

# Optimize Workplace Review

Insights from 2016 workplace studies

**Full Report**

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# Introduction

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# Background

Optimize Workplace Review is a space utilization benchmark report published by Rapal Oy since 2014. This is the 3<sup>rd</sup> report in order, and it aims to provide comparative data to help organizations assess the efficiency of their own space use, discover cost savings potential and analyze their employees' needs and workplace satisfaction. The review keeps evolving every year.

The first space utilization benchmark was conducted in the Helsinki metropolitan area during 2014 and featured a smaller sample of private-sector companies. The next year in 2015, the review of space utilization measurement data was expanded to cover all of Finland and to include municipal and governmental offices. In this review, the 2016 analysis covers measurement data collected globally from 15 countries in three major market regions.

Using our Optimize Measure software and a standardized, systematic methodology for all data collection throughout the years and across all geographical locations, the Optimize Workplace Review benchmark data now provides a unique glimpse of how office users allocate and use their space.

The 2016 data gathered for this review covers 330 observational studies in 111 buildings and 378.900 m<sup>2</sup> around the world. The space utilization studies explore the use of more than 28.900 workstations, 15.100 meeting seats and 9.600 temporary seats, and the workplaces of more than 23.000 people.

By comparison, the 2015 covered over 200.000 m<sup>2</sup> of office space in 48 buildings and spanned 177 floor levels. The utilization rate measurement data encompassed a total of 10.269 workstations, of which 59% were in public-sector offices and 41% in the private sector. 732 meeting rooms were also covered in the analysis. A total of 1.277 people responded to the work environment survey.

In other words, the 2016 data review covers 182% more workstations than the year before, 90% more floor area, 131% more locations and 77% more floors.

We are also happy to report, that in the year 2016 our Optimize Measure customer satisfaction rating was 4,46 (scale of 1-5), and the Net Promoter Score (NPS) for Rapal's workplace services reached an all-time high of +46. This is great feedback, and strengthens our confidence that our agile and flexible yet standardized observational methodology, combined with the best cloud-based measurement and reporting software on the market, is what works best for collecting both customer-specific and benchmark data in a hassle-free and cost-efficient way.

We hope you the reader will find the results and findings within this report useful, whether it is to find points of comparison or to make a case for conducting space utilization studies of your own.

- Rapal's Workplace team, 2017

# Using this review

This review is intended to provide support and a point of reference and comparison for those who have conducted space utilization studies in their own office spaces. This vast collection of data may also provide a point of reference for various service providers to compare to. It is of course important to understand that while averages are great for comparisons, variations may be extremely large. And what works for some, does not often apply to others. In other words, we always encourage involvement of personnel to create the best user-based designs that work for your specific workplace and culture. That said, perhaps these statistics can provide some interesting reading and provoke some thoughts in the reader, whether you have already started to measure your office spaces or not.

There are many reasons for which organizations conduct space utilization studies. Managers, architects, designers, facilities and real estate professionals, and workplace consultants may encounter one or many of the following needs, while striving to optimize space use and allocation with limited resources:

- The need to create a business case or to bring facts to the table for strategic decision making
- Information for investment planning and CRE portfolio and campus optimization
- Fact-based mobilization and change communication for employees
- Situations when a company is planning a move or conducting a refurbishment of office space, in order to define, plan and allocate spaces through a design program and design brief
- Assessments of pilots of work environment trials before rolling out larger changes
- Continuous tracking and measuring as part of strategic workplace management and continuous improvement

- Evaluations of spaces and their fit for purpose
- Tracking changes over time
- Highlighting over- and under-use of specific spaces or locations, perhaps in connection with plans for growth, consolidation, acquisitions or mergers
- Investigating the working culture and habits of the organization

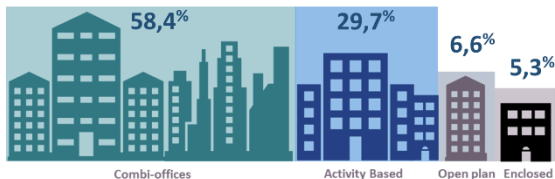
Readers are responsible for independently assessing the relevance, accuracy, completeness and best use of the information of this publication. Readers should be aware that minor variances in methodology, interpretations of definitions and observer errors may have presented some margin for error in the source data, and that averages do not represent the entire picture, as variances may be great. Readers are therefore encouraged to always conduct space utilization investigations of their own space use and space needs, to gather customer-specific data when encountering one or more of the above-mentioned situations.

# Key findings - Summary

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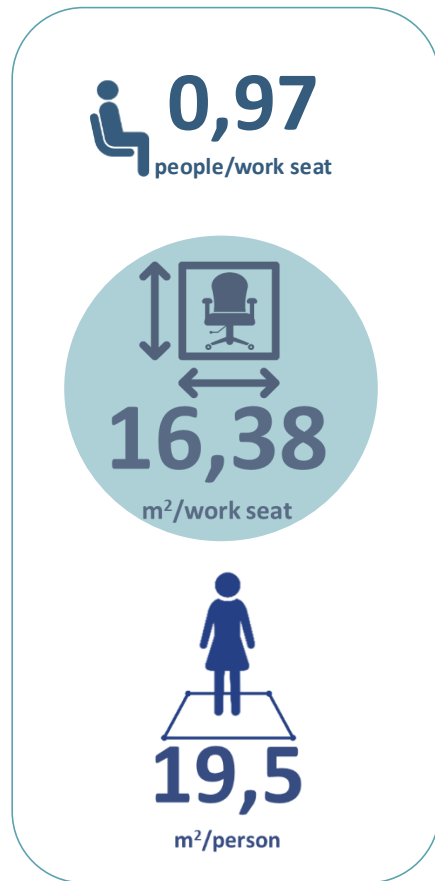
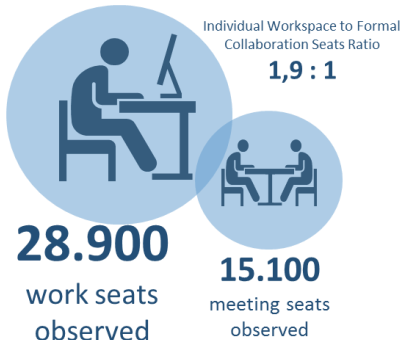
# Optimize Workplace Review 2016 Insights at a glance

The 2016 data was gathered with Optimize Measure software. This review covers **330 observational studies** in **111 buildings** and **378.900 m<sup>2</sup>** around the world. The space utilization studies explore the workplaces of more than **23.000 people**.

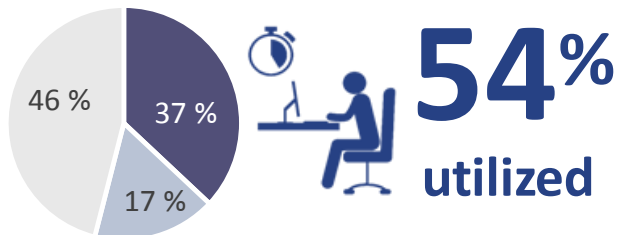


## 378.900 m<sup>2</sup>

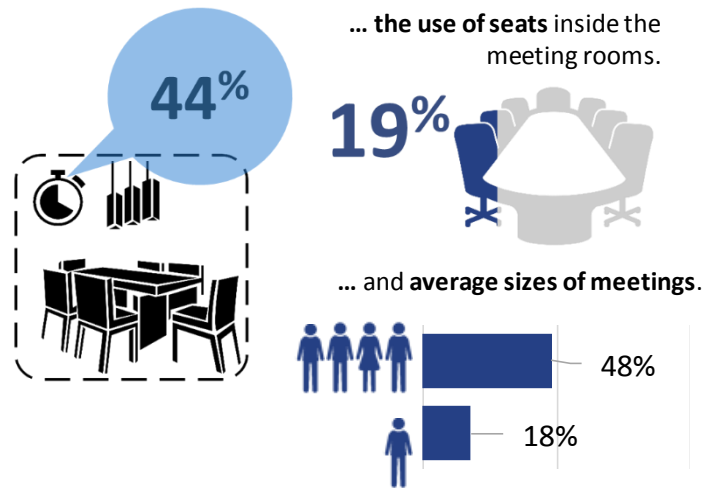
The review covers some **key ratios...**



...the use of workstations...



...the use of meeting rooms..



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# About the review

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# The spaces of 2016, by office type

**378.900 m<sup>2</sup>**  
investigated

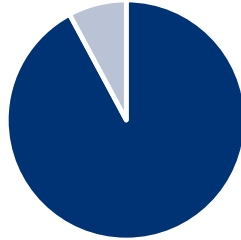
The 2016 Optimize Workplace Review of space utilization covers more than **378.900 square meters of office space**. More than half of the spaces investigated were of the combi-office type, whereas nearly a third of the spaces represent the so-called Activity-based office type.



# The office spaces of 2016, by users

92%

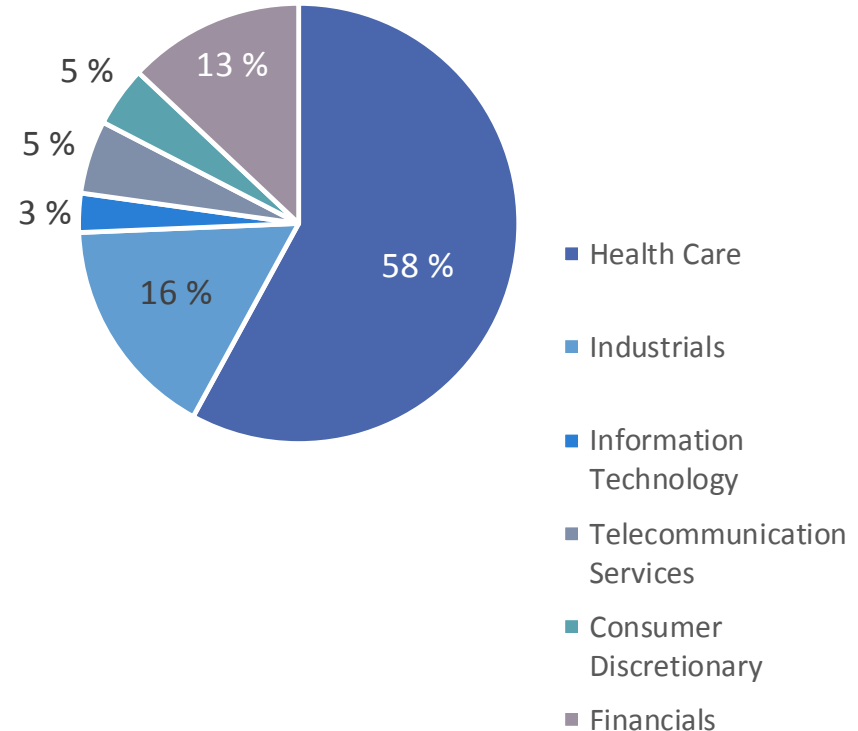
private sector



The vast majority of studies were conducted for the private sector, in industries such as health care, financials and industrials.

