



FLEXIBLE WORKPLACE BOUNDARIES

A study of added value of flexible office accommodation boundaries in organizations

THESIS REPORT

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4743881

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Flexible workplace boundaries

A study of added value of flexible office accommodation
boundaries in organizations.

By

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PREFACE

This document presents my master thesis research at the TU delft, which I started working from September 2018. Ever since the beginning of my Bachelor of Architecture. I believed that designing of buildings was more than just aesthetics and should reflect and fulfil the needs of the users. This link between the users and the built environment fascinates me even today, especially the workplaces, where people spend most of their time. Also, the advancements in technology and innovations have made possible for new concepts to make the workplaces more meaningful and efficient. Therefore, this inspired me to research more on the connection between people and the workplaces and to find out interesting findings that could help in making the workplaces more connected to the users.

This report's main topic revolves around the flexible office concepts and the main vision of my research was therefore to find out potential advantages these concepts have and further I went on to make the connection of the factors that could help in enhance the value of flexible workplaces on organization. Also, while conducting this research I came along many insights on the challenges of the flexible workplaces that the users face and the impact of this on their work performances, which was also included within this research. The practical aspect of this research was done through conducting interviews, case studies and surveys in leading organization that have adopted flexible working.

Last but not the least, this thesis is written as part of my master graduation program of master track Management in built-environment and marks the end of my master studies at Tu Delft.

Enjoy reading!

ABSTRACT

Flexible working is the trending discussion between the professionals in the field of facility management and corporate real estate management. The technological developments and the change in the need of employees have reformed the requirements of an ideal workplace. Because of these new drivers more and more organizations are opting flexibility in their accommodation strategies to gain competitive advantage. But from recent studies, flexible workplace has been receiving negative criticism from the perspective of employees. Therefore, the main goal of this research is to identify the *perceived* added value of adopting flexible workplace boundaries in the organizations, both directly and indirectly of how it adds value to the core business and wealth of the firm. The research design uses mixed approach of qualitative and quantitative research. However, the quantitative part is limited and used just to validate the qualitative data. To achieve this objective, the research attempts an empirical study by conducting surveys and interviews in organizations' that have adopted these kinds of flexible boundaries. And hence the research involves study in two cases located in Amsterdam. The main goal of this research is finding out the actual added values to organization by comparing the findings between the organizations and employee perceptions. Furthermore, within the research, the potential benefits and challenges the organizations considered are also observed and relevant findings are made. These final outcomes of the research are intended to help organization make better decision while adopting flexible accommodation strategies.

Keywords: Flexibility, Workplace boundaries, Corporate Real estate, Added value, Flexible working, Organizations

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It was also an honour to be able to discuss my topic with some of the interviewees from the companies JLL and PwC and welcoming me to their office for the interviews. I would like to thank Mr. Owen Zachariasse and Ms. Danielle Menken for their valuable time and insights from the professional view. Also, would like to thank the employees of JLL and PwC for taking their time to fill in the questionnaires.

Certainly, I would like to express my gratitude to my parents and family for their support. And also, my friends for their great support. And a special thanks to Arjun and Aishwarya for being there throughout my master journey and being my family here in the Netherlands.

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LIST OF ABBREVIATIONS

AWB	Activity based working
CBD	Central business district
CO ₂	Carbon-di-oxide
CRE	Corporate real estate
CREM	Corporate real estate management
Flex	Flexible office (space characteristic)
FM	Facility management
FWA	Flexible workplace arrangements
HR	Human Resources (department)
HRM	Human Resource management
IT	Information Technology
JLL	Jones Lang LaSalle (company)
MBE	Management in the Built Environment
NWOW	New ways of working
PREM	Public real estate management
PwC	PricewaterhouseCooper (company)
RE	Real estate
REM	Real estate management

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CHAPTER 1: INTRODUCTION.

In this chapter, the research proposal will be introduced. The first section is a broad discussion of background information about the topic and the prevalent knowledge gap. This is followed by a concise problem analysis and formulating the problem statement. Further, the relevance of this research will be discussed along with the potential outcome of the research. Lastly, the main research question and sub-questions are formulated.

1.1. Introduction

Within the last few years, the concept of accommodating employees in innovative office environments started gaining popularity. More focus is now been given to the office design. Where the design evolved from closed to more open and dispersed. With this trend gaining popularity more and more organizations are adopting flexibility in their workplace accommodation boundaries. This includes both, reduced boundaries inside the premises and the ability to work beyond the boundary of the office.

This trend also known as the flexible working concept is widely discussed about its actual benefits to the organizations and its potential challenges. Many facility managers and corporate real estate managers believe that this concept might offer many opportunities such as optimizing the workplace, reduced costs, enhancing the collaboration of employees with different departments, increase in agility of employees, increase in social interaction and enhanced user experience (CoWork, 2018). However, this concept has also resulted in criticism. Most of the challenges of these flexible boundaries are associated with the user experience. The employees have complained of lack of privacy and hygiene, difficulty in accessing colleagues and lack of social cohesion which has led to the increased doubt of the effectiveness of achieving flexible boundary. Adding to the challenges, companies now are measuring their success in a different way which focuses more on the well-being of the employees rather than just only profits as a performance indicator (Voordt & Jensen, 2018). Therefore, making it unclear whether this new concept is doing more bad than good to the organization. Hence, there is a gap in understating the real benefits of this new concept of flexible boundaries and whether or not it adds value to the organization in reality.

Therefore, this research is an attempt to understand better the added values of achieving flexibility within the workplace boundaries. The focus of this research is identifying and quantifying the real benefits and challenges from theory and from practice. The findings of this research can help fill

the gap and can also help organizations and managers better understand the effectiveness of the new concept of flexible boundaries.

1.2. Problem statement.

The situation explained in the previous section provided us that there is a gap in understanding the potential benefits and challenges the flexible workplace boundaries have. Although the concept has been gaining popularity but there is a lack of understanding of the actual potential of this concept. This is also because there is a shift of organizations focus from just minimizing costs to other factors such as well-being of the employees. Making it more difficult to measure the real added value of having the flexible boundaries. One way of identifying the added values is by looking at theories of added value through corporate real estate management. Within the theories of CREM numerous authors have attempted to measure the added value of flexibility within organizations. Hence these theories can also be used to measure the added values of having office boundaries which are flexible.

Bearing in mind the situation explained before regarding identifying the actual benefits and challenges of flexible boundaries, the final research problem can be identified as:

‘Although the flexible workplace environment is gaining popularity among organizations, but the actual benefits or the added value of this flexibility is not known.’ The theories of corporate real estate management on flexibility can help identify and measure the added value of the flexible workplace.

1.3. Research Scope

After stating the problem in the previous section, the paragraphs below will elaborate on the research objectives, position of the research within MBE, research outcome, and at last the theoretical and scientific relevance of this research.

Research objectives

The goal of this research is to add knowledge and help organization better understand the benefits that flexibility of boundaries can create to the organization. This research is intended to add knowledge to the discipline Management in the Built Environment as well as improvement of my own knowledge. The thesis is intended to provide new theoretical insights to researchers, organizations and as usable reference for future students working on similar field. Therefore, the main objectives of this research are as follows:

- Expand knowledge on adding value through flexible boundaries

- Recognize challenges and ways organizations can mitigate these challenges
- Expand my own knowledge within this field.

Position of the research within the graduation laboratory and MBE

This research falls under the graduation laboratory REM (real estate management), which is organized under the master track MBE (Management in built-environment). The main goal of this research was finding the perceived added value of adopting flexible office boundaries on the organization. And recognizing the added value of flexibility in real estate directly links to the (C)REM practice (corporate real estate management) (De Jonge et al., 2009).

Corporate real estate management (CREM) aims to align the portfolio and services to the needs of the core business, to obtain maximum added value for the business and to contribute optimally to the overall performance of the organisation (Voordt & Jensen, 2018) (G. Dewulf, Krumm, & Jonge, 2000). According to EN 15221-1, facilities management (FM) is the integration of processes within an organisation to maintain and develop the agreed services, which support and improve the effectiveness of its primary activities (CEN, 2006). In the new ISO standard, FM is also linked to the quality of life (ISO, 2017a). Another related concept is usability, which may be defined as a combination of effectiveness (providing the right output), efficiency (using the right input) and satisfaction or experience of clients, customers and end users (Alexander, 2005; ISO, 2017b). In both definitions of CREM and FM, supporting (business) processes and adding value to the organisation are key concepts. And this report focusses on the identifying criteria of value-adding corporate real estate and facilities management and discusses which indicators can be used to measure effectiveness of workplace performance and the added value of workplace interventions for an organisation. Therefore, it can be understood that it lies well within the field of CREM as the main aim of CREM is to add value to the organizations by aligning the real estate strategies to the organizational goals.

Apart from that, the main research not only focuses merely on the physical aspect of the office work environments but also on the perceived benefits for the organizations by proper management which could improve the added values. The final outcome of the research is expected to help the CRE managers, organization and the different stakeholders in making a decision of choosing the right type of flexibility by measuring the risks, challenges and benefits. Therefore, this topic fits well within the master track MBE and the master program architecture urbanism and building sciences. As it touches not only the physical designing aspect of work environments but also managing of accommodation with proper strategies which aligns the goals of organization.

Deliverables

The final result of this research will be a complete report, that will answer the questions formulated in the research. The data collected from literature review, interviews and surveys, will provide materials for other interested researchers working in this field.

Theoretical

As mentioned within Paragraph 1.3, this research aims to fill a theoretical gap of knowledge for this faculty as well as the discipline of CREM in general. Therefore, for the theoretical group, both professional researchers as well as students will be addressed. To make the piece readable for the latter, basic concepts which are presumably well-known by the professionals, will be discussed and explained briefly. The attempt as will be made to bring different theoretical concepts together as well as bridging the gap between theory and practice, reflects the value of this piece for the professional researcher.

Practical

The same accounts for practitioners of the discipline, the leaders of CRE departments as well as the strategic top of the overall organization. This thesis aims to provide these practitioners an argumentation for such decisions to be made in the future.

