

**TELEWORK DATA REPORT
(ESTABLISHMENT
SURVEY)**

- Ten Countries in Comparison -

Bonn, 2000-06-08

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1 Background

1.1 Telework: Definition And Operationalisation

The decision makers were given the following definition of telework: Teleworkers are all those workers who work on a computer away from their employer's or contractor's business and transmit their work results via a telecommunications link.

The different organisational forms of telework were operationalised in the DMS as follows:

TABLE 1: FORMS OF REGULAR TELEWORK ACCORDING TO THE ECATT DEFINITION

Organisational form	Definition	Operationalisation in ECaTT
Permanent telework	Home-based telework in the stricter sense: Form of home-based telework where work is constantly carried out in the home	Definition: Telework where employees spend their whole working time at home.
Alternating telework	Form of home-based telework where work at home alternates with presence in the central office.	Definition: Telework where employees only occasionally work from home, but on at least one full day per week.
Mobile telework	Frequent business travel using information and communication technology at the temporary or mobile workplace.	Derived from answers : mobile employees, who 1) are out on the road or with a client for more than 10 hours per week 2) have access to the business' online communication links while travelling.
Telework of self-employed who work for only one contractor (exclusive)	Supply of telework to freelance workers or self-employed who work only for their own organisation	Definition: telework by self-employed who work only for their own organisation.
Telework of self-employed who work for several contractors (non-exclusive)	Supply of telework to self-employed who also work for other organisations	Definition: telework by self-employed who also work for other contractors.

Distinct from these organisational forms of telework ECaTT defines supplementary telework as follows:

Organisational form	Definition	Operationalisation in ECaTT
supplementary telework	Type of home-based telework which is carried out in addition to work in the office workplace.	Definition: telework where employees do not spend their regular working hours at home but carry out additional tasks or preparation at home.

Historical comparison

In 1994 a similar study, TELDET (Telework Developments and Trends), was carried out in the 5 biggest EU countries (Germany, France, Great Britain, Italy, and Spain). It was considered very important to use the same formulation of questions as the 1994 survey in order to ensure compatibility of results. Thus, questions on the diffusion of telework in the 1999 survey were put in the same wording, with the exception that, in addition, supplementary and mobile telework were studied.

Teleworkcentres

Teleworkcentres are those establishments where several employees of one or a number of establishments or self-employed people work under one roof in the vicinity of their home, ie remote from their employer or contractor, and use telecommunication links for transmission of their work results. The penetration of the economy and society with telematics has led to a situation where teleworkcentres no longer differ significantly from traditional branch offices of multi-site organisations or of those service organisations, which provide services to their clients and use telecommunication links to do so.

However, the originally proposed concept of making workplaces available in structurally weak locations by setting up neighbourhood centres where employees of several organisations can work under one roof, did not succeed in any way. Only the terminology (telework-centre, telecentre, telehouse, etc) has achieved widespread use and is nowadays used to describe a range of different newly set-up organisations, but has little in common with the textbook definition of a telework-centre.

As in the GPS, teleworkcentres are not included in the figures on the diffusion of telework.

1.2 Further Questions

Apart from questions on telework practice, questions on the following topics were also asked:

- ▶ Number of teleworkers
- ▶ Length of telework practice
- ▶ Concrete plans for the expansion/introduction of telework
- ▶ Interest in expansion/introduction of telework
- ▶ Fields of activity practised and suitable for telework
- ▶ Barriers to telework

2 Diffusion Of Telework

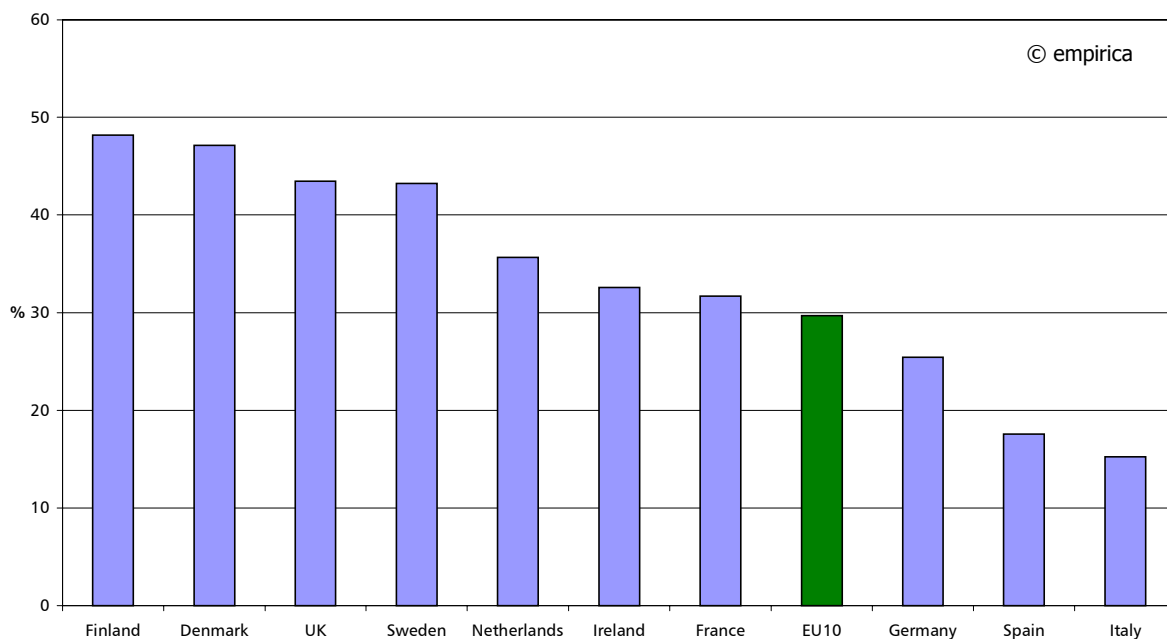
2.1 Telework in Total

Almost a third of all establishments (30%) practise regular telework. When including supplementary telework, diffusion reaches 36%.

At the end of the 90s the time for this type of workform is obviously ripe. Efficient and inexpensive information and communication technology allows employees to work when and where they wish. A number of successful organisations have demonstrated that telework can be applied to the advantage of companies as well as employees and have urged many other establishments to introduce this workform. The comprehensive campaigns, support measures and support programmes of the EU commission and the various political platforms of the individual member states were probably also of assistance.

However, across Europe there are very significant differences. The Scandinavian countries and Great Britain are leading. The Netherlands, Ireland and France form the middle field. Regarding the proportion of establishments that practise telework only Spain and Italy lag behind Germany.

Establishments Practising Regular Telework in Europe 1999



Establishments Practising Telework (Incl. Supplementary Telework) in Europe 1999

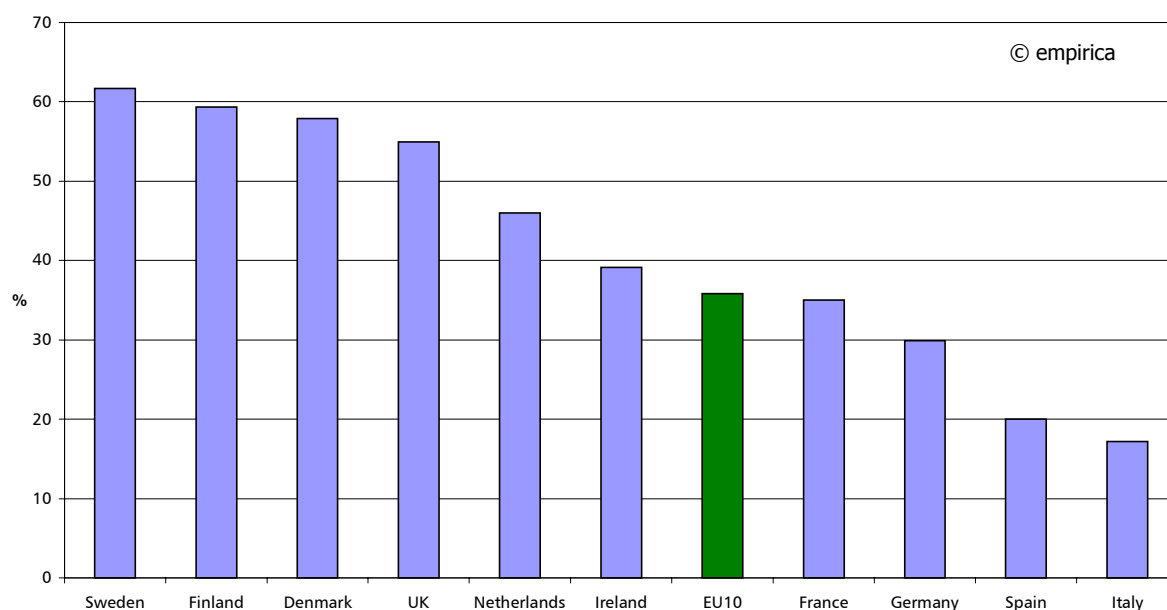


TABLE 2: ESTABLISHMENTS PRACTISING TELEWORK IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

	supplementary excluded		supplementary included	
	%	ranking	%	ranking
Denmark	47.16	2	57.88	3
Finland	48.16	1	59.33	2
France	31.69	7	35.00	7
Germany	25.45	8	29.90	8
Ireland	32.60	6	39.09	6
Italy	15.25	10	17.21	10
Netherlands	35.67	5	46.00	5
Spain	17.59	9	20.02	9
Sweden	43.25	4	61.65	1
UK	43.47	3	54.98	4
EU 10	29.70		35.80	

Italy and Spain's establishment size structure differs significantly from the rest of Europe. Both countries have more small establishments than is the case in the middle and northern European countries. As the conditions for the implementation of telework – from a purely economical point of view - are less favourable in small establishments than in larger establishments, this explains why Italy and Spain are in the bottom places in the DMS (see also chapter 10.1.1).

2.2 Organisational Forms of Telework

The following table gives an overview of telework. It shows that mobile telework is the most widespread of the organisational forms of regular telework. Throughout Europe a fifth of establishments practise this workform. 14% of establishments practise home-based telework, 9% employ self-employed teleworkers.

In most countries – with the exception of Finland, France and Italy - telework by the self-employed is the least widespread organisational form of telework. In those countries it is practised by more establishments than practise home-based telework.

Establishments Practising Different Types of Telework in Europe 1999

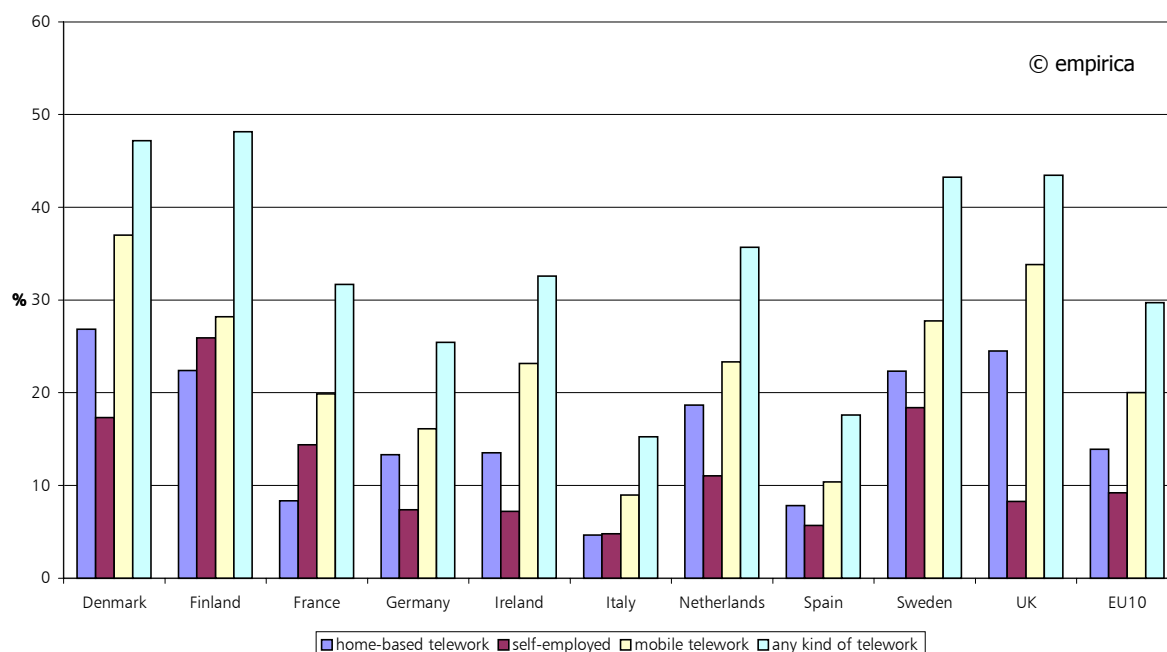


TABLE 3: ESTABLISHMENTS PRACTISING DIFFERENT TYPES OF TELEWORK IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

	home-based telework	self-employed telework	mobile telework	any kind of regular telework
Denmark	26.85	17.29	37.03	47.16
Finland	22.40	25.93	28.20	48.16
France	8.33	14.37	19.87	31.69
Germany	13.30	7.36	16.10	25.45
Ireland	13.53	7.20	23.14	32.60
Italy	4.66	4.77	8.96	15.25
Netherlands	18.67	11.00	23.33	35.67
Spain	7.83	5.69	10.38	17.59
Sweden	22.35	18.37	27.75	43.25
UK	24.47	8.26	33.81	43.47
EU10	13.90	9.20	20.00	29.70

Home-based telework

Home-based telework includes 2 variations: permanent and alternating: With the exception of Italy, the first form is practised significantly less often in Europe. Almost 2/3 of establishments practising permanent telework, have also alternating teleworkers at the same time.

Permanent telework is by far the most widespread in Great Britain (13%). The Scandinavian countries, Ireland and the Netherlands are also above average. The rest is lead by Germany, ahead of Italy, France and Spain.

The tendencies are similar for alternating telework. Here, Denmark is at the top (25%), ahead of Great Britain (21%), Sweden, and Finland (with 20% and 19%). Italy is at the bottom with (3%).

Establishments Practising Home-based Telework in Europe 1999 (in %)

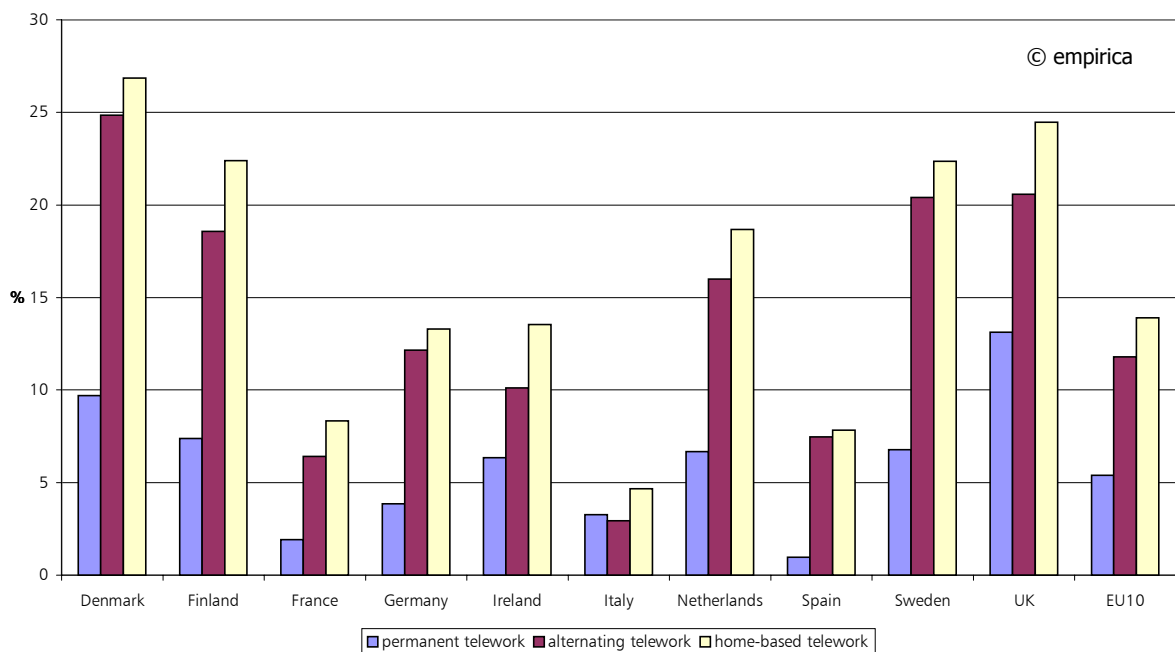


TABLE 4: ESTABLISHMENTS PRACTISING HOME-BASED TELEWORK IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

	permanent telework	alternating telework	home-based telework
Denmark	9.71	24.85	26.85
Finland	7.39	18.58	22.40
France	1.91	6.42	8.33
Germany	3.86	12.16	13.30
Ireland	6.34	10.11	13.53
Italy	3.28	2.94	4.66
Netherlands	6.67	16.00	18.67
Spain	0.96	7.47	7.83
Sweden	6.77	20.41	22.35
UK	13.13	20.57	24.47
EU10	5.40	11.80	13.90

Telework by the self-employed (exclusive and non-exclusive)

Comparatively few establishments (9%) practise this form of telework. With the exception of Spain, non-exclusive telework by the self-employed is more widespread throughout than exclusive telework (In Italy both forms are diffused equally). With regard to the relative position of countries, the by now familiar picture emerges: the North lies in front. The relatively low diffusion of self-employed telework in Great Britain is surprising. On the other hand, France is unusually above average in 4th place.

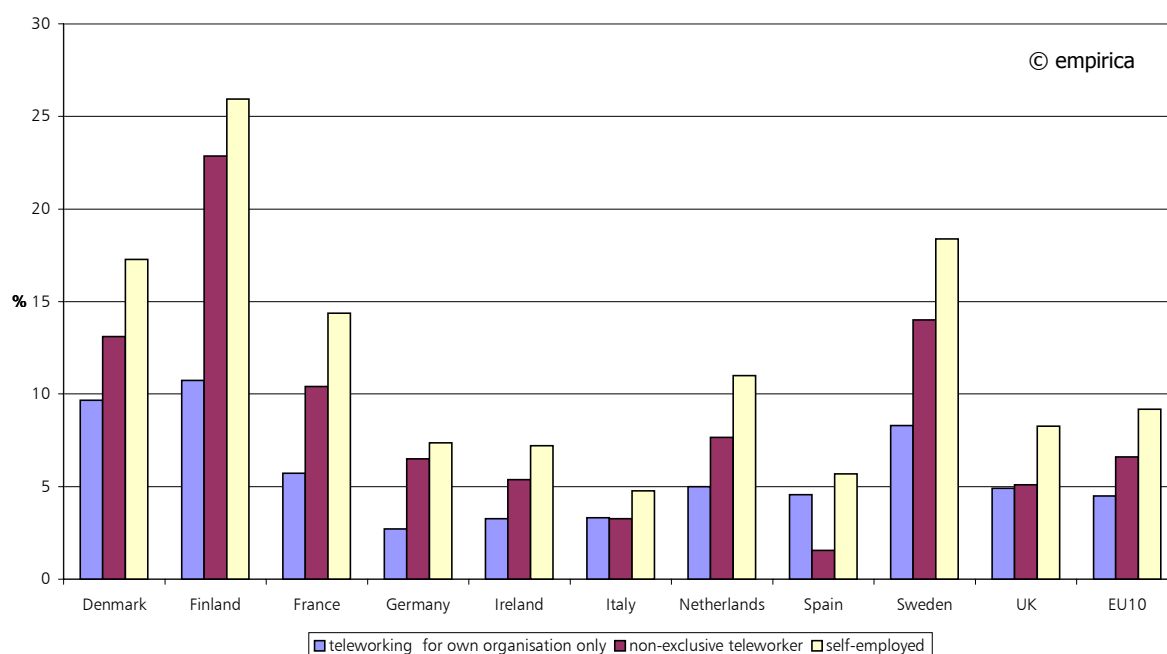
Establishments Practising Telework by Self-employed in Europe 1999 (in %)

TABLE 5: ESTABLISHMENTS PRACTISING TELEWORK BY SELF-EMPLOYED IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

	teleworking for own organisation only ("exclusive")	teleworking for several organisation ("non-exclusive")	self-employed
Denmark	9.67	13.10	17.29
Finland	10.74	22.85	25.93
France	5.72	10.42	14.37
Germany	2.72	6.50	7.36
Ireland	3.27	5.37	7.20
Italy	3.31	3.27	4.77
Netherlands	5.00	7.67	11.00
Spain	4.56	1.54	5.69
Sweden	8.30	14.02	18.37
UK	4.90	5.09	8.26
EU10	4.50	6.60	9.20

Mobile telework

Every 5th establishment in Europe practises mobile telework. The ranking order among the surveyed countries correlates with that for telework in general.

Establishments Practising Mobile Telework in Europe 1999

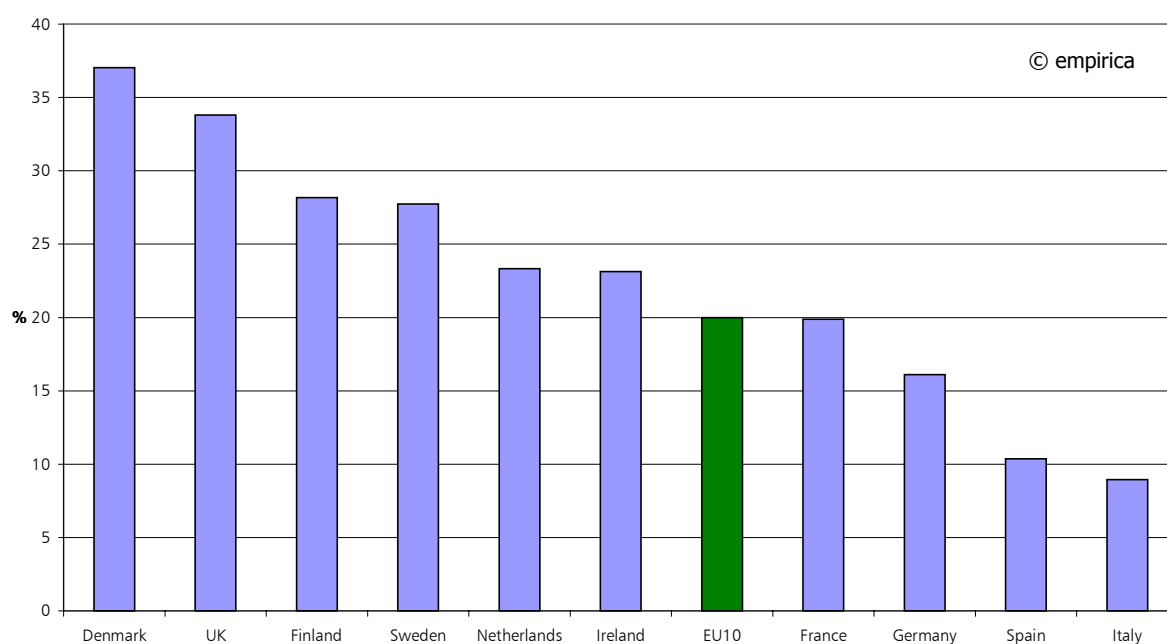


TABLE 6: ESTABLISHMENTS PRACTISING MOBILE TELEWORK IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

Denmark	37.03
Finland	28.20
France	19.87
Germany	16.10
Ireland	23.14
Italy	8.96
Netherlands	23.33
Spain	10.38
Sweden	27.75
UK	33.81
EU10	20.00

Supplementary telework:

Supplementary telework is the most widespread form of telework. 21% of establishments in Europe practise this workform. Differences between countries are huge. The ranking order follows the already familiar pattern.

Establishments Practising Supplementary Telework in Europe 1999

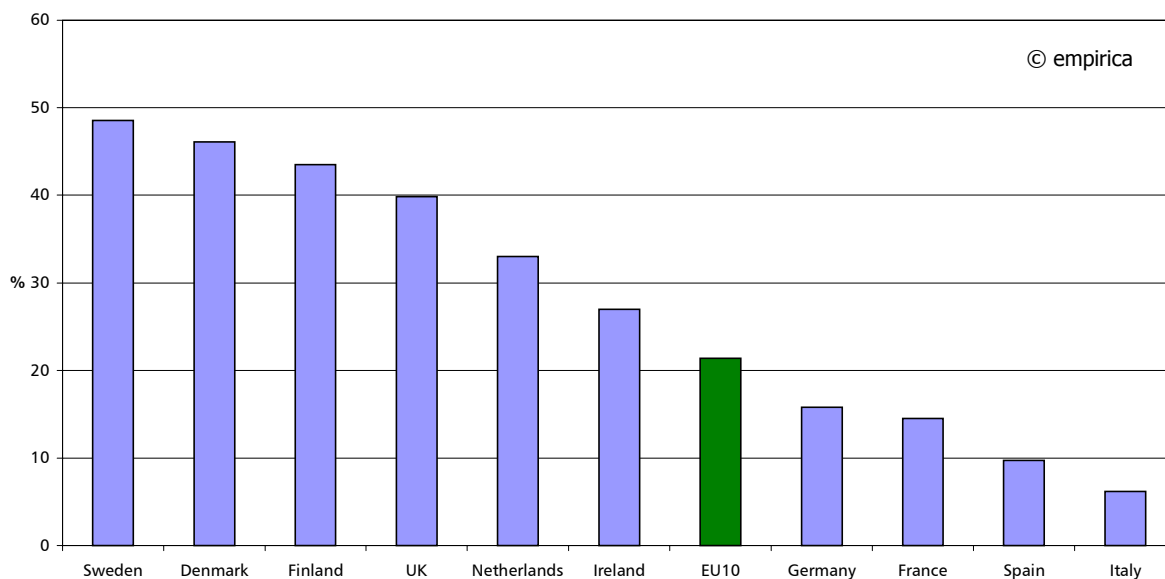


TABLE 7: ESTABLISHMENTS PRACTISING SUPPLEMENTARY TELEWORK IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

Denmark	46.12
Finland	43.51
France	14.51
Germany	15.79
Ireland	26.99
Italy	6.18
Netherlands	33.00
Spain	9.71
Sweden	48.56
UK	39.83
EU10	21.40

2.3 Historical Comparison with 1994

Telework is spreading rapidly. During the period 1994 to 1999, an almost identically high increase of establishments which practise at least one of the forms of home-based or self-employed telework can be found (for reasons of compatibility of results, supplementary and mobile telework have to be ignored, as there is no data on these from the 1994 survey).

Over this period, the number of telework-establishments has trebled or quadrupled, depending on the country. The average annual growth rate lies between 22% in France and 31% in Great Britain.

