolidations, primarily to exploit new technologies/customer groups

FUTURE

Solution/service provider (with additional offers such as consulting, financing, etc.)

Online depots, online sales, (non-specialist) internet traders and online marketplaces gaining in importance

Stronger orientation towards patient as end customer

Increasingly pervasive digital/networked processes in all business areas

Increasingly more transactions in AI area, IoT wearables, frequently with the following goal: full-service provider, access to sales networks, pooling of resources (e.g. to cope with regulatory requirements)

International perspective
Analysis by country

- Germany
- Belgium
- France
- Italy
- Netherlands
- Austria
- Switzerland
- Spain
- Czech Republic
- United Kingdom

ANALYSING
STRUCTURES

- Demographic change
- The digital patient
- Technological developments
- Market consolidation
- Globalisation
- Outsourcing
- Regulatory requirements

MASTERING
CHALLENGES

- Tomorrow's patients
- Tomorrow's dental practice
- Tomorrow's dental laboratories
- Future manufacturers and trade

DEVELOPING
SCENARIOS

Perspectives of this study:

- **Demand structures**
- **Dentists/Practices**
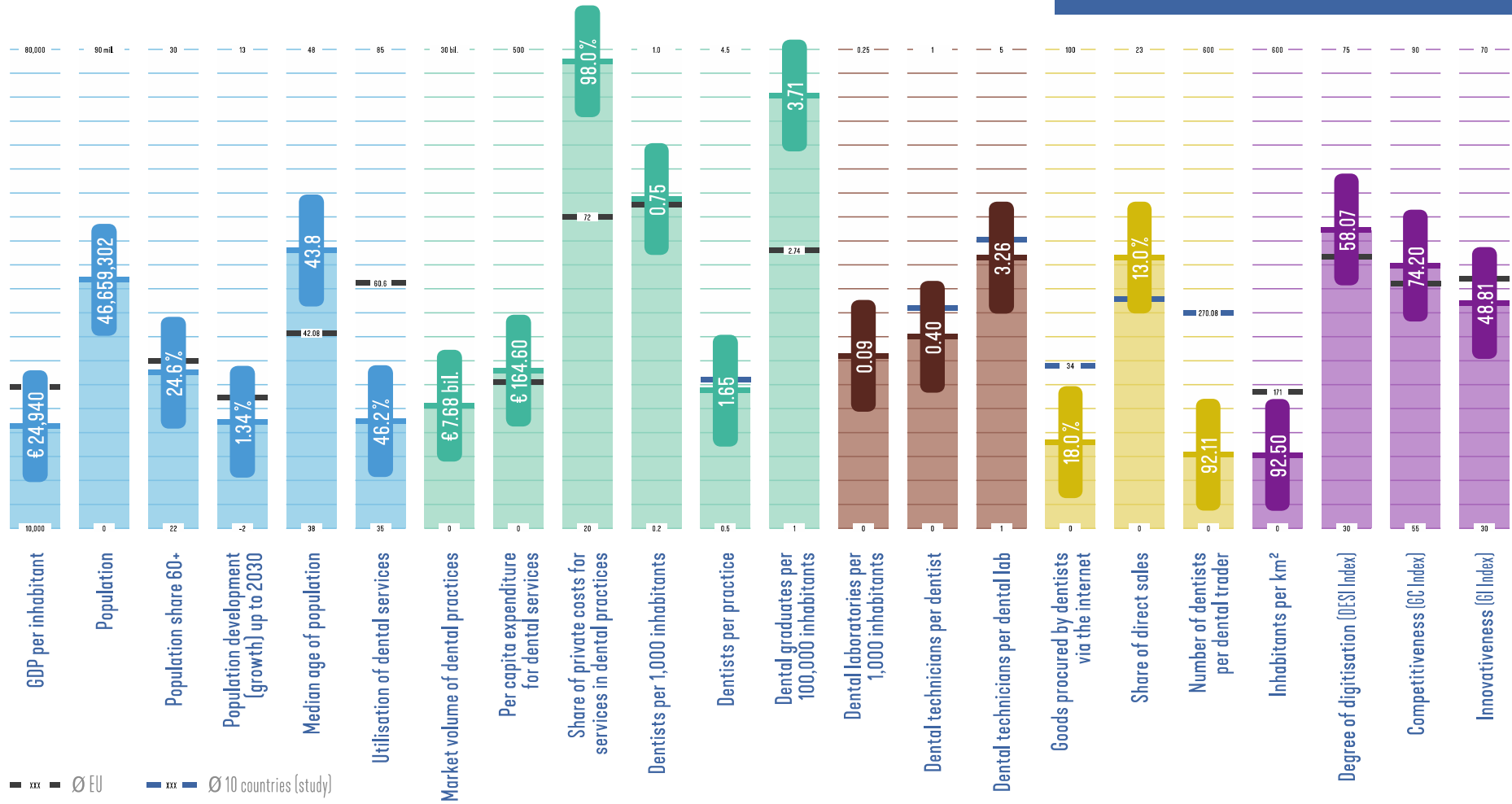- **Dental laboratories**
- **Manufacturer/Trade**
- **Infrastructure**