1.4. Research relevance

Societal relevance

Using the office buildings more efficiently, by reduction of space and energy used will also contribute to the circularity goals. Also, the construction industry generates around 35% of CO₂ emissions (Thibaut Abergel, 2017). Therefore, the building stock can act as an important aspect in reducing the overall CO₂ around the globe. Considering this situation, flexible workplaces poses great opportunity in achieving sustainability, by not only reducing the unoccupied spaces but also can reduce CO₂ emissions by reducing the need to travel. Therefore, it's necessary that people are aware of the benefits of flexible offices so that they can better contribute to overall sustainability.

This research also focuses on the aspect of employee well-being of employees. The research intends to look at the user experience side, where the challenges and concerns about the flexible workplaces are studied. Besides that, awareness among organization on the employee wellbeing is becoming a top priority. Therefore, this research can provide insights for organizations to improve well-being of their employees through flexible workplaces.

Scientific relevance

Surveys and trends have been indicating as increased demand for flexible working among organizations to reduce their building footprint and for accommodation space optimization. The organizations see a lot of potential not only in terms of reduction of costs and space but also improved well-being of employees by allowing them to work from anywhere (CoWork, 2018)

(Rossall, Armstrong, & Dunn, 2002). On the other hand, many articles and surveys also state the drawbacks of flexible working, resulted by unsatisfied employees (Thelosen, 2018). Many researches have also shown a scientific link between flexible workplace on productivity, efficiency and job performance of users (Wessels, 2017). Another approach of this research was on the implications of flexible workplaces to increase team and organizations performance (Clarke & Holdsworth, 2017).

Similarly, this research aims to identify the scientific link between the flexible workplace and the increase in productivity, satisfaction, innovation within the organization. Also, the identified connection can help in further researches relating to designing of spaces or indicating how technology can be used to enhance user experience.

1.5. Research Questions

Traditionally corporate real estate management involved cost reduction and short-term plans. But as described in the introduction chapter, now due to the changing trends there is a need for corporate real estate to adapt to these new ways and strategies, which can significantly add value to the organization. Because the property portfolio of a firm is the second largest business cost after the labor costs (Edwards, 2004) and therefore proper planning and well-designed strategies can make a significant difference. Due to the increasing innovation in technology and communication the corporate accommodation can be planned even better by optimally using the space and elimination of physical boundaries.

There have been many researches to study how these new ways of working adds value to the firms. But there is very little known to what extent does this adds value to the corporate real estate management. Therefore, it is relevant to study, as organizations can adopt the suitable strategies that matches the main goal of the company. Therefore, in this research I would like study how flexibility of workplace boundaries add value to the organizations business and the effect of these strategies on the organization and people. Hence the main research question formulated here is

‘Does flexibility in workplace boundaries adds value to the organizations?’.

The question has five aspects. First one is flexibility, the second one is workplace, followed by boundaries and organizations the last one is adding value. Depending on these five aspects the sub questions are developed to cover all these aspects and then to finally answer the question.

1. What was the purpose of boundaries at workplace and how are the new flexible boundaries classified?

This question will be answered by the literature review consisting of explaining the emergence of boundaries and that factors that led to create these boundaries. Further, the new

terminologies of flexible boundaries are identified and classified. To answer this sub-question, further two more sub-questions are formulated.

- i) How did workplace boundaries evolve in organizations?
- ii) How can the new flexible boundaries be classified?

2. What are criterions used in the literature of CREM to measure the added value of flexibility?

This question will be answered by literature review of the theories CREM. After which the different kinds of flexibility that are mentioned within the theories of CREM will be noted. And lastly the criterions to measure the added value of flexibility will be identified from literature of CREM.

- i) How do organization function and fulfil goals?
- ii) What is the role of CREM in organizational goals?
- iii) What are the flexibilities classified in CREM?

3. Which are the most crucial added values considered by organizations and how is it valued within organizations in practice?

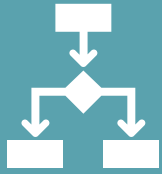
This question will be answered by studying cases of two organizations that have implemented the flexible working boundaries. The answer will be findings that indicate which how much value is actually being added to the organizations. by adopting these measures.

4. What are some of the challenges and risks of adopting flexible boundaries and how are these risks been mitigated by the organizations?

This question will be answered by studying cases of two organizations and the challenges they faced and the risk mitigations measures that they used. Then the findings are summarized to provide the challenges that might arise and the possible measures that can be used.

5. What are the factors that influence the success of flexible boundaries?

This question will be answered by considering the findings of previous sections and further analysing the organizations and the factors that influence the degree of success and how to optimize it.



RESEACH APPROACH

CHAPTER 2: RESEARCH APPROACH

This chapter will elaborate on the research approaches. After the formulation of research questions in the previous chapter, the suitable research design and methods will be used accordingly. The main method for the empirical research involves case studies. Furthermore, data is collected from case studies to derive results for the main question.

2.1. Research Design

The main applied research method here is a hybrid method. To answer this question, a hybrid methodology is required, wherein a cyclical process is carried out, in which the empirical process (fieldwork) is linked to the operational process (literature) (Barendse, Binnekamp, De Graaf, Van Gunsteren, & Van Loon, 2012). The process requires, input, and this can be obtained literature study. The first part will involve broad studying of the field from finding out and studying information of all the prevailing concepts of flexibility of boundaries and future of workplaces. Also, studying of how these came into existence etc. Further, the questions are formulated that will answer the problems in the field. The theoretical research part will answer the question with the help of the background literature. With the theoretical input a measurement tool is developed, and various alternatives are tested to check to what extent value is added. The next step involves empirical research, where a qualitative study is done with interviews, surveys, case studies etc. Then the data collected is compared with practice and a mix of quantitative and qualitative study is carried out. This mixed approach is mentioned in the next section.

Mixed method approach

This research will use the mixed method design for the research, as the research involves collection of both the qualitative and quantitative data. Several ways of mixed design methods are used, out of which this research will use one of the six design methods of (Creswell & Clark, 2017). This method is called the convergent parallel design and is depicted in figure 2. The convergent parallel design allows the simultaneous collection of both the qualitative and quantitative data. Hence both will have the equal set of priority. The resulting analysis from these both methods will then be merged in order to form an integrated whole (Bryman, 2016). This kind of method will help me offset the weakness of both the quantitative and qualitative research by capitalizing on the strengths of both. For example, within this research I collected the quantitative data by sending online questionnaire to the users of flexible working at the selected organization, by using the social media platform and also by sending emails. And qualitative data was collected from semi-structured interviews with representatives of organizations such as the corporate real estate executives, managers and HR.

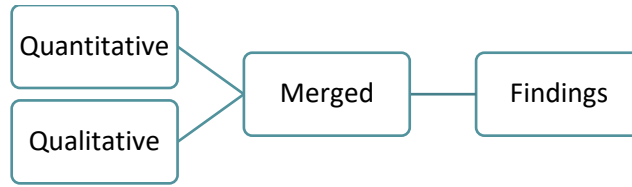


Figure 2. showing the convergent parallel design, which is a mixed design approach (Bryman, 2016).

2.2. Research Structure

In order to answer the research, question the following structure of research is used as shown in Figure 2.1. below. This will also serve as the thesis structure. The research is divided into three different stages and further these stages are divided into chapters. The three phases are the Exploration and identification phase, Elaboration phase and final phase. These phases are elaborated more in further sections.

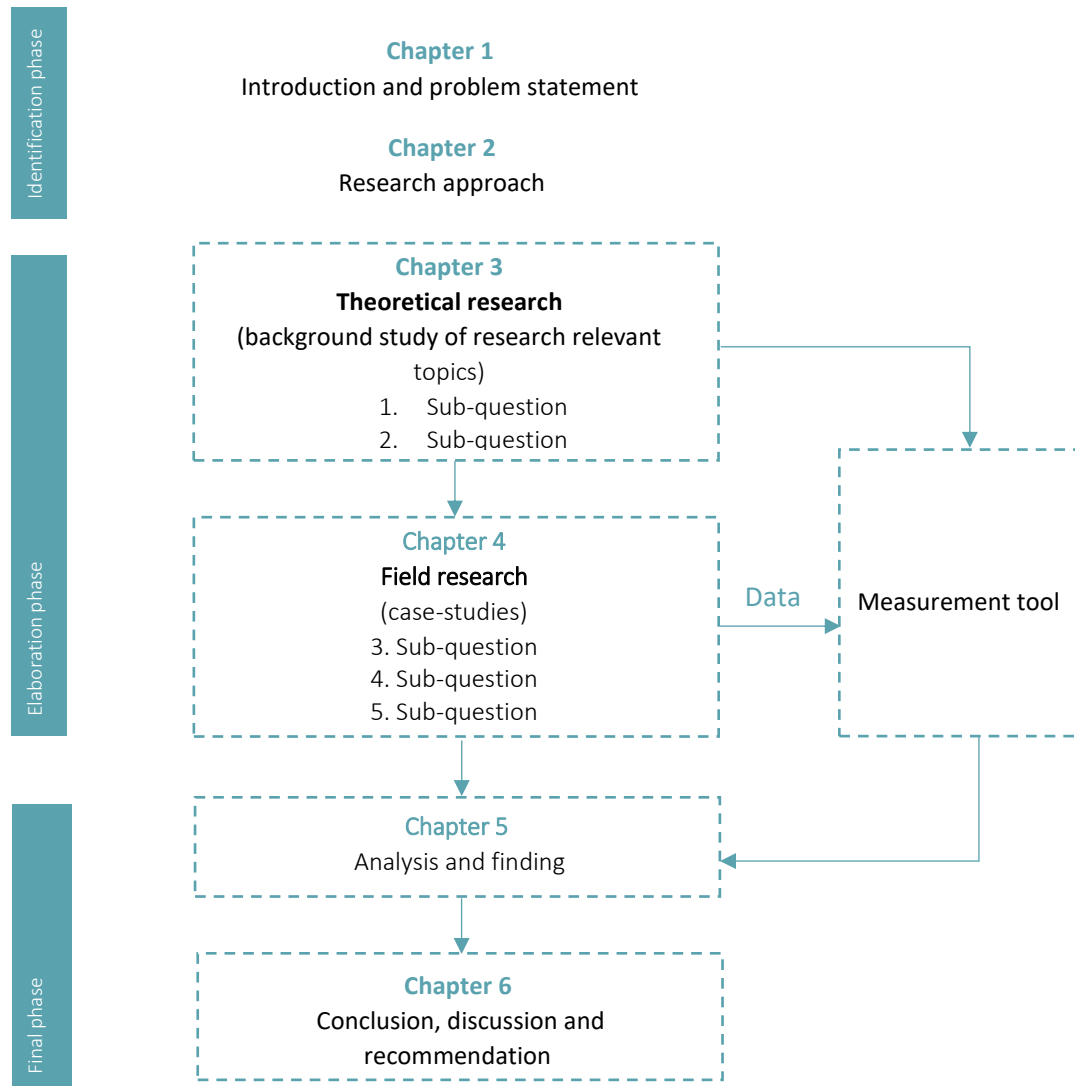


Figure 2.1. Structure of the research

Exploration and identification phase

The first phase is the *Exploration and identification phase*, this is the first chapter, which will start with the area of research and the prevailing problem and hence formulating the problem statement. Further, the problem will be analyzed resulting in determining the main research question and the sub questions. This is followed by chapter 3 which will include the research approach. It should be noted that these parts of the research are constantly changed as the research progressed.

