

# Office Occupiers' Real Estate Attributes – Identifying Occupiers' Preferences

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**Key words:** Real estate attributes, real estate preferences, office occupier, the Helsinki Metropolitan Area

## SUMMARY

The real estate business is a cluster of a multitude of groups of key actors. Among the most important groups is one composed of the occupiers and users of the office buildings. In order to predict the direction towards which the real estate market might be going in the next years, the professionals in the sector need to identify clearly what the occupiers and potential occupiers need and prefer in terms of location, services, buildings, and workspaces. In this study, real estate preferences have been studied through an internet based questionnaire, which was sent to the people responsible for corporate real estate management in 1,474 companies in the Helsinki Metropolitan Area. A total of 89 responses were selected for further analysis. The results of the analysis indicate that there are some attributes that all organisations highly value, e.g., adjustability of temperature and air conditioning, proximity to public transportation, adequate parking spaces, and meeting rooms. In this study, the least preferred attributes were part of the service attribute group, e.g. cultural services, day care and car rental. Proximity to competitors was also an unimportant attribute. However, there is an interesting asymmetry in the results: the scale for rating an attribute as important is much wider than that for rating an attribute as unimportant. Based on the results of the research, it's recommended that further studies should concentrate on the attributes that did not stand up as highly important attributes. In addition, it would be valuable to create organisational profiles that sum up what kinds of organisations prefer each set of attributes.

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## 1. INTRODUCTION

Office occupiers and potential occupiers are the customers of many players in the real estate sector, such as constructors, landlords, owners, agents, and service providers. In this study, the occupiers, namely private companies and public organisations, are the user organisations of the real estate.

All the players aim to offer products and/or services to the occupiers to compete and succeed in the market. The constructors build the buildings, the landlords supply the premises, and the service providers offer facilities services to the occupiers. While these players are seeking returns, the customers expect value. Occupiers aim to have suitable premises that bring added value to their core activities at a reasonable price. It should be noted that organisations are heterogeneous, and that one solution does not fit all, as real estate requirements and preferences vary among organisations (e.g., Bottom et al. 1998, Sing et al. 2006). Additionally, new ways of working, climate change and the financial crisis bring new challenges that occupiers need to take into consideration also in their real estate.

In order to build and maintain office buildings which provide value to the organisations using them, more information is needed on the occupiers' real estate needs and preferences. For constructors, landlords, owners, agents and service providers, it is essential to have a clear, real-time view of their customers' needs and to understand that one solution might not be the key to success in the long run.

Raab et al. (2008) have created a framework of the process and stages of customer relationship management (CRM). When adapting this framework, it can be suggested that CRM can create value for the occupier and for the product and service provider. According to the framework, the focus should be on the occupiers' needs and preferences. The occupiers will be more satisfied when the premises actually fulfil their needs and preferences, and as Sulzmaier (2001) states, satisfied customers are more loyal and, thus, buy more frequently. Therefore, satisfied occupiers can result in a more secure future cash flow, and in a long-term relationship this will lead to success for the product and service provider, while also generating value for the occupiers.

Based on the framework of Raab et al. (2008), the players in the real estate sector should be more occupier-oriented in order to achieve success. Occupiers' needs and preferences have been researched before to some extent (see, e.g., Dent and White 1998, Louw 1998, Sing et al. 2006) but previous studies have concentrated more on occupiers' current premises and how those meet their needs and preferences, rather than studying what occupiers really would prefer. For example, Dent and White (1998) examined the perceptions of existing office

occupiers in order to determine whether the current real estate attributes are meeting the needs of the occupier and to identify reasons for relocating. A more holistic view of real estate preferences is also needed, which includes not only the location or building specific attributes but brings together location, service, building and workspace attributes. The aim of this paper is to take the first step of the model of Raab et al. (2008) and identify which real estate attributes office occupiers prefer the most and the least.

The real estate preferences were studied through an internet based questionnaire, for which an email invitation has been sent to 1,474 people during April-June 2009. The questionnaire was sent to people responsible for corporate real estate management in organisations located in the Helsinki Metropolitan Area. In the analysis, the real estate attributes were analysed one by one and Kendall's tau test was selected as the method to test the correlations.