Digitisation plays a more or less significant role in every chapter, transforming patient behaviour and patient/dentist/lab/trade interaction with the manufacturer

GDP per inhabitant	€ 24,940	
Population	46,659,302	
Population share 60+	24.6 %	
Population development (growth) up to 2030	1.34 %	
Median age of population	43.8	
Utilisation of dental services	46.2 %	
Market volume of dental practices	€ 7.68 bil.	
Per capita expenditure for dental services	€ 164.60	
Share of private costs for services in dental practices	98.0 %	
Dentists per 1,000 inhabitants	0.75	
Dentists per practice	1.65	
Dental graduates per 100,000 inhabitants	3.71	
Dental laboratories per 1,000 inhabitants	0.09	
Dental technicians per dentist	0.40	
Dental technicians per dental lab	3.26	
Goods procured by dentists via the internet	18.0 %	
Share of direct sales	13.0 %	
Number of dentists per dental trader	92.11	
Inhabitants per km²	92.50	
Degree of digitisation (DESI Index)	58.07	
Competitiveness (GC Index)	74.20	
Innovativeness (GI Index)	48.81	

xxx — ∅ EU   xxx — ∅ 10 countries (study)
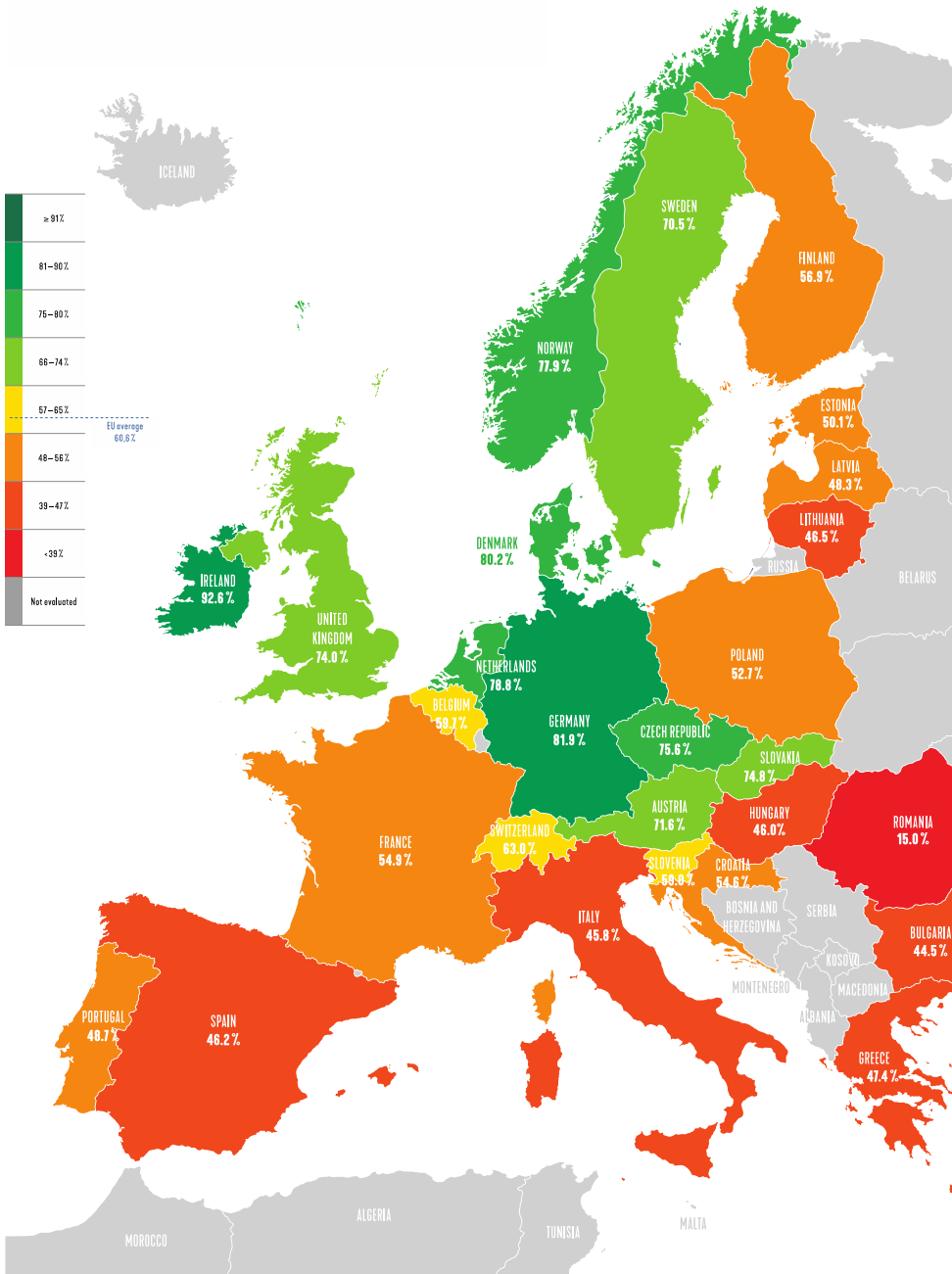
Low utilisation of dental services