Elaboration phase

Next the Elaboration phase will consist of the theoretical research and fieldwork. Theoretical research is the study of literature part, which involves the basic framing of the research by identifying all the general existing theories of boundaries, flexibility and added value of CREM that need to be analyzed. This is done by carrying out a literature study of all the existing concepts of boundaries and flexibility and their relationship. The literature review will answer the sub-question 1 & 2. The next part of this phase is the empirical research or the field research, which involves describing the relevant practices. In this part the theoretical framework formulated will be used in practice and further criterions to measure will also be formulated and weighed. This part will also involve finding out the drivers to blur boundaries from fieldwork and pilot study in a company working with NWOW or similar concepts, to help find out the demand or need from the market. This will thus answer the sub-question 3,4 and 5. This fieldwork or pilot study in a company can will provide the relevant information of the working of these concepts in the actual market and their feasibility is checked. Some pragmatic consideration that are covered while selection of the company to carry the pilot study are the accessibility and availability of data, along with the readiness to cooperate. Apart from the pilot study in a company more data is collected through surveys and interviews. In these interviews, the existing real-estate strategies will be questioned to assess the role of corporate real estate in the company portfolio. E.g. what are the drivers behind these decisions. Interview are conducted with different stakeholders involved in this process and their perspective about the concepts of flexibility in workplace boundaries are noted.

Further, if time prevails another analysis chapter will be included based on case study to get a more descriptive and in-depth knowledge. Appropriate cases based on selection criterions are chosen to use the measurement tool, through which general conclusions can be drawn. The selection criteria for the case are made in advance. The first criterion is the location of the organization, must be in the Netherlands to prevent the complexity of foreign aspects. The organization can operate international as well. The second criterion is the type of innovation. The organization with an innovative and new strategy will be of first preference. The third criterion is the real-estate portfolio size of the company which accommodates the special functions. These criteria are mentioned in the section 2.4. also.

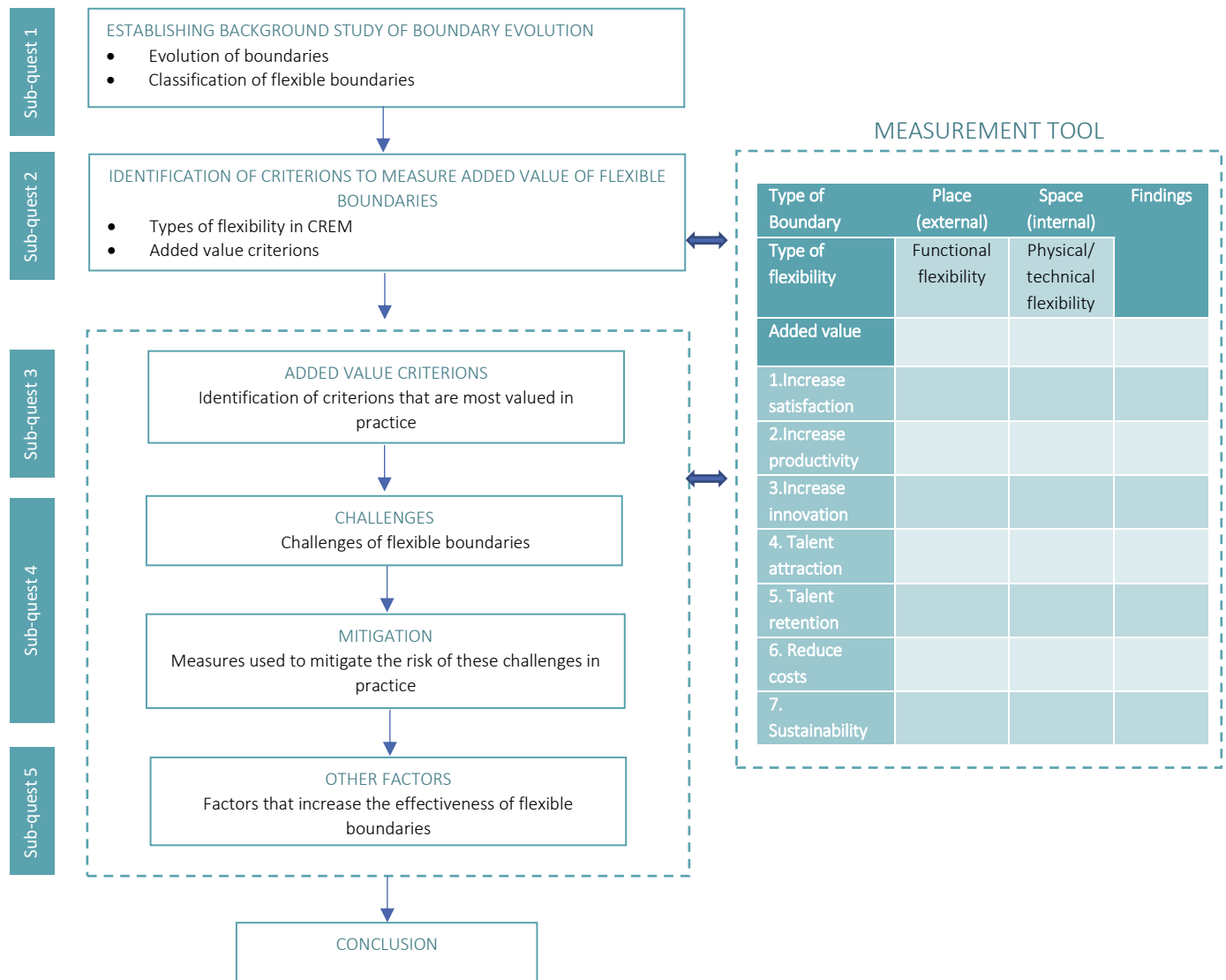


Figure 2.2. Theoretical Framework developed in the elaboration phase

Final phase

The next phase is the Final phase which involves the *Analysis* part. All the data collected from literature study and practice is analyzed and compared and will be added to the measurement tool which was created after in the theoretical review, to make it more concrete. Also, the variables for the tool are defined in a separate chapter. Lastly is conclusion and discussions. All the theories from literature study are discussed and compared to identify the ability of flexibility and its added value on organizations, Further, how corporations can adopt such concepts with the help of the theoretical framework that is formulated in this research, is also discussed. The last chapter contains the final conclusions and the recommendations for the further research.

2.3. Data collection methods

For any research there are two main approaches to gathering information and based upon these broad approaches for information gathering, data are categorized as primary and secondary data. The information gathered using the secondary sources are the secondary data and the information collected using the primary sources is the primary data (Bryman, 2016). In this thesis the secondary sources of data collection are earlier publications and the organization’s records. And the primary data, that is the first-hand information about the perceived added values of flexibility in accommodation is collected with the help of Interviews and questionnaires with the corporate executives and the employees respectively.