This paper is divided into five parts. After the introduction, the different real estate attributes found from the literature are described. In the third chapter, the survey design and data analysis is presented. The results of the questionnaire are presented in the fourth chapter by identifying the least and most preferred real estate attributes in four groups: location, building, service and workspace attributes. In the final chapter, the conclusions and suggestions for future research are presented.

## 2. THE REAL ESTATE ATTRIBUTES

Next, the different real estate attributes found from the literature are described. The real estate attributes are divided into four groups, namely location, services, building and workspace attributes. The scope focuses on attributes that are related to the property and its use. Financial issues have been left aside at this point.

*Location, location, location* is a well-known old phrase, and it has been the interest of many researchers. For example, already in 1890 Alfred Marshall introduced the idea that by a concentration of specified industries in particular localities, agglomeration benefits can be achieved, and in 1903 Richard Hurd presented a theory, in which land values were based on the structure of cities. The history of urban development is long, but it is still an interesting topic. According to the literature, many authors are still concentrating on organisations' choices of real estate by studying their locational attributes. Proximity issues have been highlighted in several contexts. Companies are seen to require suitable proximity to the labour force (Appel-Meulenbroek 2008, Appel-Meulenbroek and Feijts 2007, Low 1998), and for example in the research of Leishman et al. (2003), proximity to the labour force was the highest scoring attribute among other locational attributes. Proximity to clients (e.g., Sing et al. 2006, Low 1998), service providers (e.g., Appel-Meulenbroek and Feijts 2007, Sing et al. 2006) and other business partners (e.g., Leishman et al. 2003, Appel-Meulenbroek and Feijts 2007) have also been presented as important real estate attributes. However, for example in the study by Leishman et al. (2003), it was found that companies did not see it as important to locate close to other organisations with a similar business.

A location in the CBD or in the city centre has also been looked at in several studies (e.g., Sing et al. 2006, Dent and White 1998). According to Dent and White (1998), most companies would like to be located in the CBD, but due to a lack of larger floor layouts this is not possible. The study by Leishman et al. (2003) supports the previous study by stating that the highest correlation in their study was between the city centre location and the space in a single floor. There are also other reasons that have an impact on the choice of location, such as transportation possibilities and parking space that were highly valued in the study of Sing et al. (2006). Appel-Meulenbroek (2008) also recognised in her study that parking facilities were the most important factor that leads to occupiers' satisfaction. It has been recognised that reasonable travelling times by car or by public transportations and proximity to major transportation nodes such as motorway links and airports are noticed among occupiers. However, in the study by Sing et al. (2006), proximity to the port and airport was the least important attribute. In the study conducted by Dent and White (1998), it was found that larger organisations seek locations outside the city centre in order to solve car-parking problems. In addition to good logistic infrastructure, companies also evaluated the image of the office area. Features such as green areas, crime rates and the prestige of the area were discussed in earlier studies (e.g., Appel-Meulenbroek 2008, Ho et al. 2005). In the study conducted by Sing et al. (2006), image and prestige of the office location was the highest scored attribute.

*Services* in the office area and in the building have also been studied. However, in a study by Ho et al. (2005), services such as banks, postal services, gyms, restaurants, and other retail services were not highly ranked by office occupiers. In line with the previous study, Sing et al. (2006) found out that sport and recreational facilities and reception services were not highly valued, but food outlets were. Appel-Meulenbroek (2008) identified facility services as an attractive attribute that increases the occupiers' satisfaction. However, in the study conducted by Ho et al. (2005), services such as cleaning and maintenance were not highly ranked attributes. Further, in a study by Bottom et al. (1998), reception services and the quality of the reception facilities were not highly valued real estate attributes. The role of security has been highlighted in the literature. Important security services comprise not only surveillance systems at the entrance and throughout the building, but also fire systems and access control (e.g. Sing et al. 2006, Ho et al. 2005).

Other real estate attributes related to the *building*, such as functionality, architecture, flexibility, indoor climate, and environmental impacts, have also got attention in research. In the study by Ho et al. (2005), functionality was the most important office quality factor for CBD office occupiers. In the study, functionality was affected by factors such as site shape, allowance floor plate sizes, floor-to-ceiling heights and loading features. In the same study by Ho et al. (2005), the control and performance of passenger lifts was seen as the third most important attribute. In addition, navigation features to the building and inside the building were highly ranked. Bottom et al. (1998) added that circulation throughout the building should be suitable also for disabled staff and visitors. Bottom et al. (1998) noticed in their study that the quality of sanitary facilities is relatively important for occupiers, but the supply of those facilities does not always meet the demand. Flexibility has been identified as an important attribute, as many authors have highlighted the important role of extension possibilities (Appel-Meulenbroek and Feijts 2007, Sing et al. 2006) and the ability to reduce

space (Leishman et al. 2003). In a study by Appel-Meuleenbroek (2008), the extension possibilities were classified as a factor that helps landlords keep the tenants in the premises.