Annual Increase of the Number of Establishments Practising Telework 1994 - 1999 in %

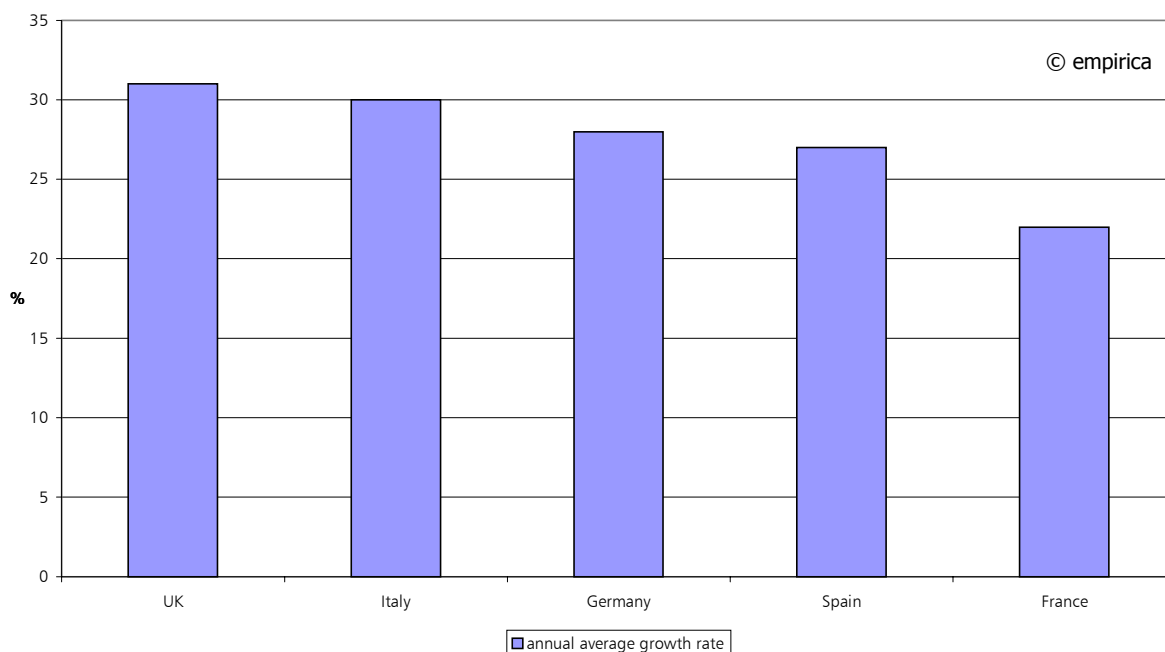


TABLE 8: DEVELOPMENT OF THE NUMBER OF ESTABLISHMENTS PRACTISING TELEWORK IN EUROPE 1994 – 1999

	growth (1994 = 100)	average annual growth rate (in %)
France	271	22
Germany	341	28
Italy	365	30
Spain	332	27
UK	382	31

Compared to the GPS, telework has grown faster in the DMS. This means that in the last 5 years, throughout Europe, the number of telework-establishments has grown faster than the number of teleworkers. In the past years, telework has obviously been adopted by a large number of establishments. However, the transfer has taken place cautiously and to only a small extent. Thus we can say that there has mainly been a strong *external* diffusion of telework, establishment *internal* diffusion is still to come.

3 Telework Practice

3.1 Number of Teleworkers per Establishment

On average, throughout Europe, every teleworking establishment has 26 teleworkers (mobile teleworkers not included). However, standard deviation is very high as only a few establishments with many teleworkers are responsible for this high value. Therefore, the median which lies at only 6 is more meaningful. This shows that in all countries, establishment-internal diffusion of telework has not progressed very far.

In a country-comparison the highest penetration can be seen in Denmark and Great Britain. There, the median lies at 10, in all other countries is significantly lower.

TABLE 9: AVERAGE NUMBER OF TELEWORKERS IN ESTABLISHMENTS PRACTISING TELEWORK (INCLUDING SUPPLEMENTARY, BUT EXCLUDING MOBILE TELEWORKERS)

	mean	deviation	median
Denmark	45.46	106.40	10
Finland	23.76	46.70	5
France	15.55	24.63	5
Germany	18.07	42.21	6
Ireland	11.07	38.06	4
Italy	7.61	16.61	5
Netherlands	29.06	102.65	7
Spain	31.13	77.25	6
Sweden	32.16	105.14	5
UK	33.69	75.75	10
EU10	26.00	69.41	6

In addition, grouped values are available:

Again, this presentation shows that the number of teleworkers per establishment is low. The majority of establishments have less than 10 teleworkers (here mobile telework is not included). Only Scandinavia, Great Britain and Spain have a larger proportion of establishments with 100 and more teleworkers.

Since 1994, establishment-internal diffusion (expansion of telework in the establishment) has only proceeded slowly compared to external diffusion (addition of establishments that practise telework). This stands in direct relation to the fact that many establishments have only recently introduced telework and therefore are only at the start of their establishment-internal diffusion. Hence, in those establishments that already practise telework, there is still a large growth potential.

Distribution of Establishments According to the Number of Teleworkers (Including Supplementary, but Excluding Mobile Teleworkers)

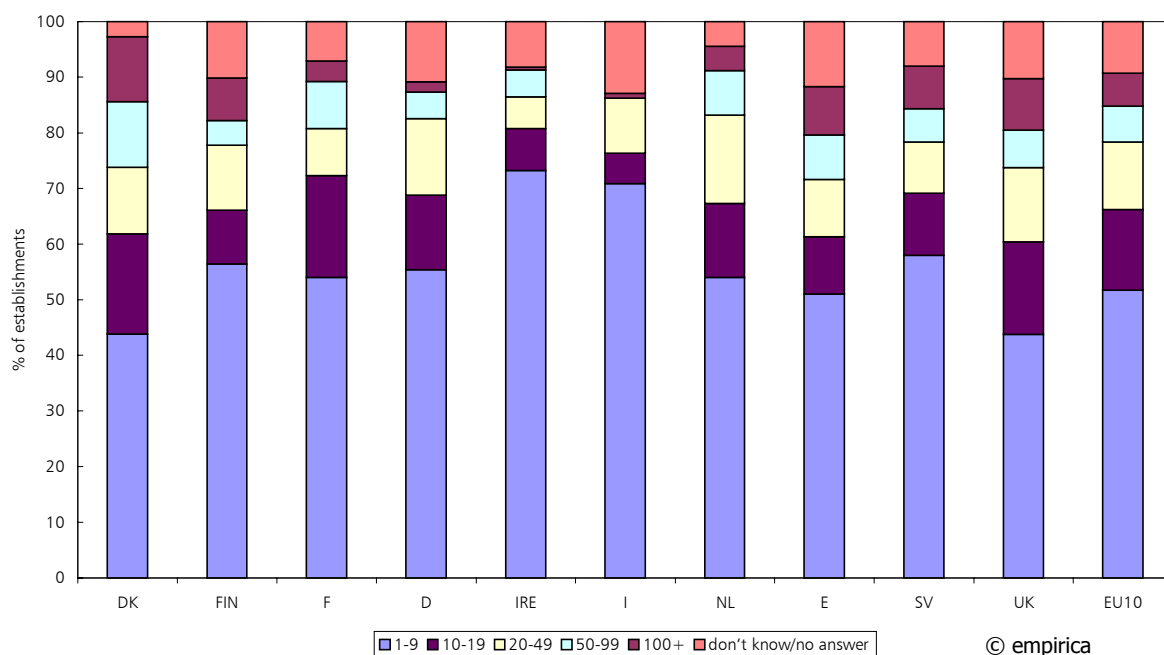


TABLE 10: DISTRIBUTION OF ESTABLISHMENTS ACCORDING TO THE NUMBER OF TELEWORKERS (INCLUDING SUPPLEMENTARY, BUT EXCLUDING MOBILE TELEWORKERS) (IN % OF ESTABLISHMENTS PRACTISING TELEWORK)

number of teleworkers	1-9	10-19	20-49	50-99	100+	don't know / n.a.	total
Denmark	43.86	17.97	11.96	11.77	11.72	2.72	100.0
Finland	56.46	9.64	11.69	4.42	7.64	10.15	100.0
France	54.03	18.30	8.46	8.42	3.71	7.09	100.0
Germany	55.39	13.43	13.73	4.73	1.91	10.81	100.0
Ireland	73.26	7.52	5.66	4.90	0.47	8.20	100.0
Italy	70.91	5.44	9.89	0.00	0.85	12.91	100.0
Netherlands	53.99	13.27	15.94	7.96	4.43	4.42	100.0
Spain	51.01	10.34	10.23	8.03	8.71	11.67	100.0
Sweden	57.97	11.18	9.22	5.97	7.64	8.03	100.0
UK	43.77	16.64	13.30	6.75	9.27	10.27	100.0
EU10	51.71	14.48	12.17	6.43	5.96	9.24	100.0

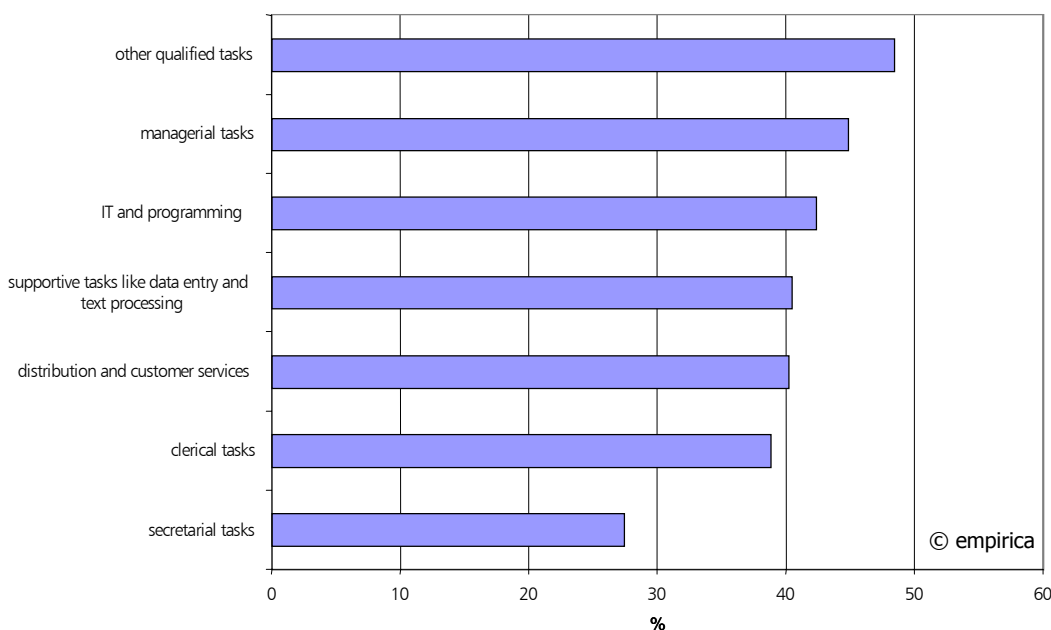
3.2 Field of Activity

Fields of activity practised

Almost every 2nd establishment that employs teleworkers uses them in the field of “other specialised activities”. The 2nd most often mentioned activity is managerial tasks. In spite of some prejudices, telework is obviously particularly suitable for managers. Secretarial duties

are by far least often practised in the form of telework. The barrier here in particular is the high need for communication and impromptu duties.

Areas of Telework Practice (in % of Establishments Practising Telework)



The proportion of data processing activities is particularly high in Germany and the Netherlands. In Spain, the proportion of distribution and client services is highest (just ahead of Ireland, Germany and Denmark), in Denmark the proportion of support and secretarial activities is particularly high. Denmark is also leading in clerical work, followed closely by Sweden. Finland and Sweden are at the top for professional activities, while Great Britain takes first place for managerial activities.

Thus, with regard to those fields of activity, which are practised in the form of telework, very different distributions emerge in the individual countries. Managerial activities dominate in Great Britain and Ireland, IT and programming activities dominate in Germany and the Netherlands, in Finland on the other hand these are specialised professional activities, and support work and clerical work in Denmark.

TABLE 11: AREAS TELEWORK IS PRACTISED IN (IN % OF ESTABLISHMENTS PRACTISING TELEWORK)

	IT and programming	distribution and customer services	support tasks such as data entry and text processing	secretarial tasks	clerical tasks	other professional tasks	managerial tasks
Denmark	43.85	44.71	66.26	52.20	65.49	50.71	58.75
Finland	45.10	27.84	40.44	14.42	30.99	65.59	37.94
France	31.16	40.86	40.17	28.40	27.77	34.10	31.89
Germany	54.53	46.99	34.62	21.30	31.60	47.69	33.81
Ireland	34.49	47.05	37.29	24.13	34.41	37.74	51.79
Italy	42.39	39.66	43.64	11.17	23.73	27.02	25.38
Netherlands	53.91	23.44	44.53	25.00	45.31	41.41	40.63
Spain	30.60	48.90	40.84	27.22	32.54	48.95	36.76
Sweden	43.04	33.79	54.77	25.08	60.98	63.21	53.55
UK	38.14	39.59	37.35	33.42	44.97	56.82	61.27
EU10	42.30	40.20	40.40	27.40	38.80	48.40	44.80

Fields of activity considered feasible

A comparison of areas where establishments already practise telework or consider it to be feasible follows.

Areas Telework is Practised or Considered Feasible (in % of Establishments Practising Telework)

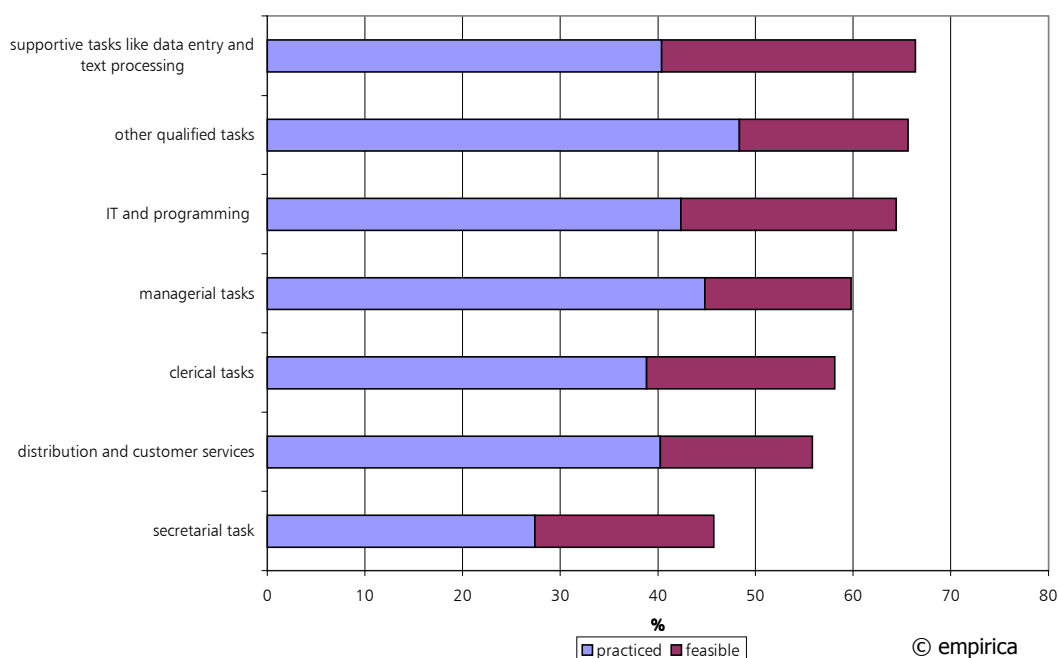


TABLE 12: AREAS TELEWORK IS PRACTISED OR CONSIDERED FEASIBLE (IN % OF ESTABLISHMENTS PRACTISING TELEWORK)

	IT and programming	distribution and customer services	support tasks such as data entry and text processing	secretarial tasks	clerical tasks	other professional tasks	managerial tasks
practised	42.33	40.25	40.39	27.37	38.83	48.37	44.78
feasible	22.06	15.56	25.95	18.34	19.28	17.25	15.01
practised or feasible	64.39	55.81	66.34	45.71	58.11	65.62	59.79

In addition to those activities already practised as telework, teleworking establishments primarily consider support activities and data processing as those most suitable for telework in their establishment.

3.3 Length of Telework Experience

The high increase in telework also becomes apparent when considering the length of telework practice. More than half (52%) of establishments have only introduced telework over the last 2 years. Only 28% claim to have been practising telework for 5 years or more.

Distribution of Establishments According to Years Since the Introduction of Telework

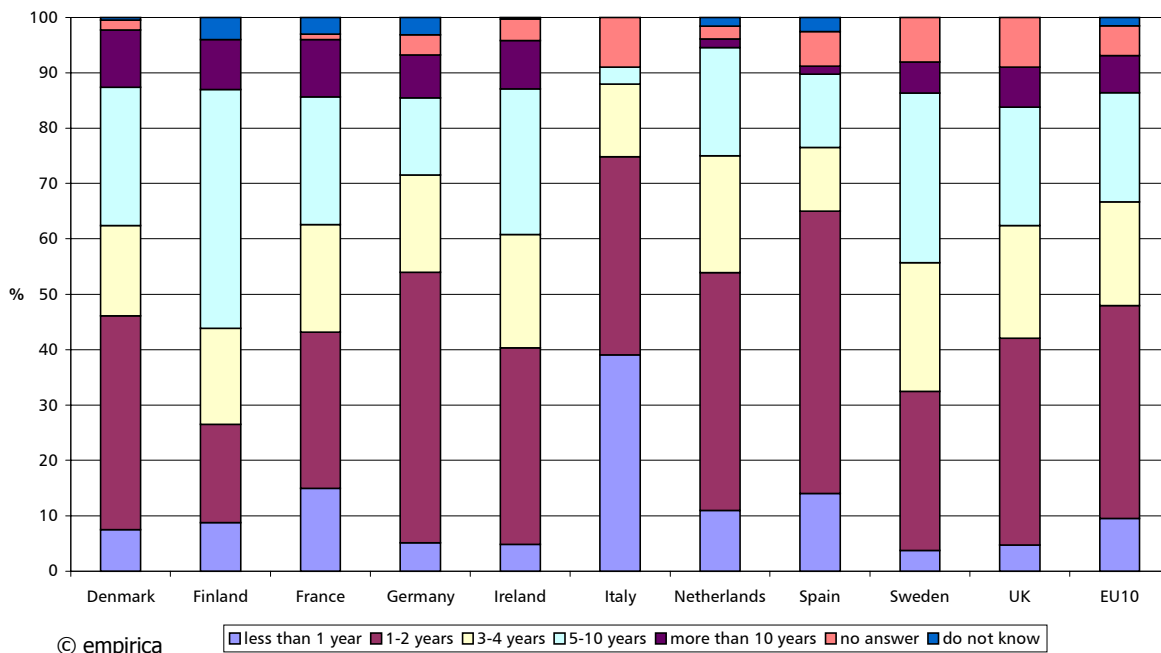


TABLE 13: DISTRIBUTION ACCORDING TO LENGTH OF EXPERIENCE OF TELEWORK (IN % OF ESTABLISHMENTS PRACTISING TELEWORK)

	less than 1 year	1-2 years	3-4 years	5-10 years	>10 years	n.a.	don't know	total
Denmark	7.50	38.63	16.28	24.99	10.31	1.77	0.52	100.0
Finland	8.82	17.66	17.38	43.08	8.99	-	4.07	100.0
France	15.00	28.15	19.45	23.04	10.33	0.98	3.04	100.0
Germany	5.10	48.88	17.54	13.93	7.80	3.59	3.16	100.0
Ireland	4.83	35.54	20.41	26.32	8.74	3.88	0.28	100.0
Italy	39.07	35.77	13.15	3.03	-	8.98	-	100.0
Netherlands	10.94	42.97	21.09	19.53	1.56	2.34	1.56	100.0
Spain	14.07	50.94	11.51	13.24	1.45	6.20	2.59	100.0
Sweden	3.76	28.71	23.26	30.59	5.65	8.04	-	100.0
UK	4.79	37.28	20.36	21.36	7.22	8.99	-	100.0
EU10	9.50	38.50	18.70	19.70	6.70	5.40	1.50	100.0

The highest dynamics is, not surprisingly, found in countries with the lowest diffusion. $\frac{3}{4}$ of teleworking establishments in Italy and $\frac{2}{3}$ in Spain have been practising telework for only one or 2 years. In Finland, on the other hand, more than half have been practising telework for 5 or more years.

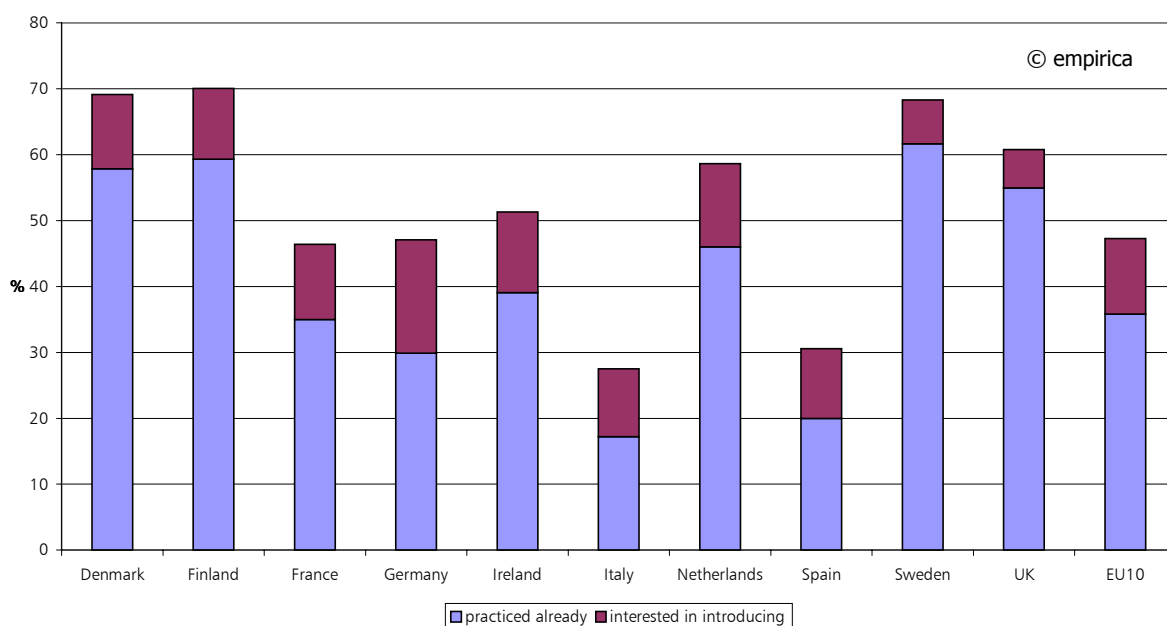
General agreement is found between length of teleworking and diffusion of telework. As shown above, since the last survey 5 years ago, the number of establishments that practise telework has increased by more than 200%. This agrees with the finding of the current survey that, throughout Europe, less than a third of teleworking establishments have been practising telework for 5 years or more.

4 Plans and Interest Regarding Telework

4.1 Establishments' Interest in the Introduction of Telework

Many European establishments already practise telework in one form or another. Others have not yet implemented telework but are interested in introducing it or already have concrete plans for setting up teleworkplaces. However, the survey results indicate that interest is rather low among establishments that have not so far practised telework. In addition to the 36% of teleworking establishments (in the wider sense), a further 11% show interest in its introduction. It is noticeable that Germany takes the lead with 17%.

Practice and Interest in Telework (Incl. Supplementary Telework) in % of All Establishments in Europe 1999



In addition, the matching table differentiates between pure interest and concrete plans. Around a third of establishments that express an interest in introducing telework have concrete plans already.

TABLE 14: PRACTICE AND INTEREST IN TELEWORK (INCL. SUPPLEMENTARY TELEWORK) IN % OF ALL ESTABLISHMENTS IN EUROPE 1999

	practised already	concrete plans for introduction	interest in introduction only	total (teleworking already or interested)
Denmark	57.88	5.27	6.02	69.17
Finland	59.33	1.54	9.19	70.06
France	35.00	4.43	7.02	46.45
Germany	29.90	5.61	11.57	47.07
Ireland	39.09	3.58	8.68	51.35
Italy	17.21	2.34	7.95	27.51
Netherlands	46.00	5.00	7.67	58.67
Spain	20.02	4.49	6.06	30.57
Sweden	61.65	2.17	4.47	68.29
UK	54.98	2.08	3.75	60.81
EU10	35.80	3.90	7.61	47.30

Differentiated by organisational form

A comparison of interest including practice of all organisational forms of telework follows below:

Practice and Interest in Different Types of Telework in % of All Establishments in Europe 1999

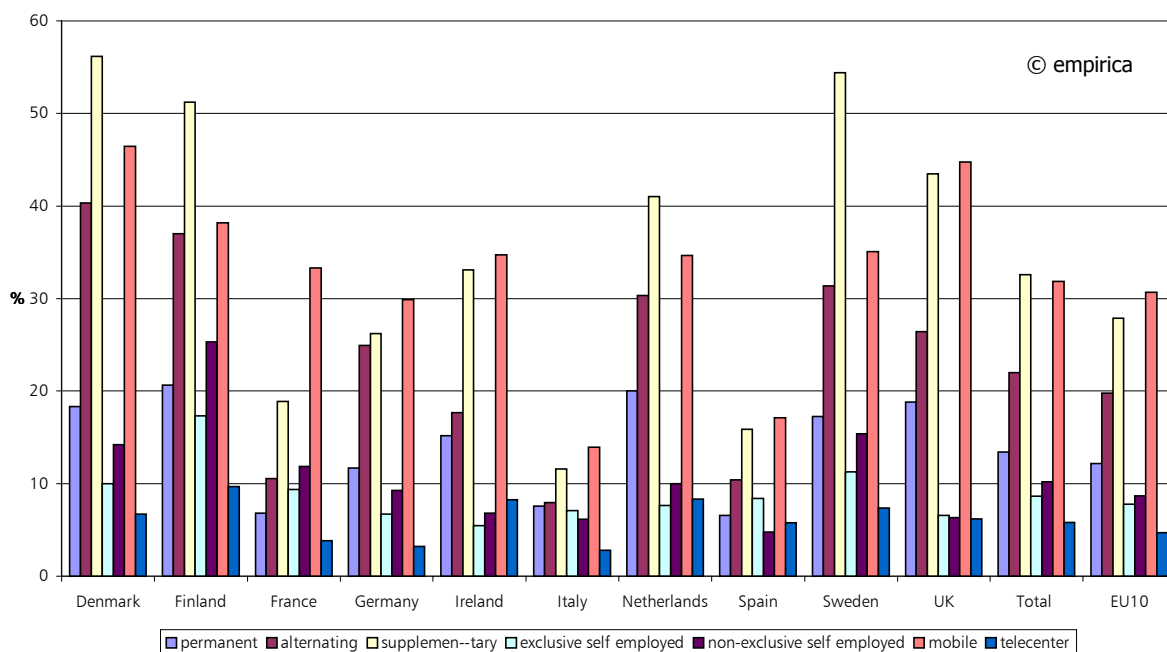


TABLE 15: PRACTICE AND INTEREST IN DIFFERENT TYPES OF TELEWORK IN % OF ALL ESTABLISHMENTS IN EUROPE 1999

	permanent	alternating	supple- mentary	exclusive self em- ployed	non- exclusive self em- ployed	mobile	telecenter
Denmark	18.34	40.31	56.17	9.98	14.21	46.43	6.72
Finland	20.68	37.00	51.20	17.36	25.29	38.17	9.69
France	6.81	10.56	18.90	9.40	11.88	33.33	3.82
Germany	11.69	24.93	26.20	6.71	9.24	29.88	3.24
Ireland	15.21	17.70	33.10	5.47	6.80	34.72	8.28
Italy	7.57	7.98	11.59	7.12	6.15	13.94	2.80
Netherlands	20.00	30.33	41.00	7.67	10.00	34.67	8.33
Spain	6.58	10.40	15.88	8.40	4.77	17.14	5.78
Sweden	17.28	31.38	54.39	11.28	15.39	35.08	7.35
UK	18.82	26.42	43.48	6.59	6.33	44.78	6.19
EU10	12.20	19.80	27.90	7.80	8.70	30.70	4.70

Establishments show a high interest (incl practice) in supplementary telework. This applies to all 10 countries surveyed. Interest in alternating telework – as with the workforce – is higher than in permanent telework throughout. Differences between the 2 forms of self-employed telework are smaller. In most cases establishments prefer to give contracts to non-exclusive self-employed teleworkers (exceptions: Spain, Italy and Great Britain).

It can be seen that the interest in teleworkcentres is low for all the countries. It is particularly low in Germany. Only in Italy (with its small establishments) is interest even lower.