High rate of trainee dentists

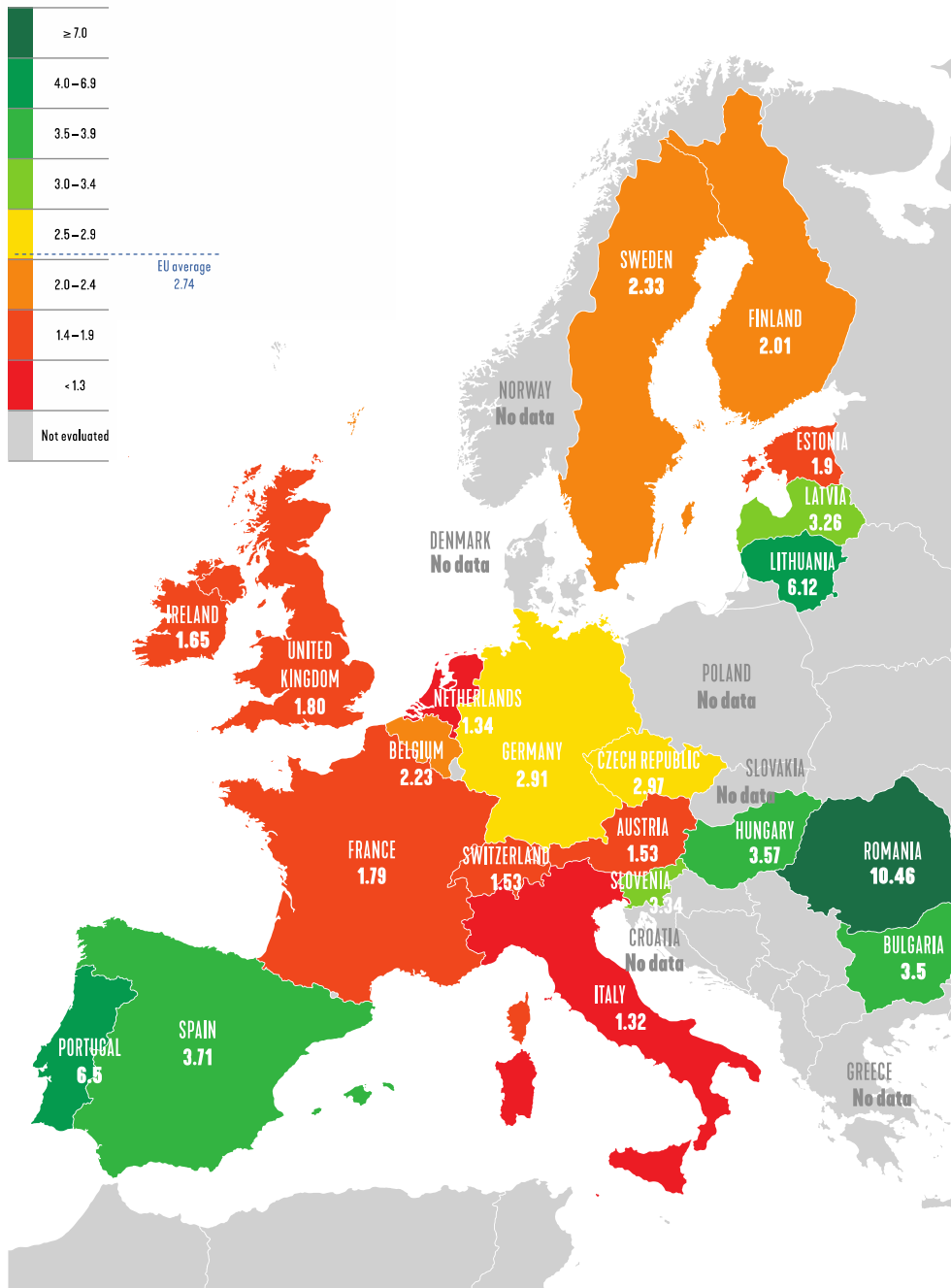Average figures in dental laboratory area

Very high trader density

Provision concentration in metropolitan areas, low provision across the board

International perspective: Consultation of dentist

- ATLAS DENTAL depicts structural data in the form of maps

- Utilisation (consultation) indicates a north-south divide

- If values of this nature exist in different age groups, between women and men or according to screening examinations/prophylaxis, fillings, X-ray services, endodontic treatment and dental prosthetics in still greater detail, significant market insights can be gained from these

Legend:
- ≥ 91%
- 81–90%
- 75–80%
- 66–74%
- 57–65%