Some comparisons of the data were made based on The Global Industry Classification Standard (GICS), which is an industry taxonomy developed in 1999 by MSCI and Standard & Poor's (S&P) for use by the global financial community. The GICS structure consists of 11 sectors.

In this review, comparisons were also made to Rapal's national "Toimiva Työympäristö 2015" –study in Finland, in which over 200.000 m<sup>2</sup> of office space was similarly observed. In that study, a survey with 1277 respondents was also conducted.



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# The 2016 data by location

Using the Optimaze Measure software, the **2016 data** gathered for this review covers **330 observational studies** in **111 buildings** and **378.900 m<sup>2</sup>** around the world. The space utilization studies explore the workplaces of more than **23.000 people**.

Countries included in the 2016 space utilization data are by region...

- **EMEA:** *Finland, Germany, Hungary, South Africa, Sweden, Switzerland, Turkey, the United Arab Emirates and the United Kingdom.*
- **AMERICAS:** *United States & Mexico.*
- **APAC:** *China, Malaysia, South Korea and Vietnam.*



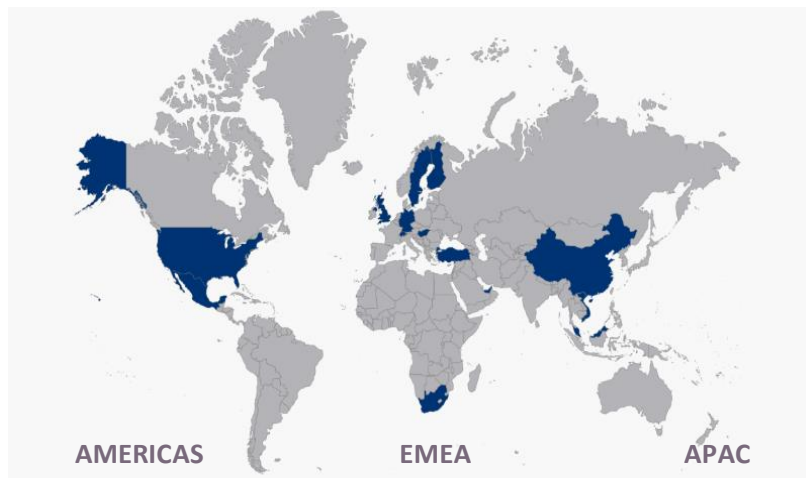
# 111

locations

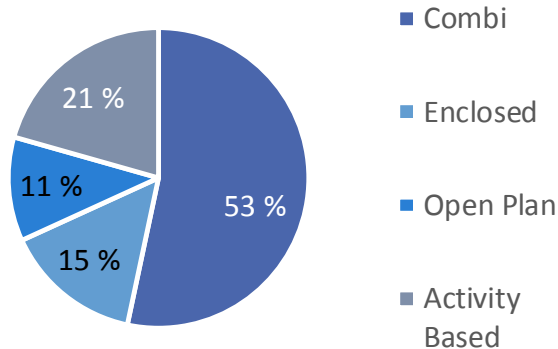
# 15

countries

Region	Measurements in 2016 data	Public sector	Private sector
EMEA	60%	12%	48%
AMERICAS	30%	0	30%
APAC	10%	0	10%



# Measurements by office type



This review of 2016 covers **330 observational studies**, that consisted of at least two observational rounds per day during a typical 2-week period. This means that there were at least **6600 walkthroughs** made using the Optimize Measure tool to collect the data from **53.600 seats**, creating a set of at least **353,76 million observations** of seat use in total.

Combi-offices were the most represented office types in the 2016 measurement data. Combi-offices were clearly the most used office type in the private sector, with Activity-Based offices far behind in second place. The public sector measurements were predominantly conducted in enclosed offices.

	Enclosed	Open plan	Combi	Activity-Based
EMEA	14%	6%	26%	15%
AMERICAS	2%	4%	19%	5%
APAC	0%	1%	8%	0%

Office type	All 2016 measurements	Public	Private
Enclosed	15%	8%	7%
Open plan	11%	1%	10%
Combi	53%	3%	50%
Activity-Based	21%	1%	20%

**353,8 M observations**

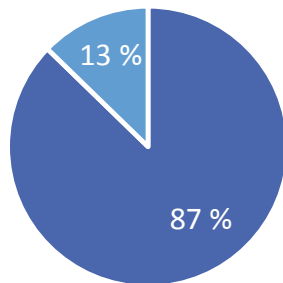


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# Measurements by industry and sectors

330

observational  
studies

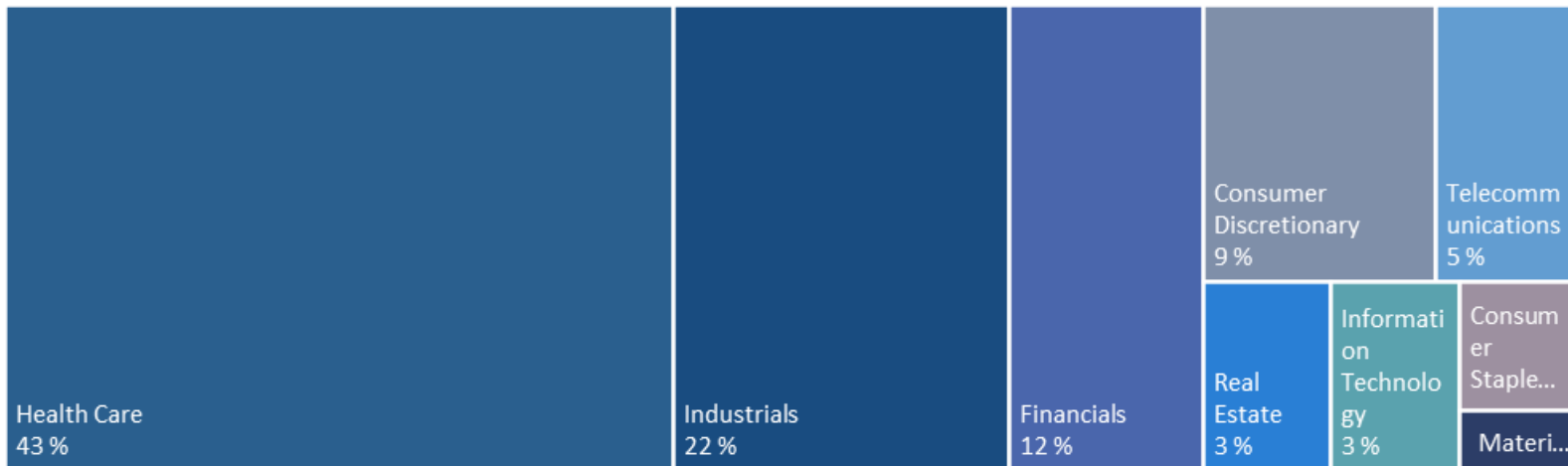


■ Private  
■ Public

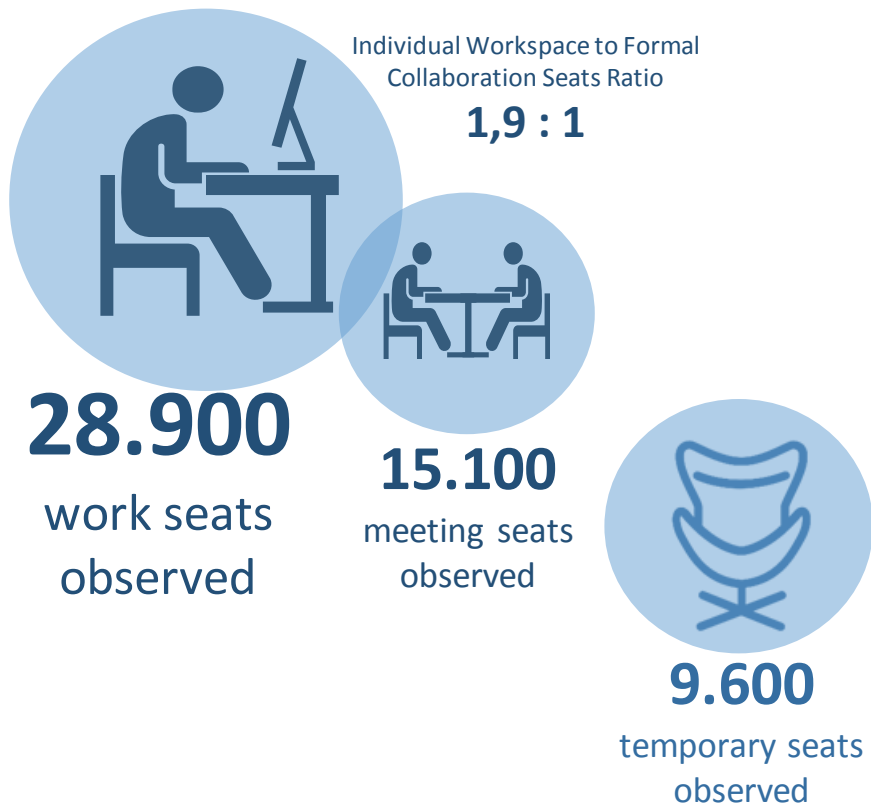
The industries most active in conducting measurements using Optimize in 2016 were the health care sector (43%), industrials (22%) and financial sector (13%).



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# Seats observed in 2016



In this Optimize Workplace Review of 2016 office use, more than **28.900 work seats were observed** over a period of 1-2 weeks. The majority, 26.700 seats, were from the private sector.

Roughly 18.600 desks were considered assigned to a particular user, while 10.300 were shared desks. About 9600 soft seats or temporary seats were also subject to study. In addition, **15.100 meeting seats were observed**.

On average, the **Individual Workspace to Formal Collaboration Seats Ratio** is thus 1,9. In other words, for every one seat of collaborative space, there are about 1,9 individual work seats. Collaborative spaces here include more formal conference rooms and huddle rooms that accommodate groups of more than one person; but not temporary seating such as soft seating or café areas that are freely shared for spontaneous use across the organization.