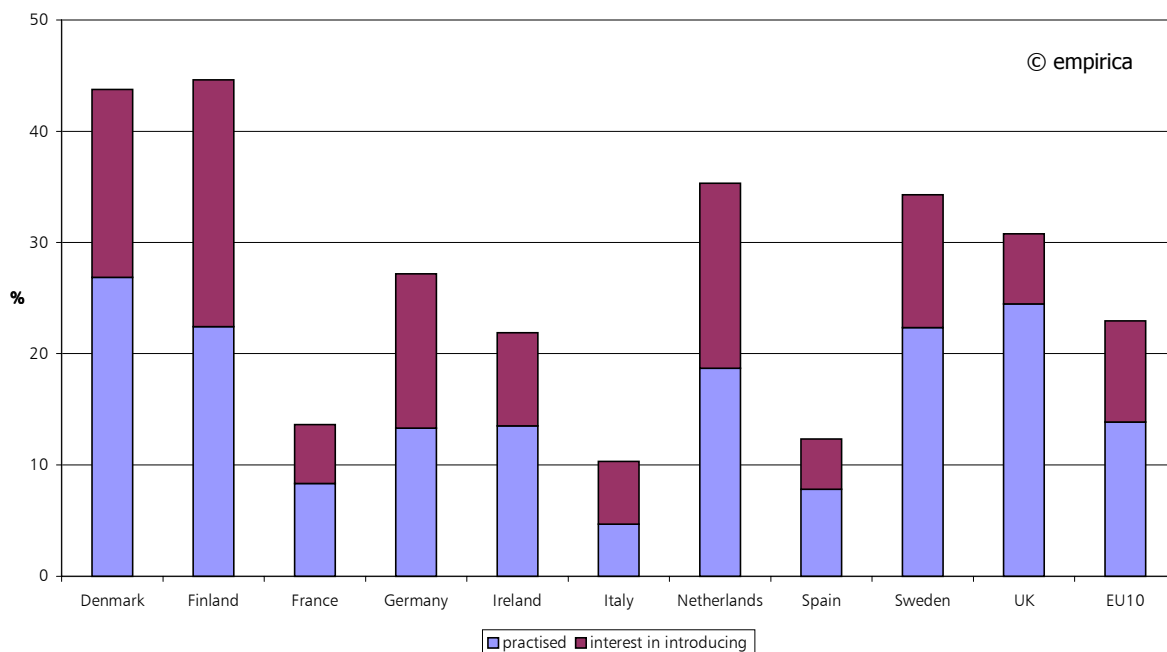
On the other hand, establishments are very interested in the introduction of mobile telework – to a similar extent as supplementary telework. Around one third or more of all establishments interviewed - except for Italy and Spain – but including France and Germany – are either interested in the introduction of mobile telework or already practise it.

A separate consideration of individual organisational forms follows:

Home-based telework

The graph shows that almost as many establishments as currently practise home-based telework are interested in its introduction. If this interest is realised the number of establishments that enable their employees to work from home will almost double. The highest increase is expected in the leading Scandinavian countries as well as the Netherlands and Germany.

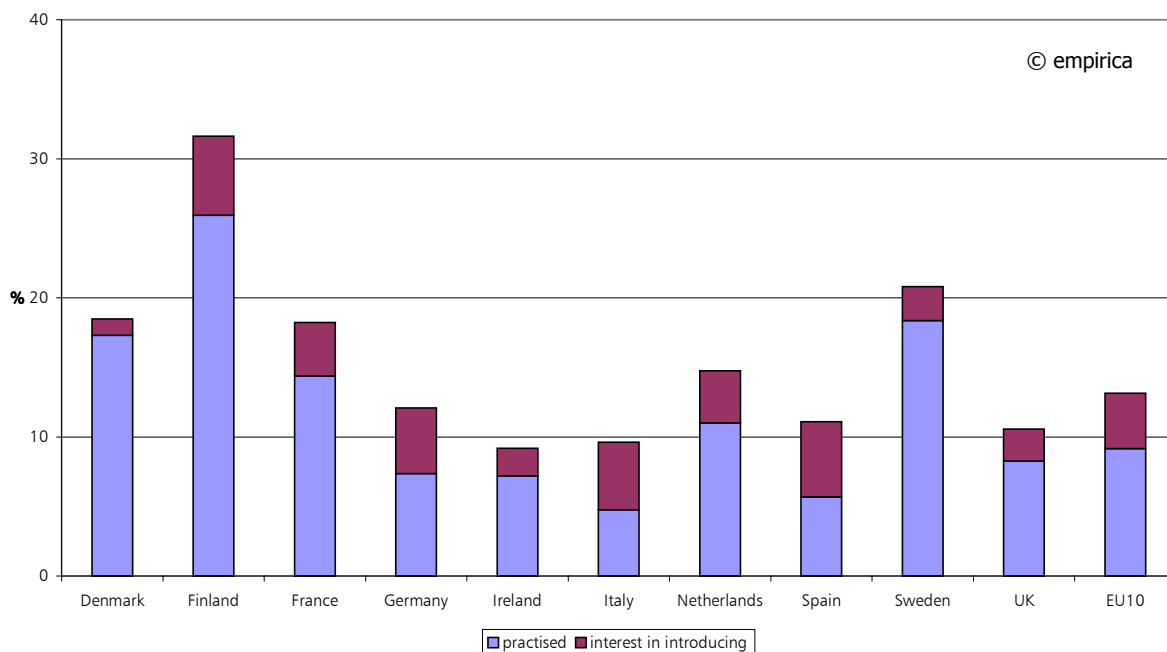
Practice and Interest in Home-based Telework in % of All Establishments in Europe 1999



telework by the self-employed

The contracting out of telework to the self-employed is not very widespread in European establishments. Interest in outsourcing work to the self-employed or freelancers is not very widespread either. It is noticeable that latecoming countries such as Italy and Spain have a comparatively high interest in the introduction of this form of telework.

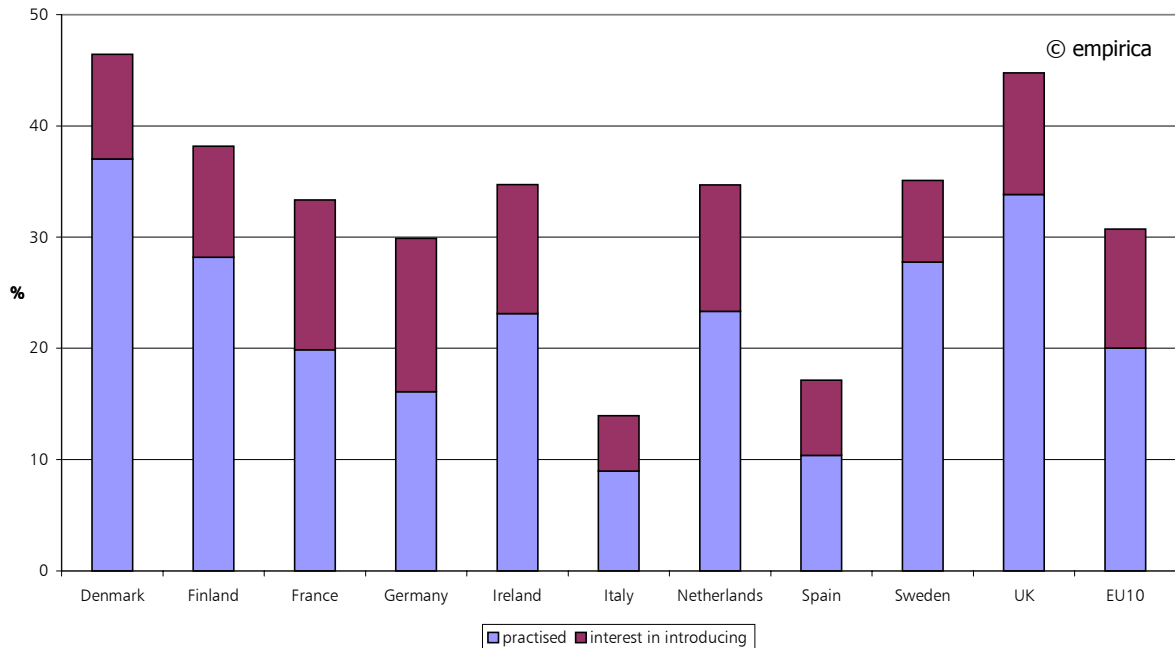
Practice and Interest in Telework by Self-employed in % of All Establishments in Europe 1999



mobile telework

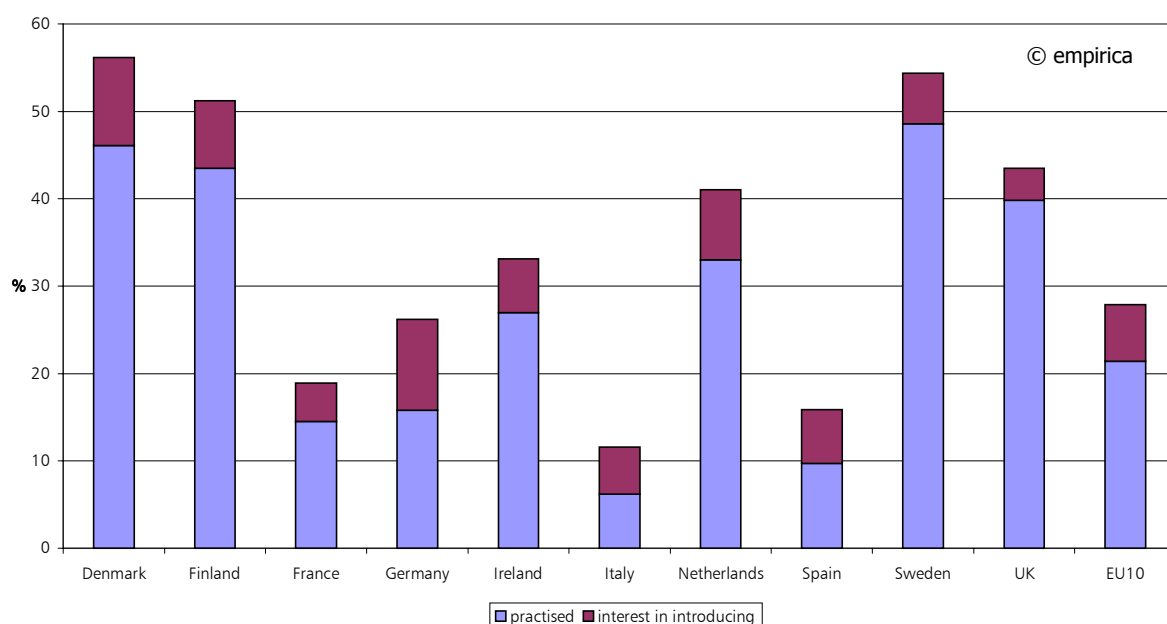
In addition to those establishments already practising mobile telework, many are interested in introducing this workform. If this interest is realised almost every third establishment in Europe will be employing mobile teleworkers. Italy and Spain stay far behind. As has already been mentioned, this can partly be explained by the smaller establishment size structure in these 2 countries.

Practice and Interest in Mobile Telework in % of All Establishments in Europe 1999

*supplementary telework:*

Supplementary telework is the most widespread form of telework in European establishments. Among those not yet practising this type of telework, the proportion of establishments interested is very low. A country comparison shows that the highest interest potential exists in Germany.

Practice and Interest in Supplementary Telework in % of All Establishments in Europe 1999



The relevant tables give a complete overview:

TABLE 16: PRACTICE AND INTEREST IN TELEWORK IN % OF ALL ESTABLISHMENTS IN EUROPE 1999

	home-based telework		self-employed		mobile telework		supplementary telework		telework overall	
	<i>Prac- tice</i>	<i>Prac- tice + inte- rest</i>	<i>Prac- tice</i>	<i>prac- tice + inte- rest</i>	<i>prac- tice</i>	<i>prac- tice + inte- rest</i>	<i>prac- tice</i>	<i>prac- tice + inte- rest</i>	<i>prac- tice</i>	<i>prac- tice + inte- rest</i>
Denmark	26.85	43.75	17.29	18.48	37.03	46.43	46.12	56.17	57.88	69.17
Finland	22.40	44.63	25.93	31.63	28.20	38.17	43.51	51.20	59.33	70.06
France	8.33	13.63	14.37	18.22	19.87	33.33	14.51	18.90	35.00	46.45
Germany	13.30	27.20	7.36	12.09	16.10	29.88	15.79	26.20	29.90	47.07
Ireland	13.53	21.88	7.20	9.17	23.14	34.72	26.99	33.10	39.09	51.35
Italy	4.66	10.33	4.77	9.62	8.96	13.94	6.18	11.59	17.21	27.51
Netherlands	18.67	35.33	11.00	14.76	23.33	34.67	33.00	41.00	46.00	58.67
Spain	7.83	12.33	5.69	11.09	10.38	17.14	9.71	15.88	20.02	30.57
Sweden	22.35	34.30	18.37	20.80	27.75	35.07	48.56	54.39	61.65	68.29
UK	24.47	30.76	8.26	10.56	33.81	44.78	39.83	43.48	54.98	60.81
EU10	13.86	22.94	9.16	13.14	20.00	30.70	21.40	27.90	35.80	47.30

TABLE 17: PRACTICE AND INTEREST IN TELEWORK OVERALL IN % OF ALL ESTABLISHMENTS IN EUROPE 1999

	practice	interest	total (= practice and interest)	practice already in % of total
home-based	13.86	9.08	22.94	60.4
self-employed	9.16	3.98	13.14	69.7
mobile	20.00	10.70	30.70	65.1
supplementary	21.40	6.30	27.90	76.7
telework overall	35.80	11.50	47.30	75.7

Historical comparison 1994-1999

When comparing interest in telework in its widest sense, during the period 1994 to 1999 interest (incl practice) has increased in most countries except for Italy.

However, it should be noted that in 1999 additional types of telework were assessed. If mobile telework, which was not considered in 1994, is taken out of the above comparison, interest has increased only in Great Britain. This suggests that from establishments' viewpoint the increased investigation of this new workform has led to the replacement of a previously euphoric attitude with one which is now more realistic.

TABLE 18: PRACTICE AND INTEREST IN TELEWORK OVERALL IN % OF ALL ESTABLISHMENTS IN EUROPE 1994 – 1999

	1994	1999
France	39.3	46.45
Germany	40.4	47.07
Italy	41.8	27.51
Spain	29.6	30.57
UK	34.4	60.81

Summary

When looking at the total interest in telework it becomes evident that the potential of establishments which are interested in practising telework, excluding those establishments already teleworking, is rather low. A comparatively high growth potential exists in Germany – when using interest in telework as the indicator.

However, growth potential for telework also exists with regard to establishments' internal expansion. So far, teleworking establishments have by no means been practising telework over the whole range of its different organisational forms. European establishments are mainly interested in the introduction of home-based and mobile telework. Interest in awarding contracts to self-employed teleworkers or in the introduction of supplementary telework, on the other hand, is appreciably lower.

4.2 Expansion Plans of Teleworking Establishments and Introduction Plans of Non-Teleworking Establishments

Interest in expansion by teleworking establishments

A large proportion of establishments that practise a particular form of telework have an interest in its expansion. However, interest in awarding contracts to the exclusive self-employed as well as outsourcing to non-exclusive self-employed is relatively low.

Germany lies far above the European average. It seems that German establishments have made positive experiences with telework. This is completely different in France. There, establishments that are interested in an expansion of telework are in the minority for all the organisational forms observed.

Interest in Extending Telework in % of Establishments Practising Telework

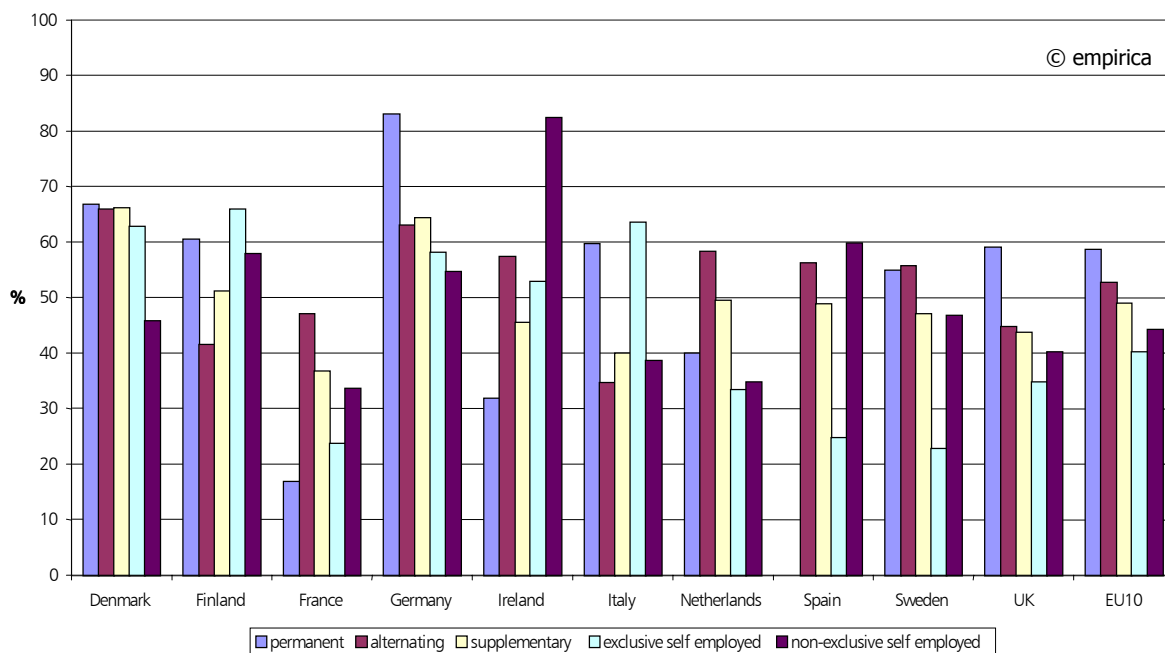


TABLE 19: INTEREST IN EXTENDING TELEWORK IN % OF ESTABLISHMENTS PRACTISING TELEWORK

	permanent	alternating	supplementary	exclusive self employed	non-exclusive self employed
Denmark	66.87	65.87	66.24	62.76	45.83
Finland	60.48	41.44	51.18	65.93	57.94
France	16.84	47.15	36.77	23.78	33.67
Germany	83.07	63.13	64.37	58.15	54.73
Ireland	31.76	57.40	45.48	52.86	82.44
Italy	59.71	34.70	39.95	63.63	38.72
Netherlands	40.00	58.33	49.49	33.33	34.78
Spain	*	56.15	48.90	24.68	59.87
Sweden	54.97	55.68	47.11	22.83	46.85
UK	59.05	44.74	43.71	34.79	40.27
EU10	58.70	52.70	49.00	40.20	44.20

** no data available due to low number of instances of permanent telework in Spain*

Interest in introduction by non-teleworking establishments

Interest in introduction among establishments that do not yet practise any particular form of telework is relatively low. Throughout Europe, an average of 9% are interested in alternating telework, 8% in supplementary telework, and 7% in permanent telework. The figures for both forms of self-employed telework are significantly lower at 3% and 2% respectively.

Interest in Introducing Telework in % of Establishments Not Practising Telework

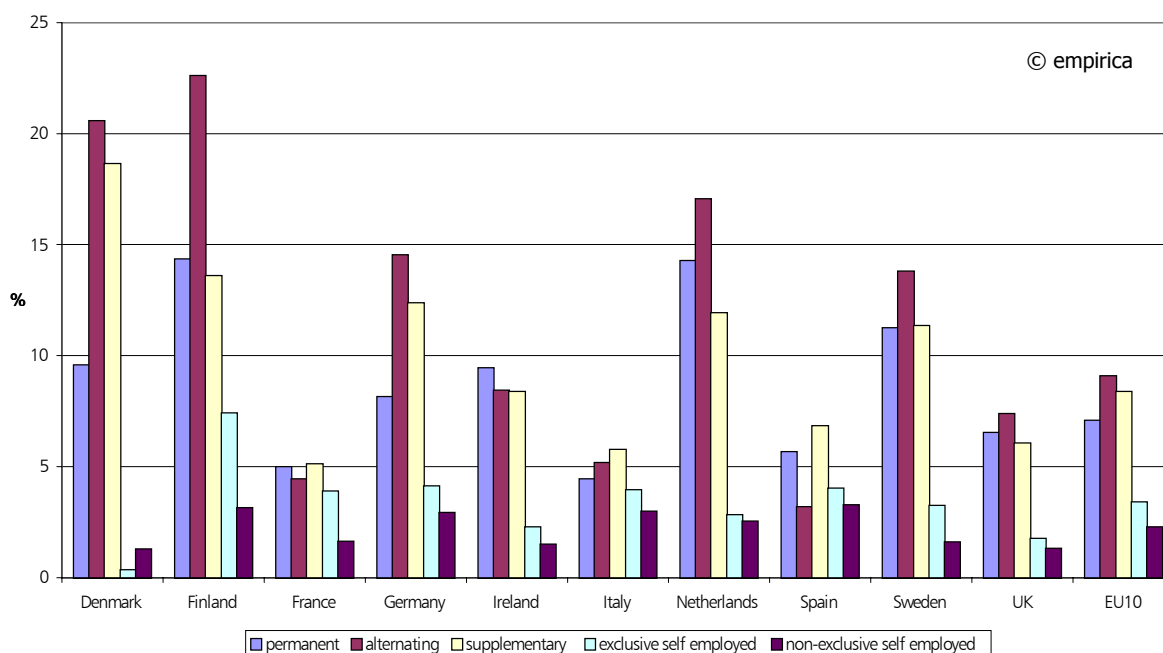


TABLE 20: INTEREST IN INTRODUCING TELEWORK IN % OF ESTABLISHMENTS NOT PRACTISING TELEWORK

	permanent	alternating	supplementary	exclusive self employed	non-exclusive self employed
Denmark	9.56	20.58	18.65	0.34	1.29
Finland	14.35	22.62	13.61	7.42	3.16
France	4.99	4.43	5.13	3.90	1.63
Germany	8.15	14.53	12.37	4.10	2.93
Ireland	9.46	8.44	8.37	2.28	1.51
Italy	4.44	5.19	5.77	3.94	2.98
Netherlands	14.29	17.06	11.94	2.81	2.53
Spain	5.67	3.17	6.84	4.02	3.28
Sweden	11.27	13.79	11.33	3.25	1.60
UK	6.55	7.37	6.07	1.78	1.31
EU10	7.10	9.10	8.40	3.40	2.30

The country-comparison shows: Not counting the Scandinavian countries and the Netherlands, interest is relatively high in Germany. In Great Britain, on the other hand, interest in the introduction of telework among non-teleworking establishments is below average.

Concrete plans by those interested:

In addition, those interested were also asked whether concrete plans for expansion or introduction existed. Throughout Europe, around a third of establishments have concrete plans regarding permanent and alternating telework as well as outsourcing to the non-exclusive self-employed. However, the proportion of establishments with concrete plans is relatively low (20%) with regard to awarding contracts to freelancers.

Denmark stands out in a country-comparison. There, in a majority of cases concrete plans back up the expression of interest. In all other countries this is the case significantly less often.

Existence of Concrete Plans for Extending or Introducing Telework in % of Establishments Interested in Extending or Introducing Telework

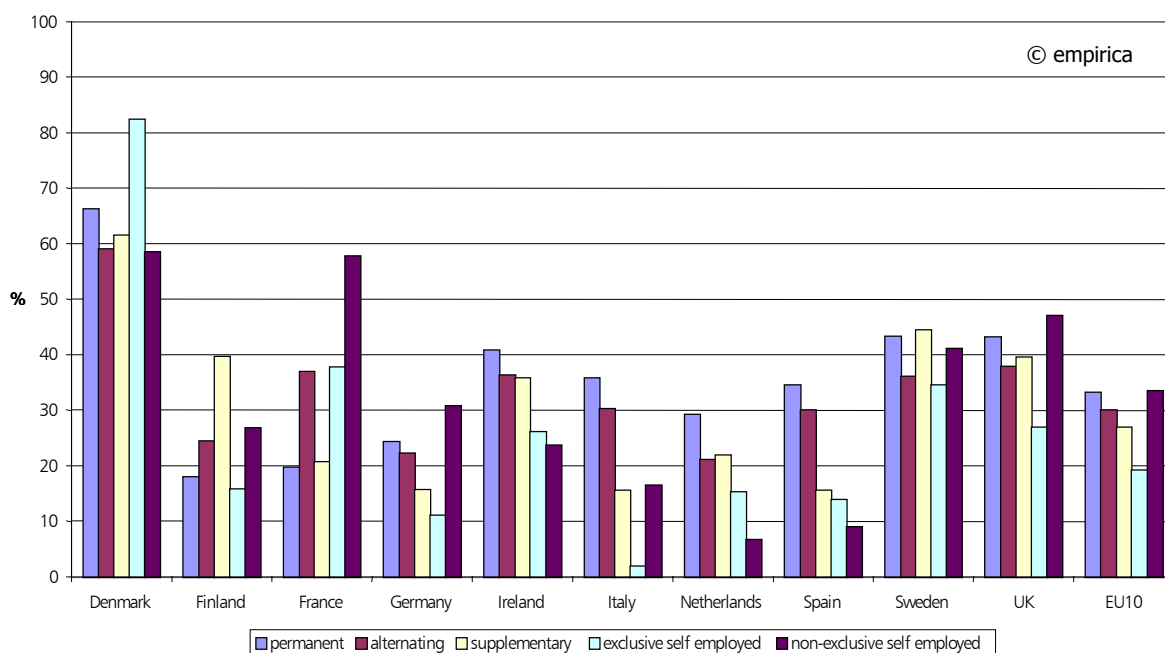


TABLE 21: EXISTENCE OF CONCRETE PLANS FOR EXTENDING OR INTRODUCING TELEWORK IN % OF ESTABLISHMENTS INTERESTED IN EXTENDING OR INTRODUCING TELEWORK

	permanent	alternating	supplementary	exclusive self employed	non-exclusive self employed
Denmark	66.38	59.06	61.46	82.39	58.55
Finland	17.99	24.55	39.77	15.81	26.80
France	19.69	37.03	20.78	37.81	57.84
Germany	24.32	22.26	15.73	11.03	30.86
Ireland	40.79	36.32	35.84	26.10	23.73
Italy	35.86	30.32	15.57	1.97	16.49
Netherlands	29.17	21.13	21.92	15.38	6.67
Spain	34.49	29.96	15.65	13.88	8.96
Sweden	43.32	36.18	44.53	34.61	41.19
UK	43.25	37.94	39.61	26.94	47.06
EU10	33.20	30.00	27.00	19.20	33.50

Summarised presentation:

The following graph and table illustrate the differences between expansion and introduction differentiated by the type of telework:

Practice, Plans and Interest in Different Types of Telework in % of All Establishments in Europe

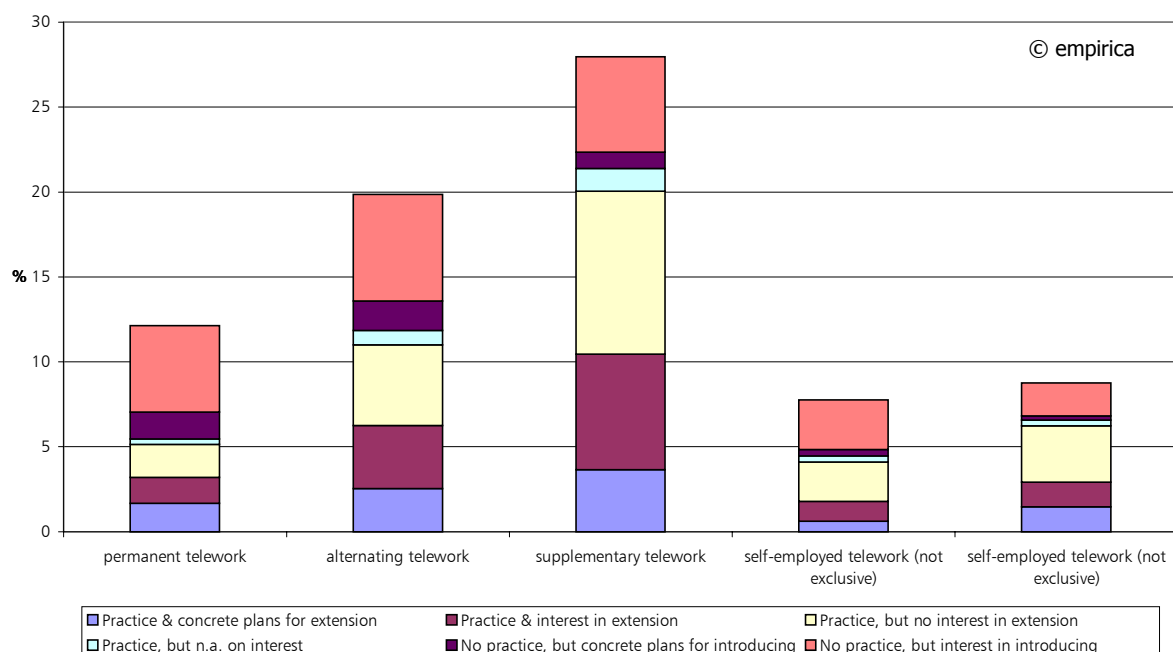


TABLE 22: PRACTICE, PLANS AND INTEREST IN DIFFERENT TYPES OF TELEWORK IN % OF ALL ESTABLISHMENTS IN EUROPE

	already practising				not practising				total
	concrete plans for extension	interest in extending	no interest in extending	n.a. on interest	concrete plans for introducing	interest in introducing	no interest in introducing	n.a. on interest	
permanent telework	1.66	1.53	1.96	0.29	1.61	5.06	83.81	4.07	100.0
alternating telework	2.54	3.70	4.76	0.84	1.74	6.27	75.91	4.24	100.0
supplementary telework	3.63	6.83	9.58	1.33	0.97	5.60	68.52	3.53	100.0
self-employed telework (not exclusive)	0.61	1.18	2.31	0.36	0.36	2.92	87.81	4.44	100.0
self-employed telework (not exclusive)	1.47	1.44	3.31	0.35	0.24	1.94	86.67	4.57	100.0
in comparison:									
mobile	20.00*				5.90**	4.80**	16.60**	52.70	100,0
* No data on interest in extension of mobile telework									
** Only establishments that practise mobile work already									

Both table and graph have to be interpreted as follows. Take for an example alternating telework: Currently 12% of European establishments practise so-called alternating telework, ie they have employees who have a workplace at the establishment-site as well as at home. More than half of those establishments have an interest in expansion. A further 8% of estab-

lishments have an interest in the introduction of alternating telework, a quarter of those already have concrete plans.