- EU average 60.6%
- 48–56%
- 39–47%
- < 39%
- Not evaluated

Map values:
- ICELAND
- IRELAND 92.6%
- UNITED KINGDOM 74.0%
- NORWAY 77.9%
- SWEDEN 70.5%
- FINLAND 56.9%
- ESTONIA 50.1%
- LATVIA 49.3%
- LITHUANIA 46.5%
- DENMARK 80.2%
- NETHERLANDS 78.8%
- BELGIUM 58.7%
- GERMANY 81.9%
- CZECH REPUBLIC 75.6%
- POLAND 52.7%
- SLOVAKIA 74.8%
- AUSTRIA 71.6%
- SWITZERLAND 63.0%
- FRANCE 54.9%
- SLOVENIA 59.0%
- CROATIA 54.6%
- HUNGARY 46.0%
- ROMANIA 15.0%
- ITALY 45.8%
- PORTUGAL 48.7%
- SPAIN 46.2%
- BULGARIA 44.5%
- GREECE 47.4%

International perspective: Dental medicine graduates

Legend:
- ≥ 7.0
- 4.0 – 6.9
- 3.5 – 3.9
- 3.0 – 3.4
- 2.5 – 2.9
- EU average 2.74
- 2.0 – 2.4
- 1.4 – 1.9
- < 1.3
- Not evaluated