# Space use

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# Allocation of work seats

Based on Rapal's observational data from the 2016 space utilization measurements, the **headcount per work seat ratio** is slightly larger in the private sector (0,98) when comparing to the public sector (0,86). However, it is notable to point out that organizations that have found space utilization measurements important to conduct have on average (0,97) more work seats available than there are people.

Regionally the differences vary between 0,90 in the Americas and 0,98 in the Asia-Pacific region to 1,01 in the EMEA countries.

Activity-Based offices are clearly different also from combi-offices (0,91) and open plan offices (0,96) which both represent over dimensioned solutions.

Of all the industries included in the 2016 Optimize study material, **only the telecommunication services and information technology sectors appear to have a headcount per seat ratio that exceeds 1.**



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The differences between office types are more clear: traditional enclosed offices have a ratio of 0,88 people/seat, whereas the newer **Activity-Based offices that often promote desk sharing, have a ratio of 1,18 people/work seat.** However, when comparing the utilization rate of work seats, both office types are very close to one another with 53% and 56% respectively, due to the flex work policies often applied at Activity-Based offices.

0,97  
people/work seat



Office type	People/work seat
Activity-Based	1,18
Combi	0,91
Enclosed	0,88
Open Plan	0,96
<b>Average</b>	<b>0,97</b>

**Desk sharing policies in Activity-Based offices enable over booking of work seats, while flex work policies keep utilization rates in check.**



# Static workplace density varies a lot



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Office type	m <sup>2</sup> /work seat
Activity-Based	13,27
Combi	16,72
Enclosed	22,14
Open Plan	16,94
<b>Average</b>	<b>16,38</b>

Based on Rapal's study data from the 2016 space utilization measurements, the average office space **area per work seat** ratio is **16,38 m<sup>2</sup> / seat**. This includes all the usable area in the office, including corridors and supporting spaces. This metric corresponds with Rapal's earlier findings of an average of 17,0 m<sup>2</sup>/seat from 2015. [Note that this metric is not the area used by a single workstation.]

**The most space-efficient office type is the activity-based office**, with 13,27 m<sup>2</sup> of office space available for every work seat. As the combi-offices (16,72 m<sup>2</sup>/seat ) represent the largest group of studied workplaces, they have the largest impact on the average.

The least efficient space use can be found in enclosed offices, where 22,14 m<sup>2</sup> of floor area is available per workstation.

By comparison, **Activity-Based offices are almost 40% more efficient** in their use of space than enclosed offices, with their personal or shared office rooms.

# Waste of space?



67%  
too much?

The studied **enclosed offices** use nearly 9 m<sup>2</sup> or some **67% more space per seat than Activity-Based offices** do (or conversely, 40% Activity-Based workplaces have 40% less space per person than enclosed offices). This might be partly because enclosed offices with rooms, walls and 'dead space' are harder to furnish and often house more storage spaces and furniture that take up more space.

Taking a closer look at office users, the consumer discretionary and industrial sectors find themselves above average in their use of space, whereas the financial, IT and telecom sectors are among the most efficient.



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GICS sectors	m <sup>2</sup> /work seat
Consumer Discretionary	15,48
Financials	11,81
Health Care	16,54
Industrials	21,29
Information Technology	12,43
Materials	12,34
Real Estate	15,81
Telecommunication Services	10,76
<b>Average</b>	<b>16,38</b>

# Towards 'dynamic workplace density'

Rapal's data review from the 2016 space utilization measurements reveal that Activity-Based offices are absolutely the most efficient in their space use, when looking at headcounts and space or desks available. Thanks to desk sharing policies in Activity-Based workplaces which enable "over booking" of work seats, and flex work policies that free people to work outside the office, utilization rates are kept in check while overall need for office space is significantly reduced. The same applies to what we can call 'dynamic workplace density', i.e. space allocated per office user.



Activity-Based offices provided only 14,75 m<sup>2</sup>/person, while the enclosed and open plan offices included in the 2016 data allocated more than **61% more space per person**, with 26,9 m<sup>2</sup>/person and 20,7 m<sup>2</sup>/person respectively.

The key difference between these office environments has probably less to do with the layouts themselves, but rather with the differences in work culture: in particular flex work and mobility policies.

## 38%

less space needed  
per person in  
Activity-Based offices

Looking at the public sector employers with an average of 26,8 m<sup>2</sup>/person compared to 18,6 m<sup>2</sup>/person in the private sector, it is clear that the public sector a) represents the more traditional and conservative workplaces with allocated desks in predominantly enclosed offices, b) has a less widely enforced flex work policy and/or c) has been less able to adjust offices after restructurings or resizings in personnel.



Office type	m²/person
Activity-Based	14,75
Combi	20,05
Enclosed	26,86
Open Plan	20,72
Average	19,50

## 19,5

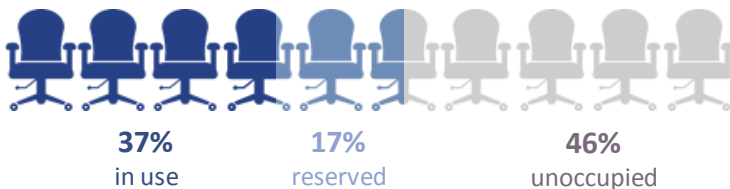
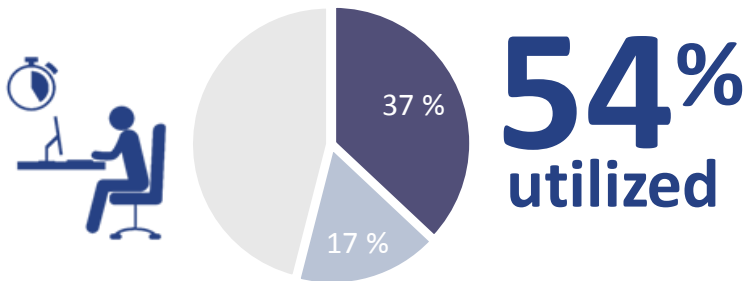
m<sup>2</sup>/person

# Work seats

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# Utilization rate of workstations



Rapal's observational data from the 2016 space utilization measurements reveals that workseats are in use, on average, only **37%** of the time. When taking into account also the times the work station is reserved without an occupant present, **the utilization rate on average sums up to 54%.**

## Average utilization rates

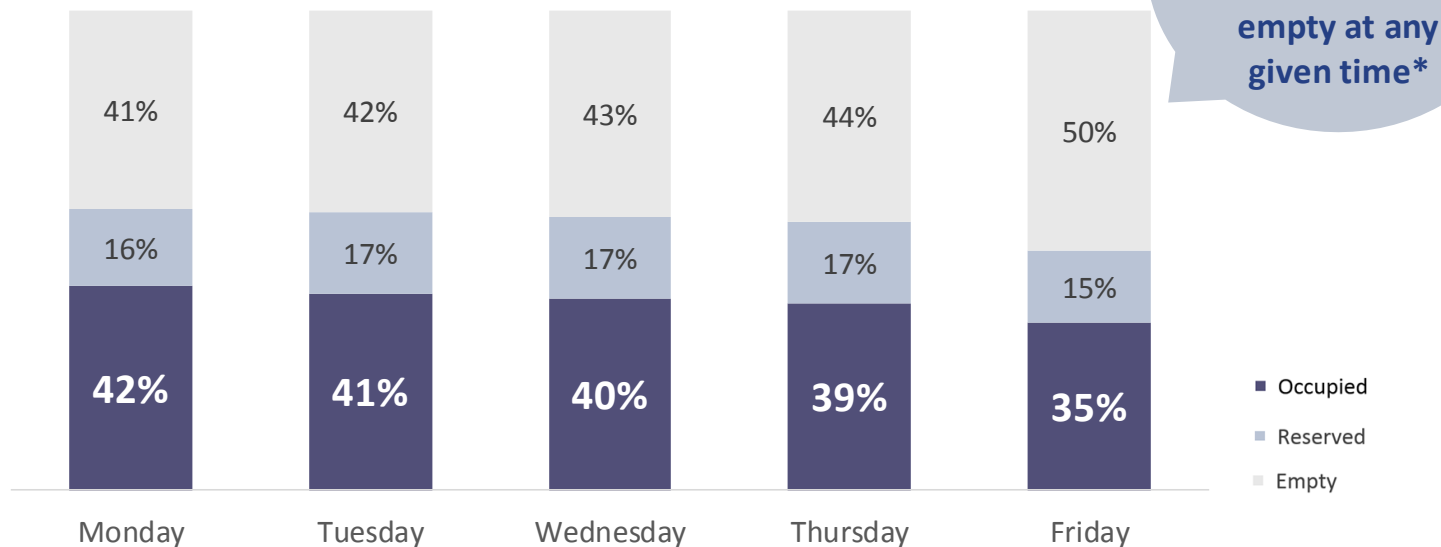
Office type	
Activity-Based	56%
Combi	51%
Enclosed	53%
Open Plan	61%
<b>Average</b>	<b>54%</b>

Private/Public sector	
Private	54%
Public	53%

Sectors (GICS)	
Information Technology	64%
Industrials	59%
Financials	59%
Telecommunications	58%
Consumer Staples	55%
Health Care	52%
Real Estate	41%
Consumer Discretionary	41%
Materials	33%
<b>Average</b>	<b>54%</b>

- Occupied
- Reserved
- Empty

# Work seat utilization declines during the week



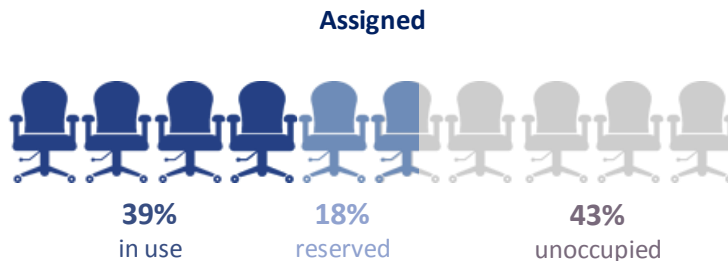
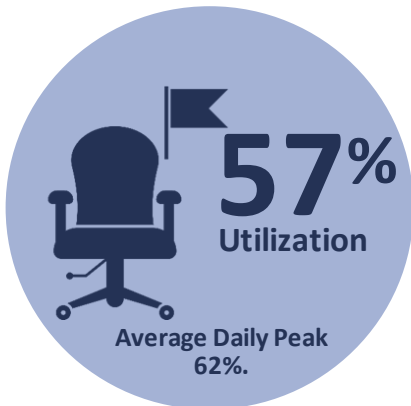
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There was a steady decline in work seat utilization over a typical work week.