This shows that among European establishments concrete plans for expansion exist, primarily for supplementary telework and for the introduction of mobile telework in particular.

To summarise: The growth potential is not restricted to additional establishments introducing telework. What is more, a large untapped potential remains for further internal diffusion. This is supported by the fact that the number of teleworkers per establishment is generally very low. A large proportion of teleworking establishments employ less than 10 teleworkers. Furthermore, telework establishments so far practise by no means the whole range of the various organisational forms of telework.

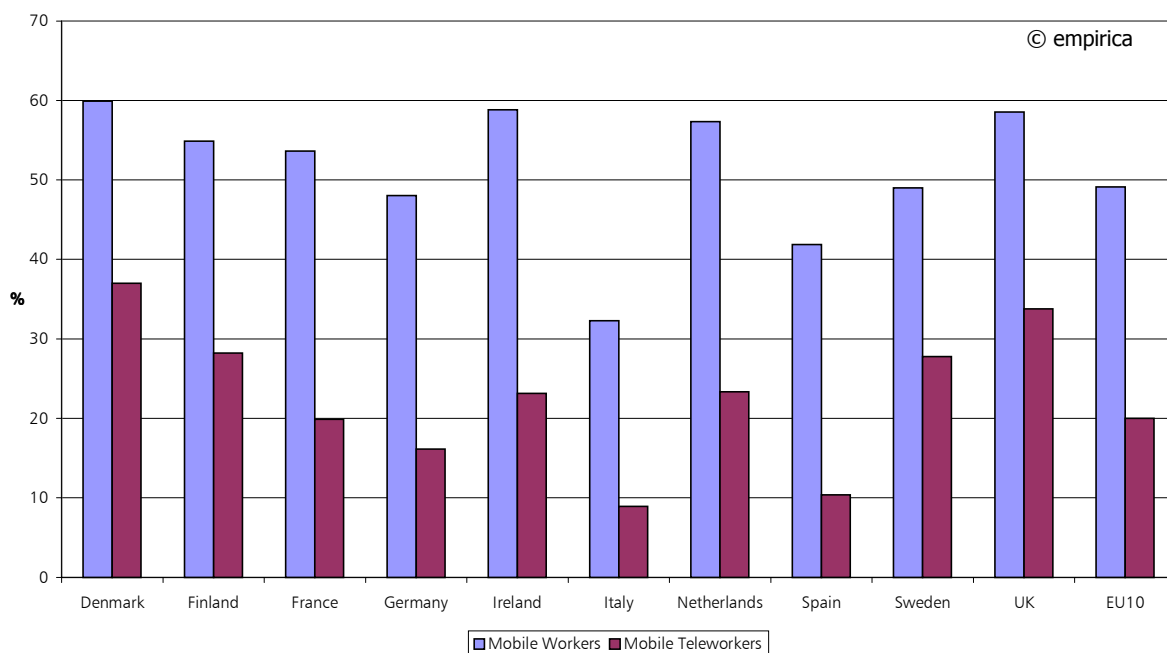
5 Mobile Work

Mobile work is defined as work carried out away from the workplace, eg at a client’s premises or on the road, for more than 10 hours per week. If mobile workers have the opportunity to access the establishment’ online communication systems while travelling, the applicable term is mobile telework.

5.1 Diffusion

The following table shows the diffusion of both forms in the countries surveyed:

Establishments Practising Mobile Work and Mobile Telework in Europe 1999



Nearly every 2nd establishment employs mobile workers, ie employees who work at a client’s premises or on the road for more than 10 hours per week. More than 40% of these establishments, or 1/5 of all establishments surveyed employ mobile teleworkers.

In Scandinavia and Great Britain more than half of mobile workers can be characterised as mobile *tele*workers. The 2 Southern European countries, Spain and Italy, lie significantly behind.

Establishments Practising Mobile Telework in % of Establishments with Mobile Workers

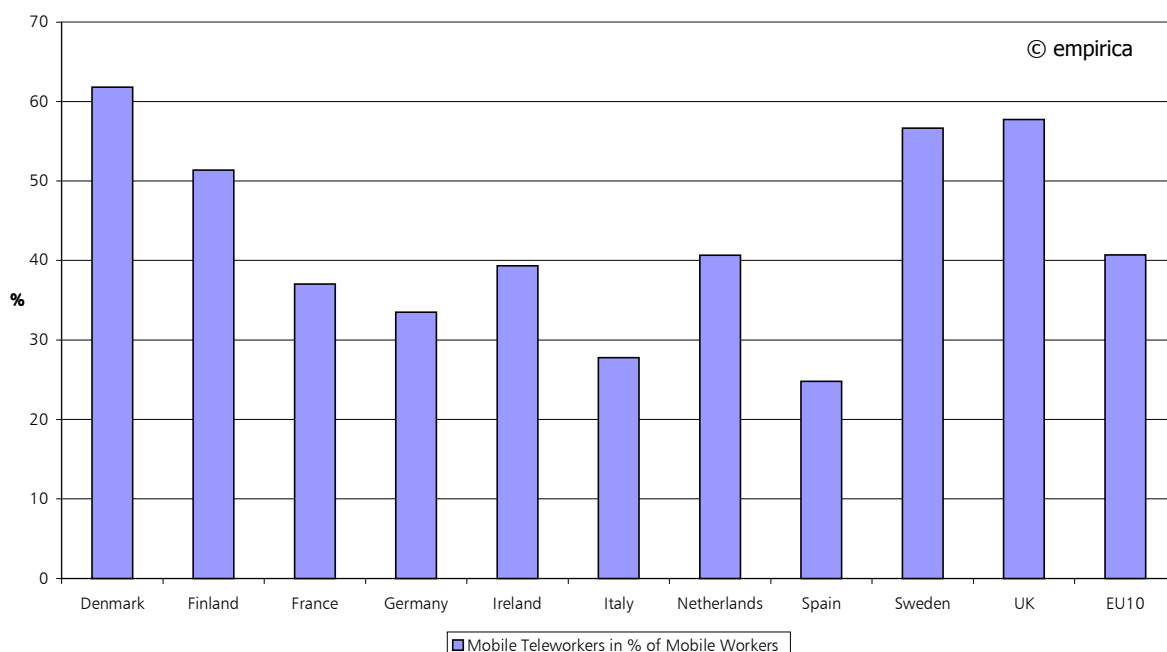


TABLE 23: MOBILE WORK AND MOBILE TELEWORK IN ESTABLISHMENTS IN EUROPE 1999

	mobile teleworkers in % of all establishments	mobile workers in % of all establishments	establishments practising mobile telework in % of establishments with mobile workers
Denmark	37.03	59.92	61.80
Finland	28.20	54.89	51.38
France	19.87	53.63	37.06
Germany	16.10	48.06	33.49
Ireland	23.14	58.86	39.31
Italy	8.96	32.28	27.75
Netherlands	23.33	57.33	40.70
Spain	10.38	41.86	24.81
Sweden	27.75	48.99	56.65
UK	33.81	58.54	57.76
EU10	20.00	49.10	40.73

5.2 Number of Mobile Teleworkers per Establishment

The arithmetic mean lies at 49, the median however at only 10. The arithmetic means for each country are strongly influenced by extreme values. This is particularly true for Italy.

TABLE 24: AVERAGE NUMBER OF MOBILE TELEWORKERS IN ESTABLISHMENTS WITH MOBILE TELEWORKERS

	mean	deviation	median
Denmark	31.82	67.01	10
Finland	46.21	89.47	17.5
France	26.73	59.82	8
Germany	30.39	55.77	10
Ireland	19.58	42.37	5
Italy	204.23	915.73	10
Netherlands	47.94	128.77	15
Spain	57.41	135.69	15
Sweden	51.76	138.55	10
UK	40.29	120.30	10
EU 10	48.66	261.18	10

A separation into classes also shows that the majority of establishments employ relatively few teleworkers. However, the number of teleworkers per establishment is higher for mobile telework than for the other organisational forms of telework.

Distribution of Establishments According to the Number of Mobile Teleworkers (in % of All Establishments)

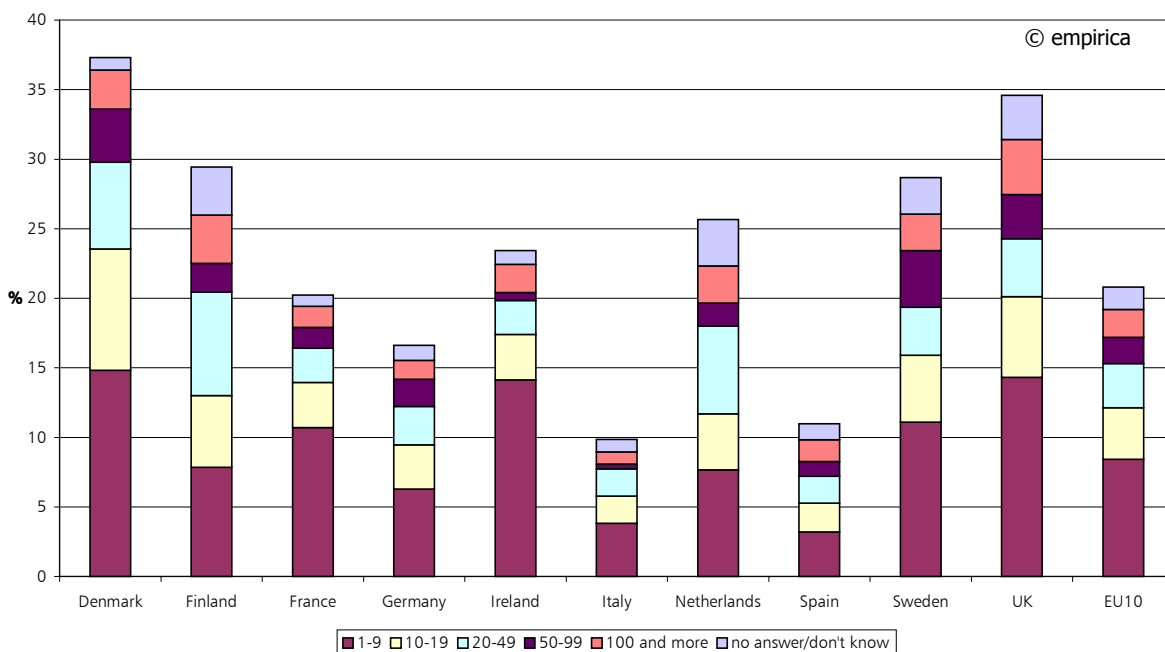


TABLE 25: DISTRIBUTION OF ESTABLISHMENTS ACCORDING TO THE NUMBER OF MOBILE TELEWORKERS (IN % OF ALL ESTABLISHMENTS)

	0	1-9	10-19	20-49	50-99	100+	don't know	n.a.	total
Denmark	62.69	14.82	8.72	6.25	3.81	2.81		0.90	100.0
Finland	70.56	7.84	5.14	7.46	2.06	3.46	2.23	1.24	100.0
France	79.76	10.69	3.25	2.47	1.50	1.51	0.45	0.37	100.0
Germany	83.38	6.29	3.16	2.78	1.96	1.34	0.57	0.52	100.0
Ireland	76.60	14.13	3.27	2.43	0.59	2.03	0.70	0.26	100.0
Italy	90.15	3.83	1.95	1.95	0.33	0.89	-	0.89	100.0
Netherlands	74.33	7.67	4.00	6.33	1.67	2.67	1.00	2.33	100.0
Spain	89.03	3.18	2.08	1.96	1.05	1.54	0.58	0.59	100.0
Sweden	71.35	11.08	4.83	3.44	4.06	2.65	1.69	0.90	100.0
UK	65.41	14.31	5.82	4.16	3.18	3.95	2.25	0.93	100.0
EU10	79.20	8.40	3.70	3.20	1.90	2.00	0.90	0.70	100.0

5.3 Interest and Plans Regarding the Introduction of Mobile Telework

Only those establishments that employ mobile workers but not yet mobile teleworkers were asked these particular questions.

On average almost one third (31%) of all establishments surveyed are interested (incl practice) in mobile telework. Around 2/3 (20%) of those already practise mobile telework, 6% have concrete plans and 5% are “only” interested in the introduction of telework.

Out of all countries, Germany has the greatest potential both in relation to (its relative low) diffusion as well as to absolute numbers. Compared to the other forms of telework mobile telework obviously has the biggest growth potential. Here concrete plans and interest in an introduction are mentioned much more often than for the other organisational forms. Among the establishments with mobile workers which do not yet have mobile teleworkers, more than every third (37%) is interested in equipping their current and future mobile employees with online access to the establishment' information system. Among those interested, more than every 2nd (55%) has concrete plans to implement this over the next one to 2 years.

Practice, Plans and Interest in Mobile Telework in % of All Establishments

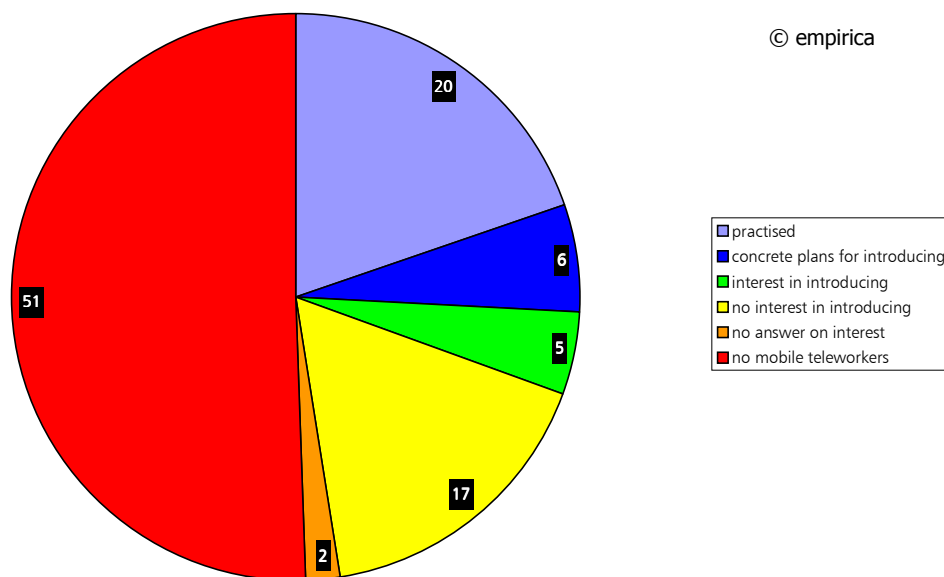


TABLE 26: PRACTICE, PLANS AND INTEREST IN MOBILE TELEWORK IN % OF ALL ESTABLISHMENTS

	mobile telework practised	mobile work practised				mobile work not practised	d.k./ n.a.	total
		concrete plans for introducing	interest in introducing	no interest in introducing	n.a. on interest			
Denmark	37.03	5.73	3.67	12.47	1.02	39.80	0.28	100.0
Finland	28.20	4.25	5.72	15.71	1.01	44.14	0.97	100.0
France	19.87	6.95	6.51	18.83	1.47	46.00	0.37	100.0
Germany	16.10	8.37	5.41	16.39	1.78	51.63	0.31	100.0
Ireland	23.14	4.37	7.21	20.67	3.48	40.88	0.26	100.0
Italy	8.96	1.74	3.24	14.97	3.37	67.00	0.73	100.0
Netherlands	23.33	7.67	3.67	21.67	1.00	40.67	2.00	100.0
Spain	10.38	4.56	2.20	22.23	2.49	57.55	0.59	100.0
Sweden	27.75	3.74	3.58	12.73	1.19	50.11	0.90	100.0
UK	33.81	5.41	5.56	13.18	0.58	40.68	0.78	100.0
EU10	20.00	5.90	4.80	16.60	1.70	50.30	0.60	100.0

6 Suitable Fields of Activity

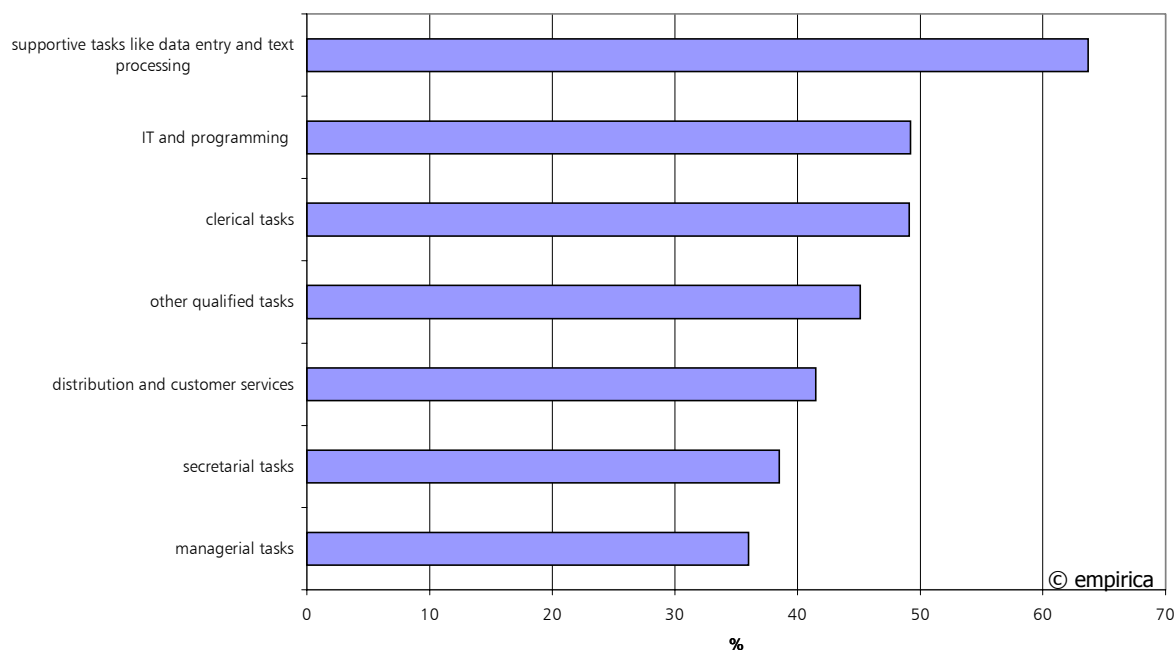
6.1 Assessment by Those Interested

Chapter 3.2 already discussed the fields of activity in which telework is currently practised and which additional fields of activity teleworking establishments classified as feasible. An analysis of the assessments by establishments' decision makers' interested in telework with regard to feasibility of selected fields of activity for telework follows below.

Establishments interested in telework select support activities as those most suitable for telework. Establishments that initially consider telework in theory obviously regard simple support activities as the main application field.

Managerial activities, on the other hand, are those least mentioned with regard to suitable activity fields in their own establishment. They even lie behind secretarial tasks, which are in general considered problematic for decentralisation, due to their particularly high proportion of personal communication and coordinating function. There is obviously still a great need for clarification regarding suitability of managerial activities for telework.

Areas Considered Feasible for Telework (in % of Establishments Interested in Telework) in Europe



Depending on the country, results differ more or less significantly from the European mean. So, in contrast to all others, French decision makers consider managerial activities the most suitable, whereas in Ireland distribution and client services are considered most suitable for decentralisation; in Sweden it is professional activities and in Great Britain data processing and programming.

Areas Considered Feasible for Telework (in % of Establishments Interested in Telework)

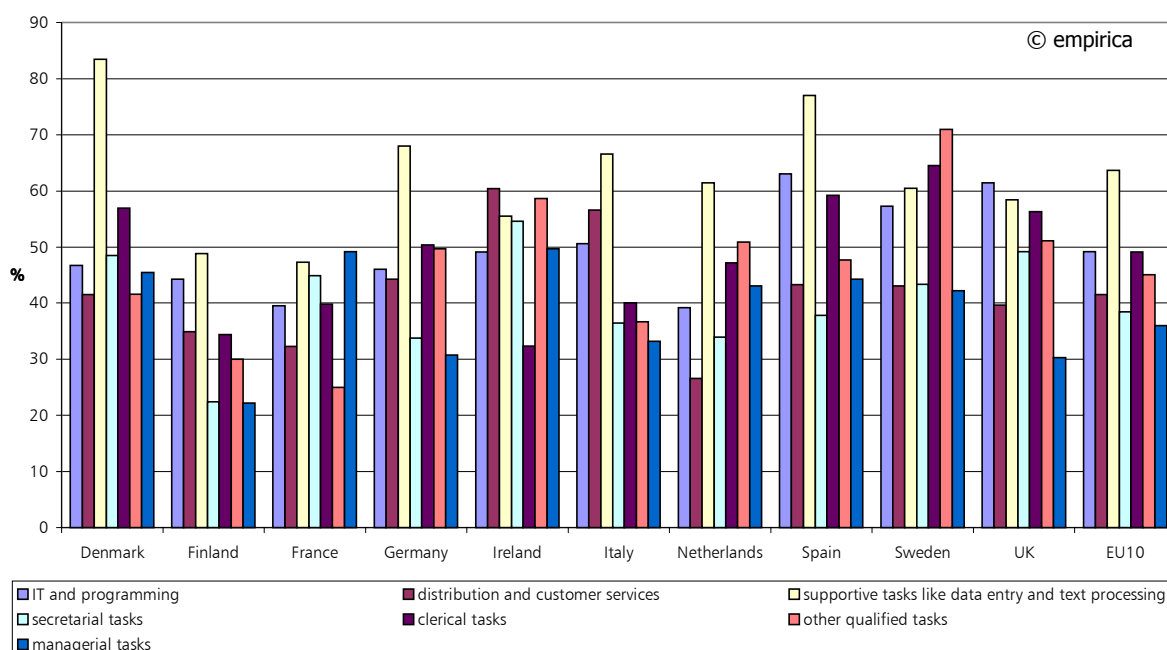


TABLE 27: AREAS CONSIDERED FEASIBLE FOR TELEWORK (IN % OF ESTABLISHMENTS INTERESTED IN TELEWORK)

	IT and programming	distribution and customer services	support tasks such as data entry and text processing	secretarial tasks	clerical tasks	other professional tasks	managerial tasks
Denmark	46.7	41.5	83.5	48.5	56.9	41.6	45.5
Finland	44.3	34.9	48.8	22.4	34.4	30.0	22.2
France	39.5	32.3	47.3	44.9	39.8	25.0	49.2
Germany	46.1	44.3	68.0	33.8	50.4	49.7	30.7
Ireland	49.1	60.4	55.5	54.6	32.4	58.6	49.7
Italy	50.6	56.6	66.6	36.5	40.0	36.7	33.2
Netherlands	39.2	26.6	61.5	33.9	47.2	50.9	43.1
Spain	63.0	43.3	77.0	37.8	59.2	47.7	44.3
Sweden	57.3	43.1	60.5	43.4	64.5	71.0	42.2
UK	61.5	39.7	58.4	49.2	56.3	51.1	30.3
EU10	49.2	41.5	63.7	38.5	49.1	45.1	36.0

6.2 Comparison Between Practice and Assessment of Feasibility

The comparison between practice (see chapter 3.2) and assessment of feasibility by establishments interested in telework shows clear differences. Establishments which deal only theoretically with telework regard simple support activities as the main application for telework. Managerial activities, on the other hand, are most often regarded as least suitable.

However, in practice another picture emerges: While supportive activities have a role, it is by no means domineering. Managerial or other professional activities, on the other hand, are right at the front.

Areas Practised or Considered Feasible for Telework (in % of Establishments Interested in or Practising Telework) in Europe

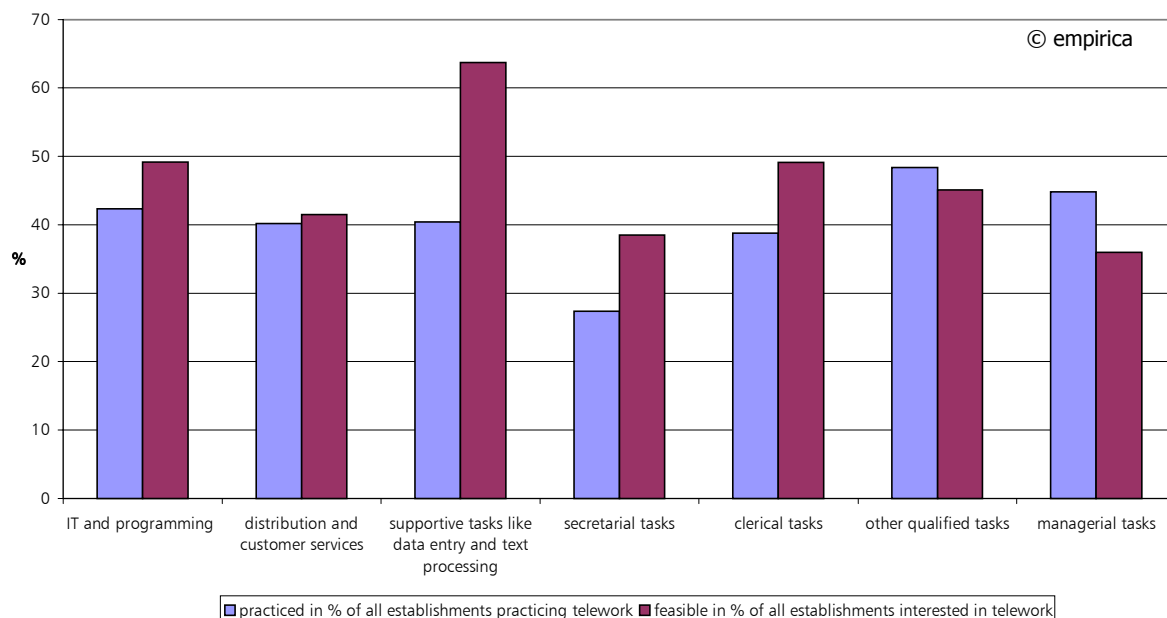


TABLE 28: AREAS PRACTISED OR CONSIDERED FEASIBLE FOR TELEWORK (IN % OF ESTABLISHMENTS INTERESTED IN OR PRACTISING TELEWORK) IN EUROPE

	IT and programming	distribution and customer services	support tasks such as data entry and text processing	secretarial tasks	clerical tasks	other professional tasks	managerial tasks
practised *	42.3	40.2	40.4	27.4	38.8	48.4	44.8
feasible **	49.2	41.5	63.7	38.5	49.1	45.1	36.0
* practised in % of all establishments practising telework							
** feasible in % of all establishments interested in telework							

7 Barriers

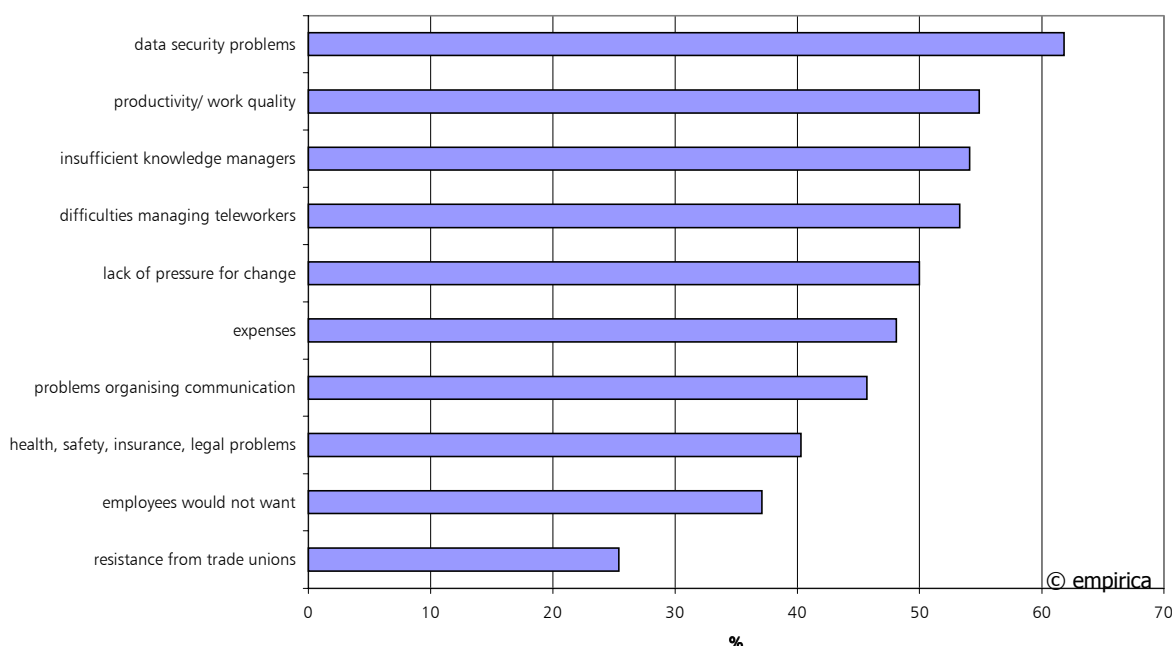
7.1 Overview of Barriers to Telework

Managers in Europe regard data protection and data security problems as particular barriers to the introduction of telework. 62% find them important or very important.