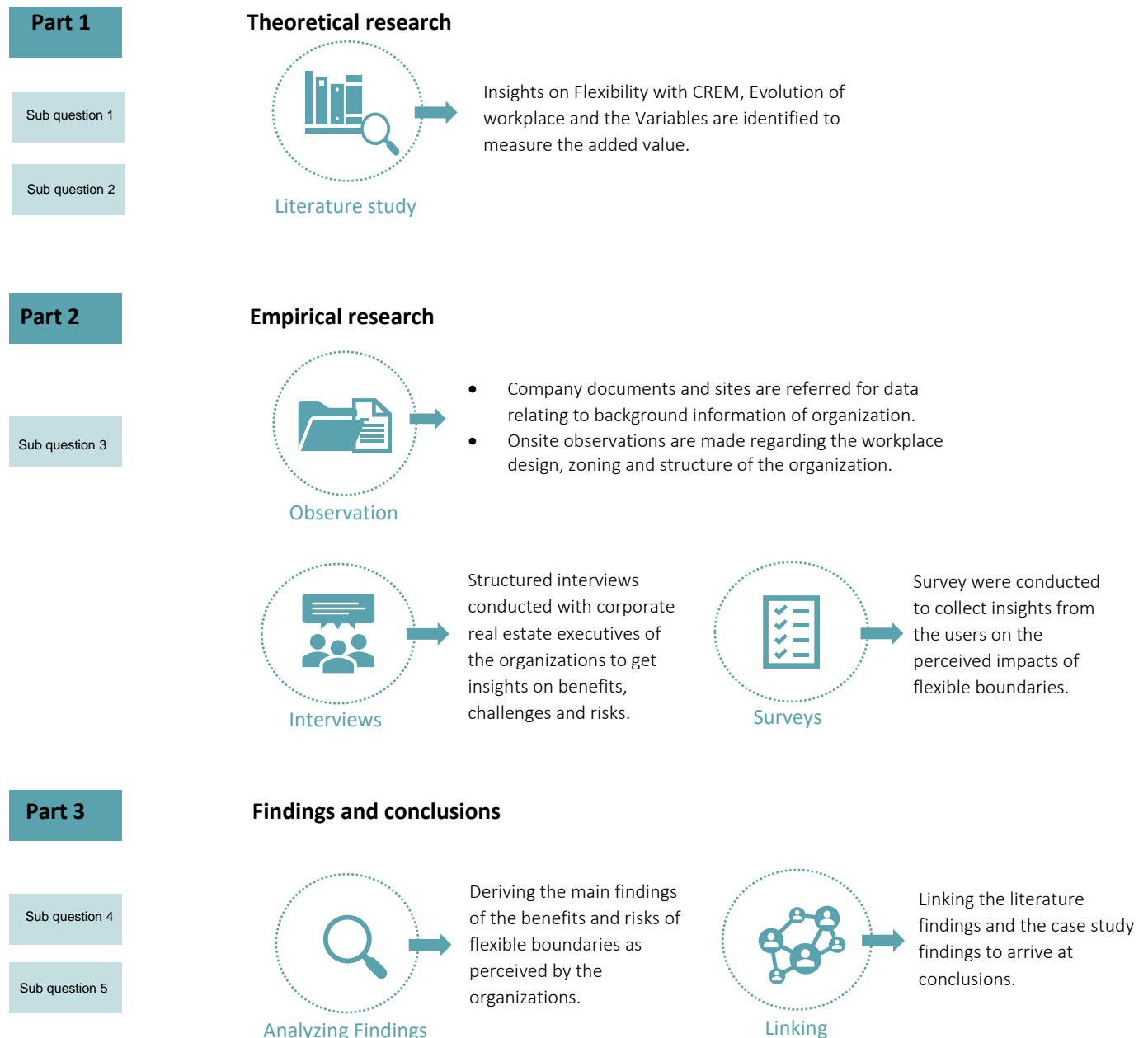


Figure2.3: Selected research methods (own illustration)

2.4. Case study and sample selection.

I selected a convenience sample of two firms in the Netherlands to carry out the in-depth case study. This specific selection is based on the companies that provided a higher chance to respond to the case study questions. The companies were selected according to their convenience and potential to offer the required data. Further data about the companies is gathered from their websites, annual reports, and case studies reports. Furthermore, I then contacted the corporate real estate executives within the selected firm to interview, accessing their knowledge based on being involved in the corporate real estate decisions and strategies in their organizations. The survey is conducted with the employees working in the specific organization using online surveys software's and were circulated in social networking platforms. Further details of how the respondents and the interviewee were approached is explained in detail under each of the case sections. The cases selection criteria for the cases is as follows:

1. The first criterion is the location of the organization, must be in the Netherlands to prevent the complexity of foreign aspects. The organization can operate international as well.
2. The second criterion is the type of innovation. The organization with an innovative and new strategy will be of first preference.
3. The third criterion is that the organization has implemented/working with one or more type of the flexibility that were described from the literature and covers the types of flexibility of boundaries (can be one covering two types and other case the last one, or similar combination)
4. The fourth criterion is the real-estate portfolio size of the company which accommodates the special functions.

After the finalization of case studies, the process of case study was done in the following way. Firstly, the literature study is used as a background study and a tool to measure the added value through the different criterions is created. Therefore, the data to measure the actual result is found out through the case studies. To collect the data of the first three criterions, a survey was conducted on the organizations selected for the case study (see survey document below in Appendix I). Then the collected data was analyzed and transferred to the measurement tool (Figure 2.2 & 2.4.). This provided the data for measuring the first three criterions of added value. For the next four criteria, data was collected from the data-base of CRE department of the organization. And thus, this was done through conducting interviews with the CRE department and also, getting access to the data base. Further these interviews were conducted in such a way that they were able to get the data as depicted in Appendix II. This data collected from the interviews and data-base was then analyzed and added to the framework (figure 2.4.) and the results are calculated and analyzed example (figure 2.5).

Interviews

During the mock interview conducted with my mentor (refer to appendix II) to formulate my main questionnaire, we observed that not all the added value criteria were measurable with the help of questionnaire and the interviews. Therefore, it was essential to categorize the data for which criteria was possible to collect with the help of the interviews and surveys. Therefore, with the help of surveys the added value through employee satisfaction, productivity, innovation, talent attraction and retention are identified. Further, to collect the data of the added value criteria of costs and sustainability an interview was essential with the real estate department of the organization. Therefore, the interviews are intended to gather data about the all criteria, that is from the perspective of the organization. Furthermore, the interviewees are asked open questions about their views on the potential benefits and challenges the organization has faced or might face by adopting the accommodation flexibility. Findings from these will be used to answer the sub-question 5.

A structured interview is used as the data collection tool for this research, where a predetermined set of questions are asked. The interview schedule is shown in appendix I which consists of both open-ended and closed-ended questions. The motivation for using a structured interview as a data collection tool is that it provides uniform information, which assures the comparability of the data and also structured interview requires fewer interviewing skills (Bryman, 2016).

Structure of the interview:

The interview will consist of questions divided into three sections. The first section consists of general questions to collect background information about the organization. Example, size and number of employees in the organization. The next section consists of questions to gather data of added value criteria from the organization's perspective. The last section consists of open questions to collect information about the potential benefits and threats of adopting flexibility through the CRE perspective (Refer appendix II).

Questionnaire

Based on the previous research of corporate real estate and along with my mentors I developed a structured questionnaire. This was done first by conducting a mock interview with my first mentor. This interview was the bases of developing the questionnaire. Further, with this interview the questionnaire was structured, as shown in appendix I and II. The questionnaire is comprised of a mixed of closed ended and open-ended questions that will be conducted with the employees of organizations.

The questionnaire covers the added value through satisfaction, productivity, innovation and Talent attraction and retention. The questionnaire consists of three sections (A, B and C). Section A of the survey consists of the general information. This information gathered will be used for the classification of the data and will not be used in the analysis of the data as it is out of scope of this

research. The next two sections are based on the sub-question 2 where the types of flexible workplace boundaries were identified through literature. Section B deals with the first boundary type that is the flexibility in boundaries of **place (Remote working)**. Further, the questions in this section are intended to measure the added value of respondents who are using this type of flexibility of PLACE based on the added value criteria that were identified in the literature (criteria of added value). Here the respondents are asked to measure their satisfaction, productivity, innovation, talent attraction and talent retention, which are the questions 1 to 5 in this section. In addition, they can even state the reasons for their perception (which is kept optional). At the end, there is an open-question stating on the employee's opinion on what they consider as benefits and the challenges of such flexible boundaries, this open question is intended to gather data to answer the sub-question 4 (Benefits and challenges). Lastly, section C is similar to the section B, but this section is intended to measure the added value of respondents who are using the flexible boundaries of **space (Non-assigned desks)** and this section will follow the similar set of question as section B.

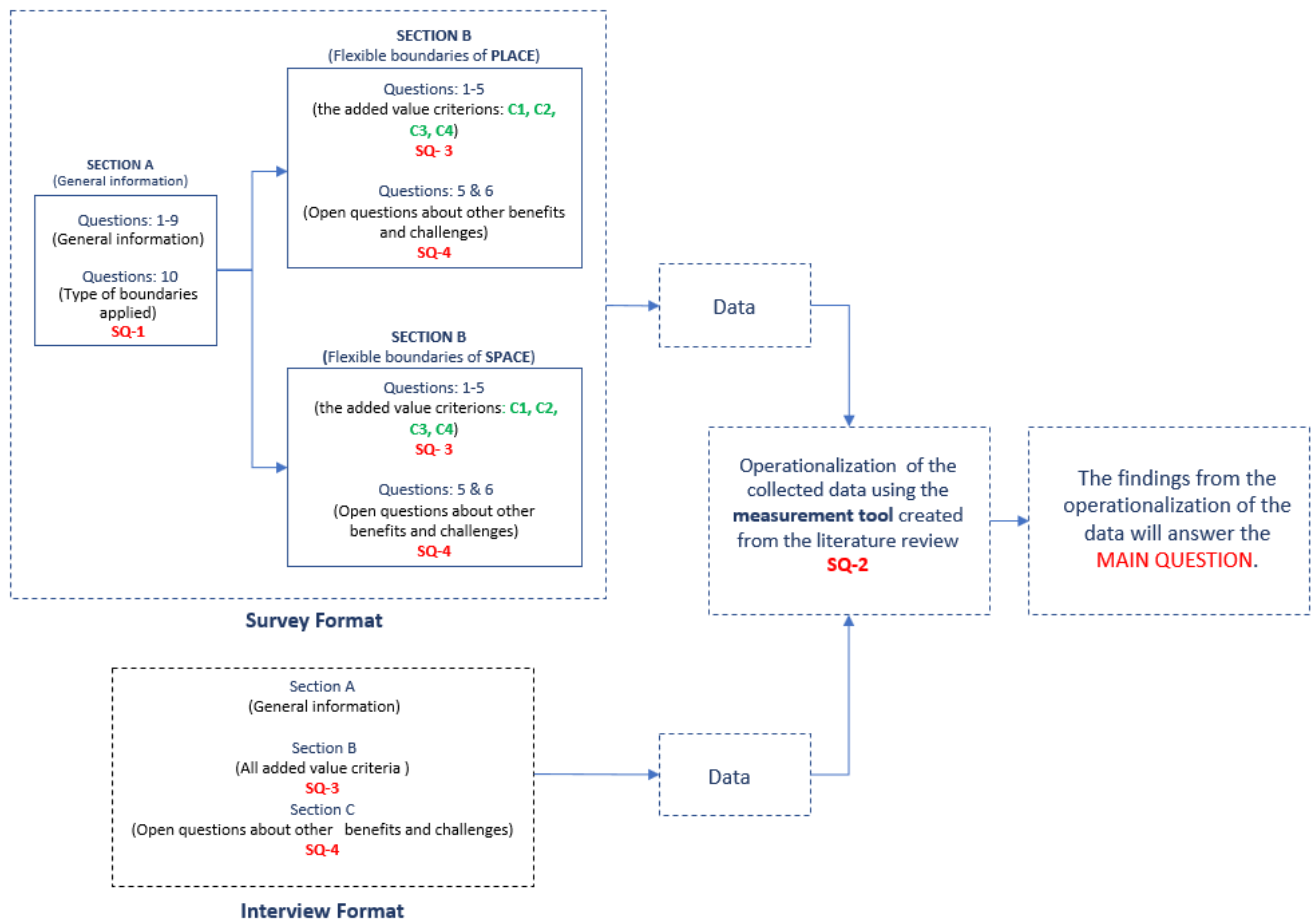


Figure 2.4: Overview of the structure of questionnaire and interview based on the research framework.