In earlier studies it has been shown that the indoor climate - heating, ventilation and air conditioning (HVAC) as well as lighting - has an impact on the productivity of the employees (e.g., Seppänen 2005, Leaman and Bordass 2000). In the study conducted by Ho et al. (2005), the control and capacity of the HVAC was seen as the second most important quality attribute among occupiers. Bottom et al. (1998) found out that artificial and natural lighting is very important for organisations. In the same study, the stability of the power supply to the building was in great demand. Environmental friendliness is often highlighted in connection with the energy consumption of the building. By energy saving habits and technology, organisations can minimise costs. For example, Junnila (2008) found that in the studied organisations the saving in end-user energy would equal approx. 20 per cent of the overall electricity budgets of the companies.

There are several attributes that are related to the office *workspace* and work settings. It is possible that work settings support the company's image, social interaction, quiet working, innovation and employees' privacy, to name a few issues. In a study conducted by Bottom et al. (1998), it was found that the quality and presentation of finishes used in office space is considered important for organizations.

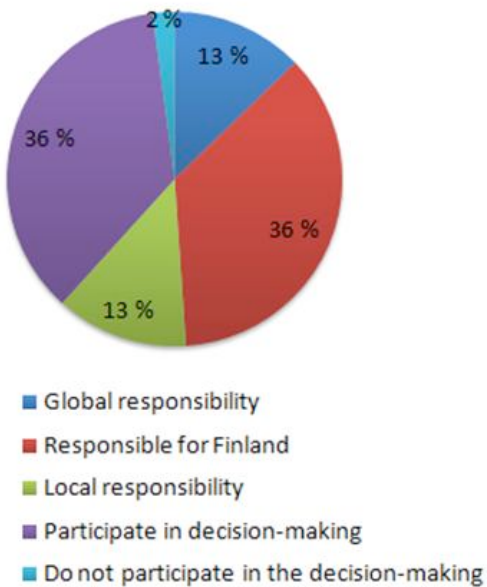
The workspace should be flexible for different kinds of uses for the premises, such as hot desking and teleworking. In a report by Hardy et al. (2008), a wide range of different physical and virtual work settings was described. A physical work setting, or a desk, can be located in an open space or in an enclosed room. They can be dedicated to one person or they can be for shared use. The work setting can be also planned for short-staying or for quiet working that requires concentration. A room or a desk can be bookable or not. Different kinds of informal places, such as a kitchen, copying rooms and corridors, are also work settings in which interaction often takes place. In addition, meeting rooms are more usually bookable enclosed rooms of different sizes. Beyond the office, organisations should notice that their employees might also work, for example, at home, in the train, car, hotel, airport, library or at their customers' premises. This kind of virtual working requires high-level IT. In a study by Bottom et al. (1998), the flexibility of the IT etc. was the third most important factor among 38 other features.

### **3. SURVEY DESIGN AND DATA ANALYSIS**

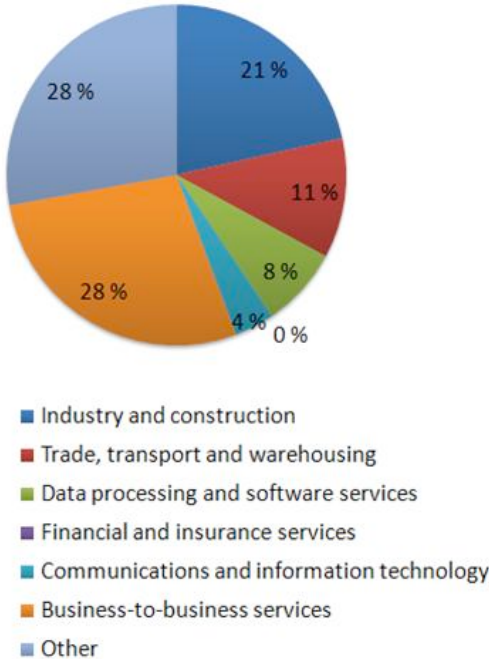
Understanding office occupiers' real estate attributes require data from a scale of various real estate elements. An internet based survey with email invitations was selected as the appropriate data collection method to study office occupiers' real estate attributes, since the focus was on arriving at a descriptive and precise analysis of the occupiers' evaluation of the real estate attributes. The survey consisted of a wide range of logical questions with multiple choice answers consisting of options that suit each respondent. Some open questions were added to the survey to get additional new insights.