Other most often mentioned barriers: Concerns regarding productivity and quality of work (55%), insufficient knowledge of how to plan and organise telework as well as problems regarding management and supervision of teleworkers (54% each).

Lack of employee interest plays only a minor role (37%) while possible resistance from works councils and trade unions (25%) takes the last position.

Barriers to Telework in Europe 1999 (in % of All Establishments)



Country-specific analysis

The initial hypothesis might be that barriers are most often mentioned in the latecoming countries. This is correct for Spain but less so for Italy. In Ireland and France the preset possible barriers were often classed as important, however, comparatively rarely in Denmark and Finland, as well as in Germany.

It is certainly not accidental that barriers are most often mentioned in countries that are behind with regard to diffusion of telework. Even the argument “Trade unions will resist” which in other countries is only mentioned by a quarter of establishments at most is classed as a significant barrier for expansion of telework by 31% of decision makers in Italy, 40% in Spain, and 47% in France.

Barriers to Telework in Europe 1999 (in % of All Establishments)

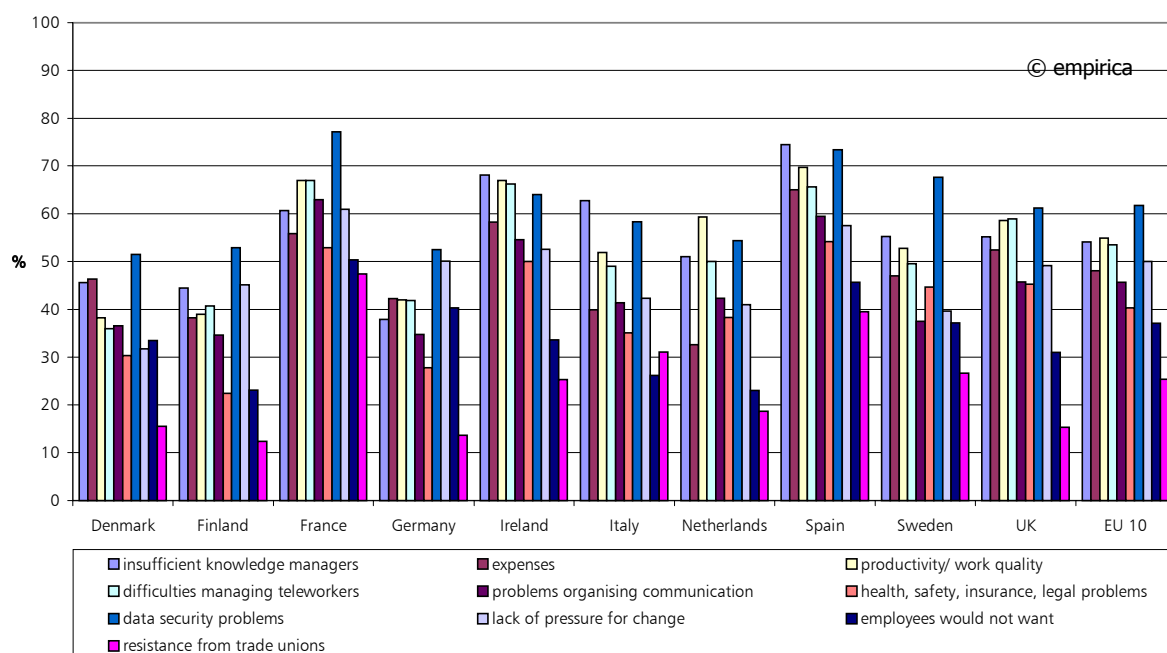


TABLE 29: BARRIERS TO TELEWORK IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

	insufficient knowledge managers	expenses	productivity/work quality	difficulties managing teleworkers	problems organising communication	health, safety, insurance, legal problems	data security problems	lack of pressure for change	employees would not want	resistance from trade unions
Denmark	45.61	46.33	38.22	36.01	36.59	30.34	51.47	31.76	33.46	15.53
Finland	44.45	38.25	39.01	40.73	34.60	22.48	52.96	45.18	23.14	12.34
France	60.69	55.81	66.94	66.92	62.92	52.96	77.12	60.97	50.37	47.44
Germany	37.93	42.26	42.00	41.83	34.72	27.83	52.53	50.11	40.35	13.68
Ireland	68.11	58.26	66.94	66.18	54.63	49.97	63.99	52.55	33.65	25.28
Italy	62.77	39.93	51.94	48.97	41.42	35.10	58.35	42.30	26.18	31.07
Netherlands	51.00	32.67	59.33	50.00	42.33	38.33	54.33	41.00	23.00	18.67
Spain	74.43	65.02	69.70	65.58	59.46	54.18	73.38	57.53	45.70	39.50
Sweden	55.28	47.01	52.75	49.60	37.48	44.64	67.65	39.61	37.15	26.65
UK	55.16	52.38	58.58	58.93	45.78	45.26	61.16	49.19	31.01	15.40
EU 10	54.1	48.1	54.9	53.5	45.7	40.3	61.8	50.0	37.0	25.4

The table below puts barriers in ranking order. Six out of 10 countries regard data security problems as the most important barrier. While in the Netherlands concerns regarding productivity and quality of work take 1st position, in Ireland, Italy and Spain it is management’s insufficient knowledge.

*Ranking order of barriers by country***TABLE 30: RANKING OF BARRIERS TO TELEWORK IN EUROPEAN COUNTRIES 1999**

	insuffi- cient know- ledge mana- gers	expen- ses	produc- tivity/ work quality	difficul- ties mana- ging telewor- kers	pro- blems organi- sing commu- nica- tion	health, safety, insu- rance, legal pro- blems	data securi- ty pro- blems	lack of pres- sure for change	emplo- yees would not want	resis- tance from trade unions
Denmark	3	2	4	6	5	9	1	8	7	10
Finland	3	6	5	4	7	9	1	2	8	10
France	6	7	2	3	4	8	1	5	9	10
Germany	7	3	4	5	8	9	1	2	6	10
Ireland	1	5	2	3	6	8	4	7	9	10
Italy	1	7	3	4	6	8	2	5	10	9
Netherlands	3	8	1	4	5	7	2	6	9	10
Spain	1	5	3	4	6	8	2	7	9	10
Sweden	2	5	3	4	8	6	1	7	9	10
UK	4	5	3	2	7	8	1	6	9	10
EU 10	3	6	2	4	7	8	1	5	9	10

7.2 Differentiation by Intensity

In the survey part that was concerned with barriers to the expansion of telework, a distinction was made between important and very important motives. Whereas so far both replies were summated, in the following they are presented separately.

However, it can be seen that differences are very small: Data security problems still carry outstanding importance. 27% of decision makers interviewed in Europe classify it as a very important barrier for further expansion of telework. The last mentioned reasons are least important: no employee interest (11%) and particularly resistance from trade unions (6%).

TABLE 31: VERY IMPORTANT AND IMPORTANT BARRIERS TO TELEWORK IN EUROPE 1999 (IN % OF ALL ESTABLISHMENTS)

	insufficient knowledge managers	expenses	productivity/work quality	difficulties managing teleworkers	problems organizing communication	health, safety, insurance, legal problems	data security problems	lack of pressure for change	employees would not want	resistance from trade unions
<i>Denmark</i>										
very important	15.2	14.9	15.7	9.9	10.7	10.2	25.1	13.0	10.5	7.2
important	30.5	31.5	22.6	26.0	25.9	20.2	26.2	18.6	22.9	8.6
total	45.7	46.4	38.3	35.9	36.6	30.4	51.3	31.6	33.4	15.8
<i>Finland</i>										
very important	8.1	4.2	8.1	2.9	7.1	1.9	15.2	17.5	3.6	2.6
important	36.5	34.1	31.1	37.7	27.6	20.7	37.5	27.6	19.5	9.7
total	44.6	38.3	39.2	40.6	34.7	22.6	52.7	45.1	23.1	12.3
<i>France</i>										
very important	13.4	12.2	17.4	20.6	15.6	16.6	29.9	16.4	13.6	13.8
important	47.3	43.6	49.5	46.3	47.3	36.4	47.1	44.6	36.8	33.7
total	60.7	55.8	66.9	66.9	62.9	53.0	77.0	61.0	50.4	47.5
<i>Germany</i>										
very important	10.6	12.8	11.4	11.8	11.6	7.0	22.9	18.2	15.4	2.8
important	27.3	29.5	30.7	30.1	23.0	21.0	29.7	31.9	25.0	11.0
total	37.9	42.3	42.1	41.9	34.6	28.0	52.6	50.1	40.4	13.8
<i>Ireland</i>										
very important	24.3	12.8	21.3	19.2	11.2	14.7	26.2	11.2	6.1	1.3
important	43.9	45.5	45.6	46.9	43.6	35.3	38.0	41.4	27.5	24.0
total	68.2	58.3	66.9	66.1	54.8	50.0	64.2	52.6	33.6	25.3
<i>Italy</i>										
very important	27.5	12.8	12.6	13.8	10.8	9.9	23.2	10.7	6.5	6.9
important	35.4	27.1	39.3	35.2	30.6	25.2	35.2	31.6	19.6	24.2
total	62.9	39.9	51.9	49.0	41.4	35.1	58.4	42.3	26.1	31.1
<i>Netherlands</i>										
very important	14.7	4.0	10.3	10.7	8.3	8.7	28.0	7.3	4.7	1.7
important	36.3	28.7	49.0	39.3	34.0	29.7	26.3	33.7	18.3	17.0
total	51.0	32.7	59.3	50.0	42.3	38.3	54.3	41.0	23.0	18.7
<i>Spain</i>										
very important	25.0	20.2	18.8	16.2	13.6	15.6	36.1	13.6	14.2	9.2
important	49.4	44.8	50.9	49.4	45.7	38.5	37.3	43.9	31.5	30.3
total	74.4	65.0	69.7	65.6	59.3	54.1	73.4	57.5	45.7	39.5
<i>Sweden</i>										
very important	17.0	14.4	16.0	17.3	10.8	20.6	35.0	11.8	10.2	8.5
important	38.2	32.7	36.6	32.2	26.6	24.2	32.7	27.8	26.9	18.3

total	55.2	47.1	52.6	49.5	37.4	44.8	67.7	39.6	37.1	26.8
<i>UK</i>										
very important	20.0	20.9	17.3	18.2	12.8	15.2	29.9	16.2	7.4	3.0
important	35.1	31.5	41.2	40.9	32.9	29.9	31.3	33.0	23.6	12.4
total	55.1	52.4	58.5	59.1	45.7	45.1	61.2	49.2	31.0	15.4
<i>Total</i>										
very important	18.1	13.6	15.2	14.5	11.6	12.2	27.4	13.9	9.7	6.0
important	38.2	35.1	40.1	38.9	34.3	28.6	34.6	34.2	25.7	19.6
total	56.3	48.7	55.3	53.4	45.9	40.8	62.0	48.1	35.4	25.6
<i>EU10</i>										
very important	17.4	14.5	14.7	15.2	12.3	12.0	27.3	15.0	11.0	6.0
important	36.7	33.6	40.3	38.2	33.4	28.3	34.5	35.0	26.1	19.4
total	54.1	48.1	54.9	53.5	45.7	40.3	61.8	50.0	37.0	25.4

7.3 Differentiation Between Users and Non-Users

A differentiation between teleworking, interested and non-interested establishments, brings about several differences - however, not necessarily those expected. Considering that questions regarding the importance of possible barriers to telework were asked in general (not related to own establishment) it is reasonable that those who have considered telework more intensively will also be aware of more barriers. Those interested in the introduction of telework followed by those practising telework attach great importance to the barriers mentioned. For those not interested in an introduction of telework the barriers mentioned have only little importance.

This general discovery by and large is also true for the individual barriers. It is noticeable that among those interested in telework, those without concrete plans regard the possible barriers of awareness and cost as of much higher importance. This possibly indicates that these 2 barriers are classed as more important than they actually are for those practising it.

TABLE 32: BARRIERS TO TELEWORK IN % OF ALL ESTABLISHMENTS AND ESTABLISHMENTS PRACTISING OR INTERESTED IN TELEWORK

establishments	insufficient knowledge managers	expenses	productivity/work quality	difficulties managing teleworkers	problems organising communication	health, safety, insurance, legal problems	data security problems	lack of pressure for change	employees would not want	resistance from trade unions
1) already practise	59.2	49.2	60.3	62.0	50.7	44.2	67.9	48.2	38.4	26.0
2) concrete plans for introduction	55.2	46.9	66.7	68.2	52.4	41.5	67.9	55.6	39.7	25.1
3) interest in introduction but no concrete plans	70.5	63.2	68.4	68.1	51.6	42.1	73.3	65.7	41.7	21.1
4) interest in introduction [= 2)+3)]	64.6	57.2	67.8	68.2	51.9	41.9	71.3	62.0	41.0	22.6
5) no interest in introduction	47.9	45.3	48.6	45.3	41.5	37.8	56.2	48.8	35.9	25.4
6) all establishments	54.1	48.1	54.9	53.5	45.7	40.3	61.8	50.0	37.0	25.4

7.4 Historical Comparison

Apart from the results of the 1994 TELDET survey there are also results on barriers to telework from the survey of 1985. Although the compatibility of results is limited due to different methodologies (only the ranking order of reasons mentioned can be historically compared) interesting results emerge:

The comparison shows that the problems of organising communication between office and teleworkplace and costs for the technological equipment have significantly decreased in importance in the opinion of decision makers. Looking back even further to the 1980s, it is noticeable that the previously most often mentioned reason of "lack of pressure to change" is mentioned far less often in the changed competitive market of the 1990s.

TABLE 33: RANKING OF BARRIERS TO TELEWORK IN EUROPE IN 1985, 1994 AND 1999*

1985	1994	1999
1. Lack of any pressure to change current practice	1. Insufficient knowledge	1. Data security problems
2. Expense	2. Difficulties of managing and supervising teleworkers	2. Productivity/ work quality
3. Organisational effort	3. Problems organising communication with teleworkers	3. Insufficient knowledge of managers
4. Lack of supervision and control	4. Expense of computing equipment and telecommunication services	4. Difficulties managing teleworkers
5. Inefficient computing equipment	5. Lack of any pressure to change current practice	5. Lack of pressure for change
6. Training effort	6. Reasons relating to productivity or work quality	6. Expenses
7. Lack of acceptance by staff	7. Employees would not want to telework	7. Problems organising communication
8. Resistance from trade unions	8. Health, safety, insurance, security or legal problems	8. Health, safety, insurance, legal problems
	9. Resistance from trade unions	9. Employees would not want
		10. Resistance from trade unions
<i>* Not directly comparable due to differences in methodologies used</i>		

8 Cross Referencing of Practice and Interest with Independent Variables

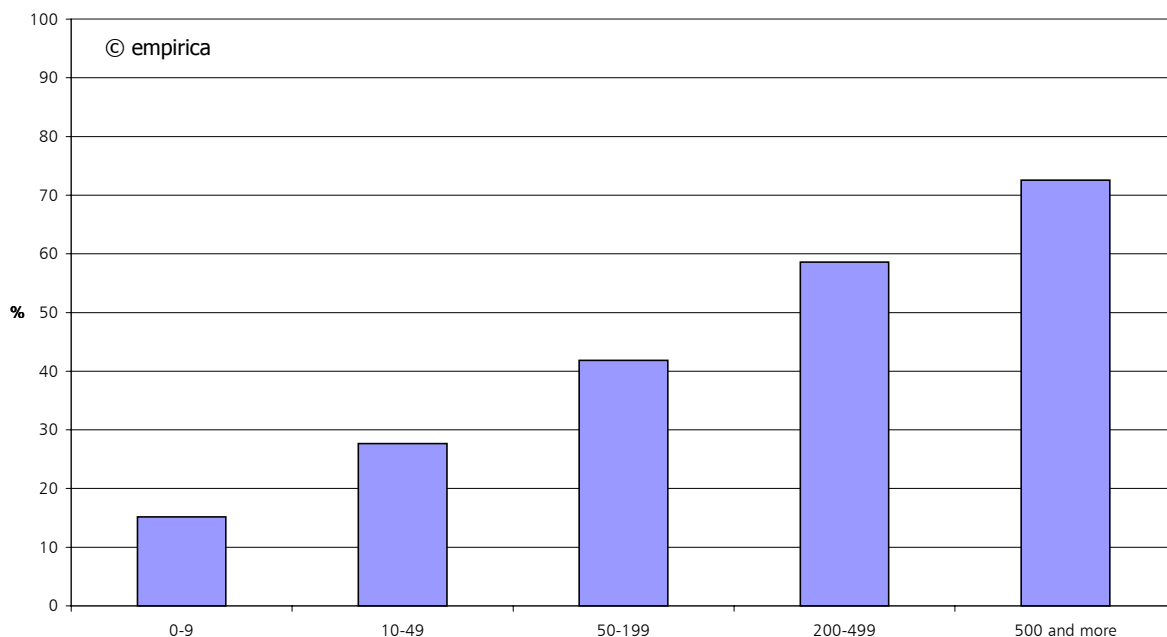
Results of the cross reference tables of practice and interest in telework with establishment size, sector and region are represented below. The results relate to telework in the wider sense (incl supplementary telework). The results for regular telework show similar trends.

Further cross reference tables with independent variables can be found in chapter 10.

8.1 Diffusion (of Telework) and Interest in Telework in Europe Differentiated by Establishment Size

Telework is still mainly practised by large establishments. Almost ¼ of establishments in Europe with more than 500 employees already offer teleworkplaces. This proportion is a lot smaller for smaller establishments.

Establishments Practising Telework (Incl. Supplementary Telework) According to Establishment Size in Europe



The biggest growth is expected in medium-sized establishments – if measured by interest expressed. However, the biggest growth rates are expected for the smaller establishments, due to their low starting level.

Practice and Interest in Telework (Incl. Supplementary Telework) According to Establishment Size

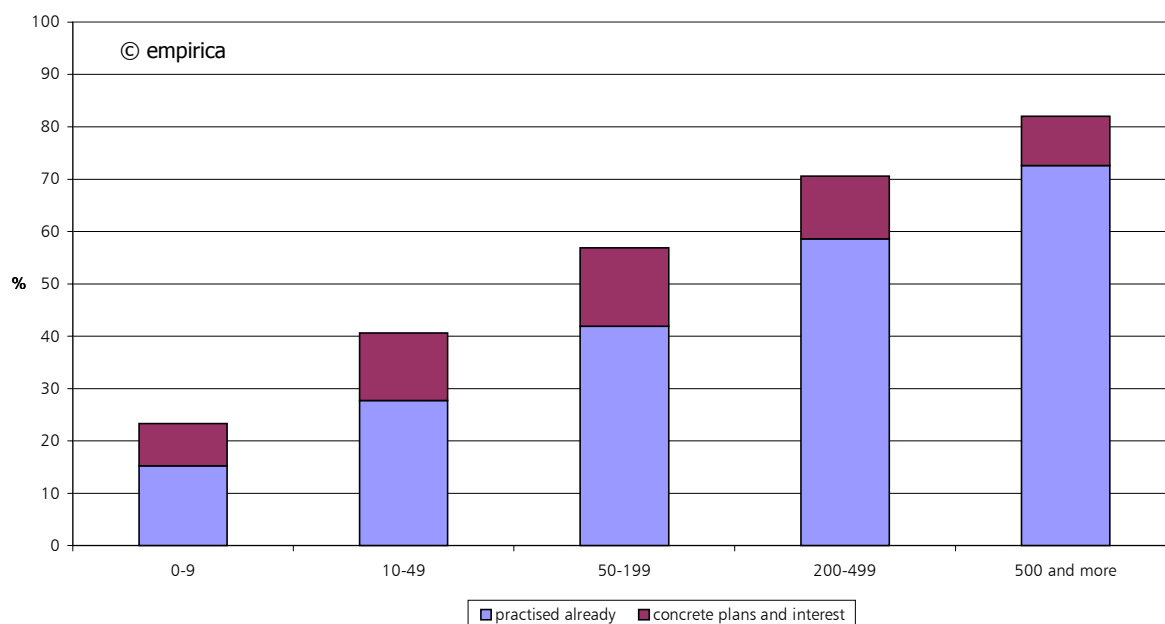


TABLE 34: PRACTICE AND INTEREST IN TELEWORK (INCL. SUPPLEMENTARY TELEWORK) ACCORDING TO ESTABLISHMENT SIZE

number of employees	0-9	10-49	50-199	200-499	500 and more
already practise	15.23	27.72	41.90	58.56	72.60
concrete plans	1.82	3.91	5.92	6.21	1.14
interest only	6.28	9.00	9.08	5.82	8.28
practise and interest	23.33	40.63	56.90	70.59	82.02

Country-specific differentiation – Practice

The country-specific differentiation initially shows that in all countries both diffusion of telework and interest in telework (incl practice) are highly dependent on the size of the establishment.

Furthermore, it is noticeable that in all countries the majority of establishments in the largest establishment-size group already have telework experience. When adding the interest in telework expressed, the value increases to 2/3. This confirms the explanation that Italy and Spain's trailing positions can also partly be explained by the establishment size structure of these 2 countries which was inevitably reflected in the the ECaTT sample.

On the other hand, it can be seen that the leading countries Denmark, Finland, Sweden and Great Britain are at the top of all establishment-size groups. The lead is particularly high for the small establishments. The leading position of Scandinavia and Great Britain with regard to diffusion of telework cannot thus be explained only by differences in economic structure.

Establishments Practising Telework (Including Supplementary Telework) According to Establishment Size

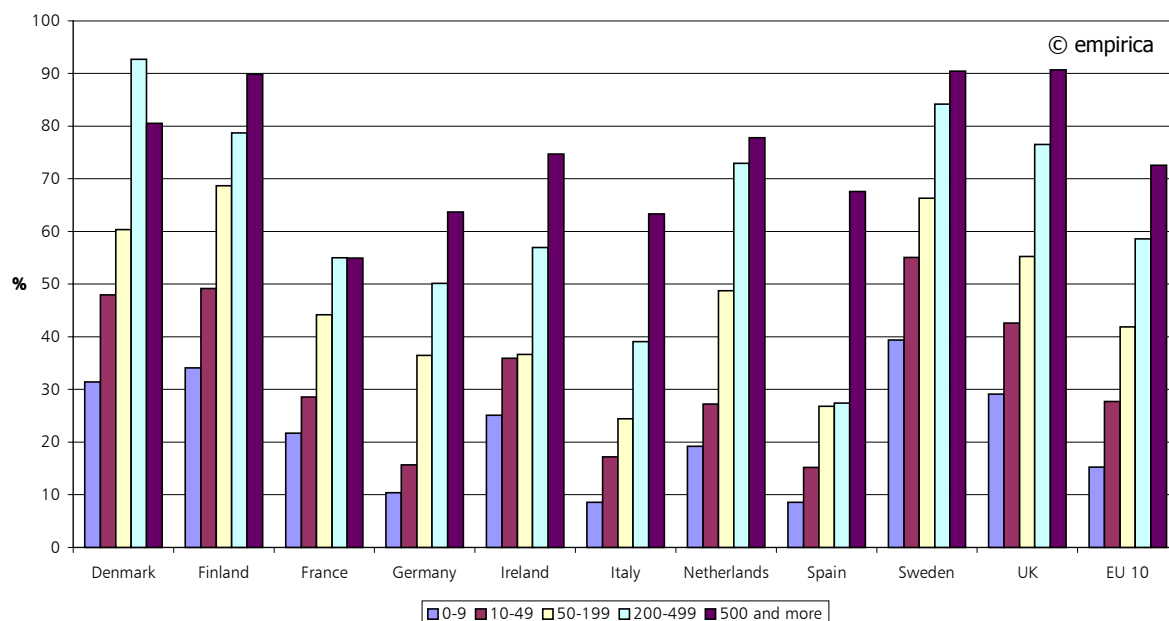


TABLE 35: ESTABLISHMENTS PRACTISING TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO ESTABLISHMENT SIZE

number of employees	0-9	10-49	50-199	200-499	500 and more
Denmark	31.43	47.93	60.35	92.69	80.55
Finland	34.09	49.16	68.75	78.71	89.82
France	21.70	28.53	44.20	55.02	54.91
Germany	10.39	15.66	36.47	50.15	63.69
Ireland	25.06	35.94	36.64	56.97	74.72
Italy	8.58	17.23	24.36	39.12	63.32
Netherlands	19.15	27.16	48.75	72.97	77.78
Spain	8.58	15.13	26.82	27.40	67.54
Sweden	39.42	55.11	66.27	84.14	90.46
UK	29.06	42.58	55.21	76.51	90.69
EU 10	15.23	27.72	41.90	58.56	72.60

Country-specific differentiation – Interest (incl practice)

Establishments Interested* in Telework (Including Supplementary Telework) According to Establishment Size

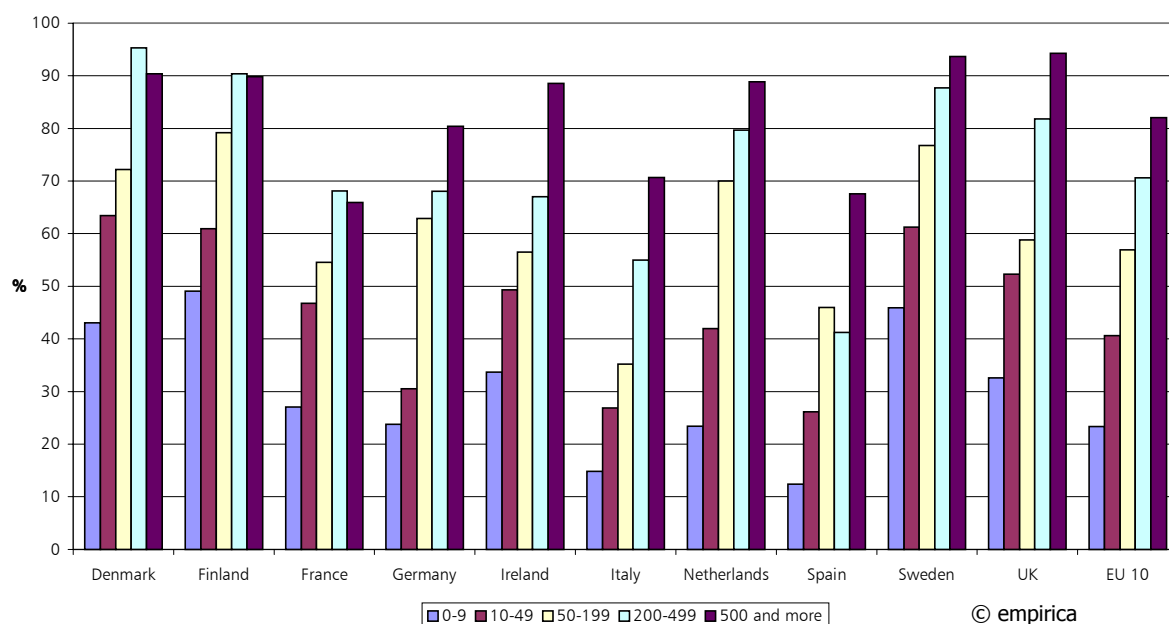


TABLE 36: ESTABLISHMENTS INTERESTED* IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO ESTABLISHMENT SIZE

number of employees	0-9	10-49	50-199	200-499	500 and more
Denmark	43.05	63.40	72.23	95.31	90.41
Finland	49.06	60.88	79.14	90.39	89.82
France	27.03	46.76	54.53	68.12	65.89
Germany	23.78	30.50	62.90	68.02	80.36
Ireland	33.68	49.33	56.53	67.08	88.58
Italy	14.85	26.93	35.23	54.99	70.65
Netherlands	23.41	41.97	70.00	79.72	88.89
Spain	12.40	26.15	45.99	41.20	67.54
Sweden	45.93	61.23	76.75	87.72	93.64
UK	32.54	52.31	58.79	81.79	94.28
EU 10	23.33	40.63	56.90	70.59	82.02

*) including establishments already practising telework

Country-specific differentiation – Potential

Which establishment-size group has the biggest potential? As many large establishments already practise telework (and therefore have reached a certain saturation point), medium-sized establishments have interest and concrete plans for the introduction of telework most often. This is therefore the most important target group for measures that aim at boosting telework take-up.