Data Analysis

As mentioned in the previous section 2.4, several techniques for data collection are used as input for the measurement tool. The collection and analysis of the collected data will occur in three steps. First, as mentioned before, the literature study is used to first find the understanding of all the concepts, background information and criteria to measure. And basic framework of the measurement tool is made. Subsequently, from the interviews and surveys, the data from the field work will be created to fill the gaps of knowledge and information. This will again serve as the input for the measurement tool. Finally, the data collected will be analyzed and further an attempt will be made to come up with a solution that will answer the research question.

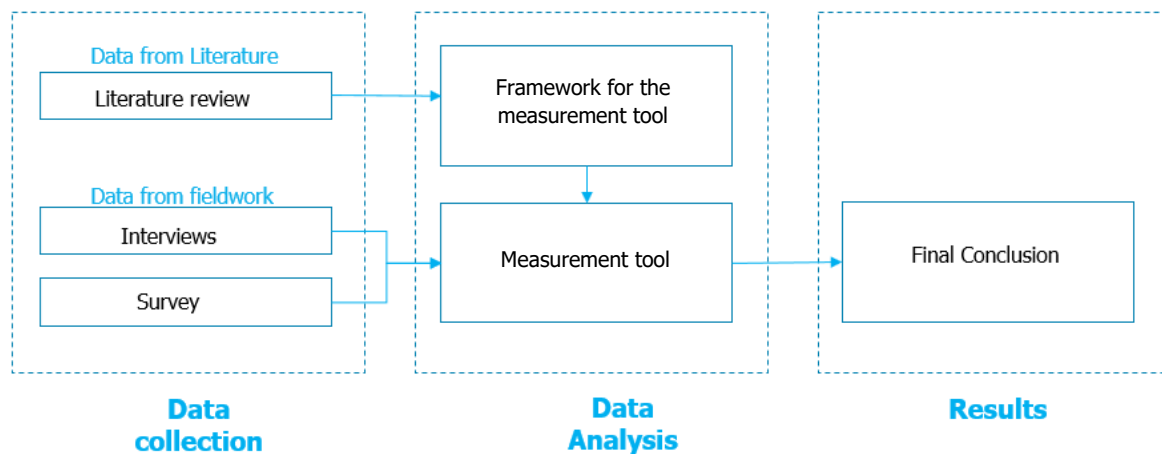


Figure 2.5. Indicating the steps of data collection, analysis and results.



THEORETICAL RESEARCH

3.1. WORKPLACE BOUNDARIES

This chapter will consist of the study relating to workplace boundaries. Where firstly the broad definition of boundary will be stated as described by different authors. This is followed by a study that led to boundary creation at workplace. After this, the section will further elaborate evolution of these boundaries over time till current day. Further, the following section will identify all the terminologies used in current time for flexible boundaries and then classified relevantly suit the research.

What is a boundary?

According to the oxford dictionary a boundary is defined as ‘a line which marks the limits of an area; a dividing line.’ Something that intends to define or separate, to make things distinct and clear; objects, spaces, uses, customs, administrations (Beals, 2012). Here boundary does not only mean where things end, stop or are trapped. But as Heidegger says that a boundary has a two-fold condition:

“A boundary is not that at which something stops but, as the Greeks recognized, the boundary is that from which something begins its presence.” (Heidegger, n.d.)

Beals (2012) states that boundaries can either be real or imaginary, built or unbuilt. Further, he describes that what is crucial is the boundaries that can be perceived, having a physical manifestation: limits to create a definition between public and private, interior and exterior, building and landscape. In a traditional understanding of architecture these limits are located at different scales, and normally understood as a succession. Therefore, boundary in this research can be defined with three aspects the first one describes boundaries mean something that intends to separate, and the second aspect is to make distinction between, spaces, uses, customs, time, administrations. And third aspect relates to that boundary means enclosure. This is illustrated in the figure 3. Below.

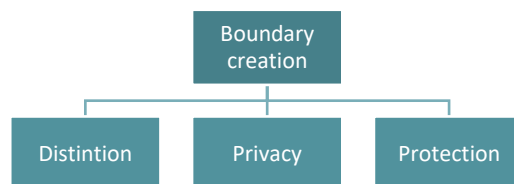


Figure 3: Showing the motives boundaries were created in workplace

Protection

Tartakovsky (n.d.) in her article gives an idea that physical external boundaries were created to protect the group against unpleasant situations; boundaries indicate and facilitate distinction between what is considered supportive/acceptable and what is not. Therefore, boundaries provided protection to people from external factors and acted as an enclosure.

Referring to the above para and talking in context with the office accommodations, that is boundary as an enclosure was created in office to protect people from external factors, such as weather etc. and to bring the workers under a common roof and to facilitate inclusion. The physical boundaries with reference to workplaces are the visual and acoustic isolation supplied by the organizational environment (Sundstrom, Burt, & Kamp, 1980). Such physical boundaries in workplace influence the extent to which people are exposed to disturbances and distraction and to provide privacy.

Privacy

Another factor for boundary creation is to achieve privacy. Author Miller (n.d.), explains the importance of personal boundaries for privacy, by stating that it provides with a comfortable environment that will in turn boosts productivity.

Traditionally in workplaces, the use of physical barriers such as walls, was to create higher level of privacy, while in the recent times it is perceived that blurring of such boundaries provides minimal privacy which leads to greater opportunity of interaction, collaboration and communication (Zerella, von Treuer, & Albrecht, 2017). All of these which are now valued by organizational cultures. However, reducing boundaries also have some drawbacks such as, low levels of privacy can have undesirable outcomes such as distractions and blurring of psychological boundaries (Sundstrom, Herbert, & Brown, 1982). Furthermore, the positive and negative impacts of blurring such boundaries depend on other factors such as the organization structure, workplace design, use of technology and the job type which are explained in the next chapter.

Distinction

One more aspect of boundaries as described by Beals (2012), is that boundaries were created to provide distinction and categorize things. Referring to workplace, the boundary created by organization were not only for protection and privacy but also to facilitate exclusion, that is boundaries were created in organization to differentiate one organization from the other. Therefore, it can be said that boundaries were created for both to exclude from other organization and to facilitate inclusion by bringing people under the same enclosure. Thus, boundaries were created for both inclusion and exclusion.

3.2. Evolution of workplace boundaries

In this section the evolution of workplace boundaries will be studied which will provide an overview of the change of workplace design over the last 100 years. Further, out of all the office layouts the flexible office layout will be studied more in depth in the later sections. Furthermore, the terminologies used for flexible offices will be categorized and the characteristics of each type will be identified and elaborated. Furthermore, the benefits and challenges of flexible workplaces are identified from the literature, within each of their types.

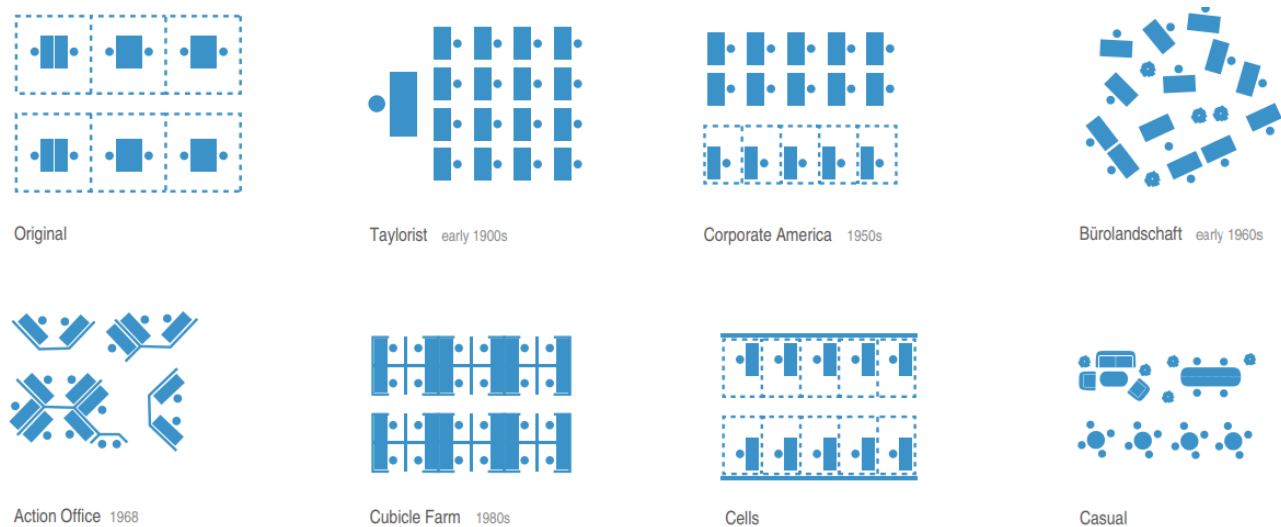


Figure 3.1: Showing the evolution of workplace boundaries (liu, 2012)

The Figure 3.1. shows the evolution of workplace boundaries and layout over time (Liu et al., 2012). The author Liu in his research explains the evolution of workplace from before 1900s which is based on the research work of Duffy (1992). Before the start of 1900s, the workplace was usually a space inside the owner's house or estate. As the scale of business was usually small and also because there was no distinction between management and business ownership.

Later, this classic workplace layout was replaced with long rows of desks in large open spaces which resembled the factories and was also believed to increase the efficiency. This workplace layout was basically influenced by the principles of scientific management where the organizations circulation pattern was compared to a factory. And furthermore, a clerk was needed to be permanently in view which made a requirement of no privacy and separation between the workers and thus the boundaries were eliminated.