Map values:
- SWEDEN 2.33
- FINLAND 2.01
- NORWAY No data
- ESTONIA 1.9
- LATVIA 3.26
- LITHUANIA 6.12
- DENMARK No data
- IRELAND 1.65
- UNITED KINGDOM 1.80
- NETHERLANDS 1.34
- POLAND No data
- BELGIUM 2.23
- GERMANY 2.91
- CZECH REPUBLIC 2.97
- SLOVAKIA No data
- FRANCE 1.79
- SWITZERLAND 1.53
- AUSTRIA 1.53
- HUNGARY 3.57
- ROMANIA 10.46
- SLOVENIA 3.34
- CROATIA No data
- BULGARIA 3.5
- PORTUGAL 6.5
- SPAIN 3.71
- ITALY 1.32
- GREECE No data

- Some East European countries, such as Hungary, Bulgaria, Romania, have high graduate rates

- Spain and Portugal also currently train an above-average number of dentists.

- In Western Europe, where demographics allegedly have the strongest impact on the future, levels of up-and-coming talent are average (Germany) to critical (Italy, Netherlands)

- The prospective dentist is very digitally conscious, more internationally oriented and location-independent

In event of questions for study authors

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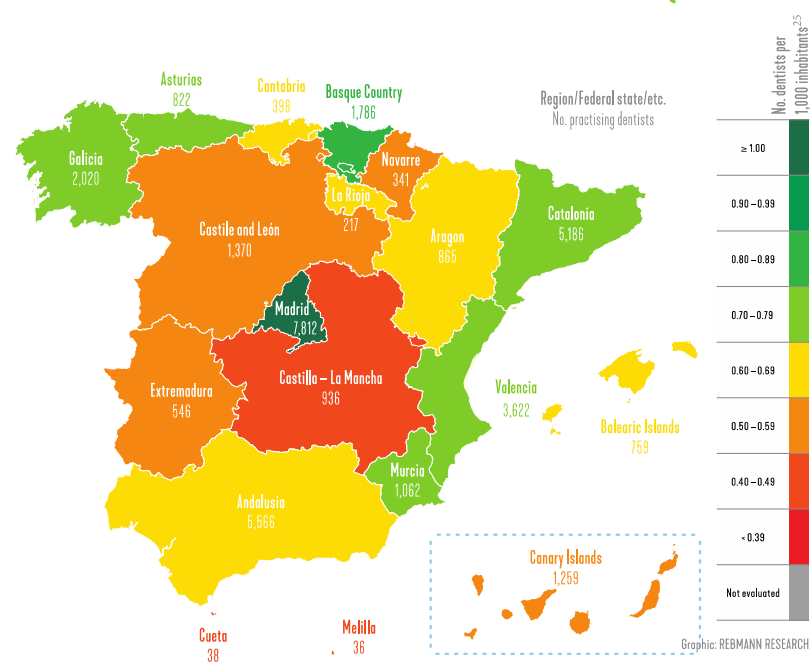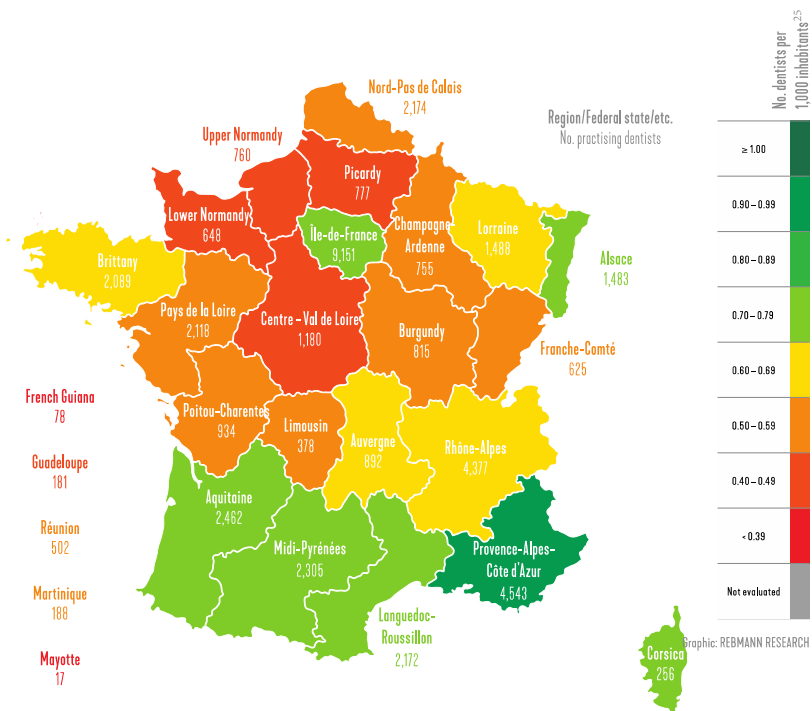verena.heimzmann@rebmann-research.de