Establishments Interested** in Telework (Including Supplementary Telework) According to Establishment Size

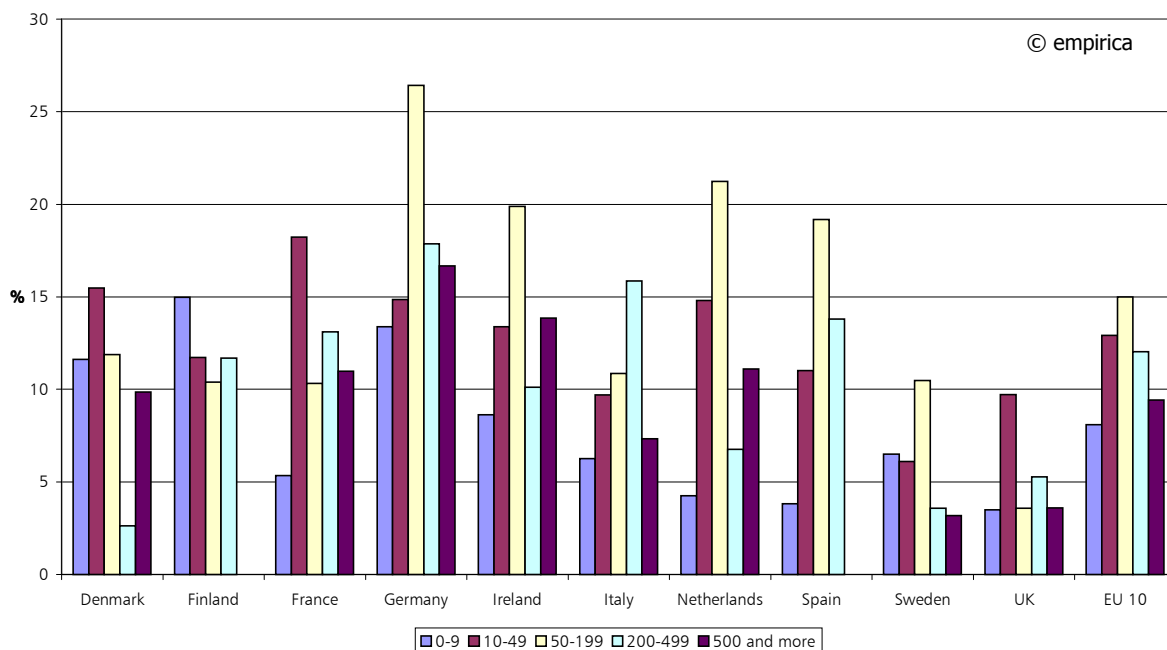


TABLE 37: ESTABLISHMENTS INTERESTED** IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO ESTABLISHMENT SIZE

number of employees	0-9	10-49	50-199	200-499	500 and more
Denmark	11.62	15.47	11.88	2.62	9.86
Finland	14.97	11.72	10.39	11.68	0.00
France	5.33	18.23	10.33	13.10	10.98
Germany	13.39	14.84	26.43	17.87	16.67
Ireland	8.62	13.39	19.89	10.11	13.86
Italy	6.27	9.70	10.87	15.87	7.33
Netherlands	4.26	14.81	21.25	6.75	11.11
Spain	3.82	11.02	19.17	13.80	0.00
Sweden	6.51	6.12	10.48	3.58	3.18
UK	3.48	9.73	3.58	5.28	3.59
EU 10	8.10	12.91	15.00	12.03	9.42

**) excluding establishments already practising telework

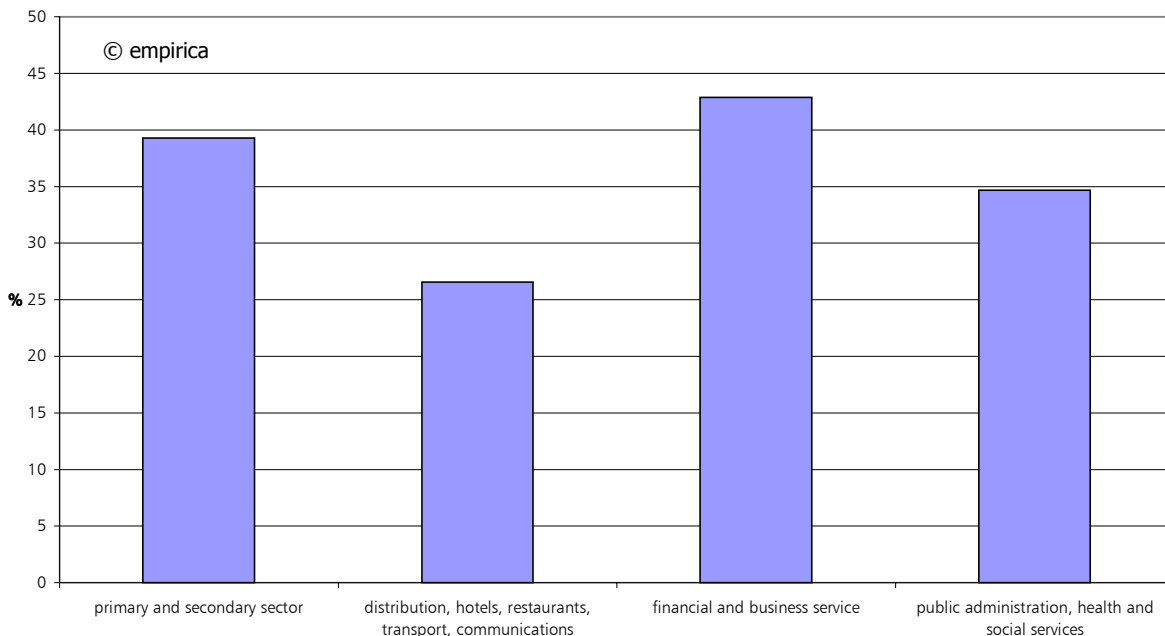
8.2 Diffusion and Interest in Telework in Europe Differentiated by Sector

The financial and business services sector takes a leading role with regard to practice of telework. A disproportionately high number of teleworkers work in this sector. The sector which here includes industry, building and primary sector, is in 2nd position. Whereas public

administration and personal and social services are represented at below average, distribution, hotels, restaurants, and transport and communication are at the bottom.

Whereas there are clear distinctions for the diffusion of telework, additional interest is evenly spread over the different economic sectors.

Establishments Practising Telework (Including Supplementary Telework) According to Sector



Practice and Interest in Telework (Including Supplementary Telework) According to Sector

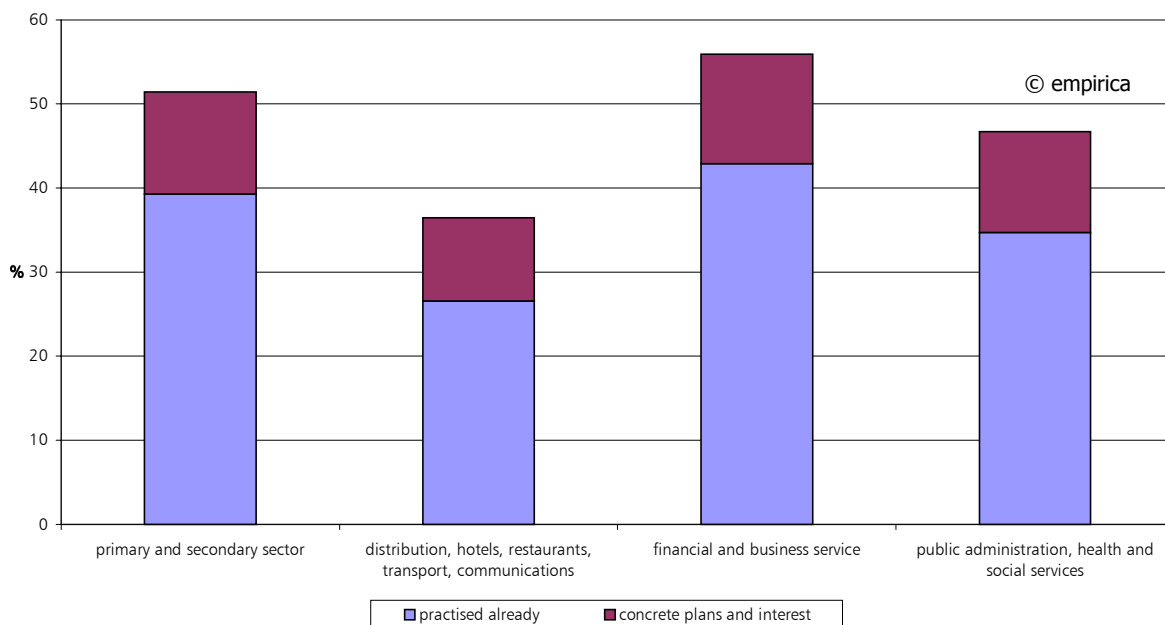


TABLE 38: PRACTICE AND INTEREST IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO SECTOR (IN %)

	primary and secondary sector	distribution, hotels, restaurants, transport, communications	financial and business service	public administration, health and social services
already practise	39.30	26.55	42.88	34.68
concrete plans	5.25	3.02	4.27	2.68
interest only	6.89	6.86	8.77	9.30
practise and interest	51.44	36.43	55.92	46.66

The country-specific consideration in parts shows significant deviation from the general European pattern. The primary and secondary sector in many countries is in first position – sometimes with a clear gap. This result might at first glance be surprising. However, it must be considered that tertiarisation of the economy is very far advanced. Even in industry many employees carry out office tasks in a wider sense, which can easily be decentralised. In addition there is the wide application field of mobile activities in the primary and secondary sector (see also chapter 10.2).

Country-specific differentiation - Practice

Establishments Practising Telework (Including Supplementary Telework) According to Sector

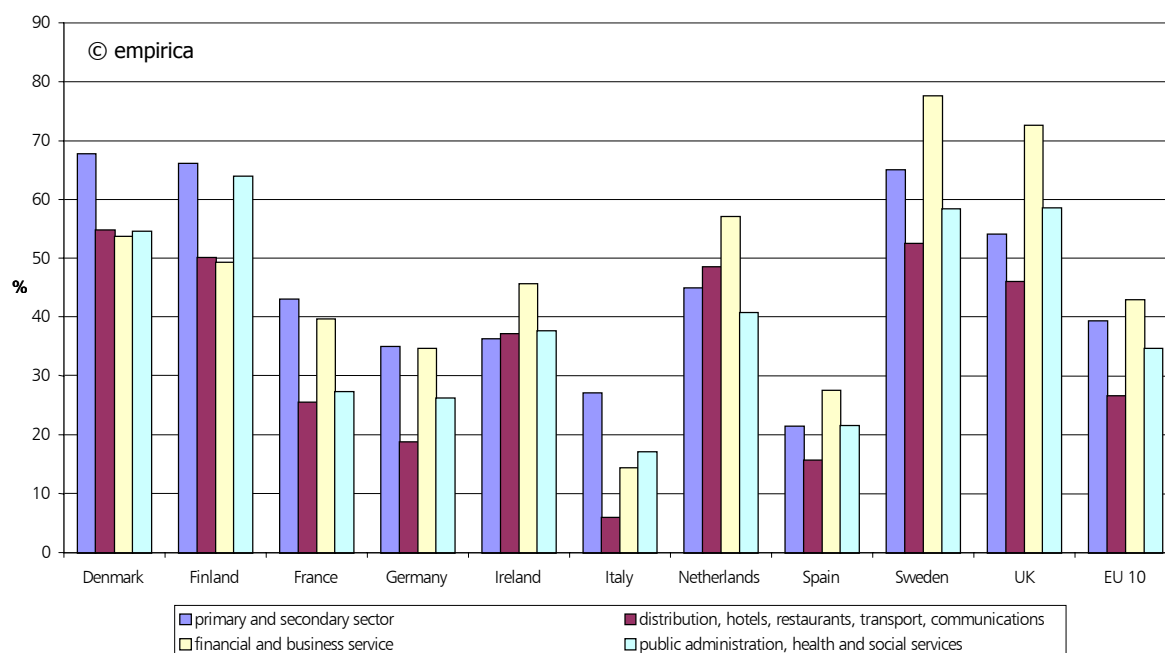


TABLE 39: ESTABLISHMENTS PRACTISING TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO SECTOR

	primary and secondary sector	distribution, hotels, restaurants, transport, communications	financial and business service	public administration, health and social services
Denmark	67.82	54.76	53.76	54.63
Finland	66.13	50.12	49.30	63.94
France	43.00	25.55	39.71	27.37
Germany	35.00	18.80	34.71	26.32
Ireland	36.34	37.11	45.73	37.64
Italy	27.07	5.96	14.31	17.13
Netherlands	44.94	48.57	57.14	40.83
Spain	21.51	15.70	27.52	21.63
Sweden	65.00	52.50	77.64	58.43
UK	54.08	46.13	72.56	58.53
EU 10	39.30	26.55	42.88	34.68

Country-specific differentiation – Interest (incl practice)

Establishments Interested* in Telework (Including Supplementary Telework) According to Sector

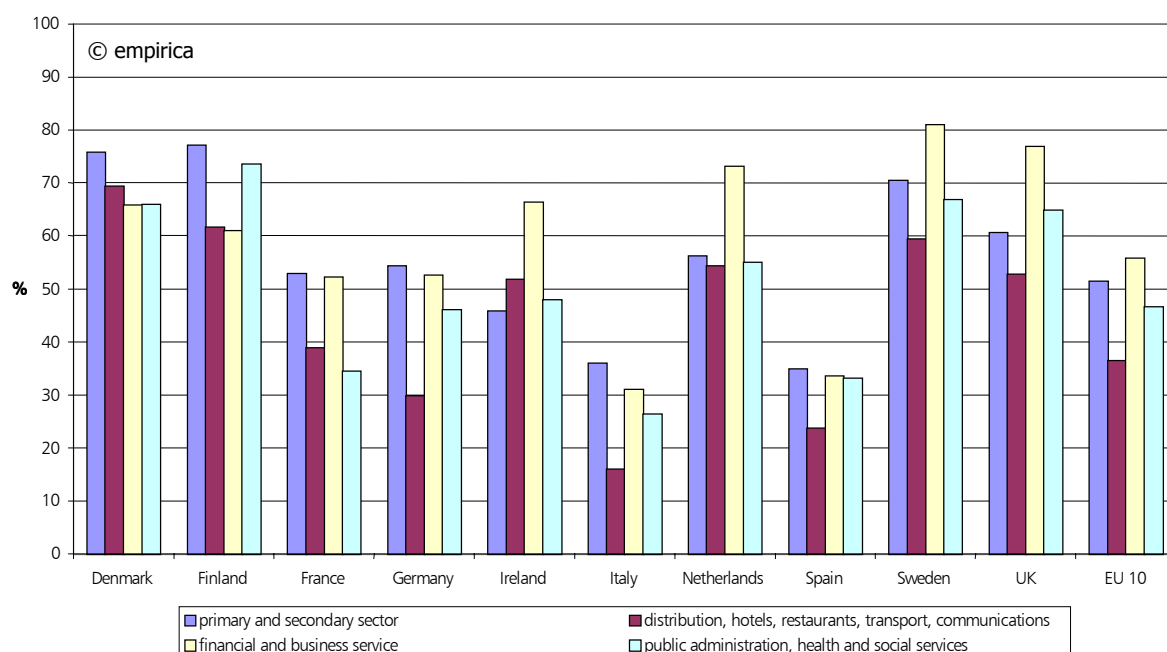


TABLE 40: ESTABLISHMENTS INTERESTED* IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO SECTOR

	primary and secondary sector	distribution, hotels, restaurants, transport, communications	financial and business service	public administration, health and social services
Denmark	75.86	69.41	65.79	65.99
Finland	77.24	61.69	61.10	73.57
France	52.92	38.92	52.20	34.59
Germany	54.34	29.86	52.68	46.06
Ireland	45.82	51.82	66.32	47.97
Italy	35.95	16.04	31.13	26.37
Netherlands	56.18	54.29	73.21	55.00
Spain	34.93	23.71	33.52	33.18
Sweden	70.58	59.40	81.02	66.95
UK	60.70	52.83	76.91	64.84
EU 10	51.44	36.43	55.92	46.66

**) including establishments already practising telework*

Country-specific differentiation - Potential

Which sector has the highest growth potential? Across Europe differences between sectors are not very big. However, there are considerable differences between countries. Denmark, for example, is clearly at the front in the sector distribution, hotels, restaurants, transport and communication, whereas Ireland and Italy are clearly ahead in the financial and business services sector.

Establishments Interested in Telework (Including Supplementary Telework) According to Sector**

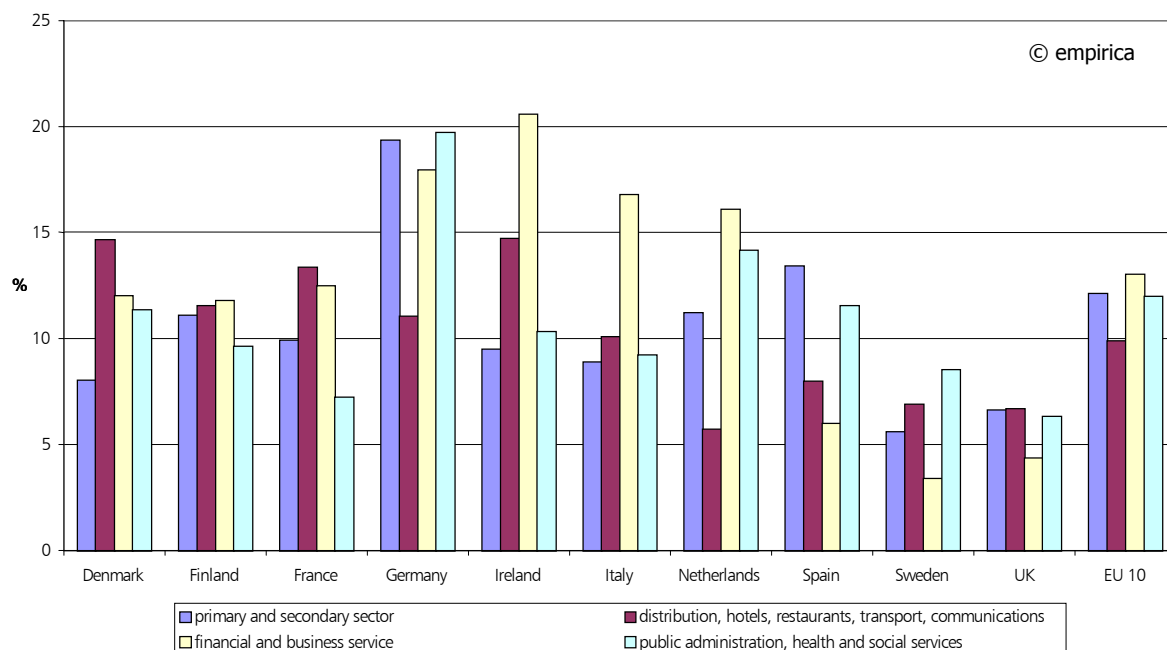


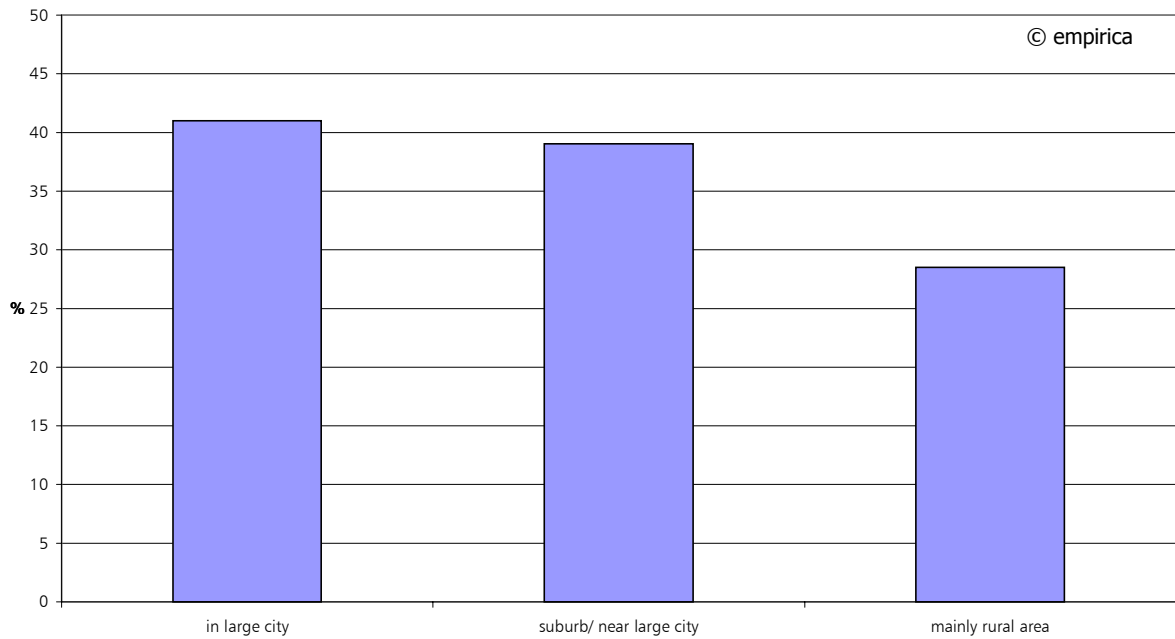
TABLE 41: ESTABLISHMENTS INTERESTED IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO SECTOR**

	primary and secondary sector	distribution, hotels, restaurants, transport, communications	financial and business service	public administration, health and social services
Denmark	8.04	14.65	12.03	11.36
Finland	11.11	11.57	11.80	9.63
France	9.92	13.37	12.49	7.22
Germany	19.34	11.06	17.97	19.74
Ireland	9.48	14.71	20.59	10.33
Italy	8.88	10.08	16.82	9.24
Netherlands	11.24	5.72	16.07	14.17
Spain	13.42	8.01	6.00	11.55
Sweden	5.58	6.90	3.38	8.52
UK	6.62	6.70	4.35	6.31
EU 10	12.14	9.88	13.04	11.98
<i>**) excluding establishments already practising telework</i>				

8.3 Diffusion and Interest in Telework in Europe by Type of Region

With regard to diffusion of telework rural regions are far behind large cities and suburban regions.

Establishments Practising Telework (Including Supplementary Telework) According to Type of Region in Europe



Additional interest is equally spread over the different region types. Thus, even if this potential is realised, in the near future, rural regions will not catch up with regard to diffusion of telework.

Practice and Interest in Telework (Including Supplementary Telework) According to Type of Region in Europe

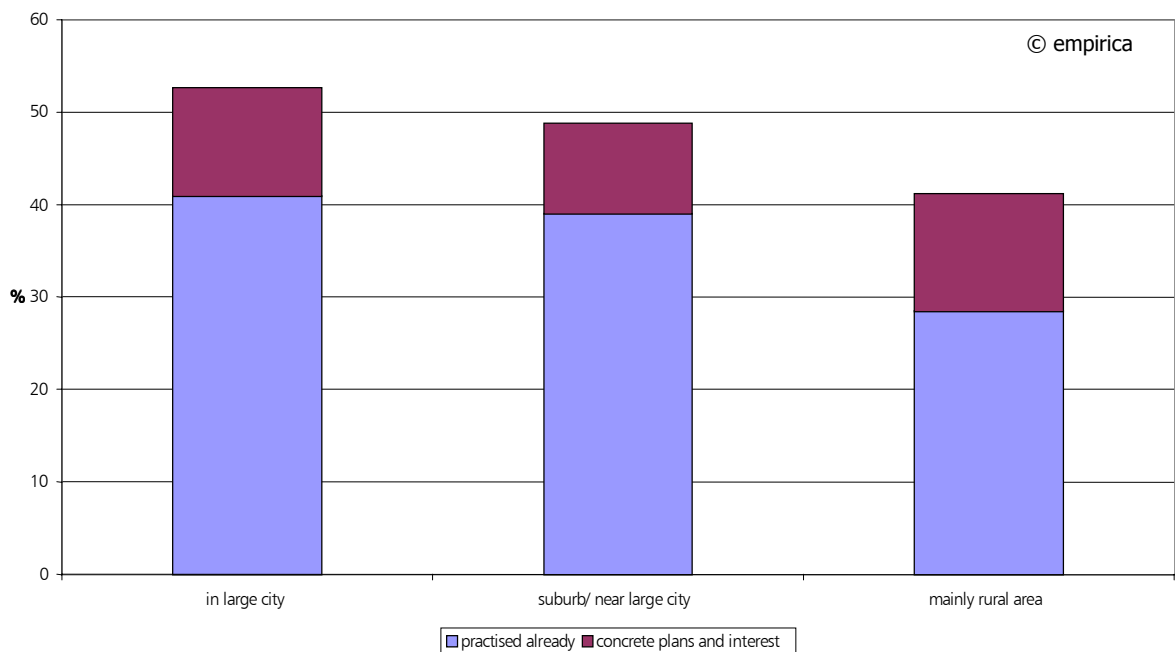


TABLE 42: PRACTICE AND INTEREST IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO TYPE OF REGION IN EUROPE

	in large city	suburb/ near large city	mainly rural region	total
already practise	40.99	39.02	28.51	35.80
concrete plans	3.98	3.49	4.16	3.90
interest only	7.72	6.35	8.55	7.61
practise and interest	52.69	48.86	41.22	47.31

Country-specific differentiation – Practice

The disparities regarding practice and interest between large cities on the one hand and rural regions on the other can be recognised in all countries surveyed. Furthermore it is noticeable that in all Scandinavian countries and in Great Britain establishments from suburban regions are more or less at the same level as those from rural regions. In all other countries however, their situation is similar to those of establishments in large cities.