\* On average, even at peak use, there were always 9086 seats free and unoccupied in the 2016 data set. This is regardless of weekday or time of day. Differences were however great between different locations.

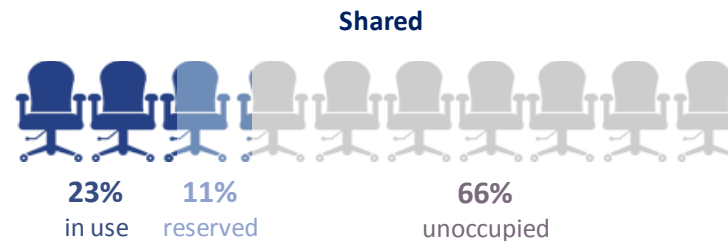
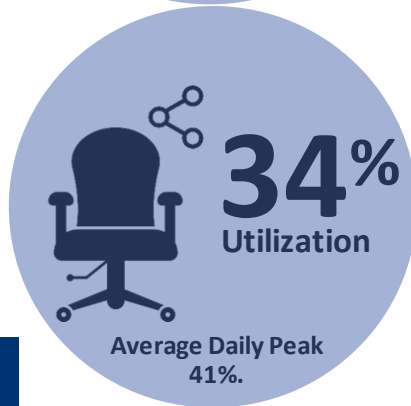
-9%

# Assigned seating vs. shared seats



In Rapal's 2016 observational data, roughly 18.600 desks were considered assigned to a particular user, while about 10.300 were shared desks.

Unsurprisingly, assigned seats have a higher utilization rate than shared seats, as they are typically used in work cultures that encourage sitting at the desk.

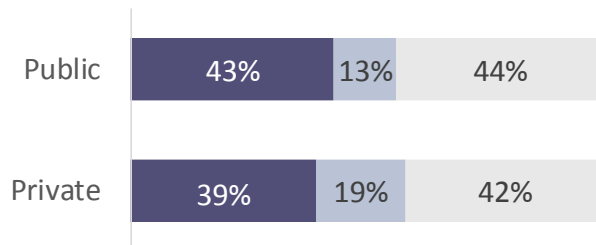


Notably, even at peak use, there were on average always at least 30% free seats available. Variations were however extreme: some offices had more than half of their seats free, whereas some growth companies ran out of workstations.

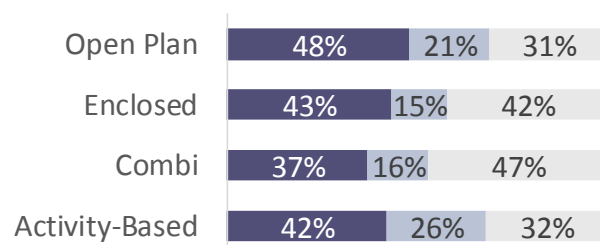
# Utilization by sector and office type



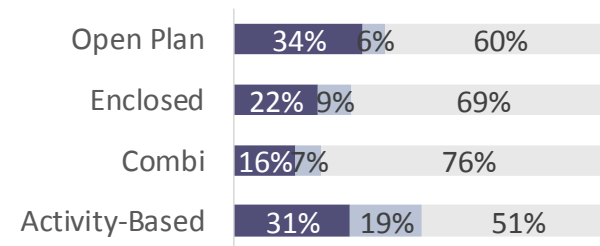
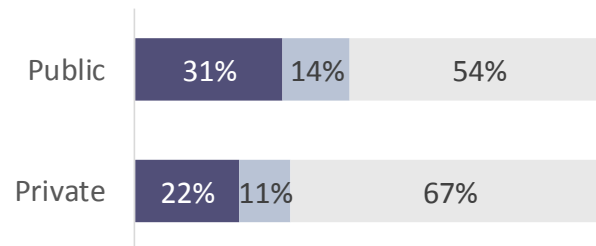
## Sector comparison



## Office type comparison

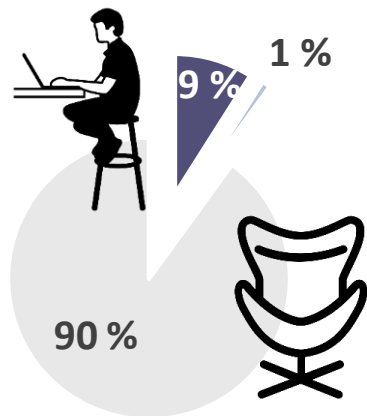


■ Occupied  
■ Reserved  
■ Empty





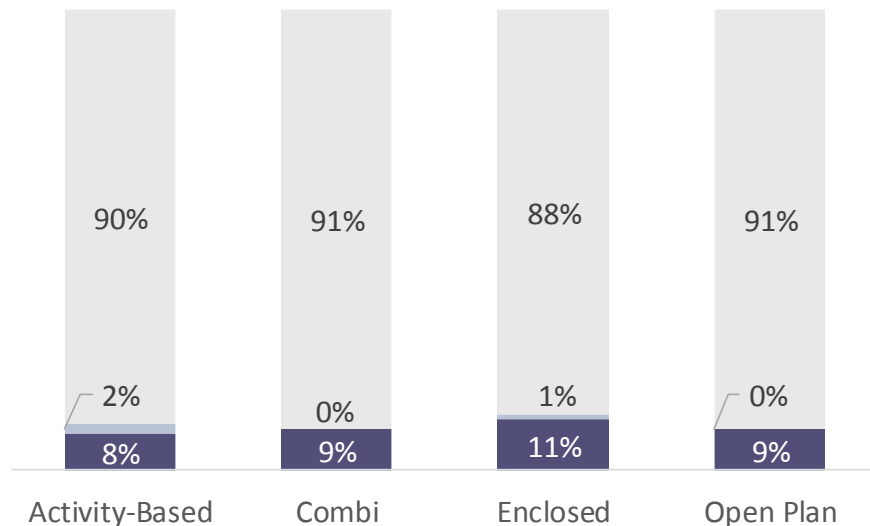
# Temporary seating: free breakout space



**Temporary seats**, such as drop-in seats or laptop bar seats, couches and other soft seating are chosen as the location for a particular task or period of time. They are also used for breaks and recharging time. These seats are loosely defined as informal seats without a formal desk, and typically not assigned to any person as a primary work seat. These seats are typically located all over the office in lounges, coffee rooms, cafeterias, breakout and transition spaces.

Due to the nature of the walkthrough methodology, making observations during hours of peak use of workstations, these informal seats tend to be less used in all types of offices.

■ Occupied  
■ Reserved  
■ Empty



# Meeting rooms

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# How frequently are meeting rooms in use?

Rapal's observational data from the 2016 space utilization measurements reveals that **meeting rooms are used, on average, only 44% of the time.**

Contrary to popular belief, there are typically many meeting rooms standing idle throughout the day. Based on **observations of about 300 conference rooms globally** over the last year, Rapal's data indicates that even **at peak use during the work day, meeting rooms are only used at a frequency of 58%.**

The misconception of there not being enough meeting rooms available occurs typically because meetings tend to be arranged on the same days and times across the week, leaving certain parts of the days and certain weekdays less popular for meetings.

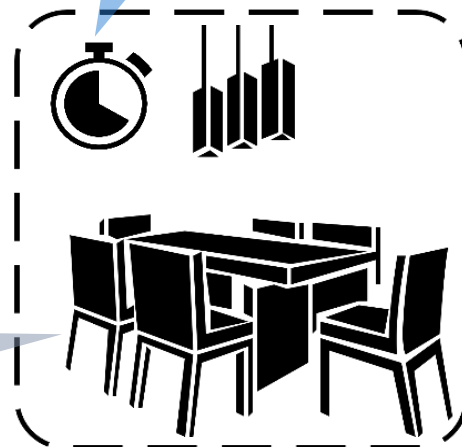
The 2016 global data shows that on average, at any given time, **at least 49% of all meeting seats are always free and unused.**



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On average, the peak utilization of meeting rooms is 83%. This means that **17% of meeting rooms are empty at any given time across the week.**

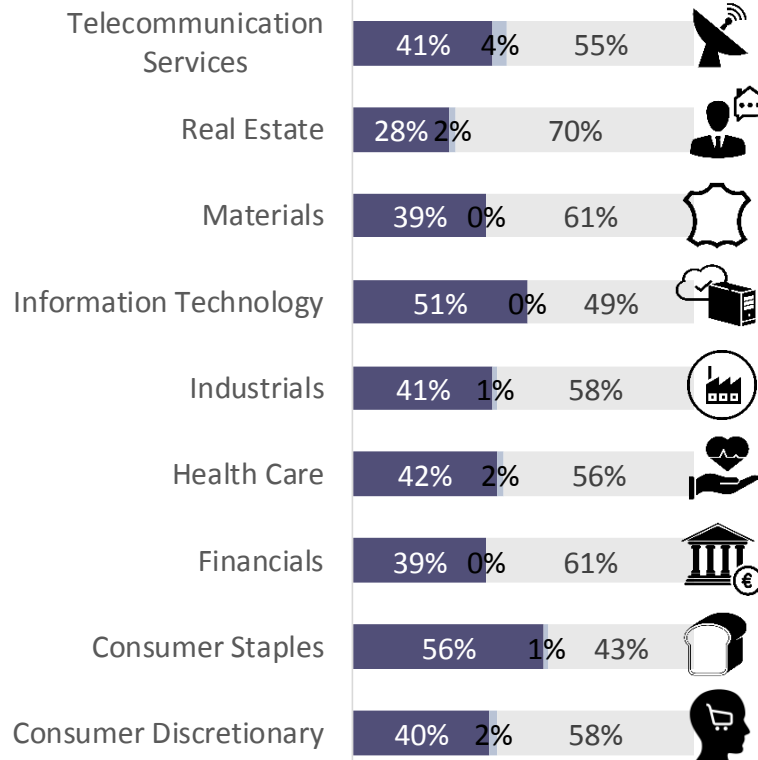
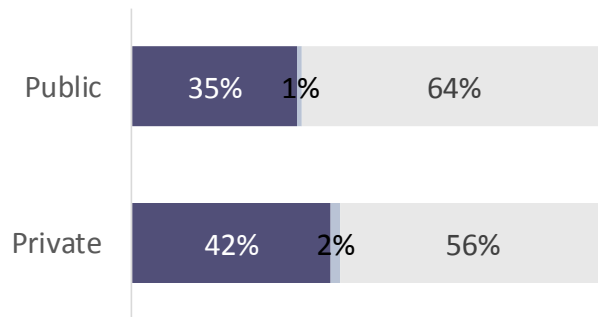
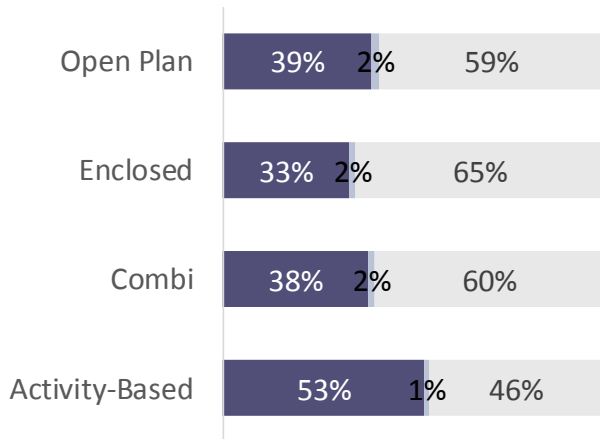
44%



# Meeting room use by category

Throughout the day, meeting rooms in **Activity-Based offices** were observed to have a higher average use of **55%**, while **enclosed office users occupied their meeting rooms only 38% of the time.**

■ Occupied  
■ Reserved  
■ Empty



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# Meeting rooms: supply and demand

Based on the 2016 data, Activity-Based offices have their meeting rooms clearly more frequently in use than in other office types, especially small meeting rooms for 4 people or fewer.