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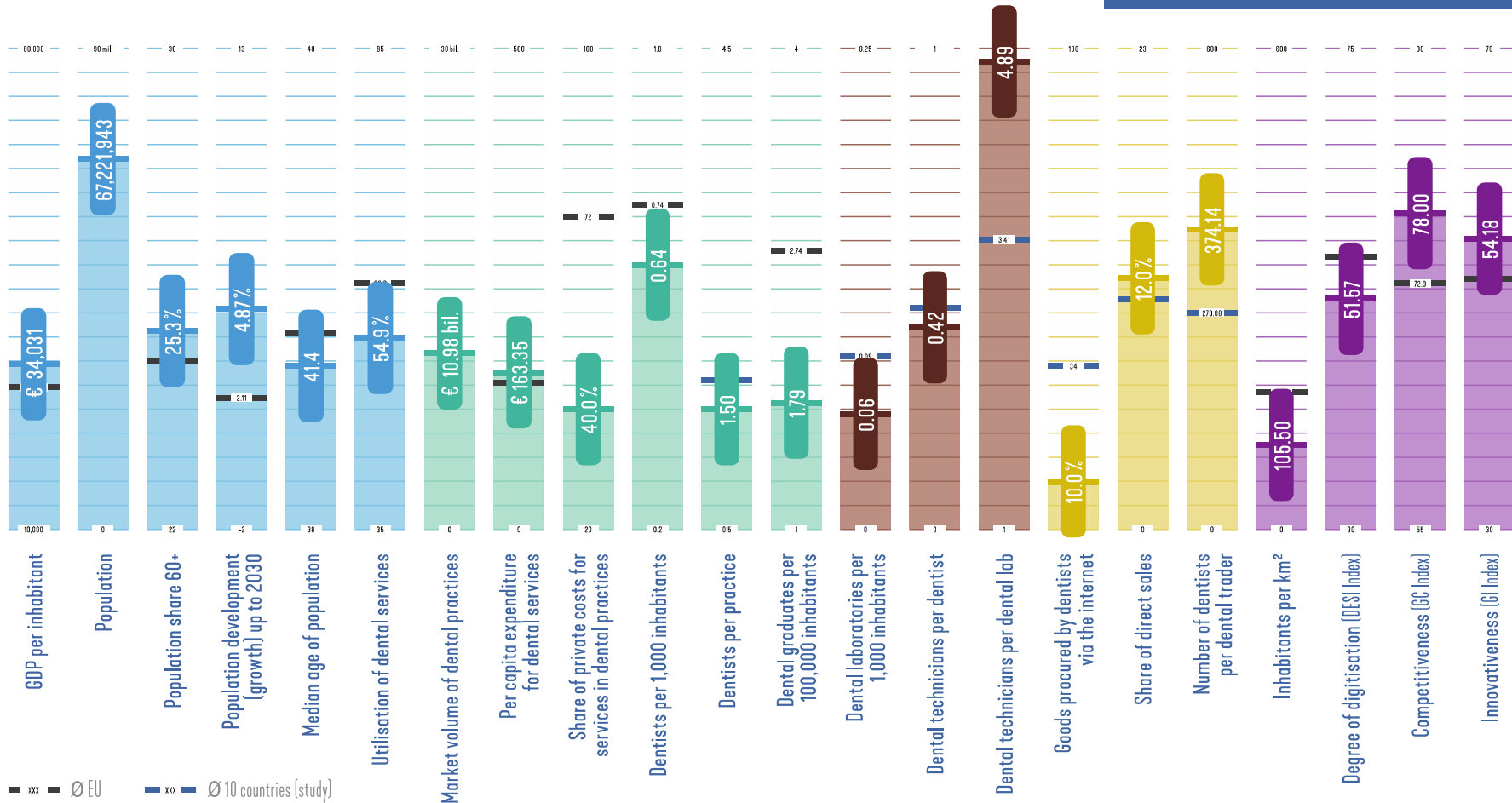Aachener Straße 1053-1055
50858 Köln