Establishments Practising Telework (Including Supplementary Telework) According to Type of Region

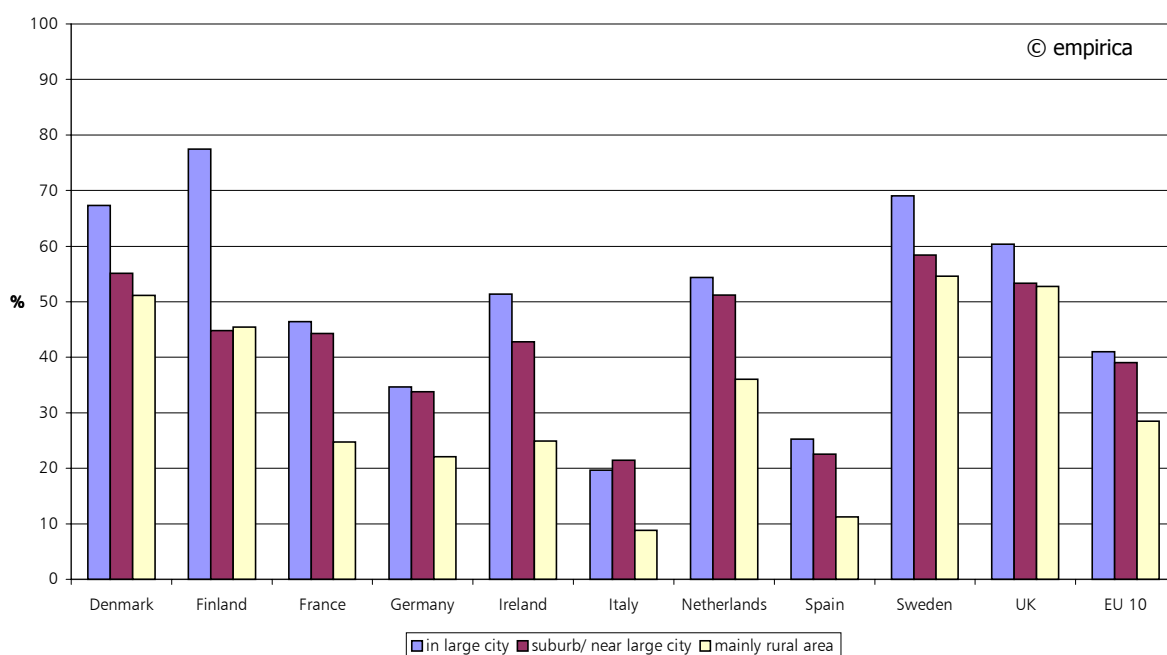


TABLE 43: ESTABLISHMENTS PRACTISING TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO TYPE OF REGION

	in large city	suburb/ near large city	mainly rural region	total
Denmark	67.38	55.10	51.15	57.88
Finland	77.49	44.77	45.44	59.33
France	46.42	44.23	24.74	35.00
Germany	34.63	33.79	22.08	29.90
Ireland	51.34	42.78	24.89	39.09
Italy	19.63	21.48	8.81	17.21
Netherlands	54.35	51.22	36.00	46.00
Spain	25.27	22.55	11.25	20.02
Sweden	69.05	58.36	54.56	61.65
UK	60.33	53.32	52.74	54.98
EU 10	40.99	39.02	28.51	35.80

Country-specific differentiation – Interest (incl practice)

Establishments Interested* In Telework (Including Supplementary Telework) According to Type of Region

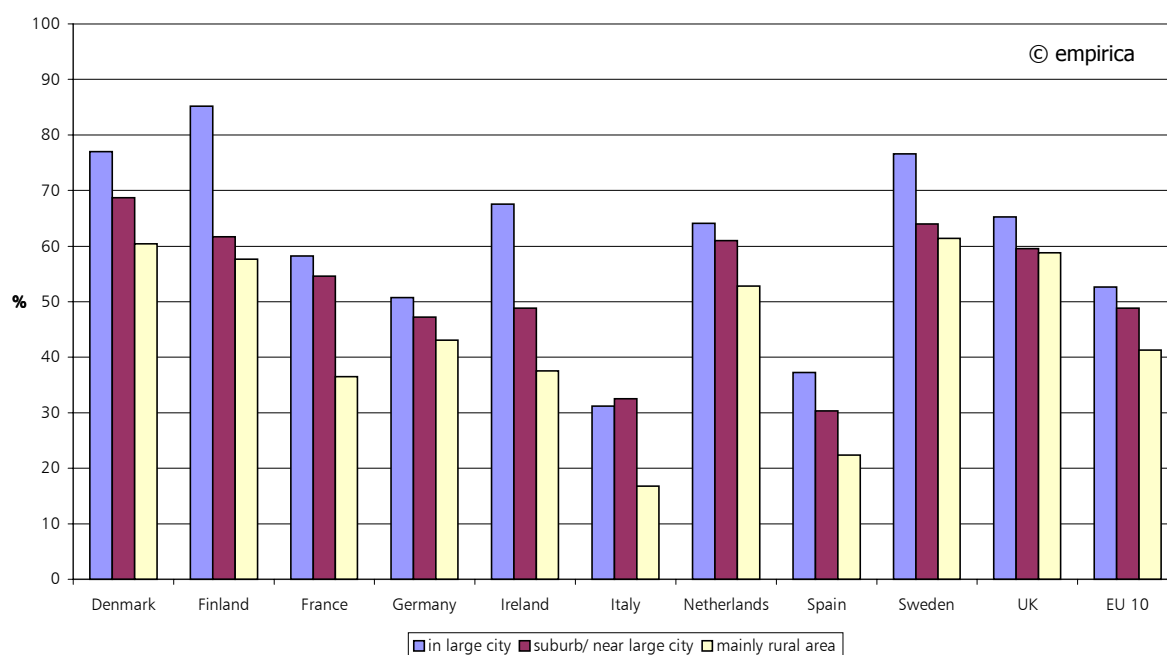


TABLE 44: ESTABLISHMENTS INTERESTED* IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO TYPE OF REGION

	in large city	suburb/ near large city	mainly rural region	total
Denmark	77.01	68.73	60.42	69.17
Finland	85.24	61.72	57.65	70.06
France	58.23	54.60	36.49	46.45
Germany	50.74	47.23	43.03	47.07
Ireland	67.58	48.88	37.52	51.35
Italy	31.21	32.50	16.76	27.51
Netherlands	64.13	60.98	52.80	58.67
Spain	37.25	30.35	22.36	30.57
Sweden	76.58	64.02	61.38	68.29
UK	65.29	59.52	58.83	60.81
EU 10	52.69	48.86	41.22	47.31

*) including establishments already practising telework

Country-specific differentiation – Potential

Which type of region has the highest potential? This question also shows certain country-specific differences. Whereas in Ireland primarily establishments in large cities and in Denmark and Finland particularly establishments from suburban regions show interest, in Germany and the Netherlands establishments from the rural regions obviously feel the highest need to catch up with regard to telework.

Establishments Interested in Telework (Including Supplementary Telework) According to Type of Region**

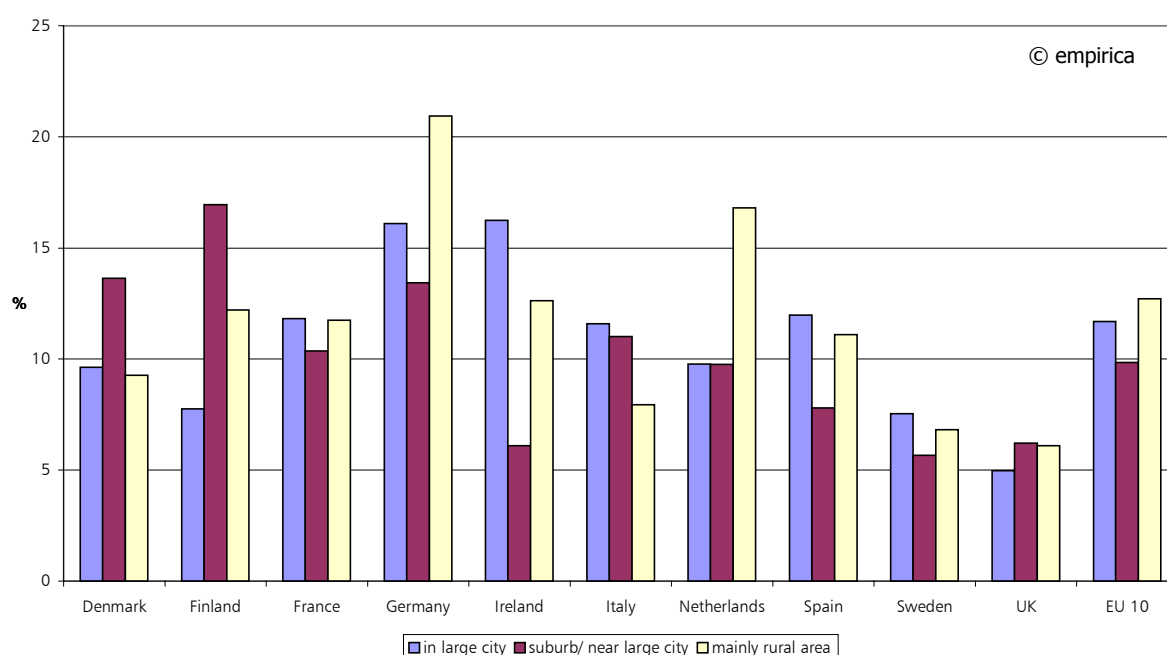


TABLE 45: ESTABLISHMENTS INTERESTED IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO TYPE OF REGION**

	in large city	suburb/ near large city	mainly rural region	total
Denmark	9.63	13.63	9.27	11.29
Finland	7.75	16.95	12.21	10.73
France	11.81	10.37	11.75	11.45
Germany	16.11	13.44	20.95	17.17
Ireland	16.24	6.10	12.63	12.26
Italy	11.58	11.02	7.95	10.30
Netherlands	9.78	9.76	16.80	12.67
Spain	11.98	7.80	11.11	10.55
Sweden	7.53	5.66	6.82	6.64
UK	4.96	6.20	6.09	5.83
EU 10	11.70	9.84	12.71	11.51
**) <i>excluding establishments already practising telework</i>				

9 Cross Reference Tables of Barriers with Independent Variables

The following chapter deals with the cross referencing of barriers which can hinder a further expansion of telework with the independent variables establishment size, sector and region. The answers ‘very important’ and ‘important’ are added up.

9.1 Establishment Size

No substantial establishment-size-specific differences between the barriers to expansion of telework are noticeable. At most the following trends show: The problem of managing teleworkers and data security problems play a slightly bigger role in larger business units, whereas small establishments judge problems of cost as more important.

Barriers to Telework According to Establishment Size in Europe

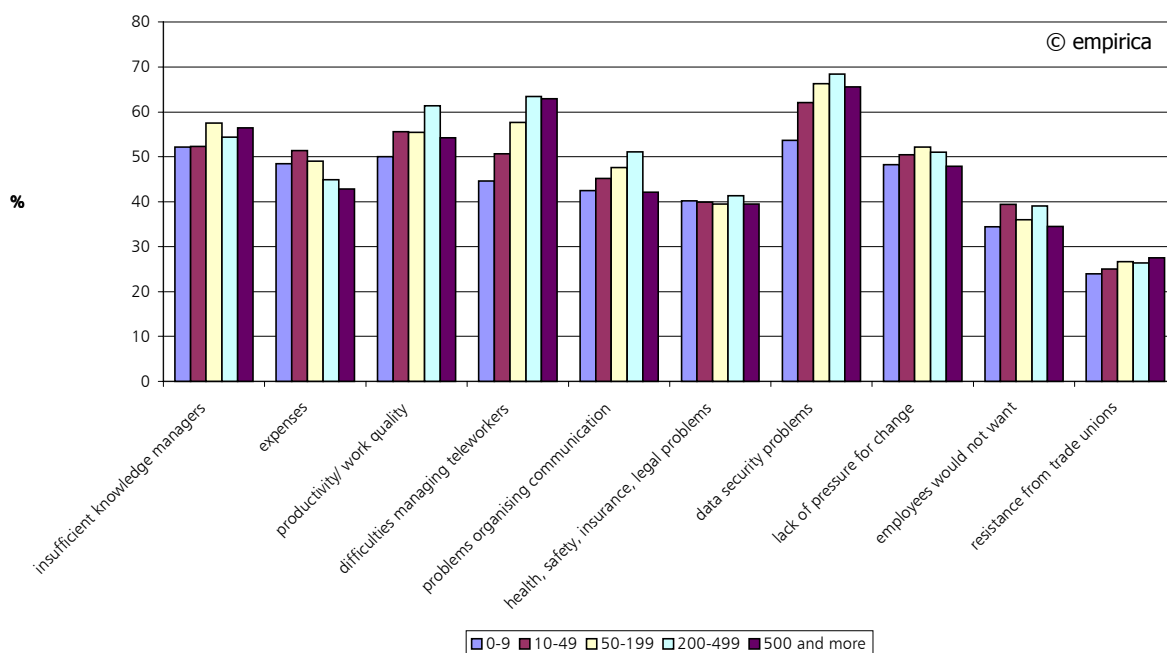


TABLE 46: BARRIERS TO TELEWORK ACCORDING TO ESTABLISHMENT SIZE IN EUROPE (IN %)

	0-9	10-49	50-199	200-499	500 and more
insufficient knowledge managers	52.11	52.31	57.50	54.39	56.42
expenses	48.43	51.35	49.05	44.92	42.81
productivity/ work quality	49.98	55.62	55.46	61.34	54.18
difficulties managing teleworkers	44.63	50.60	57.68	63.38	62.88
problems organising communication	42.45	45.12	47.64	51.07	42.17
health, safety, insurance, legal problems	40.19	39.95	39.48	41.32	39.49
data security problems	53.65	62.05	66.26	68.38	65.52
lack of pressure for change	48.23	50.43	52.16	51.03	47.88
employees would not want	34.44	39.36	36.00	39.06	34.54
resistance from trade unions	23.96	25.05	26.63	26.33	27.46

9.2 Sector

A differentiation by sector does not show any big differences. For the public administration and education sector it is noticeable that a lot of emphasis is put on the cost factor, whereas productivity and quality of work are classed as less important.

Barriers to Telework According to Sector in Europe

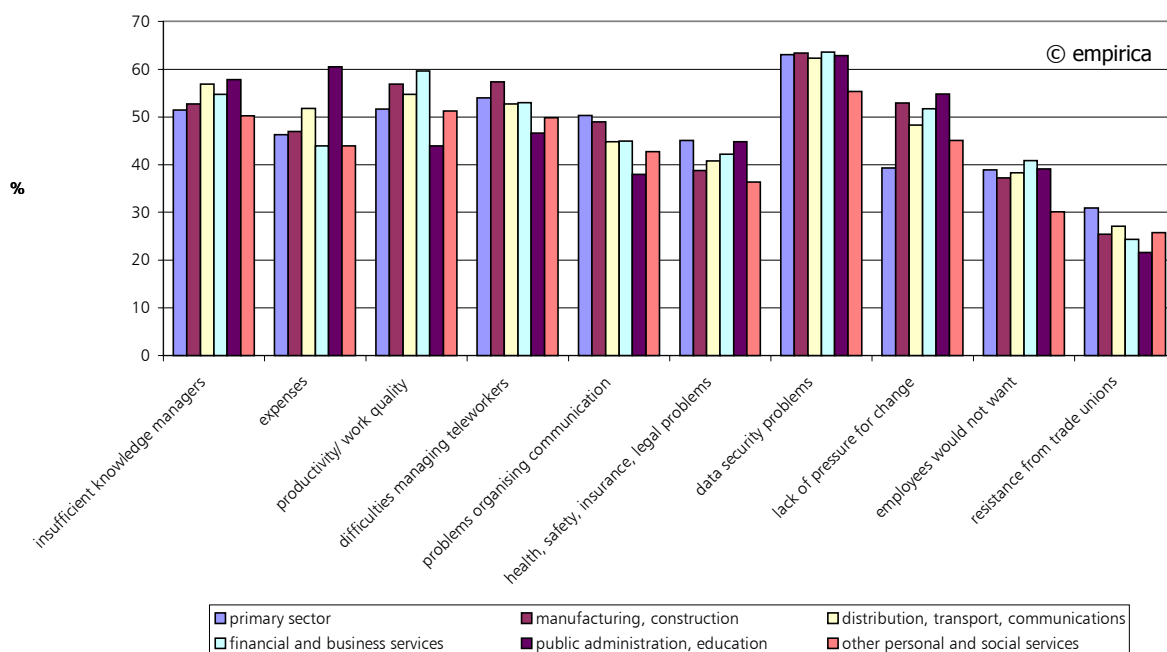


TABLE 47: BARRIERS TO TELEWORK ACCORDING TO SECTOR IN EUROPE (IN %)

	primary sector	manufacturing, construction	distribution, transport, communications	financial and business services	public administration, education	other personal and social services
insufficient knowledge managers	51.49	52.71	56.89	54.73	57.83	50.25
expenses	46.31	46.99	51.81	44.01	60.46	43.94
productivity/ work quality	51.66	56.93	54.77	59.62	43.98	51.20
difficulties managing teleworkers	53.96	57.29	52.76	53.00	46.63	49.80
problems organising communication	50.30	48.94	44.83	45.00	38.00	42.73
health, safety, insurance, legal problems	45.06	38.83	40.84	42.24	44.84	36.37
data security problems	63.04	63.39	62.33	63.57	62.84	55.35
lack of pressure for change	39.27	52.86	48.32	51.76	54.78	45.06
employees would not want	38.84	37.22	38.28	40.89	39.17	30.12
resistance from trade unions	30.96	25.44	27.12	24.39	21.60	25.75

9.3 Region

In the main, differences with respect to type of region can also be ignored.

Barriers to Telework According to Type of Region in Europe (in %)

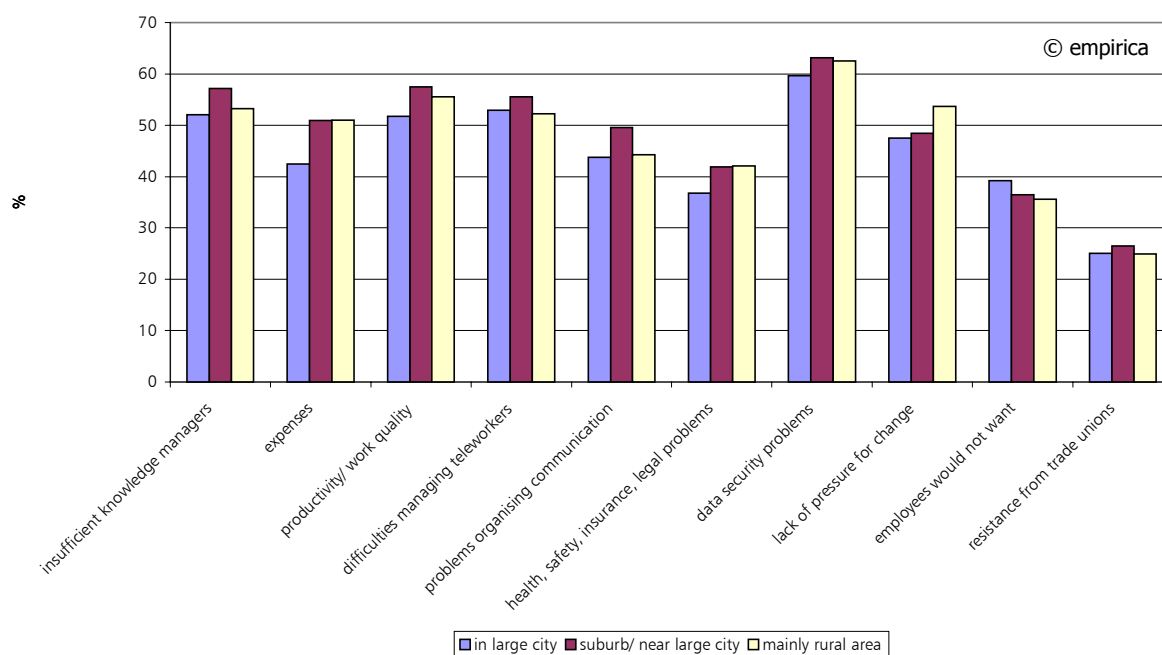


TABLE 48: BARRIERS TO TELEWORK ACCORDING TO TYPE OF REGION IN EUROPE (IN %)

	in large city	suburb/ near large city	mainly rural region
insufficient knowledge managers	52.09	57.20	53.22
expenses	42.45	50.89	50.99
productivity/ work quality	51.79	57.51	55.54
difficulties managing teleworkers	52.96	55.53	52.25
problems organising communication	43.75	49.58	44.20
health, safety, insurance, legal problems	36.81	41.87	42.03
data security problems	59.68	63.18	62.57
lack of pressure for change	47.51	48.43	53.67
employees would not want	39.16	36.48	35.62
resistance from trade unions	25.06	26.43	24.93

10 Detailed Study

10.1 Business Size Effects

Cross reference tables have already been produced in chapters 8 and 9. It was shown that diffusion of telework is strongly dependent on establishment size. This result is not unexpected due to the establishment size effect. In addition, many further questions and hypotheses can be examined in relation to establishment size.

10.1.1 Country Ranking Order of Diffusion of Telework Differentiated by Establishment Size

In the following, the country ranking order of diffusion of regular telework was determined for each establishment-size group, then the mean value was calculated and this ranking order of mean values was then compared with the general ranking order:

TABLE 49: PENETRATION OF TELEWORK (EXCLUDING SUPPLEMENTARY TELEWORK) IN DIFFERENT ESTABLISHMENT SIZE GROUPS

number of employees	0-9		10-49		50-199		200-499		500 and more		total		
	%	ranking position	%	ranking position	%	ranking position	%	ranking position	%	ranking position	aver. ranking position	%	ranking position
Denmark	18.84	5	34.90	2	48.95	2	88.18	1	72.52	4	2.8	47.16	2
Finland	27.21	2	36.30	1	54.19	1	63.44	2	89.82	1	1.4	48.16	1
France	16.85	6	27.59	5	39.03	6	51.93	5	54.15	10	6.4	31.69	7
Germany	7.84	8	14.04	8	31.65	7	39.59	8	63.69	5	7.2	25.45	8
Ireland	22.85	4	30.04	4	25.74	8	49.94	7	60.86	7	6.0	32.60	6
Italy	5.58	10	12.57	9	20.16	10	39.12	9	57.36	8	9.2	15.25	10
NL	14.89	7	20.99	7	43.75	5	51.35	6	55.56	9	6.8	35.67	5
Spain	7.62	9	11.29	10	23.09	9	26.67	10	62.08	6	8.8	17.59	9
Sweden	27.51	1	33.01	3	45.24	3	59.80	4	77.74	3	2.8	43.25	4
UK	25.45	3	26.89	6	45.22	4	60.45	3	83.14	2	3.6	43.47	3
EU 10	12.46		20.98		35.25		48.23		67.97			29.73	

It can be seen that the changes are not very large. However, the lead over the 2 latecomers gets smaller, ie the very small penetration in Italy and Spain is reinforced by the structural effect (many small establishments). In addition, the country ranking order changes, eg the Netherlands falls back 2 positions when analyzing only small establishments with less than 50 staff.

10.1.2 Diffusion of Telework Differentiated by Organisational Forms and Establishment Size

The various organisational forms of telework have equally low representation in the smallest establishment size group. The proportion of teleworking establishments increases with increasing establishment size, however to a different extent. Mobile and supplementary telework are most dependent on establishment size with self-employed telework least dependent. Home-based telework is in middle position.

Penetration of Different Types of Telework (in %) in Different Establishment Size Categories in Europe

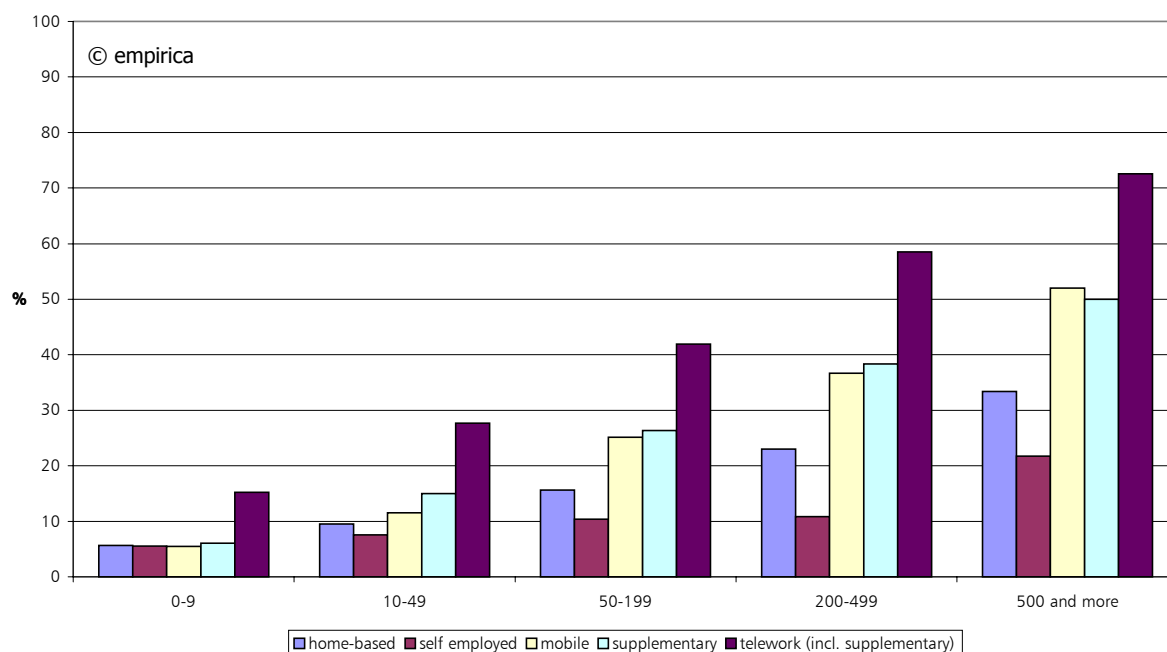


TABLE 50: PENETRATION OF DIFFERENT TYPES OF TELEWORK (IN %) IN DIFFERENT ESTABLISHMENT SIZE CATEGORIES IN EUROPE

number of employees	0-9	10-49	50-199	200-499	500 and more	total
home-based	5.69	9.54	15.67	23.00	33.38	13.86
- permanent	1.99	3.96	4.79	9.46	15.24	5.45
- alternating	4.76	8.11	14.08	19.10	28.25	11.84
self employed	5.49	7.54	10.37	10.85	21.76	9.16
- exclusive	1.93	2.75	5.43	6.81	12.23	4.47
- non exclusive	4.44	5.69	7.36	6.47	16.00	6.57
mobile	5.45	11.57	25.10	36.65	51.99	20.04
supplementary	6.02	15.00	26.30	38.28	49.99	21.38
telework (excl. supplementary)	12.46	20.98	35.25	48.23	67.97	29.73
telework (incl. supplementary)	15.23	27.72	41.90	58.56	72.60	35.80

10.1.3 Number of Teleworkers per Establishment Differentiated by Establishment Size

Do large establishments really have more teleworkers or – on the contrary - do they still have the highest growth potential?

TABLE 51: AVERAGE NUMBER OF TELEWORKERS (INCLUDING SUPPLEMENTARY, BUT EXCLUDING MOBILE TELEWORKERS) IN ESTABLISHMENTS PRACTISING TELEWORK ACCORDING TO ESTABLISHMENT SIZE – MEDIAN

	0-9	10-49	50-199	200-499	500 and more	total
Denmark	3	4	12	46	50.5	10
Finland	2	5	5	5	67	5
France	2	4	5	10.5	30	5
Germany	1.5	4	10	5	10	6
Ireland	1	3	3	6	12	4
Italy	3	1.5	5	5.5	20	5
Netherlands	1	3	7.5	10	20	5
Spain	2	5	7	5	22	6
Sweden	2	3	5.5	7.5	30	5
UK	2	2	10	15	50	10
EU10	2	3	7.5	10	25	6

Two things become clear: On the one hand – as expected – larger establishments employ more teleworkers. In small establishments, on the other hand, penetration is higher. This means that the highest growth potential exists in the larger teleworking establishments.

10.2 Sector as an Explanatory Factor

10.2.1 Diffusion of Telework by Organisational Form and Sector

The following table answers the question of which sectors practise telework in Europe.