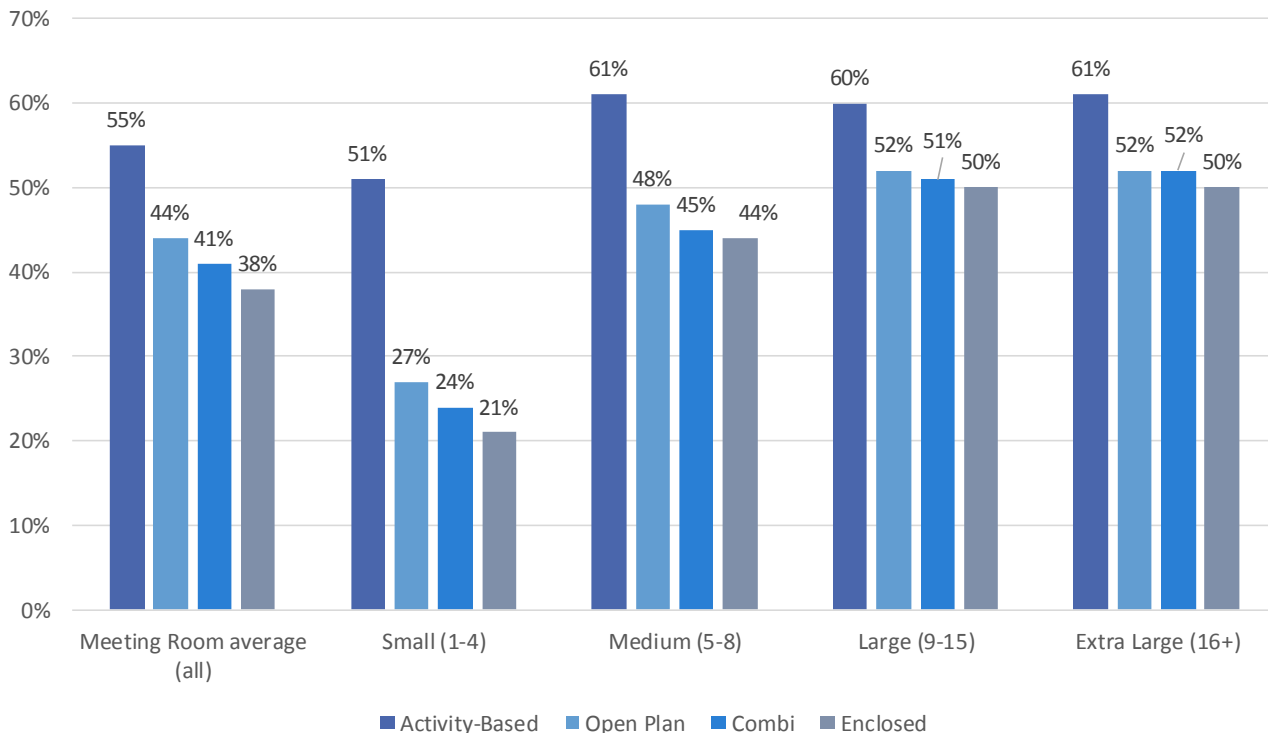
Considering that 66% of all observed meetings in the 2016 global observations were with 4 or fewer attendees, it is however interesting to note that the least utilized meeting spaces are those rooms intended for meetings of just that size.

The average daily peak for meeting room frequency rate was 58%.



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Meeting Room Utilization Frequency Rate, avg.



# Utilization of meeting seats

Rapal's observational data from the 2016 space utilization measurements reveals that **meeting seats are used, on average, only 19% of the time**, when observing conference rooms both in use and out of use throughout the day. This low utilization rate is the combined result of both over dimensioned meeting rooms in relation to the number of participants, and the low frequency at which meeting rooms are being used.

Typically, conference rooms are not used to their full potential. Based on observations of about **15.100 meeting seats** globally over the last year, Rapal's data indicates that there are no notable geographical differences for this metric. **Even in an Activity-Based work setting which promotes more collaboration, only 24%** of the formal meeting seat capacity is being used throughout a typical workweek.



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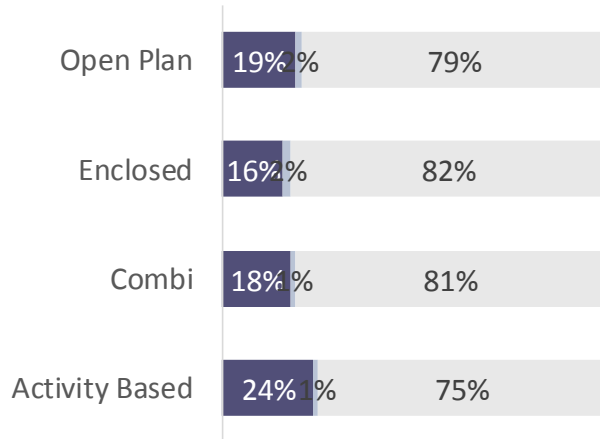
Rapal's earlier comparative study "Toimiva työympäristö 2015", found that when meeting rooms were in use (39% of the time), meeting seats in the rooms were only used to a degree of 41%. In other words, **on average, 6 seats of 10 were always empty even when the room was being used**. This indicates that meeting rooms are too large in relation to typical group sizes at meetings.

# 19%

- Occupied
- Reserved
- Empty



**49%** of  
meeting seats  
were always  
empty

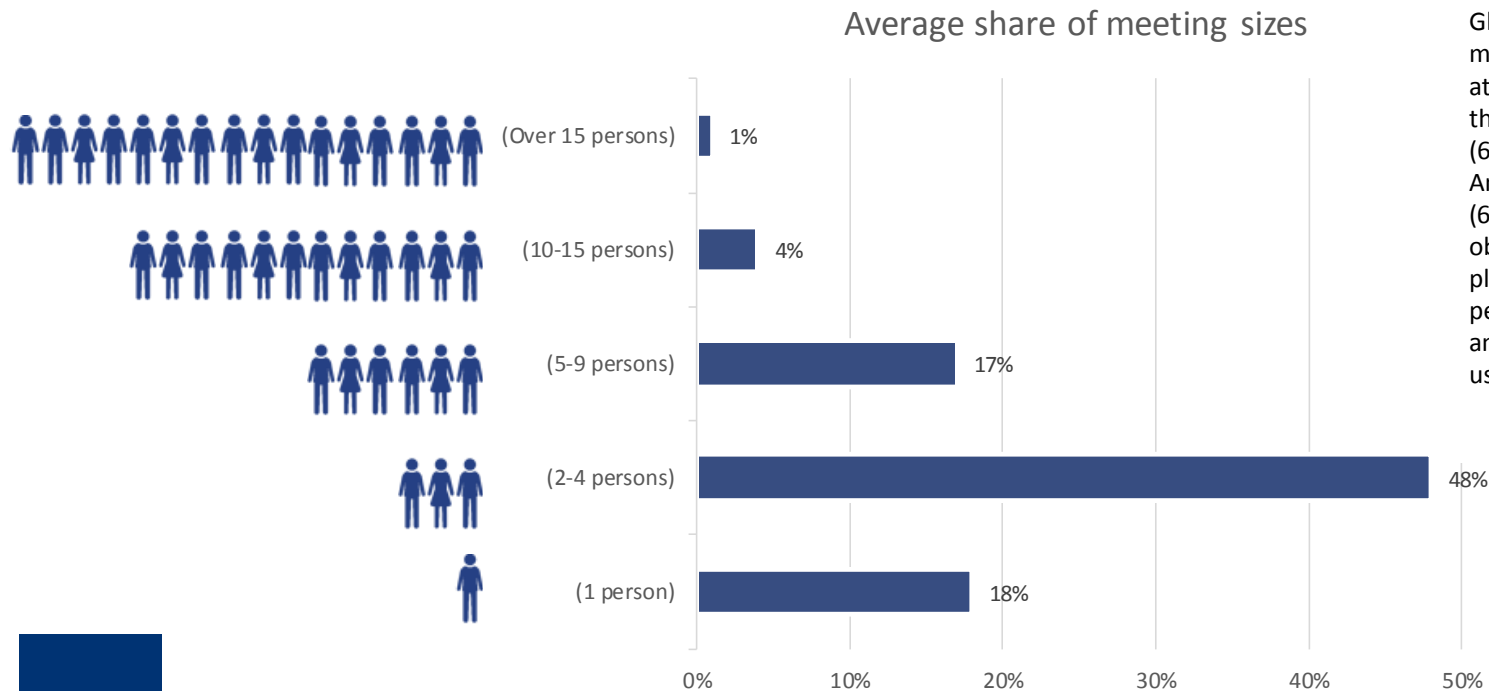


# Meeting sizes

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# Frequency of meeting sizes



Globally, 66% of all observed meetings were with 4 or fewer attendees. This is slightly lower than the EMEA benchmark (69%) but higher than the Americas (62%) and PAC regions (61%). In 18% of the observations made, a meeting place was occupied by only one person – indicating a fair amount of virtual meetings using video or audio technology.