The target group of the study was the management level responsible for corporate real estate in office occupier organisations. Figure 1 shows that the target group was attained; 98 per cent of the respondents are responsible at some level for corporate real estate. The two per cent of the respondents who were not involved with the decision making were excluded from the data.

The survey was carried out during spring-summer 2009 in two phases. The survey was sent via e-mail to one or two people in managing positions per organisation in the Helsinki Metropolitan Area (HMA), which is the most significant investment region for domestic and international investors in Finland. The HMA has a dominant position as the only large city region in Finland, comprising the capital city of Helsinki and neighbouring cities Espoo, Kauniainen and Vantaa, with a total of almost eight million square meters of office space. Altogether, the total office space in Finland is 10-11 million square meters. (KTI, 2009) The sample of the first phase was gathered from selected tenant organisations and was sent to 126 people; the return rate was approx. 27.7 per cent with 35 responses. The second phase was carried out straight after the first phase in June to ensure the similarity of the general market situation between the different phases. In this phase, the questionnaire was sent to 1,348 people in organisations with over 50 employees in the HMA. In the second phase, the return rate was approx. 4.5 per cent with 60 responses. The total amount of responses was 95 with a return rate of 6.4 per cent. Figure 2 shows the two largest business sectors of the respondents, *Business-to-business services* and *Other*, which consisted of, for example, pharmaceutical and educational institutions.



**Figure 1 The corporate real estate responsibility of the respondents**



**Figure 2 Distribution of the branches of the business of the respondents**

The questionnaire was developed by researcher brainstorming sessions, a workshop with industrial specialists and performance tests. In the first phase in spring 2009, the researchers

and other specialists had a total of seven brainstorming sessions to define the aim and to construct the questionnaire based on previous studies and on the expertise of the group. In March 2009, in the second phase, a workshop focusing on the survey was arranged for the industrial specialists. A draft of the questionnaire was sent out beforehand to give the possibility to get acquainted with the survey in advance. At the workshop, the structure and the questions were widely discussed in working groups of five to seven representatives. Researchers facilitated the discussions and made full notes, which were afterwards gathered together. A researcher brainstorming for examining and analysing the researchers' notes was arranged shortly after the workshop.

In the last phase after the modifications, the questionnaire was tested by the researchers and company representatives who had not been acquainted with the survey beforehand, in order to establish fresh and spontaneous views on the survey. Based on the feedback from the performance tests, the questionnaire was modified to its final form.

The survey consisted of six parts, starting with background and basic information of the organisation such as its business sector, geographic distribution of the organisation, and future prospects of the organisation. The second part consisted of questions related to the organisation's real estate strategy and standards, as well as the respondent's role regarding real estate related decisions and his sphere of competence. These elements constituted an understanding of the organisation and its operative surroundings. After this, the current space and the development of space needs were evaluated in order to have an opportunity to analyse the impact of the current premises on the gathered data. The last three parts concentrated on real estate attributes, which were divided into locational attributes, service attributes, office building attributes and workspace attributes. In each group, the attributes were defined based on previous studies, the workshop with industrial specialists and researcher brainstorming sessions. The respondents evaluated the attributes with a five step scale: *not important*, *less important*, *neutral*, *important to some extent*, and *very important*. The scale enabled the analysis of the importance and unimportance of the attribute for the occupiers. The attributes were analysed one by one and correlations were calculated between the attributes in the four groups by Kendall's tau ( $\tau$ ) test. Kendall's tau has been designed for discrete data with an ordinal scale (e.g., Sheskin 2007 and Duncan 1997). In addition, Spearman's rho value, which is another widely used measure for the strength of correlation, is always larger than Kendall's tau value (Sheskin 2007) and, thus, Kendall's tau test was selected to measure the strength of the correlations between variables to avoid bias. Kendall's tau measures the degree of direction between two sets of ranks with respect to the relative ordering of all possible pairs of objects (Sheskin 2007). Kendall's tau will get values between -1 and 1: a positive correlation indicates that both variables increase together (concordant pairs), whereas a negative correlation indicates that as one variable increases the other decreases (discordant pairs) (Sheskin 2007). In this study, the tau b test was used, and the values were calculated by a computer program called Statistical Package for the Social Science (SPSS) as follows (Duncan 1997):