28% of teleworking establishments come from manufacturing industry. Furthermore, telework is practised in the larger service and business services sectors, distribution as well as personal and social services. Other sectors, eg mining and energy or education play only a minor quantitative role with regard to diffusion of telework, due to the comparatively low number of establishments.

TABLE 52: DISTRIBUTION OF ESTABLISHMENTS PRACTISING DIFFERENT TYPES OF TELEWORK ACCORDING TO SECTORS IN EUROPE (IN %)

	homebased	self-employed	mobile	supplementary	overall (incl. supplementary)
agriculture	1.22	1.15	0.52	1.00	0.77
mining, energy	2.77	2.74	2.99	2.83	2.19
manufacturing	24.02	31.47	30.23	27.17	28.00
construction	4.94	5.21	5.57	4.23	6.17
distribution	11.31	8.96	9.93	10.57	11.50
hotels, restaurants	3.75	2.25	2.70	2.46	2.74
transport, communication	3.97	5.47	6.24	5.70	5.51
banking, insurance	6.36	7.93	7.70	7.49	6.19
business services	19.86	18.30	17.96	15.39	16.02
public administration	4.27	3.70	4.39	6.77	5.25
education	2.39	1.22	1.96	4.12	2.78
health and social work	1.26	1.95	2.17	2.46	2.43
other personell and social services	11.19	6.58	6.57	7.55	8.49
n.a.	2.69	3.08	1.07	2.26	1.97
total	100.00	100.00	100.00	100.00	100.00

The tabulation of results into 4 sectors shows that the finance and business services sector has a disproportionately high representation in all organisational forms of telework. The distribution, hotels, restaurants, transport, and communication sector, in contrast, has a disproportionately low representation for all forms, whereas the primary and secondary sector lies in the middle or just above. The biggest differences between the organisational forms on this 4-sector level exist in the public administration, health and social work sector. Whereas an above average number of establishments in this sector practise supplementary telework, telework by the self-employed and mobile telework are practised rather infrequently.

TABLE 53: PENETRATION OF DIFFERENT TYPES OF TELEWORK IN DIFFERENT SECTORS IN EUROPE (IN %)

	home-based	self-employed	mobile	supplementary	overall (incl. supplementary)
primary and secondary sector	13.50	10.99	23.29	22.27	39.30
distribution, hotels, restaurants, transport, communications	9.91	5.74	14.21	15.04	26.55
financial and business service	19.60	12.95	27.73	26.37	42.88
public administration, health and social services	13.53	6.29	15.46	22.85	34.68
total	13.86	9.16	20.04	21.38	35.80

The more in-depth subdivision according to NACE allows additional findings with regard to the relationship between sector and organisational form of telework: First of all, in the mining and energy sector an extensive diffusion of telework in all its organisational forms is noticeable. Almost 2/3 of European establishments in this sector practise telework in one form or other. Industrial establishments, banks and insurance companies, as well as establishments providing business-related services are represented at above average. In the public administration and education sector – believable because of the influence teachers and lecturers – supplementary telework is widespread. Furthermore, it can be shown that mobile telework is particularly widespread in the financial services sector (eg insurance salesmen). However, nothing similar emerges from the data for transportation and distribution.

TABLE 54: PENETRATION OF DIFFERENT TYPES OF TELEWORK IN DIFFERENT SECTORS IN EUROPE (IN %)

	home-based	self-employed	mobile	supplementary	overall (incl. supplementary)
agriculture	14.10	8.85	8.76	17.82	23.05
mining, energy	31.82	20.78	49.59	50.02	64.90
manufacturing	14.09	12.20	25.64	24.58	42.43
construction	8.78	6.12	14.33	11.62	28.34
distribution	9.73	5.10	12.36	14.02	25.56
hotels, restaurants	11.90	4.72	12.40	12.07	22.46
transport, communication	8.95	8.14	20.35	19.82	32.06
banking, insurance	18.88	15.55	33.06	34.28	47.50
business services	19.84	12.08	25.94	23.71	41.33
public administration	13.75	7.88	20.45	33.63	43.66
education	11.71	3.95	13.89	31.19	35.22
health and social work	4.96	5.07	12.35	14.95	24.73
other personell and social services	17.39	6.76	14.77	18.12	34.11
total	13.86	9.16	20.04	21.38	35.80

10.2.2 Number of Teleworkers per Establishment Differentiated by Sector

A hypothesis: While there is a certain telework potential for all establishments above a certain size, it is significantly smaller in distribution and industry, ie it relates to less workplaces than in administration or banking and insurance.

This hypothesis can basically be confirmed. In the European average, more teleworkers (excl mobile teleworkers) are employed per teleworking establishment in financial and business services as well as in civil service, health and social services than in either the primary and secondary sector or in the distribution and transport sector.

However, results differ in the individual countries. An example for this is the comparatively weak penetration of telework in Germany in the public administration, health and social services sector. Here, establishment-internal diffusion of telework is still in its early stage.

TABLE 55: AVERAGE NUMBER OF TELEWORKERS (INCLUDING SUPPLEMENTARY, BUT EXCLUDING MOBILE TELEWORKERS) IN ESTABLISHMENTS PRACTISING TELEWORK ACCORDING TO SECTOR - MEDIAN

	primary and secondary sector	distribution, hotels, restaurants, transport, communications	financial and business service	public administration, health and social services
Denmark	6	7	10	15
Finland	5	4.5	3.5	9
France	3	5.5	8	7
Germany	6	3.5	7.5	2.5
Ireland	3.5	5	2.5	5
Italy	4.5	2	5	4.5
Netherlands	8	5.5	8.5	6
Spain	5	4	15.5	12
Sweden	5	2	5	9.5
UK	6.5	4	15	23
EU10	6	4	10	9

A further classification of sectors (NACE) shows the following results:

TABLE 56: AVERAGE NUMBER OF TELEWORKERS (INCLUDING SUPPLEMENTARY, BUT EXCLUDING MOBILE TELEWORKERS) IN ESTABLISHMENTS PRACTISING TELEWORK ACCORDING TO SECTOR IN EUROPE

	mean	median
agriculture	14.00	10.5
mining, energy	29.38	8
manufacturing	17.91	6
construction	17.09	4
distribution	15.29	2
hotels, restaurants	9.99	4
transport, communication	39.75	6
banking, insurance	22.12	19.5
business services	36.49	8
public administration	31.64	7
education	77.34	20
health and social work	58.43	5
other personell and social services	26.55	5
total	26.00	6

The median illustrates the significant, comparatively high penetration of telework in banking and insurance as well as education. This result can partly be explained by the establishment size structure of these sectors.

10.3 Explanatory Variable: E-Mail-Use

In line with expectations, technologically advanced establishments already practise telework. Whereas for example 86% of teleworking establishments use E-mail, this is the case for only every 2nd establishment without telework experience.

TABLE 57: USE OF E-MAIL IN ESTABLISHMENTS PRACTISING AND NOT PRACTISING TELEWORK IN EUROPE (IN %)

	establishments with telework	establishments without telework	all establishments
e-mail used already	86.48	47.71	61.73
e-mail not used	13.52	52.29	38.27
total	100.00	100.00	100.00

62% of establishments use E-mail. Every 2nd establishment of those using E-mail has already introduced telework. Only 13% of establishments without E-mail use have made this step.

Therefore there is a close relationship between E-mail use and telework. In general, E-mail, or even a establishment-internal E-mail culture, is an important prerequisite for the practice of telework. There are evidently only relatively few establishments that can practise telework without E-mail, alternative communication methods being the telephone and host links.

TABLE 58: ESTABLISHMENTS PRACTISING TELEWORK ACCORDING TO USE OF E-MAIL IN EUROPE (IN %)

	establishments with telework	establishments without telework	n.a.	all establishments
e-mail used already	50.15	49.09	0.76	100.00
e-mail not used	12.70	86.70	0.60	100.00
- use planned	16.28	83.68	0.62	100.00
- not planned	8.80	90.21	0.99	100.00
total	35.80	63.51	0.69	100.00

*Country-specific observation:***TABLE 59: USE OF E-MAIL IN ESTABLISHMENTS PRACTISING AND NOT PRACTISING TELEWORK (IN %)**

	establishments with e-mail in %	establishments with e-mail practising telework in %	establishments with telework using e-mail in %
Denmark	85.18	66.39	97.72
Finland	87.58	64.65	95.42
France	39.90	53.21	60.65
Germany	61.18	44.86	91.79
Ireland	76.02	46.87	91.15
Italy	50.83	28.19	83.26
Netherlands	75.00	56.89	92.75
Spain	65.14	27.65	89.98
Sweden	83.20	69.15	93.33
UK	75.32	67.02	91.81
EU10	61.73	50.15	86.48

With regard to E-mail penetration the French differ significantly from all other countries. The French development of Minitel certainly plays an important part in this.

10.4 Explanatory variable: Single vs. multi-site establishments

The differentiation between single and multi-site organisations is very informative. In the ECaTT sample 56% of establishments are single-site establishments and 44% are part of multi-site companies. However, among establishments that practise telework or are interested in its introduction (incl supplementary telework), only 39% are of single-site companies and 61% are establishments that belong to multi-site companies.

Only ¼ of single-site establishments in Europe practise telework (24%), including those interested the proportion is 33%. However, the proportion of establishments belonging to multi-site organisations is twice as high with 51% and 65%.

TABLE 60: PRACTICE AND INTEREST IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO TYPE OF ESTABLISHMENT IN EUROPE (IN %)

	establishment is the only site of the company	establishment belongs to company that has more than one site
already practise	23.66	51.15
concrete plans	2.27	5.98
interest only	7.15	8.22
practice and interest	33.08	65.35

Differentiation by establishment size

The average size of establishments differs significantly depending on the type of establishment. In the sample, 33% of establishments from multi-site organisations have less than 50

employees, whereas this is the case for 72% of single-site establishments. In order to determine whether the striking differences in diffusion and interest in telework are structure-related, the following table differentiates by establishment size also.

TABLE 61: PRACTICE AND INTEREST IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO ESTABLISHMENT SIZE AND TYPE OF ESTABLISHMENT IN EUROPE

single-site establishment					
	<i>0-9</i>	<i>10-49</i>	<i>50-199</i>	<i>200-499</i>	<i>500 and more</i>
already practise	12.59	23.61	29.05	53.96	56.06
concrete plans	1.64	1.43	4.48	4.00	2.61
interest only	5.33	8.53	10.15	3.57	16.26
practice and interest	19.56	33.57	43.68	61.53	74.93
part of multi-site company					
	<i>0-9</i>	<i>10-49</i>	<i>50-199</i>	<i>200-499</i>	<i>500 and more</i>
already practise	29.02	34.34	51.82	60.50	78.01
concrete plans	2.77	7.91	7.03	7.21	0.64
interest only	11.26	9.76	8.25	6.84	5.58
practice and interest	43.05	52.01	67.10	74.55	84.23

Across all establishment-size groups telework is consistently more widespread in multi-site establishments. Independently of the size of a particular establishment there are therefore reasons which are responsible for the fact that the introduction of telework is much more likely in multi-site establishments. Reasons for this are, for example, the experience of technological links to the other sites, but there are certainly also reasons relating to establishment structure as well as personality, ie of the owner or director of the establishment.

The interest expressed leads to the assumption that medium-sized establishments from multi-site organisations particularly will introduce telework in the future. Many large single-site establishments, on the other hand, still need to catch up.

Country-specific observation:

The above mentioned results can be demonstrated for all countries surveyed. In Germany, Italy and Spain the difference between single and multi-site establishments is particularly marked. Here the proportion of teleworking establishments among multi-site organisations is three times as high as among single-site establishments.

TABLE 62: PRACTICE AND INTEREST IN TELEWORK (INCLUDING SUPPLEMENTARY TELEWORK) ACCORDING TO TYPE OF ESTABLISHMENT (IN %)

	single-site establishment		part of multi-site company	
	<i>practice</i>	<i>practice and interest</i>	<i>practice</i>	<i>practice and interest</i>
Denmark	49.48	61.35	71.43	81.90
Finland	49.10	59.39	68.15	79.39
France	29.43	38.54	45.28	61.04
Germany	15.44	28.46	45.10	66.64
Ireland	32.47	42.14	45.82	60.98
Italy	12.24	21.13	32.60	47.30
Netherlands	35.86	46.90	55.48	69.68
Spain	10.57	18.21	31.45	45.53
Sweden	46.71	55.67	71.16	76.33
UK	38.08	43.46	69.11	75.41
EU10	23.66	33.08	51.15	65.35

There are significant differences between the diffusion of telework with regard to country, establishment size and type of establishment. In many small establishments telework is obviously not considered because the sector and the field of activity are less suitable (personal services, retail trade or trade) or because the daily business prevents the owner from concerning himself with other workforms. The international comparison shows that this result should be viewed as a snapshot of the moment. In Scandinavia and Great Britain, diffusion of telework has already progressed a lot further in these establishments.

10.5 Fields of Activity

What type of establishment regards particular activities as suitable or already practises these in the form of telework?

In order to answer this question only managerial activities and clerical work are chosen from the range of fields of activity mentioned (in ECaTT only those establishments which already practised telework or expressed an interest in telework were asked about fields of activity). It is assumed that they are more or less independent of size and sector of the establishment.

Managerial activities

The number of managers practising telework increases with increasing establishment size. The majority of decision makers in small establishments do not think this feasible. One possible reason for this is that managers are more indispensable in small establishments (or believe themselves to be).

TABLE 63: PRACTICE/ FEASIBILITY OF TELEWORK IN MANAGERIAL TASKS ACCORDING TO ESTABLISHMENT SIZE (IN % OF ESTABLISHMENTS INTERESTED IN OR PRACTISING TELEWORK)

	0-9	10-49	50-199	200-499	500 and more
already practise	25.55	33.75	29.95	40.65	46.20
considered feasible	19.45	18.17	24.21	16.42	15.84
not considered feasible	49.73	45.85	42.55	41.65	36.38
n.a./d.k.	5.28	2.22	3.30	1.28	1.58
total	100.00	100.00	100.00	100.00	100.00

Differences between sectors are comparatively small. In the majority of sectors managerial activities are regarded as feasible for telework in their own establishment or this is already practised.

TABLE 64: PRACTICE/ FEASIBILITY OF TELEWORK IN MANAGERIAL TASKS ACCORDING TO SECTOR (IN % OF ESTABLISHMENTS INTERESTED IN OR PRACTISING TELEWORK)

	primary and secondary sector	distribution, hotels, restaurants, transport, communications	financial and business service	public administration, health and social services
already practise	30.90	36.29	38.85	34.95
considered feasible	20.66	20.78	19.37	15.18
not considered feasible	45.07	41.01	40.66	46.35
n.a./d.k.	3.37	1.91	1.12	3.50
total	100.00	100.00	100.00	100.00

Clerical work

Here, in contrast to managerial activities, no relationship can be found between establishment size and assessment of feasibility or practice of telework in the own establishment. In almost a third of those establishments which either practise telework or are interested in it, clerical workers practise telework. Furthermore, in ¼ of establishments decision makers are of the opinion that clerical work is suitable for telework.

TABLE 65: PRACTICE/ FEASIBILITY OF TELEWORK IN CLERICAL TASKS ACCORDING TO ESTABLISHMENT SIZE (IN % OF ESTABLISHMENTS INTERESTED IN OR PRACTISING TELEWORK)

	0-9	10-49	50-199	200-499	500 and more
already practise	29.58	32.36	30.96	30.88	29.64
considered feasible	25.00	25.32	27.63	27.54	27.44
not considered feasible	42.60	40.89	37.13	39.06	40.09
n.a./d.k.	2.82	1.42	4.28	2.52	2.83
total	100.00	100.00	100.00	100.00	100.00

Around one third of establishments from the tertiary sectors practise telework for clerical work, whereas only a quarter do so in the primary and secondary sectors. A rather large telework potential is apparent in this field of activity in the public administration, health and social services sector.

TABLE 66: PRACTICE/ FEASIBILITY OF TELEWORK IN CLERICAL TASKS ACCORDING TO SECTOR (IN % OF ESTABLISHMENTS INTERESTED IN OR PRACTISING TELEWORK)

	primary and secondary sector	distribution, hotels, restaurants, transport, communications	financial and business service	public administration, health and social services
already practise	23.88	33.54	35.21	32.92
considered feasible	28.41	23.46	23.76	31.69
not considered feasible	43.80	41.00	38.81	32.79
n.a./d.k.	3.91	2.00	2.22	2.60
total	100.00	100.00	100.00	100.00

11 Methodology

This survey was based on a random sample of establishments in Denmark, Finland, France, Germany, Netherlands, Ireland, Italy, Spain, Sweden and the United Kingdom, stratified by establishment size (number of employees) and industry. Quotas of establishments weighted by size were set to ensure the results are not dominated by small units but properly reflect the situation of workers in larger enterprises. The fieldwork took place in April and May 1999. The samples were either drawn from special establishment master samples maintained by the survey institutes or from other available frames, as follows:

TABLE 67: SAMPLE FRAMES USED FOR ECATT

Denmark	Kobmansstandens erhvervsoplysning (data base of all establishments in Denmark)
Germany	Startel establishment directory
Finland	INSEE (the national office of statistics)
France	The Infratest Burke Arbeitsstätten-Mastersample (establishment master sample), which contains approx. 150,000 addresses from workplaces (and almost every workplace in Germany with more than 100 employees)
Ireland	Dun & Bradstreet and Yellow Pages
Italy	Yellow Pages
Netherlands	Chamber of Commerce data base
Sweden	Chamber of Commerce
Spain	SCB
United Kingdom	Business Database

The survey was carried out by Infratest Burke using computer-aided telephone interviewing. 500 decision makers are to be interviewed in the larger countries, 300 in the smaller ones. The respondents were chosen to be the head of the DP department, senior professionals in the DP department (in large organisations) or the managing director, general manager or proprietor (in small organisations). The questions were worded to elicit working practice in the respondent's own establishment, rather than in his company overall. This method decision was based on the assessment that, particularly in large multi-site organisations, there would be no single respondent able to give reliable detailed information about working practice across the whole company.

TABLE 68: SAMPLE COMPOSITION

	target	actual size
Denmark	300	361
Germany	300	308
Finland	500	501
France	500	501
Ireland	300	374
Italy	500	506
Netherlands	300	300
Sweden	500	500
Spain	300	306
United Kingdom	500	501
Total sample	4,000	4,158

12 DMS Questionnaire

QA ALL
 Interviewer: Code respondent's position in establishment (ask to confirm if necessary)

- (1) Owner/Proprieter
- (2) Managing Director/Board Member
- (3) Head of Establishment/Site
- (4) Head of IT/DP
- (5) Other member of IT/DP Department

Q1 ALL
 Which industry does your organisation belong to? (READ OUT AND CODE FIRST TO APPLY)

- (1) agriculture
- (2) mining, energy
- (3) manufacturing
- (4) construction
- (5) distribution
- (6) hotels, restaurants
- (7) transport, communication
- (8) banking, insurance
- (9) business services
- (10) public administration
- (11) education
- (12) health and social work
- (13) other personnel or social services
- (99) na

Q2A ALL
 Does your organisation have only one site, or has it more than one establishment?

- (1) only one site
- (2) more than one establishment
- (8) don't know
- (9) na

Q2B IF Q2A = (2)
 How many employees does your organisation have in total in this country?
 [NOTE TO TRANSLATORS: employee means those with a work contract]

-
- (888) don't know
- (999) na

Q2C IF Q2A = (2)
From now on, we would like you to consider only this establishment when answering questions about your organisation.
 How many employees and how many freelancers work for your organisation **at this establishment?** [INTERVIEWER: ADD IF ONLY ONE NUMBER IS GIVEN: And how many of these are freelancers or self-employed, i.e. do not have a contract of employment?]

- a) employees (888) don't know (999) na
 b) freelancers/ self-employed (888) don't know (999) na

Q2D IF Q2A IS NOT (2)
 How many employees and how many freelancers work for your establishment?
 [INTERVIEWER: ADD IF ONLY ONE NUMBER IS GIVEN: And how many of these are freelancers or self-employed, i.e. do not have a contract of employment?]

- a) employees (888) don't know (999) na
 b) freelancers/ self-employed (888) don't know (999) na

Q3 ALL
 Would you say your establishment site is in a large city, in a suburb or near a large city, or in a mainly rural area?
 [INTERVIEWER: IF INTERVIEWEE IS UNSURE, ADD: A "large city" is one with **more than 100 thousand inhabitants**]

- (1) in large city
 (2) suburb / near large city (including medium and small cities that are adjacent to a large city)
 (3) mainly rural area (including medium and small cities that are not adjacent to a large city)
 (8) don't know
 (9) na

Q19 ALL
 In many companies there are some employees who spend a considerable part of their working time **away** from their employer's premises, i.e. **in the field or at customer's premises**.
 Does your establishment have employees who do so **for approximately more than 10 hours a week?**

- (1) yes
 (2) no
 (8) don't know
 (9) na

Q20 IF Q19 = (1)
 Today mobile workers can be given online access to company information systems.
 Are some of your mobile workers equipped to have online access to company information systems from outside of the organisation's premises?

- (1) yes
 (2) no
 (8) don't know
 (9) na

Q21 IF Q20 = (1)
 Roughly, how many [INTERVIEWER: ADD IF REQUESTED: ... of your mobile workers are equipped to have online access to company information systems from outside of the organisation's premises]?

(88) don't know
 (99) na

Q22 IF Q19 = (1) or (8) or (9) AND Q20 = (2) or (8) or (9)
 Are you interested in equipping some of your current or prospective mobile workers with online access?

(1) yes
 (2) no
 (8) don't know
 (9) na

Q23 IF Q22 = (1)
 ... and are there already concrete plans to do this in the next one to two years?

(1) yes
 (2) no
 (8) don't know
 (9) na

Q24 ALL
Teleworkers in general are those who

- work at a distance from the premises of their employer
- use computers in their work
- transmit work results using telecommunications

Q24 ALL
 I am now going to list five forms of teleworkers
 Please tell me whether any of the following currently work for your establishment:

Q25 IF Q24a-e = 1
 Do you think your establishment would be interested in extending this form of telework

Q26 If Q24a-e = (2) or (8) or (9)
 Do you think your organisation would be interested in introducing this type of telework.

Q27 If Q25/Q26 a-e = 1
 ...and are there already concrete plans for this?
 ...

		Q24 Currently employ	Q25 Interest - Extending	Q26 Interest - Introducing	Q27 Plans
a	teleworking employees who spend nearly all their working time at home	(1) yes (2) no (8) dk (9) na	(1) yes (2) no (9) na	(1) yes (2) no (9) na	(1) yes (2) no (8) dk (9) na
b	teleworking employees who spend only part of their time but at least one whole working day a week at home	(1) yes (2) no (8) dk (9) na	(1) yes (2) no (9) na	(1) yes (2) no (9) na	(1) yes (2) no (8) dk (9) na
c	employees who spent not their regular working time at home but do additional work and preparation teleworking at home	(1) yes (2) no (8) dk (9) na	(1) yes (2) no (9) na	(1) yes (2) no (9) na	(1) yes (2) no (8) dk (9) na
d	self-employed teleworkers working for your organisation only	(1) yes (2) no (8) dk (9) na	(1) yes (2) no (9) na	(1) yes (2) no (9) na	(1) yes (2) no (8) dk (9) na
e	self-employed teleworkers working for other organisations as well	(1) yes (2) no (8) dk (9) na	(1) yes (2) no (9) na	(1) yes (2) no (9) na	(1) yes (2) no (8) dk (9) na

Q28 IF Q24a = (1) or 24b = 1 or 24c = 1 or 24d = 1 or 24e = 1

Thinking now about all these types of teleworkers: roughly, how many teleworkers do you currently employ in total ?

[NOTE TO TRANSLATORS: Make sure that the translation of "employ" does not only include relationships based on a work contract but also client/ contractor relationships in case the teleworker is self-employed]

(88) don't know
(99) na

Q29 ALL

There is also a kind of telework where the employees do not work at home, but in an office provided near their home, a so-called telecottage or telecenter.

Do some of your employees work in such a telecottage/ telecenter?

(1) yes
(2) no
(8) don't know
(9) no answer

Q30 IF Q29 = (1)

Roughly, how many employees of your establishment work in telecottages or telecenters currently?

(88) don't know
(99) na

Q31 IF Q29 = (2) or (8) or (9)

Would you be interested or not interested in this type of telework?

(1) interested
(2) not interested
(8) don't know
(9) na

Q32 IF Q29 = (1)
Are you interested in extending this kind of telework?

- (1) yes
- (2) no
- (8) don't know
- (9) no answer

Q33 IF Q31= (1) or Q32 = (1)
... and are there already concrete plans for it in the next one to two years?

- (1) yes
- (2) no
- (8) don't know
- (9) na

Q34 IF Q24a = (1) or Q24b = 1 or Q24c = 1 or Q24d = 1 or Q24e = 1 or Q29 = (1)
In what areas does your establishment practice telework?

a	IT and programming	(1) yes	(2) no	(8) dk	(9) na
b	distribution and customer services	(1) yes	(2) no	(8) dk	(9) na
c	supportive tasks like data entry and text processing	(1) yes	(2) no	(8) dk	(9) na
d	secretarial tasks	(1) yes	(2) no	(8) dk	(9) na
e	clerical tasks	(1) yes	(2) no	(8) dk	(9) na
f	other qualified tasks	(1) yes	(2) no	(8) dk	(9) na
g	managerial tasks	(1) yes	(2) no	(8) dk	(9) na
h	IF Q34a = (2) And Q34b = (2) And Q34c = (2) And Q34d = (2) And Q34e = (2) And Q34f = (2) And Q34g = (2) other not mentioned, please specify: _____	(1) yes			(9) na

Q35
If Q24a = (1) or Q24b = (1) or Q24c = (1) or Q24d = (1) or Q24e = (1)
OR
If Q26a = (1) or Q26b = (1) or Q26c = (1) or Q26d = (1) or Q26e = (1)
Which of the following tasks would you consider **feasible** for telework in your establishment?

a	IF NOT Q34a = (1) IT and programming	(1) yes	(2) no	(8) dk	(9) na
b	IF NOT Q34b = (1) distribution and customer services	(1) yes	(2) no	(8) dk	(9) na
c	IF NOT Q34c = (1) supportive tasks like data entry and text processing	(1) yes	(2) no	(8) dk	(9) na
d	IF NOT Q34d = (1) secretarial tasks	(1) yes	(2) no	(8) dk	(9) na
e	IF NOT Q34e = (1) clerical tasks	(1) yes	(2) no	(8) dk	(9) na
f	IF NOT Q34f = (1) other qualified tasks	(1) yes	(2) no	(8) dk	(9) na
g	IF NOT Q34g = (1) managerial tasks	(1) yes	(2) no	(8) dk	(9) na

Q36 IF Q24a = (1) or Q24b = (1) or Q24c = (1) or Q24d = (1) or Q24e = (1) or Q29 = (1)
 How many years has your establishment practiced telework?

years
 (88) don't know
 (99) na

Q37 ALL
 Now I am going to read out a list of possible **barriers** to the further spread of telework. Please say for each whether you regard it as very important, important or not important **as a barrier to telework.**

a	insufficient knowledge among managers of how to plan and organise telework	(1) very important	(2) important	(3) not important	(8) dk (9) na
b	the expense of computing equipment and telecommunications services	(1) very important	(2) important	(3) not important	(8) dk (9) na
c	reasons relating to productivity or work quality	(1) very important	(2) important	(3) not important	(8) dk (9) na
d	the difficulties of managing and supervising teleworkers	(1) very important	(2) important	(3) not important	(8) dk (9) na
e	problems organising communication with teleworkers	(1) very important	(2) important	(3) not important	(8) dk (9) na
f	health, safety, insurance or legal problems	(1) very important	(2) important	(3) not important	(8) dk (9) na
g	data security problems	(1) very important	(2) important	(3) not important	(8) dk (9) na
h	lack of any pressure to change current practice	(1) very important	(2) important	(3) not important	(8) dk (9) na
i	employees would not want to telework	(1) very important	(2) important	(3) not important	(8) dk (9) na
j	resistance from trade unions	(1) very important	(2) important	(3) not important	(8) dk (9) na