Later in the late 19th century, after the distinction of ownership and management and the increase in more knowledge work, more of these layouts were grouped together which became a distinctive building type and thus the first skyscrapers appeared. Contrary to this, in the early 1960s a new workplace layout emerged called the burolandschaft, which was designed to supposedly increase the communication and workflow efficiency. This was then followed by the action office where individual workstations emerged. These were designed to balance between flexibility and privacy. This workplace was further replaced by the cubicle farm, where the employees were separated into different cells, which gave rise to the cell layout in the workplace design. Further moving into the current day, more and more organizations are shifting to the casual workplace, where employees have the autonomy to choose their own workplace depending on the type of work they will be doing. And hence there is shift from having fixed layout to more dispersed and flexible workplaces (Figure 3.2). Therefore, the next section will look into the emergence of the concepts of flexible workplaces and the terminologies being in use.

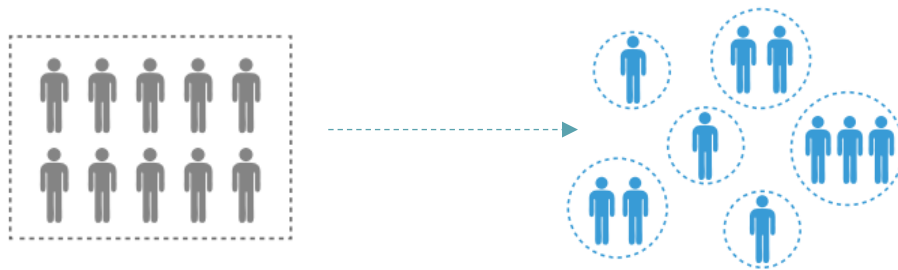


Figure 3.2.: Shift from rigid to flexible workplace boundaries (Own illustration)

3.2.1. Terminologies used for flexible workplace boundaries

Juriaan van Meel in his book *Workplaces today* (2015), talks about the modern workplaces and he has further defined them into ten various types of office. Where he has classified different offices like the home offices, public spaces, co-work offices, play office flex office, studios, cell office, process offices, modernist office and recycled offices. These are the terminology he classified under the non-office, new-offices and traditional office spaces, as depicted in the table 3.2.1.

Non-office	New-office	Traditional office
1. Home offices	3. Co-work offices	7. Studios
2. Public spaces	4. Play offices	8. Modernist offices
	5. Flex offices	9. Process offices
	6. Re-cycled offices	10. Cell offices

Table 3.2.1. Overview of office typology (van Meel, 2015)

Moreover, the non-offices concept also known as the concept of mobile working was already been used by the architect Hans Hollein in 1969, where he had identified the opportunity caused by quick developing technologies which could enable people to work anywhere and however, they wanted. Part of his concept didn't get realized but it provided people to start thinking the concept of fixed offices and what people should be offered and how flexibility at workplaces could be improved to meet the needs of employees.

Further moving on to the other terminologies used relating to the organization's physical structure, these flexible office types here relates to the building shell or the building skin and layout. Example of initiatives used in this type is the open-plan office. The term open-plan was first used in 1960. In this type of planning the internal partitions are removed or reduced to increase the interaction between employees. This kind of initiative is especially very useful for knowledge-based firms that highly value innovation, as open-plan layouts facilitates creativity and discoveries leading to innovation (Brunia & Hartjes-Gosselink, 2009).

Moving on to the inside layout to the boundaries created by furniture in workplaces. Terminologies used in this type are non-territorial offices, hot-desking etc. Author Brunia (2009) uses the term non-territorial offices to describe them as spaces where there are no designated places allocated. Also, this initiative is termed as hot-desking where office workers using the single physical workstation at different time periods to optimize the use of space. This is also termed as desk sharing. Flexibility in this type adapted more in organization because furniture is a highly accessible way to add value to the organization's performance which leads to more exchange to tacit information thus adding value to the organization.

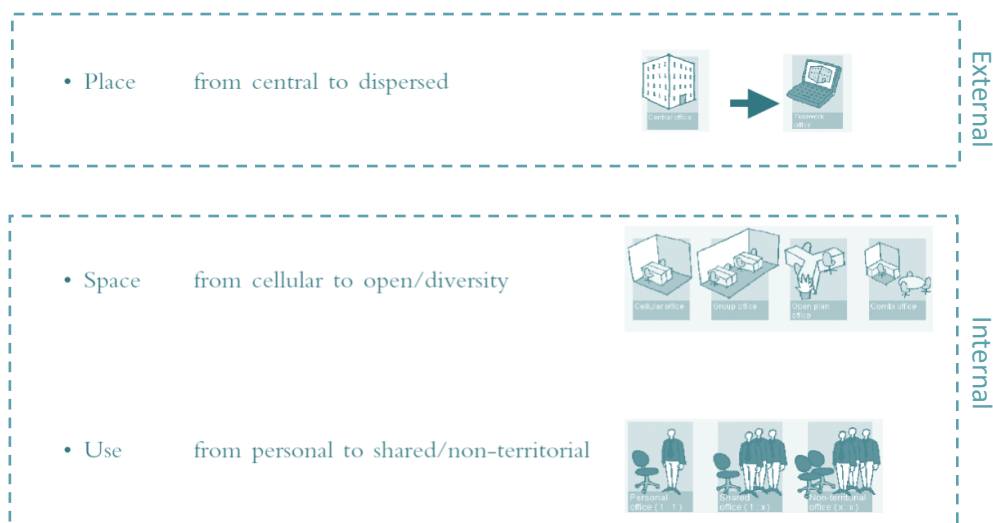


Figure 3.2.2. Changing alternative offices (Vos et al., 2000)

Different researchers have developed frameworks of alternative office concepts and grouped them according to the level. In the book 'The Office, the Whole Office and Nothing but the Office', works on a framework where, office is defined as a place where people process information. This framework uses the changes in place, space and use as shown in the figure 3.2.2. (Vos, Meel, 2000). Here the author has similarly used three level of boundaries and further explained what flexibility in these boundaries mean. The first boundary is boundary of place, and flexibility according to him in this context is from a central location to a more dispersed working. The second boundary described by him is boundaries of space and flexibility in this context is changing from cellular structure to an open layout. The third one is about boundary of use of space. Flexibility in this context is by changing designated use of space to a shared use of space.

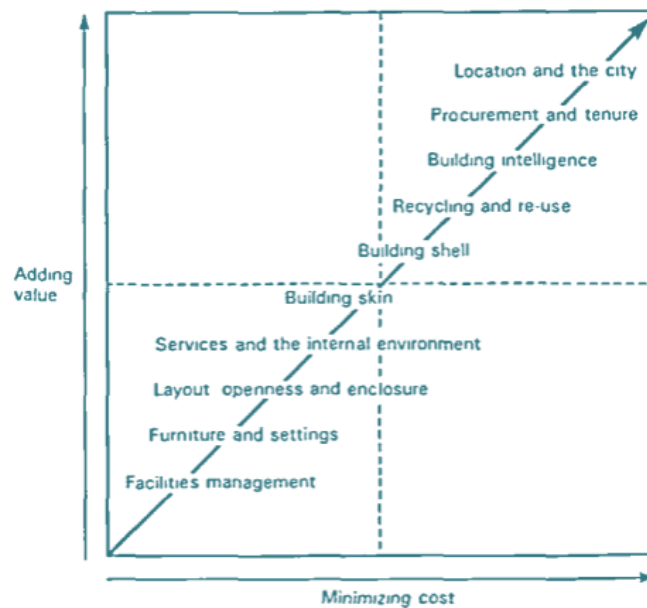


Figure 3.2.3. Levels of initiative and the added value (Duffy et al., 1992)

In the research of Duffy et al.,(1992), she describes the added value of such new types of office initiatives by combining the advantage of added value to organizational performance and minimizing occupancy costs. Here the author has identified ten kinds of initiatives and are presented in order of how easy it is to implement. According to this author, some features of workplace designs and space management (such as the office furniture and layout) are relatively easy to achieve flexibility in short term than others as they involve interventions of different physical type (such as decisions about location). According to the figure 3.2.3. We can conclude that the more difficult to adopt these initiatives the more is the value generated.

Factors that affect the success of adaption of flexible office.

When implementing the flexible office concept, multiple variables can contribute to the level of success of the change. Although it can be hard to exactly define the relationship between

characteristics of the workplace environment and the added values to employees, but in general, the following variables can have an impact on the chance of success:

Workplace design

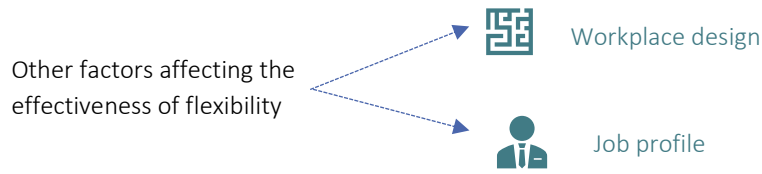
Several physical aspects of the office environment contribute to the success and failure of the flexible workplace, such as the office design (Brunia, De Been & Van Der Voordt, 2016). The workplace design has long been identified the physical dimension of an organization and where organizations altered this physical dimension through office redesign in order to align with the organization's strategy or goals (McElroy & Morrow, 2010). However, with today's advancement in technology, the concept of workplace as a physical dimension has been changing making the organization think of a new workplace that fits the organizations goals and benefits the overall success. According to a survey conducted by the Gensler's on around 2000 office employees in US, 92% employees agreed that an innovative and workplace that fits current need of the employees could make a company gain competitive advantage over the others.

Another aspect of the workplace design was that the design should enable more collaboration. The workplace layout contributes to the employee's collaboration and thus improve productivity (Hua, Loftness, Kraut, & Powell, 2010). According to Hua et al, the success of a workplace design that enable more collaboration depends on two characteristics of the workplace design, which are openness and accessibility. Where the characteristic openness is about the ratio of total square meters of the office to the length of interior boundaries (walls and partitions). Which indicated that the lesser the walls and partitions within the office design than more is the collaboration which will in return increase the performance. The other characteristic accessibility refers to the extent an employee's workstation is accessible to the external interference of other. Where, the more a person is accessible to the others might increase more collaboration. Therefore, the combination of these two aspects that is the openness and accessibility are crucial tools to evaluate the workplace design. Therefore, the office design should include combination of collaborate and other spaces, which directly impacts the performance of the employees within the organization and will benefit(Hua et al., 2010). Hence workplace design can serve as a factor for the success of implementing a design that enables the flexible accommodation boundaries. And thus, increase the added benefits of these boundaries.