$$\tau_b = (C - D) / \sqrt{(T - T_{11}) * (T - T_{22})}$$

in which the excess of concordant pairs ( $C$ ) over discordant pairs ( $D$ ) are divided by the square root of the product of the total number of pairs ( $T$ ) minus the number of the tied pairs for one variable ( $T_1$ ) and the total number of pairs ( $T$ ) minus the number of tied pairs for the other variable ( $T_2$ ).

#### 4. RESULTS

The importance and unimportance of the attributes are described in three ways. First, the *important* and *important to some extent* answers were summed up together to form an importance figure. *Not important* and *less important* answers were also combined together to form an unimportance figure. This way, the consensus and differences in the attributes were better illustrated.

Second, balance figures (%) were calculated for each attribute. The balance figure can have values from +100 per cent to -100 per cent. A positive balance figure ( $0 \leq \text{balance figure} \leq 100$ ) implies importance of the attribute and a negative balance figure ( $0 > \text{balance figure} \geq -100$ ) is a sign of the unimportance of the attribute. In other words, the closer the value is to +100 per cent, the more important the attribute is, and, thus, the closer the value is to -100 per cent the more unimportant the attribute is. In this study, the highest balance figure was approx. 95.5 per cent and the lowest approx. -61.8 per cent. None of the attributes was recognised as highly unimportant but the most unimportant attributes can be recognised.

Third, according to the balance figure, the attributes were ranked in order. There were 76 attributes with a positive balance figure, which were ranked from 1 to 76 (1 = most important attribute) and 23 attributes with negative balance figure, which were ranked from -1 to -23 (-1 = least important / the most unimportant attribute). In general, attributes were more frequently rated as important than as unimportant.

In general, locational, building and workspace attributes were identified to be more important for the larger part of the studied organisations. 13 service attributes were recognised to be unimportant for occupiers while there were only a total of 23 unimportant attributes. In addition, only four service attributes reached the level of over 60 per cent in the balance figure and the highest ranked service attribute in the entire study is found at the 14th place.

In this study, the amount of neutral answers increases when the importance of attribute decreases. It seems that the studied organisations are unanimous about the highly important attributes, but any particularly unimportant real estate attribute was not found. The most and least preferred real estate attributes are discussed next.

##### 4.1 Location attributes

In this study, there were a total of 18 location attributes. Only four attributes were identified to be unimportant for occupiers, and the rest of the attributes, a total of 14, were considered to be important.

According to the results, a significant number of the studied organisations value a location near public transportation, which was also the fourth most important attribute in the entire study (see table 1). In addition, a significant number of the organisations value adequate parking spaces near the office, and this was the fifth most important attribute in the entire study. According to Kendall's tau test, a positive correlation between parking spaces and accessibility by one's own car was found ( $\tau = 0.583$  at the 0.01 level). However, most respondents prefer the adequacy of parking spaces to accessibility by one's own car. Furthermore, a significant part of the respondents prefer to be located in a clean and safe area, and a strong correlation was also found between those attributes ( $\tau = 0.772$  at the 0.01 level).

**Table 1 The highest and lowest scoring location attributes**

Attributes	Important (%) *	Unimportant (%) **	Balance figure (%)	Rank in the study
To locate near public transportation	94.4	3.7	91.0	4
Adequacy of parking spaces near the office	93.3	3.7	89.9	5
Safety of the area	88.8	2.3	86.5	8***
Cleanliness of the area	85.4	1.1	84.3	11
To locate near private car transportation possibilities	77.5	4.5	73.0	25***
To locate near employees	74.2	4.5	69.7	27***
To locate near airport	28.1	33.7	-5.6	-23
To locate near business services	15.7	53.9	-38.2	-12
Cultural history of the area	7.9	60.7	-52.8	-6
Located near competitors	4.5	61.8	-57.3	-3***