Appendix

Analysis by country indicates interesting differences in the density of dentists

- A quarter of all dentists in France practice in Paris. The density in the Picardy and Upper Normandy regions (*Picardie*, *Haute-Normandie*) is only 50% of that in the capital region, with overseas departments (*Départements d'Outre-Mer*) having even fewer dentists

- One third of Spanish dentists are concentrated around Madrid and Barcelona, with the supply density in rural regions is just one third when compared to the urban agglomerations. This is probably one reason why dental health in this country is among the poorest in Europe

Appendix 1

Analysis by country chart for France showing the following indicators with their values:

Indicator	Value
GDP per inhabitant	€ 34,031
Population	67,221,943
Population share 60+	25.3 %
Population development (growth) up to 2030	4.87 %
Median age of population	41.4
Utilisation of dental services	54.9 %
Market volume of dental practices	€ 10.98 bil.
Per capita expenditure for dental services	€ 163.35
Share of private costs for services in dental practices	40.0 %
Dentists per 1,000 inhabitants	0.64
Dentists per practice	1.50
Dental graduates per 100,000 inhabitants	1.79
Dental laboratories per 1,000 inhabitants	0.06
Dental technicians per dentist	0.42
Dental technicians per dental lab	4.89
Goods procured by dentists via the internet	10.0 %
Share of direct sales	12.0 %
Number of dentists per dental trader	374.14
Inhabitants per km²	105.50
Degree of digitisation (DESI Index)	51.57
Competitiveness (GC Index)	78.00
Innovativeness (GI Index)	54.18

Legend: xxx Ø EU   xxx Ø 10 countries (study)

Summary categories:
- Low utilisation of dental services
- Only few dental graduates
- Highest number of dental technicians per dental lab
- Very low share of services procured via the internet
- Good competitiveness and innovativeness

Source: Eurostat, OECD, European Commission, ADDE/FIDE, World Economic Forum, Cornell University, INSEAD, WIPO and others /// Graphic: REBMANN RESEARCH /// As of: 2018

The e-patient

- researches symptoms/therapies (72%)
- chooses a density through a rating platform (43%)
- purchases increasingly online
- is also willing to collect health data personally
  (electronic health record (EHR)) and provide practitioners
  with this data (62%)

**Eight of every ten patients perceive a backlog to exist
regarding digitisation in healthcare**

The e-patient wants more e-offers:

59% online appointments

60% want to communicate digitally with the doctor,
of these:

68% by telephone,

56% by video chat,

50% by email,

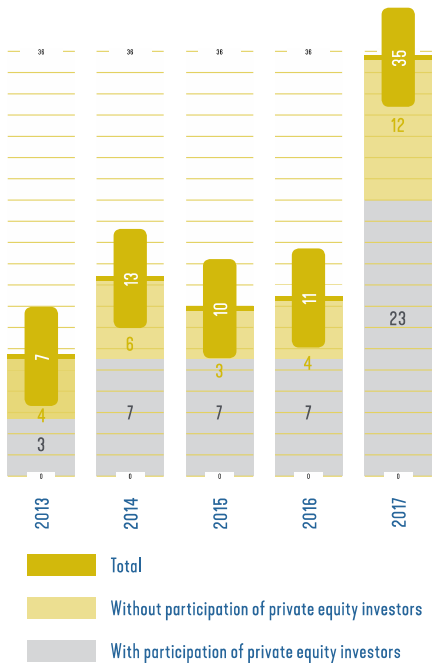**35%** by text chat (Whatsapp, Messenger,...)