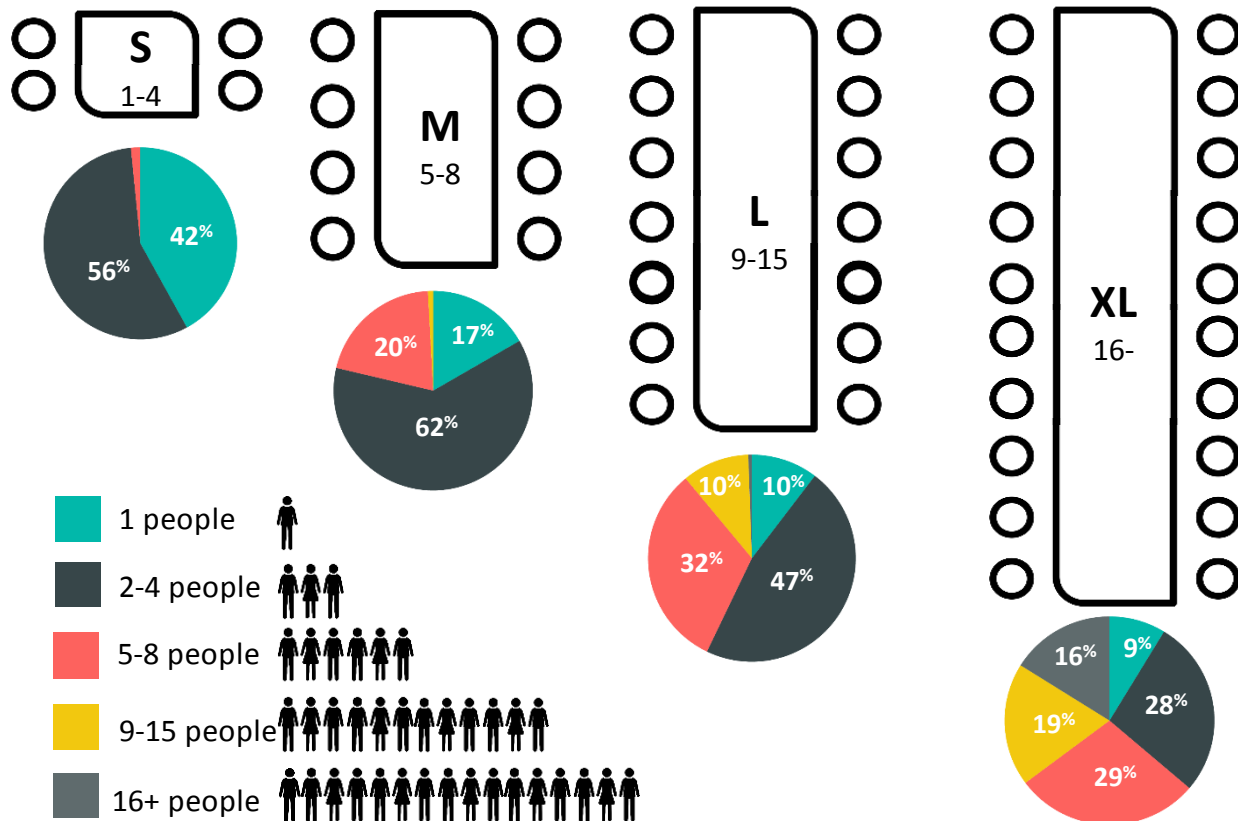
One-person meetings were held most frequently at Activity-Based offices (24%) and least frequently in open plan offices (9%), the average occurrence being 18%.



# Group sizes in meeting rooms

Small meetings are commonly being held in all meeting room sizes. Rapal's 2016 data shows that there are not enough small sized meeting places available (or freed up from cancelled bookings) for one-on-one meetings, videoconferencing or small team meetings. This results in small meetings taking larger rooms into use when no smaller spaces are available.

Meetings of 4 people or less were observed occupying large meeting rooms (designed for 16 people or more) 37% of the time. These extra large gathering places were occupied by more than 9 people only 35% of the time.



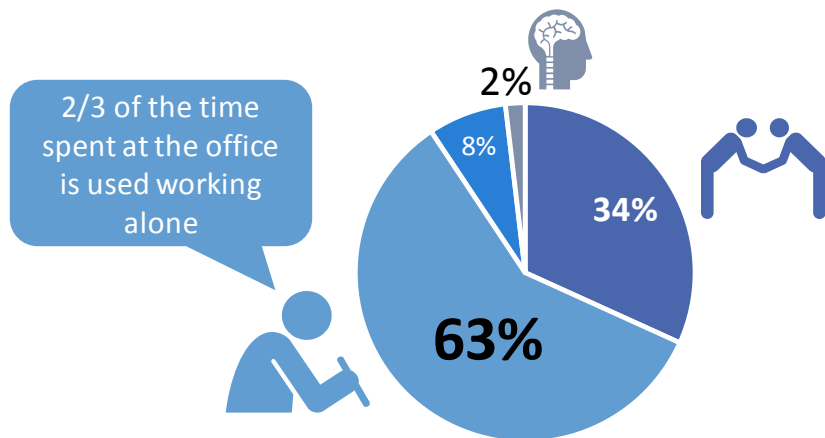
# Workplace Activities

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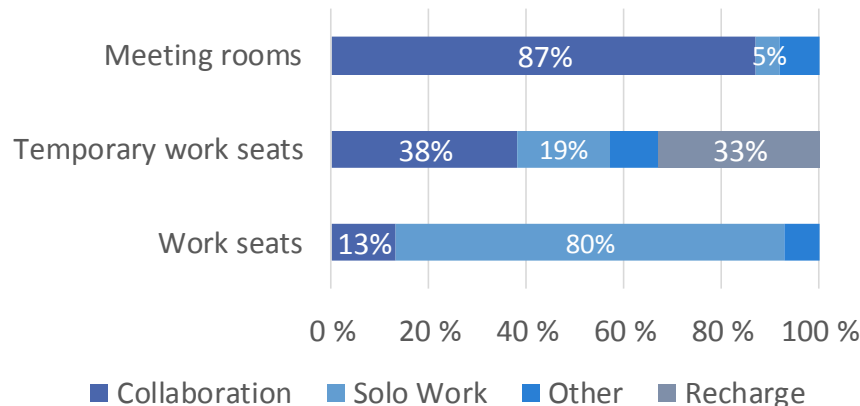
# Typical work activities

Distribution of typical work activities at the office



- Collaboration
- Individual work
- Other
- Recharge

Typical activities in different work settings



In Activity-Based offices, work seats are used for working individually to a degree of 94%, surpassed only by open offices at 97%. In combi-offices and enclosed offices there is more collaboration taking place directly at the workstations, at a rate of 13% and 10% respectively. The use of temporary seats for solo work was lowest for enclosed offices, while being highest for open plan office users.

# Optimize Workplace Review 2016 vs. 2015

A regional and temporal comparison

# Optimize Workplace Review 2015

## Toimiva työympäristö

Rapal Oy carried out a national review of space utilization measurements conducted in 2015, under the name “Toimiva työympäristö 2015”. The study covered corporate, municipal and government premises in Finland.

The aim of the study, which was conducted as part of a master’s thesis for Aalto University, was to help organizations assess the efficiency of their space use, discover cost savings potential and analyze their employees’ needs and satisfaction rates concerning the work environment.

The study consisted of two complementary parts: measuring the space utilization rate and a work environment survey. Utilization rates were measured with Rapal’s Optimize Measure software. The work environment survey was based on Rapal’s own Choice & Collaboration survey, a model developed by Rapal, aimed at assessing ways of working and work environment satisfaction.

The 2015 utilization measurements covered:

- a total of 200.000 m2 of office space
- 48 locations
- 177 floors
- 732 meeting rooms
- 10.269 workstations:
  - 59% in the public sector
  - 41% in the private sector

The workplace survey covered:

- 14 locations
- 1.277 respondents:
  - 73% in the public sector
  - 23% in the private sector

In comparison to 2015, the increase in the amount of analyzed data from conducted observational studies during 2016 is +86,4%.

**+86,4%**

Based on the survey data, employees would like to work remotely from home for around 20% of their working time, whereas at present, the proportion of remote work is 4%. Activity-Based offices were found to offer the best selection of different spaces and the best support for work.

A positive correlation was found between HR policies supporting flexible or remote work and personnel well-being. Employees working in Activity-Based offices exhibit a better level of well-being and satisfaction with their work environment than those working in other types of offices.

# Findings from 2015

Rapal's comparative study "Toimiva työympäristö 2015" found that the difference in density by office type could be as much as 11m<sup>2</sup>/seat (44%) when looking at 10.269 work seats on 177 office floors across Finland. The space use found in that study was found to be 13,6 m<sup>2</sup>/seat in Activity-Based offices and 24,2 m<sup>2</sup>/seat in enclosed offices respectively. However, satisfaction with the work environment was higher for Activity-Based workplaces (4,36) than for enclosed offices (4,04) on a scale from 1 to 5.

Variation of office density in the 2015 study was big: offices provided between 8,7 m<sup>2</sup>/work seat, and 33,2 m<sup>2</sup>/work seat. In 2015, the Finnish public sector had +7,1 m<sup>2</sup>/work seat more than the private sector, however the public sector occupants were overall less happy (4,09) with their work environment than private sector (4,46). The greatest gaps in satisfaction were related to flexibility of work arrangements, functioning technology and a sense of belonging and community.

Meeting rooms when in use, had on average 41% unused capacity.