\* The portion (%) of answers rating the attribute very important or important to some extent  
\*\* The portion (%) of answers rating the attribute not important or less important  
\*\*\* Equally ranked with at least one other attribute

A location near competitors and a location near other business service providers were identified to be unimportant attributes for occupiers, which is not in line with the traditional view. However, based on Kendall's tau test, organisations that for example prefer to locate near competitors also prefer to locate closer to the business service providers ( $\tau = 0.519$  at the 0.01 level), and those who prefer to locate near partners also prefer to locate closer to other interest groups and competitors ( $\tau = 0.502$  at the 0.01 level). In addition, organisations that prefer to locate near customers also prefer to locate closer to the city centre ( $\tau = 0.480$  at the 0.01 level). However, a strong connection between preferring to locate in the proximity of the city centre and in the proximity of partners, competitors or other interest groups was not found. In addition, the image of the area was not as important for the occupiers as was assumed; the balance figure was only approx. 44 per cent. The cultural history of the area was the sixth most unimportant attribute in the entire study.

Proximity to the airport was identified as unimportant for the occupiers. However, a strong generalisation cannot be done due to the fact that approx. 34 per cent of the respondents said this is less important or not important, and approx. 28 per cent of the respondents said it is very important or important to some extent.

## 4.2 Service attributes

A total of 29 service attributes were included in the questionnaire: 14 service attributes that are supplied within walking distance and 15 service attributes supplied in the office building. A total of 13 service attributes were identified to be unimportant, of which 7 were in the building and 6 within walking distance.

In general, the important attributes were not ranked as high in importance as the important attributes in other attribute groups. There was only one attribute that reached a balance figure of over 80 per cent (see table 2). In addition, there was a low but statistically significant correlation between most of the service attributes. Based on Kendall's tau test, there is a higher connection with similar service attributes such as a restaurant within walking distance and a café within walking distance ( $\tau = 0.539$  at the 0.01 level), or car washing service in the office building and dry cleaning service in the building ( $\tau = 0.661$  at the 0.01 level). However, there are some exceptions. For example, a significant part of the studied organisations said it is important to have a staff restaurant in the office building, but there was no statistically significant correlation between a staff restaurant and a restaurant within walking distance. However, approx. 63 per cent of the respondents stated that it is important to have a restaurant within walking distance, and only approx. 10 per cent said it is unimportant to have a staff restaurant in the building. In Finland and in other Nordic countries, it is common to have two warm meals per day, which might affect the positive attitude towards a staff restaurant. If the same question is asked e.g. in Great Britain the result could be different.

The highest ranked service attribute and the attribute ranked 14<sup>th</sup> in the entire study was the availability of bookable meeting rooms which are shared with other organisations in the building. This could be an indication of difficulties in having enough suitable meeting rooms, especially, for example, at the busiest time of the year and for bigger business events.

**Table 2 The highest and lowest scoring service attributes**

Attributes	Important (%) *	Unimportant (%) **	Balance figure (%)	Rank in the study
Public meeting rooms that can be booked in the building	87.6	5.6	82.0	14
Staff restaurant that serves lunch in the building	85.2	10.2	75.0	23
Reception services in the building	77.5	11.2	66.3	31***
Occupational health services within walking distance	74.2	7.9	66.4	31***
Dry cleaning services within walking distance	13.5	57.3	-43.8	-10
Beauty care services, for example a hairdresser, in the building	12.4	59.6	-47.2	-8
Dry cleaning services in the building	9.0	59.6	-50.6	-7
Car rental services within walking distance	10.1	67.4	-57.3	-3***
Day care within walking distance	6.7	61.8	-55.1	-5
Cultural services within walking distance	5.6	67.4	-61.8	-1
Day care in the building	4.5	65.2	-60.7	-2

\* The portion (%) of answers rating the attribute very important or important to some extent  
 \*\* The portion (%) of answers rating the attribute not important or less important  
 \*\*\* Equally ranked with at least one other attribute

An interesting observation can be made concerning the occupational health services within walking distance and in the office building. According to the balance figure, it is more important that the occupational health services are within walking distance (balance figure approx. 66 per cent) than in the same office building (balance figure approx. 36 percent).