Impacts:

- Greater market power for patients
- Patient orientation and online offers are increasingly a
  success factor
- Big data analyses and AI algorithms enable individual
  customer contact
- Supply and demand market is more transparent

Digitisation example: Digital impression using intraoral scanner

- Time required for digital impression using intraoral scanner 1.5 min. ↔ Conventional using impression tray: setting for minimum 5 min. in mouth

- In addition, the following steps are associated with an impression using intraoral scanner: Preparation of impression tray, model casting, cleaning and disinfection of impression tray, model demoulding and trimming (time saving per impression: 0.5h)

- Data is available directly after the scan

- Question is not if the digital impression will replace the conventional, but when

- Similarly disruptive: 3D printing

Source: FIDE/ADDE Survey /// Graphic: REBMANN RESEARCH /// As of: 2018

Chart 1 (yellow bars, years):

	2013	2014	2015	2016	2017
Total	7	13	10	11	35
Without participation of private equity investors	4	6	3	4	12
With participation of private equity investors	3	7	7	7	23

Legend:
- **Total**
- Without participation of private equity investors
- With participation of private equity investors

Source: KPMG[164] /// Graphic: REBMANN RESEARCH /// As of: 2017

Chart 2 (green bars, countries):

Belgium	Germany	Denmark	Finland	France	Italy	Netherlands	Spain	United Kingdom
2.0 %	1.0 %	7.0 %	35.0 %	1.0 %	3.0 %	10.0 %	25.0 %	24.0 %

Source: KPMG[164] /// Graphic: REBMANN RESEARCH /// As of: 2017

Manufacturer/Trade

Drivers of manufacturer consolidations

- Rising cost pressure, aggravated by falling prices and increasing raw material costs
- Demand requires a broad product portfolio
  - → Full-service providers
  - → Takeover of specialist suppliers to round off range
- Ever decreasing product lifecycles
- Increasing regulatory requirements
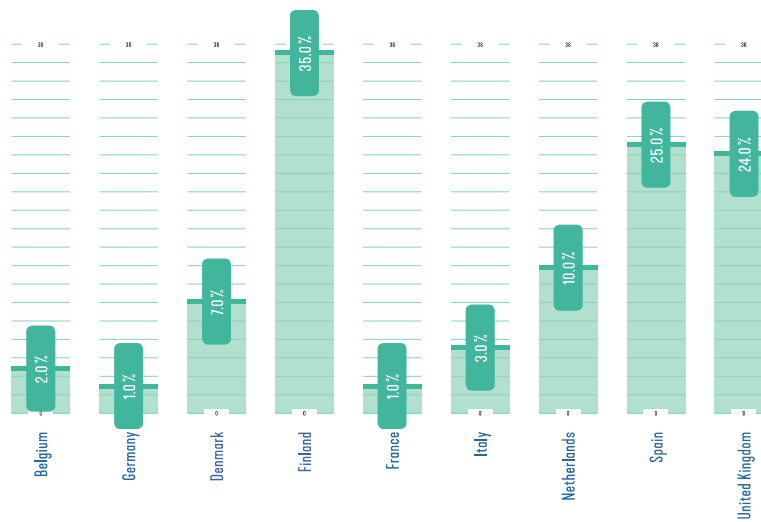
Dentist/Practices

Drivers of large clinic structures

- Changes to legal framework conditions
- Changed working behaviour of upcoming generation of skilled personnel
- High-income regions/ conurbations
- Market entry of investors
- Increasing service diversity due to progress in medical technology

Dental laboratories

Drivers of large lab structures

- The change to CAD/CAM devices necessitates commensurate utilisation of equipment
- Dedicated practice or dental health centre labs compete with commercial laboratories
- Growing number of dental health centres leads to demand aggregation
- Market entry of investors