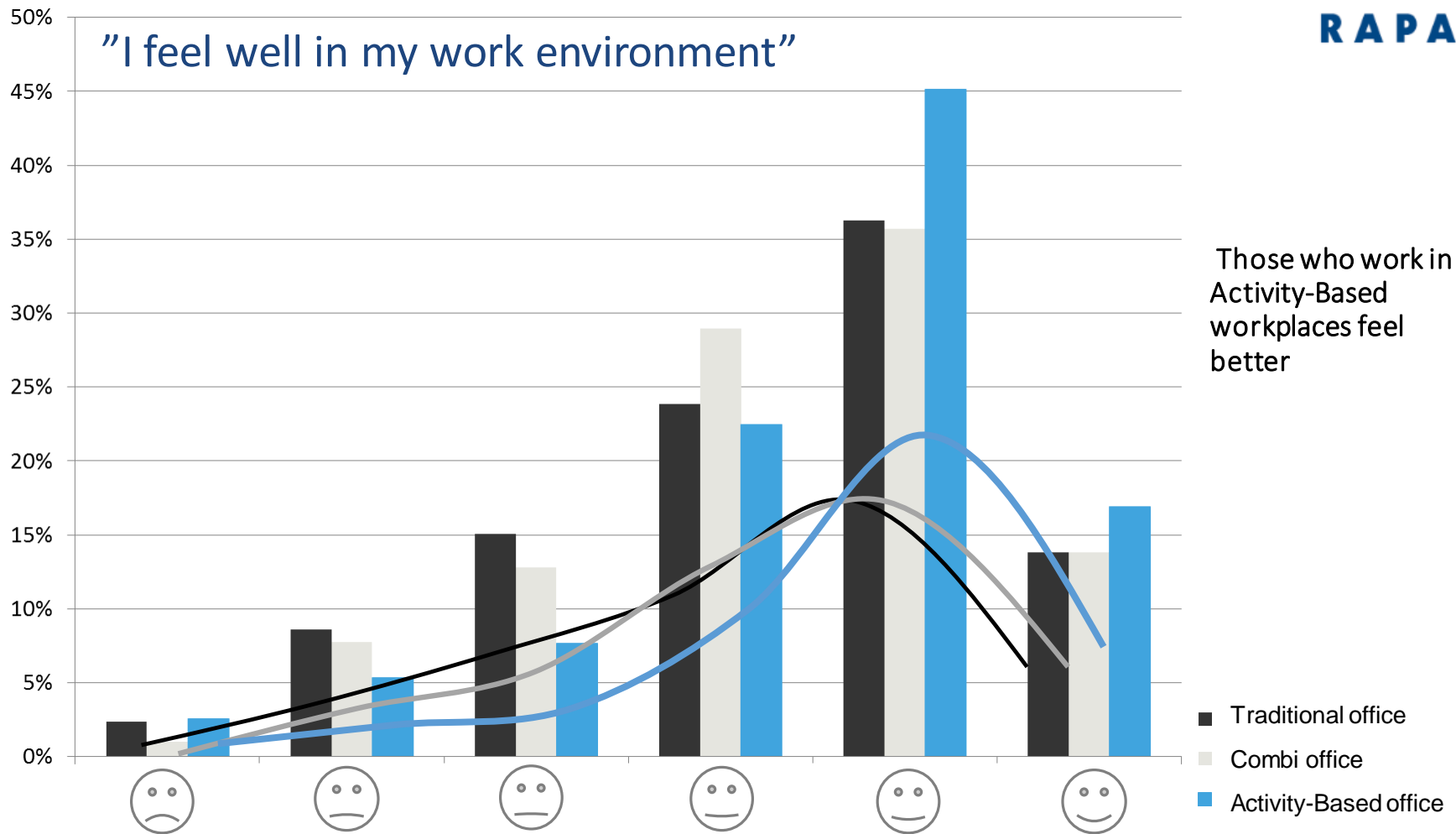


<b>Average office density [m<sup>2</sup>/workstation]</b>	<b>17,0 m<sup>2</sup></b>	<b>16,9 m<sup>2</sup></b>
<b>Average difference in density, Activity-Based vs. Enclosed office [m<sup>2</sup>/workstation]</b>	<b>-11,0 m<sup>2</sup> (-44%)</b>	<b>-8,9 m<sup>2</sup> (-40%)</b>
<b>Work seats occupied on average [%]</b>	<b>41 %</b>	<b>41 %</b>
<b>Work seats reserved on average [%]</b>	<b>24 %</b>	<b>17 %</b>
<b>Meeting rooms in use on average [%]</b>	<b>39 %</b>	<b>41 %</b>

“The variety of spaces in my workplace offers good options for different modes of work”



# "I feel well in my work environment"





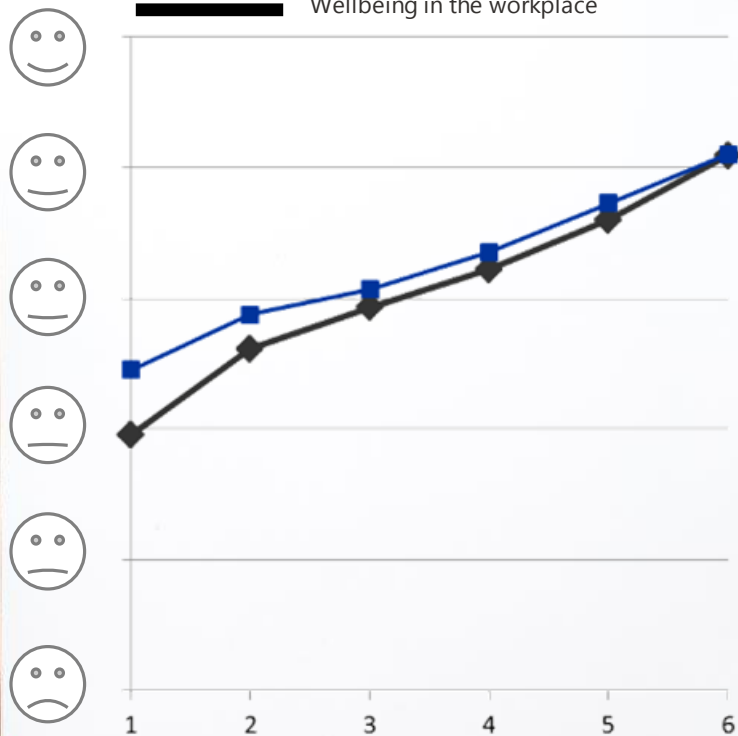
# The impact of flexwork

People want to **work more from home**, increasing from current 4% of work time to **20%**. Similarly, less time spent at the office was desired.

**1**  
Totally disagree

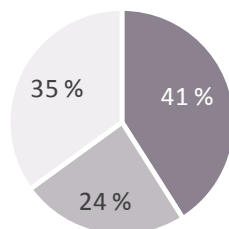
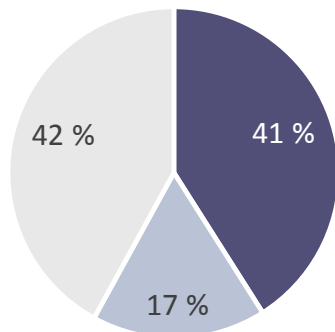
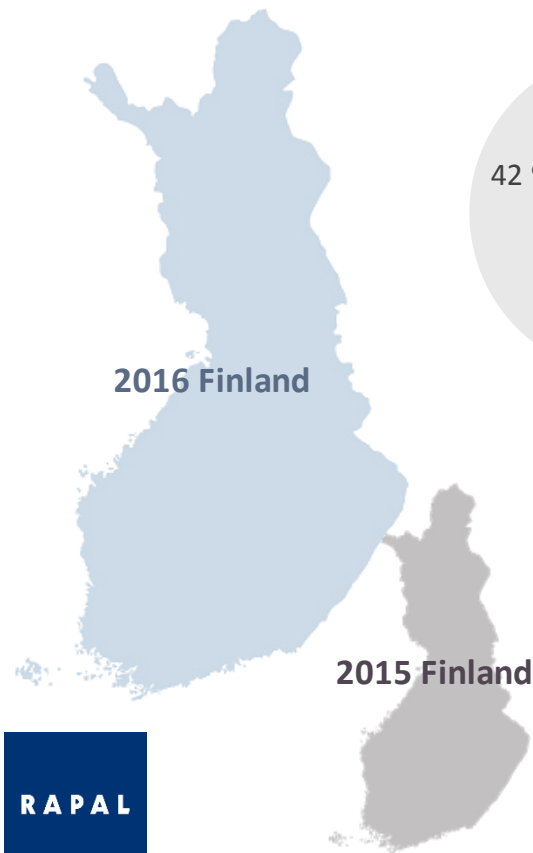
**6**  
Totally agree

— Satisfaction in the workplace  
— Wellbeing in the workplace



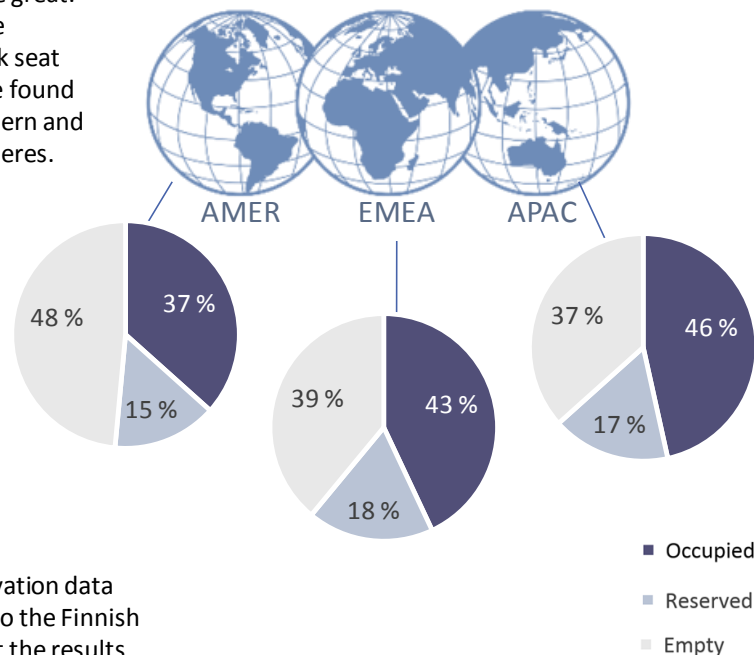
"My organizations procedures & policies support flexwork"

# Average work seat utilization rate



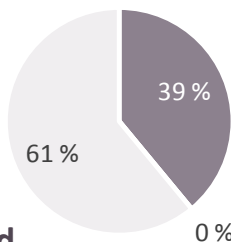
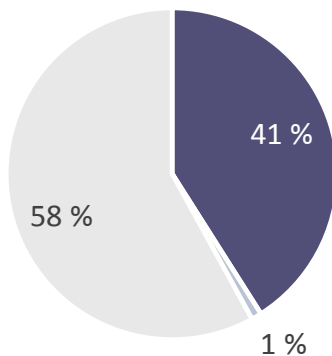
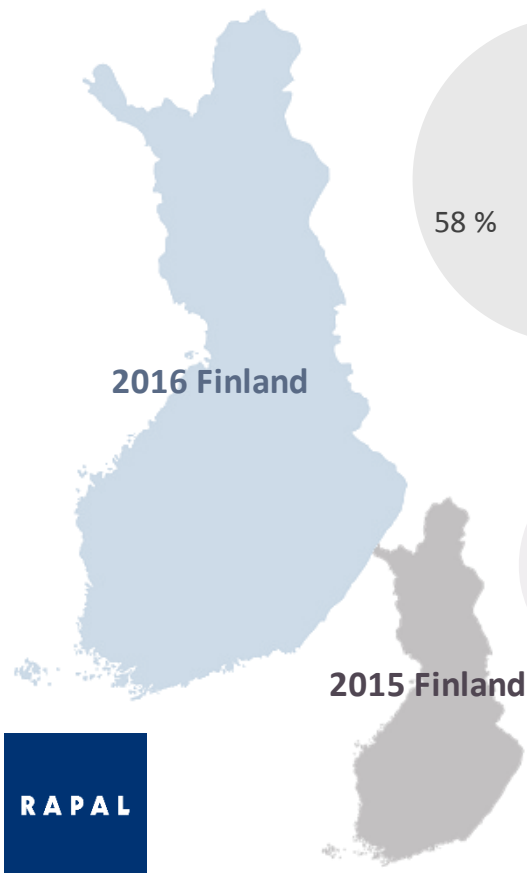
The average utilization rates of workstations are close to the average in all regions, even if company-specific variations may be great. The most notable difference in work seat occupancy can be found between the eastern and western hemispheres.