Day care services in the office building and cultural services within walking distance were the two most unimportant attributes in the entire study. Day care services within walking distance were also identified to be unimportant for occupiers. One reason why day care services were not highly ranked is the fact that in Finland it is the responsibility of municipalities to arrange day care. Dry cleaning services and beauty services in the building and within walking distance were also not important for organisations. Another unimportant attribute was car rental services, which was also the third least important attribute in the entire study.

### **4.3 Building attributes**

A total of 22 building attributes were analysed in this study. Most of the building attributes were identified to be important for the occupiers. Only two attributes were identified to be unimportant (see table 3).

The adjustability of temperature and air conditioning were the two most important attributes in the entire study, and it can be argued that all the studied occupiers value those attributes. Nobody rated the adjustability of temperature as unimportant. There was the highest positive correlation between the two above-mentioned attributes ( $\tau = 1.000$  at the 0.01 level). In addition, statistics showed that organisations that value adjustability of temperature and air conditioning also value adjustable lighting, which was the third most important factor among building attributes.

Approx. 88 per cent, which equals the amount of organisations that ranked the adjustability of lighting to be very important or important to some extent, prefer to have a shower and a dressing room. Organisations that prefer to have a shower and a dressing room are also more likely to prefer to have place for storing bikes ( $\tau = 0.494$  at the 0.01 level). Further, the majority of occupiers who value having an elevator in the building also value the suitability of the building for disabled people ( $\tau = 0.493$  at the 0.01 level), which sounds reasonable.

The energy efficiency of the building was the sixth most important attribute among building attributes. According to the statistics, organisations that value environmentally friendly surface materials also value recycling possibilities ( $\tau = 0.521$  at the 0.01 level), energy efficient buildings ( $\tau = 0.556$  at the 0.01 level) and environmentally certificated buildings, e.g. LEED buildings ( $\tau = 0.603$  at the 0.01 level). Other correlations between environmental attributes of the building were also found, which could indicate that if an organisation pays attention to an environmental issue, it probably also values other environmental real estate attributes more. Surprisingly, there was no strong statistical correlation between energy efficiency and the adjustability of temperature and air conditioning.

The attribute concerning the first impression when stepping into the building was the 16th most important attribute in the entire study. According to Kendall's tau test, there is a positive connection between the first impression and the façade of the office building ( $\tau = 0.573$  at the 0.01 level). The flexibility of the premises (e.g., transformation between different work settings) is also important for occupiers. It turns out that it is more important to have the opportunity to reduce space (rank 24) than to take on more space in the building (rank 27). It can be argued that this is impacted by the credit crunch, but the volume of the impact is difficult to estimate. We also asked if organisations prefer to have the opportunity to take on more space on the same floor, but this was not a highly ranked attribute (rank 39).

Only two unimportant building attributes were found in this study, and they were related to the image of the building. It was found out that the studied organisations do not think that it is important to have customers or interest groups and other players from the same business field in the same building to enhance the image of the organisation. However, the unanimity of the answers was not high

**Table 3 The highest and lowest scoring building attributes**

Attributes	Important (%) *	Unimportant (%) **	Balance figure (%)	Rank in the study
Adjustability of temperature	95.5	0.0	95.5	1
Adjustability of air conditioning	95.5	1.1	94.4	2
Adjustability of lighting	87.6	1.1	86.5	8***
Elevator	87.6	4.5	83.2	12
Shower and dressing room	87.6	2.3	85.4	10
The energy efficiency of the building	85.2	2.3	83.0	13
The first impression when stepping into the building	83.2	2.3	80.9	16***
Building that has customers and other interest groups	18.2	42.1	-23.9	-18***
Building that has other players in the same business field	13.5	58.4	-44.9	-9

\* The portion (%) of answers rating the attribute very important or important to some extent  
\*\* The portion (%) of answers rating the attribute not important or less important  
\*\*\* Equally ranked with at least one other attribute

#### 4.4 Workspace attributes

A total of 30 space attributes were ranked according to their importance among occupiers. 26 attributes were recognised to be important for occupiers and only 4 to be unimportant.

A significant part of the respondent organisations said that it is important to have small and large meeting rooms in the office (see table 4). There was also a strong correlation between these two attributes ( $\tau = 0.743$  at the 0.01 level). In addition, a significant part of the respondents, 89 per cent, stated that it is important to have the possibility to archive and storage documents digitally; none of the respondents said that this is unimportant.