Job Profile

One of the factors to observe in order to successfully implement the flexible boundaries is the providing flexibility depending on the job profiles of the employees within the organization. In the literature of Zerella (2017), the author says that workplaces with walls were found to decrease distractions for business professionals and technical professionals, but not for administrative and support services. Also, another factor depends on how much of human interaction is valued within the workplaces, which depends on the organization structure. For example, organizations that

value team communication might not view disturbance and distractions as negative from those who do not value interactions. That is mechanistic organization that are centralized in structure and follow rigid departmentalization do not see that flexibility in boundaries to add value. As these types of organization focus on specialization rather than innovation. Whereas, on the other hand organizations with organic structures, such as knowledge-based organization (like apple, google) value innovation the most. Therefore, these organization's core focus is on achieving creativity by encouraging human interaction. Hence these organization do not perceive disturbance as a negative aspect. Therefore, the value of reducing boundaries is perceived with these factors (Zerella et al., 2017).



Conclusion

From the literature illustrated above, it can now be concluded that boundaries exist at two levels in an organization that are externally called the 'boundary of place' and internally called 'boundary of space'. The outermost level deals with the boundaries of location, where in the flexible boundary here enables the workers to work anywhere (e.g. distributed working and mobile working). The second level deals with the boundaries in space and flexibility in these boundaries enables to more interaction and collaboration (e.g. open-layout). This layer also deals with boundaries in using of the space and flexibility in the context will enable using space as and when required (non-territorial workplace, hotdesking). This is illustrated in the figure 3.2.4. These two classified levels are elaborated more in the next chapter, where the characteristics of each boundary type and its benefits and challenges mentioned within the literature will be noted.

Level	Kind of shift due to flexibility	Examples
Place <i>(Vos et al., 2000)</i>	Central to dispersed locations	<ul style="list-style-type: none"> • Distributed workplace • Mobile working. • Home office. • Public Spaces • Flex office. (Duffy et al., 1992) (Watad, 1999).
Space <i>(Vos et al., 2000)</i>	Closed layouts to more open layouts Personal to shared	<ul style="list-style-type: none"> • Open-office layout • Non-territorial workplace. • Hot-desking. • Play office. • Co-work spaces. (Brunia & Hartjes-Gosselink, 2009)

Figure 3.2.4. Classification of flexible workplace terminology into boundaries of place and space. (own figure)

3.3. Types of Boundaries

From the above sections it is evident that within an organization when we talk about boundaries, different sorts of boundaries exist. And different authors have used different terminology for the various flexible workplace boundaries. Therefore, for the ease of this research I have classified all the different types of flexible office terminology under two categories. The first type is flexible **boundaries of place (External boundaries)**. In this type, the boundaries of place refer to the locational boundaries, and the flexibility here indicated being able to work beyond this boundary of workplace. Example, of such type is mobile working and distributed working as they allow people to work beyond the walls of offices. The second type is flexible **boundaries of space (Internal boundaries)**. This refers to the physical building shell or the layout and flexibility in these boundaries enables to more interaction and collaboration (e.g. open-layout), Also, here the context relates to enable using space as and when required (non-territorial workplace, hotdesking). These types are further elaborated in their respective sections below.

3.4.1. Boundaries of Place (External boundaries)

This type of boundaries here refers to the locational boundary of the office and the blurring here refers to the ability to work beyond the location of the office. In this digitally connected age, provides us with more mobility.

In modern times flexibility is not only taking place inside a building and is more global as people work in all places at all times and this has impact on the organizations and the city. Therefore, alternative locations such as cafes, restaurants etc. pop up. This concludes that the traditional perimeter around the organizations are dissolving and leading to emergence of new flexible boundaries that enable people to work anywhere. Author Jordan (2009)

observes that a number of people now live in a hybrid world where the boundaries between what is physical and what is digital continue to fade. Examples of such initiatives are distributed work places and mobile working which involves workforce that reaches beyond the restrictions of a traditional office environment. It also relates to the fact that the in this kind, the main factor is installing key technologies that enables the workers to be located anywhere and to access all the company's resources and software without working within the confines of a physical company-



operated facility (Watad, 1999). Flexibility on location boundaries relates directly to the organization’s performance. First it avoids social and environmental costs of wasted commuting and need for less infrastructure (Duffy et al., 1992). Second, performance of workers could improve as it provides them a sense of autonomy to select the location according to their need thus increasing productivity.

Apart from that organizations can benefit in numerous other ways such as increased productivity, lower rate of absences and a more engaged workforce. This kind also has some substantial savings for the organization, as they can have large workforce without requiring a large office space. These benefits can only be realized if employees have clear parameters within which and how to operate. Some of the negative aspects here are indicated in a study (Becker, 2000) that stated visual access was crucial as it facilitated more face-to-face communication and development of relationships. Also, its visual access resulted in people being less disturbed by others as they could be seen if one was busy. The type of flexibility it offers according to literature studied is the functional flexibility. Following figure 3.4.1. illustrates the positive and negative impacts of enabling flexibility in boundaries of space.

POSITIVE ASPECTS	NEGATIVE ASPECTS
<ul style="list-style-type: none"> Reduction of resource consumption, relating to construction, maintenance and operation of office building. 	<ul style="list-style-type: none"> Due to scattering of people, collaboration is affected.
<ul style="list-style-type: none"> More workforce 	<ul style="list-style-type: none"> Highly dependent on tele-communication (sometimes not very effective).
<ul style="list-style-type: none"> Less need of large office 	<ul style="list-style-type: none"> Difficult to measure productivity.
<ul style="list-style-type: none"> More employee’s productivity 	<ul style="list-style-type: none"> Reduced psychological distance between staff and managers
<ul style="list-style-type: none"> High added value 	<ul style="list-style-type: none"> Difficult for organizations to implement

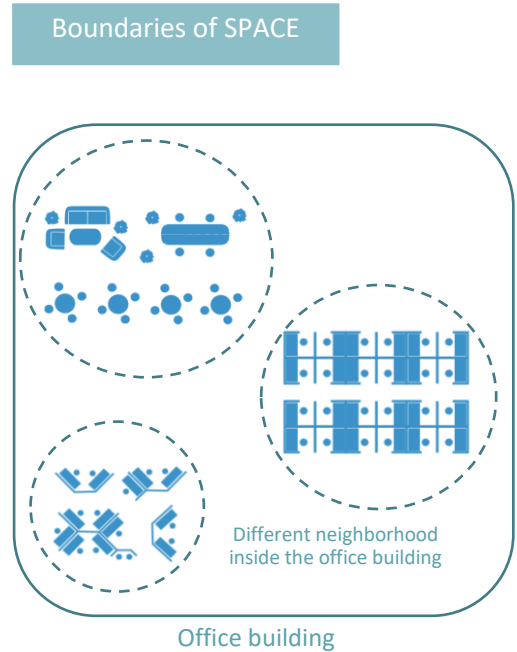
Figure 3.4.1. Indicates the positive and negative factors of blurring of boundaries of space (own figure)

3.4.2. Boundaries of Space (Internal boundaries)

The boundaries of space refers to the physical office space and the way the objects are arranged within it (Lee, 2010). Elements in this type includes layout and positioning of workstation and the boundaries created by physical barriers such as walls and other objects. Office layout, which is an element of physical environment can influence employees behavior and attitude and more specifically has direct influence on the workplace culture (Ornstein, 1989).

Among the terminologies classified under flexibility of space is the flex office. This type is identified by Van meel (2015), which is the response for increasing demand for mobility and flexibility. Flex office or flex workplaces are offices with limited number of desks compared to the employees and

therefore desks are not assigned to anyone anymore. This relates enabling spaces without territory. Flexibility in this context refers to using of space without demarcation or distinction. The design of flex office was made to make the workplace more efficient and by using spaces depending on the activity of the employees and keeping the number of desks limited by looking at what is really necessary for an organization to run its business (van meel, 2015). Instead of having a personal workstation or desk, the employees share the spaces. This will not only result in reduced costs and optimization of space but will also make the organizations more flexible by making them easier to adapt to the organizational shifts and alterations (Wohlers & Hertel, 2017).



This concept of flexible boundaries of space can be implemented in different office design layouts. Where the most noted one is the open-office layout, where everyone works in the open spaces with minimal boundaries and enclosed rooms. The benefits of the open-office layouts can be read in the article of (Zerella et al., 2017). Where employees who were shifted from cubicles to an open layout perceived the organizational culture to be less formal, less bureaucratic and more innovative and gave them a sense of autonomous than employees who remained inside fixed cubicles. Another study (Hong, Easterby-Smith, & Snell, 2006) found that organizations that situated employees, irrespective of their rank in open office layouts without any physical barriers separating their workstations, caused an increase in the cross-departmental collaboration and development of collective learning.

POSITIVE ASPECTS	NEGATIVE ASPECTS
<ul style="list-style-type: none"> • Increase in productivity 	<ul style="list-style-type: none"> • Loss of privacy
<ul style="list-style-type: none"> • More innovative 	<ul style="list-style-type: none"> • Not ideal for mechanic structure of organization.
<ul style="list-style-type: none"> • Increase in the cross-departmental collaboration 	<ul style="list-style-type: none"> • Difficult for organizations to implement
<ul style="list-style-type: none"> • Increase in development of collective learning 	<ul style="list-style-type: none"> • Can reduce productivity
<ul style="list-style-type: none"> • Minimizing occupancy costs 	<ul style="list-style-type: none"> • Personal hygiene issues due to sharing of desks
<ul style="list-style-type: none"> • Easy for organizations to implement 	<ul style="list-style-type: none"> • Limitation to personalize their desks

Figure 3.4.2. Indicates the positive and negative factors of boundaries of space (own figure)

Another popular concept is the activity-based working, which consists of variety of workspaces which are chosen by the employees according to their work activity. This also refers to workspaces that are shared and are typically booked prior to usage on a temporary or daily basis. Therefore, this boundary type relates to how a space is being used within the office premises. While the idea of open office layout is to include a greater number of people in the same amount of space by the reduction of square meter per workspace, the concept of flexible desking (Also termed as non-territorial, hot-desking, or desk sharing) increases efficiency by increasing number of people per workstation (Kim, Candido, Thomas, & de Dear, 2016). This enables organization to benefit by minimize occupancy costs.