## by region 2016



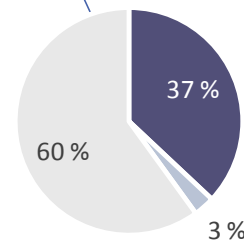
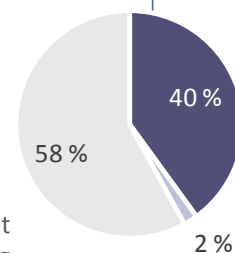
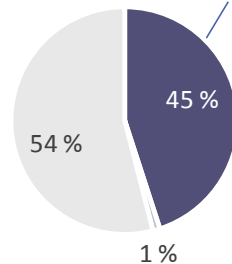
By comparing Rapal's 2016 global observation data (which includes new data from Finland) to the Finnish 2015 nationwide data, it is apparent that the results differ very little between the two data samples within the same geography over the course of a year.

# Average meeting room frequency rate



The meeting room use differs very little when comparing 2016 global observation data between regions, and over time within Finland. The starkest differences in meeting room use can be found between the eastern and western hemispheres.

## by region 2016



■ Occupied  
■ Reserved  
■ Empty

Rapal's earlier review "Toimiva työympäristö 2015" found that when meeting rooms were in use (39% of the time), meeting seats in the rooms were only used to a degree of 41%. In other words, **on average, 6 seats of 10 were always empty even when the room was being used.** This indicates that meeting rooms are too large in relation to typical group sizes at meetings.

# Methodology & terminology

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# Walkthrough method using Optimize

**Space utilization measurement using the Optimize Measure tool** is a method for observing actual work environment utilization rates. During a 2-week measurement period, measurers perform walkthrough observations at least twice a day, noting how many people are using the work seats and meeting rooms at the time.

During a measurement, one can also **observe activities**. This allows learning about what kind of work people do in different types of work settings, meeting rooms and other spaces.

There are three stages of a measurement: preparation, performing walkthroughs, and viewing results. Training is given to all people conducting observational studies in order to ensure that interpretation and gathering of the data is systematic and coherent.

Walkthroughs are done at a pre-scheduled time during estimated peaks. Walkthroughs should be performed at the same time every day: at least one in the morning and one in the afternoon. During a walkthrough, the observer marks the status of each seat or location as either occupied, reserved or empty.

Automatically reported results are used to provide detailed, up-to-date information on seat utilization and space needs.



**Occupied:** There is someone at the seat or desk. If activities are observed and someone is at the seat, the activity that best describes what a person is doing is also recorded.

**Reserved:** No one is at the seat, but there is clear evidence that someone has been using the seat recently. For example, a jacket, coat, or briefcase has been left at the seat, the computer monitor is on and the screen saver hasn't come on yet, or a fresh food or beverage item is on the desk.

**Empty:** No one is at the seat, and there is no clear evidence that someone has been using the seat.

**Overuse.** If there are more people at the seat than the capacity, the observer can enter overuse. E.g. if the capacity of a meeting room is six and there are eight people in the room, you should enter an overuse of 2.

# A note of caution

When interpreting the collected data, it is important to understand the risks involved when drawing conclusions. Correct interpretations are crucial when using the data going forward. Every utilization study has certain risks that may affect the quality of the data as a whole. Here are a few:

- **Errors made by the observer:** One of the largest risks with utilization studies involves interpretation of how and when seats are being used, and the proper training of observers to ensure that they understand the difference between empty seats and temporarily unoccupied seats (the desk is taken by someone, but the user is temporarily away from the seat). The same risk for error comes up when observing activities of the occupants of seats and spaces. This is why a comprehensive and consistent training in measurement and observation is always provided as part of Rapal's measurement projects.
- **Peaks, averages and daily peak averages:** It is crucial to understand the different uses for different calculation methods. Averages can be treacherous if used for dimensioning in a refurbishment project. Averages are good for making an argument or case for change, whereas design decisions that utilize data for calculating desk-sharing ratios should use average daily peaks to build in a buffer and to create a solution that has some overflow capacity. At the same time, peak utilization (the single highest observed use during the measurement period) can act as a way to recognize how much unused capacity there is available at any given time – which can either be seen as a waste of space, or a potential for further growth of users.
- **Reporting differences:** Some utilization studies only include the time people are physically at their desk and report this as the utilization rate. This is often the case, especially when using automated systems and sensors to make observations. In truth, a lot of the time seats are not free but only temporarily unoccupied, as employees move around inside the office building and between spaces. Making calculations based on only headcounting would be a crude mistake. This is why the Optimize Measure tool with its standardized methodology for observing and recording reserved seats allows for marking and calculating utilization rates that include situations where seats are unoccupied but taken.
- **Utilization or frequency rate:** keeping up with the use of seats versus the use of work settings that provide many seats (such as a meeting space) can be tricky. Careful attention to terminology and definitions should be given!

# Terminology

## Seat types

- **Work seats**, function as a person's primary work seat. Work can be categorized as assigned or shared work seats. Assigned work seats are assigned to be used by a specific person; shared seats are those which a group of people have the right to use. Work seats are typically found in connection to a desk, forming a workstation.
- **Temporary seats**, such as drop-in seats or laptop bar seats, are chosen as the location for a particular task or period of time. These would not be assigned to a person as his or her primary work seat.
- **Meeting seats**, primarily located at meeting rooms, are those seats that are used by groups of people temporarily working together.

## Metrics

- **Utilization rate**. Share of seat or room capacity that has been occupied or reserved (multiplied by the reserved multiplier).  
*E.g. if during tow walkthroughs a meeting room is utilized 5/10 and 0/10, the utilization rate is 25 % (5/20).*
- **Frequency rate**. Share of seat or room count that has been occupied or reserved (multiplied by the reserved multiplier) by at least one person.  
*E.g. if during tow walkthroughs a meeting room is utilized 5/10 and 0/10, the utilization rate is 50 % (1/2).*

*[Note that terms used for these metrics vary between different sources. The terms used here are defined for the purposes of interpretation of the results presented within this review report.]*

## The calculation method for the metrics

- **Peak**. Single highest walkthrough value.
- **Average**. Average value of each walkthrough.
- **Daily peak average**. Average of the peak value for each day.
- **Reserved multiplier**. The weight given to reserved capacity or count when calculating the utilization rate or frequency rate. If the multiplier is 1, reserved capacity or count is fully included in the rate. If 0, only occupied capacity or count is included in the rate. *In this review, the multiplier 1 has been used.*



# Definitions

**Enclosed Office:** An office type that predominantly houses workstations enclosed by four walls. The space can be assigned to individual workers and can accommodate from one to more than five visitors. Also called cell-office. There are some meeting rooms, but some may have meeting space also in their own rooms.

**Open Plan Office:** The open plan office is mainly defined by employees sharing a common workspace where many workstations are situated within the same open area, sometimes separated from each other by dividers and file storage cabinets. No or few enclosed rooms exist apart from meeting rooms.

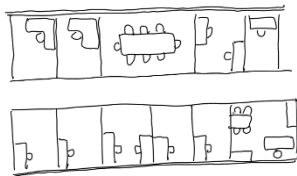
**Combi-Office:** An office type that is a combination of open plan offices and enclosed offices. Some workers have rooms, others sit together with others in an open plan layout. Traditionally, rooms are assigned based on rank, rather than need, worker profile or work task.

**Activity-Based Office:** An office type that takes the combi-office one step further, by introducing a diversity of spaces, places and furniture that are available to anyone based on the task at hand. Spaces are used and reserved (sometimes assigned) based on each employee's own role, preference and current work task. The idea is to create a flexible platform that enables all workers to succeed in their jobs. No universal blueprint exists for Activity-Based offices – each one should be tailored to the needs of its users.

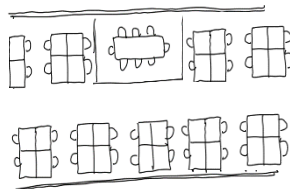
**Workstation:** An individual workspace with a proper desk and seat, that can be connected to a series of desks and includes separations in the form of dividers and file storage space.

**Meeting Room:** Collaborative space enclosed by four walls and typically able to accommodate from two to more than 16 people. This report groups rooms into small, medium, large and extra large rooms.

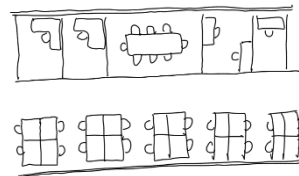
**Net floor area:** Used in this review as the area on a floor that has been assigned to occupant groups or functions. It is calculated by subtracting secondary circulation, restricted areas, interior encroachments and occupant void areas from plannable area (the portion of the floor enclosed within the face of interior encroachments). Bearing structures and shafts are excluded. This area is used to measure space assigned to tenant personnel, furniture, equipment support areas and common support areas.



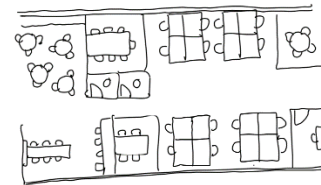
Enclosed



Open plan



Combi



Activity-Based



Rapal's tools and services are aimed at supporting clients and its partners in analyzing and optimizing better working environments that can boost wellbeing, productivity and cost efficiency. This review of observational data was prepared by Rapal Oy's Workplace team based on 2016 data collected through the use of its space utilization measurement tool Optimize Measure, by permission of its end clients.

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