A majority of the studied organisations value a space that supports sociality and tacit knowledge sharing in the office. According to the results, those organisations also prefer more support for team work ( $\tau = 0.708$  at the 0.01 level) and innovations ( $\tau = 0.521$  at the 0.01 level). In addition, organisations that value the workspace supporting the image of the

company also value supporting the values of the organisation through space solutions ( $\tau = 0.662$  at the 0.01 level).

A majority of the respondents answered that it is unimportant to control employees through space solutions. In addition, approx. 43 per cent of the respondents said it is unimportant and approx. 21 per cent of the respondents said it is important to use virtual cooperation bases such as Second Life. In addition, organisations that value virtual cooperation bases also value virtual communication possibilities such as Skype ( $\tau = 0.549$  at the 0.01 level).

Less than half of the respondents considered touchdown and hot-desking work settings as unimportant. Hot-desking was considered to be more unimportant than touchdown work settings. According to the results, organisations that value hot-desking also value touchdown work settings more ( $\tau = 0.661$  at the 0.01 level). In Finland, these kinds of new work settings are not very widely known and used, which might explain the unimportance of the attributes.

**Table 4 The highest and lowest scoring workspace attributes**

Attributes	Important (%) *	Unimportant (%) **	Balance figure (%)	Rank in the entire study
Small meeting room	96.6	2.3	94.3	3
Large meeting room	92.1	3.4	88.6	7
The possibility to archive and storage documents digitally	88.8	0	88.8	6
Wireless internet connection in the office	86.5	5.6	80.9	16***
The possibility to influence the development of the premises	84.3	2.3	82.0	14***
The possibility to adjust the furniture	84.3	5.6	78.7	19
Space supports sociality and tacit knowledge sharing	84.3	3.4	80.9	16***
Touchdown	29.9	40.2	-10.3	-22
Hot-desking	22.7	46.6	-23.9	-18***
The opportunity to use virtual cooperation bases (e.g. Second Life)	21.4	42.9	-21.4	-20
Space enables controlling the employees	13.5	56.2	-42.7	-11

\* The portion (%) of answers rating the attribute very important or important to some extent  
 \*\* The portion (%) of answers rating the attribute not important or less important  
 \*\*\* Equally ranked with at least one other attribute

## 5. DISCUSSION

In this study, the aim was to identify real estate attributes that are most and least preferred by office occupiers. The most and least preferred attributes in four groups, namely location, building, service and workspace attributes, were studied through a questionnaire that was sent to organisations' management level responsible for corporate real estate.

The scale of the real estate attributes in the study was wide, but in general the results were in line with previous studies. For example, transportation, parking, and HVAC possibilities were identified as highly important, and service related attributes as less important in previous studies, too. However, at a more detailed level there were also some differences; for example,

in this study the functionality of the premises and the image of the area were not as highly ranked as in the previous studies. In addition, the importance of some of the attributes, such as meeting rooms, showers and dressing rooms, a wireless internet connection, an elevator, the energy efficiency of the building and the possibility to influence the development of the premises, was highlighted more than in previous studies. The unimportance of locating near customers and other interest groups also diverged from the results of previous studies.

It was found out that there are some attributes that all organisations highly value; e.g., adjustability of temperature and air conditioning, proximity to public transportation, adequate parking space and meeting rooms. The unimportant attributes were not as clearly defined as the important attributes because of the greater number of respondents giving a neutral answer for the unimportant attributes. In this study, the attributes that were part of the location, building and workspace attribute groups were the most preferred, and the least preferred attributes were part of the service attribute group, e.g., cultural services, day care and car rental. Proximity to competitors was also an unimportant attribute. However, there is an interesting asymmetry in the results: the scale of rating an attribute as important is much wider than that of rating an attribute as unimportant.

It would be necessary to study the attributes that did not stand up as highly important more. Based on these attributes, a more transparent picture of what kinds of attributes are important to different kinds of organisations can be achieved. In addition, it would be valuable to create organisation profiles based on the occupiers' preferences. The profiles would describe what kinds of organisations prefer which sets of attributes.

In this research, the correlations between attributes inside the groups were studied. It could be interesting to also study the relationships between the groups. In the future, it could be valuable to also understand more deeply the role of the different real estate attributes and how the attributes affect the relocation decisions of the office occupiers. For example, some attributes might be must-be attributes for certain types of organisations, whereas some attributes might be important but organisations are not willing to pay extra for them.

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