The traditional office model, where the employees have demarcated workspaces. In these scenarios it is observed that significant proportions of workspaces are unutilized and therefore the office space utilization falls (e.g. leaves, meeting outside office, attending training courses etc). This problem is more intense where large spaces often dedicated to senior staff who are frequently away from the office or the consequence of modern, non-standard working patterns (e.g. job sharing, part time) and location (e.g. client's place, work from home or external locations). This concept of flexible boundaries within the office premises has been being adopted in corporate office designs as a solution to increase space efficiency, through shared spaces or desks (Kim et al., 2016). Therefore, while implementing flexibility within the boundaries inside the office there can be various benefits as well as challenges. Therefore, it is important that organizations see not only the benefits but also the challenges and risks of implementing it. So that the risks can be better mitigated by already being aware of the challenges that might arrive. Figure 3.4.2. shows the benefits and challenges of the internal boundaries of space.

Findings and conclusion.

After analyzing and studying the topic of boundaries, we can further arrive at conclusion which will be answered with the help of the sub-questions formulated.

1. What was the purpose of boundaries at workplace and how are the new flexible boundaries classified?

The literature provided us that boundaries were created at workplace mainly for three reason: Protection, privacy and distinction. Where the aspect of protection refers to boundary as an enclosure, created in office to protect people from external factors, such as weather etc. and to bring the workers under a common roof and to facilitate inclusion. The importance of second aspect privacy is explained by author Miller (n.d.), as personal boundaries for privacy, by stating that it provides with a comfortable environment that will in turn boosts productivity. And thirdly boundaries were created to provide distinction and categorize things. However, the need for these boundaries started changing after a change in the purpose. Workplaces started evolving more with open plans and less boundaries. The shift in the design of workplace was due to inclusion of principles of management. Now, in the present-day boundaries are required to be

more and more flexible to accommodate the changing needs of organizations and employees. Today, the flexible boundaries are known by different terminologies and concepts, but within this research we classify them all under two categories that is external flexible boundaries and internal flexible boundaries. Therefore, it can be concluded that boundaries exist at two levels in an organization that are externally called the 'boundary of place' and internally called 'boundary of space'. The outermost level deals with the boundaries of location, where in the flexible boundary here enables the workers to work anywhere (e.g. distributed working and mobile working). The second level deals with the boundaries in space and flexibility in these boundaries enables to more interaction and collaboration (e.g. open-layout). boundaries in using of the space and flexibility in the context will enable using space as and when required (non-territorial workplace, hotdesking).

3.5. Organization, function and structure

To understand the benefits and added value to the organization, we should first know the organization is structured and how it functions. We need to know the parts of the organization and what functions they provide in order to better understand how enabling flexible boundaries can added value to these parts of the organization.

The first section of this chapter will be a study on how an organization functions and how it is structured the next section will then elaborate on the CREM of an organization and its link with designing flexible boundaries and to the organizational goals.

3.5.1. Organization structure

Author Lunenburg (2012) describe that Organizations exist to achieve goals. These goals are further divided into tasks which become the basis of jobs. Further these jobs are grouped into various departments such sales, manufacturing, marketing and so on. Inside of these departments further distinctions are made depending on the job that people perform. These various departments are linked with each other to form the basis of organizational structure, this structure gives the organization a form to function and fulfil its goals. According to the theories of Mintzberg (1989) these organizations can be distinct long three dimensions

1. The key part of the organization:
This part of the organization plays the major role in determining its success or failure;
2. The prime coordinating mechanism:
This part is the major method the organization uses to coordinate its activities; and
3. The type of decentralization used,
This part is the extent to which the organization involves subordinates in the decision-making process.(Mintzberg, 1989)

These key parts of the organization are depicted in the figure below

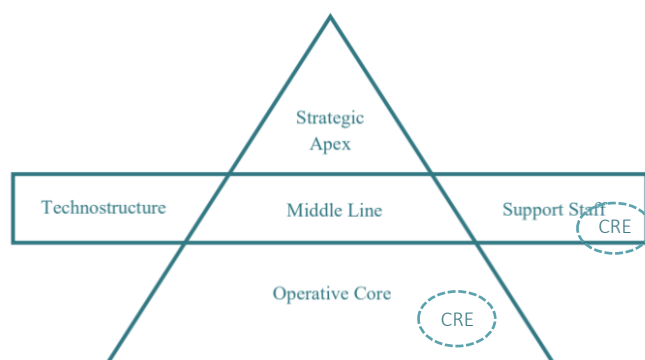


Figure 3.5.1. structure of organization based on Mintzberg (1989)

Further within these three main dimensions Mintzberg (1989) divides the organization into five distinctive parts where the key part consists of the strategic apex, middle line management and operating core. The strategic apex refers to the top management along with their support staff and are responsible for making strategies and coordinating the overall organization. The middle line is middle- and lower-level management and they form the link between the strategic apex and the operating core. The operative core are the workers who carry out the organization's actual work. The technostructure consists of staff that basically carry out analysis of the organizations process such as the analysts like engineers, accountants, planners, researchers, and personnel managers. The support staff are the people who provide indirect services and perform activities that support the organizations process.

Further, Mintzberg states that the configuration of these five parts depends on the organization's goals and strategies. He further states five organizations types based on the different configuration of these parts. The five distinctive types are the simple structure, the Machine bureaucracy, the Professional bureaucracy, the Divisionalised form and the Adhocracy.

3.5.2. Position of CRE department within the organizations

As the goals and objectives of CRE department is closely aligned with the organization's overall goals and objective, therefore the activities of CRE department is greatly influenced by the organization's goals. For example, if the main goal of an organization is cost-efficiency, then the CRE will have the similar goals. Therefore, one can say that the CRE department can be positioned either in the supporting staff or the operating core.

3.5.3. Objectives of the CREM

CREM definition

From the theories of real estate management, the constructed building stock is considered as the supply and the interest of organizations or people for the need of a specific type of building is called demand. Therefore, managing this supply and demand is seen as the real estate management (De Jonge, Arkesteijn, Den Heijer, De Vries & Vande Putte, 2009). The importance of management of real estate has been growing in the corporate organizations with the growth of their corporate portfolios, over the last decades (Krumm, Dewulf & de Jonge, 1998). Therefore, real estate is now seen as a possible opportunity rather than a burden to add value to the organization (Jensen, Sarasoja, van der Voordt & Coenen, 2013). In the present, the aim of real estate management is to add value for both the users as well as the owners of the building (Den Heijer, 2011).

Real estate management can be categorized into mainly into Public real estate management (PREM) and Corporate real estate management. Where the PREM deals with the management for public purposes such as the university campuses or the governmental functions. And the focus of

CREM is more commercial such as, it deals with the retails and offices. The definition of CREM is further elaborated as “the management of a corporation’s’ real estate portfolio by aligning the portfolio and services to the needs of the core business (processes), in order to obtain maximum added value for the business and to contribute optimally to the overall performance of the corporation” (Krumm, Dewulf & De Jonge, 2000). Over the years, CREM as gained importance as an essential for businesses to have a competitive advantage, by means of aligning the space of organizations to the business objectives and focusing on internal benefits of space management.

CREM objectives

According to Den (Heijer, 2011) CREM is referred to as ‘real estate management by parties that are both owners and occupiers of their real estate’. Initially CREM was defined as a range of managerial activities which aimed at making the right fit between real estate and corporate performance. The main focus of Corporate real estate management (CREM) used to be providing cost effective and good quality services or products to its clients, which is still remains as one of the primary focus even today.

Initially, corporate real estate professionals focused on managing the physical property for the business. They were responsible with acquiring, maintaining, and disposing of real estate throughout the “lifecycle,” or useful life, of any property. Certainly, those functions remain at the core of corporate real estate (CoreNet, 2016).

But however, in the present day the role of CREM has continued to evolve. By the end of 20th century it is widely recognized that fulfilling only the two mentioned objectives does not guarantee success of real estate and it does not directly improve an organizational performance (Krumm, Dewulf, & de Jonge, 1998)

Currently, the corporate real estate specialists are responsible with partnering with the business and adding strategic value. More and more corporations now see real estate as a strategic asset and corporate real estate as a strategic function. Because of that shift, a new skill set is required for the management of the corporate real estate. And corporate real estate mangers are at leading the corporate social responsibility and sustainability initiatives and are at the fore front in the innovative workplace design movement which aims at improving worker productivity and wellbeing.

Also, corporate real estate plays a crucial role in making work experiences that aid in talent recruitment and retention. With the growing competition for skilled people, organizations are looking for top talent in this highly transparent job market. Executives are looking ways in implementing digital technologies to improve the knowledge-workers experience, focusing on inclusion and diversity as a business strategy, and understanding that, they will not succeed without a strong learning culture. Further complicating the challenge for corporations, the marketplace is in continuous change, driven by new services products, technologies, and uncertain

and unpredictable global political and economic shifts. And this has led to a shift of the balance of power from the employer to the employee. Due to such aspects that could add value, Research was done on CREM and how it could add value to organizations, which resulted in criteria such as the reduction of costs, the focus on more flexibility and the raise of the value of the asset. However, not only the organizational side seemed to make profit out of it, but also the user side got recognized by better user satisfaction, increased productivity and a competitive marketing position (Meulenbroek, 2014). De Jonge (1997) also saw this division between certain domains within the sector of real estate management. These aspects of added value are further explained in the chapter 3.7.

The next chapter will elaborate on the position of flexibility within CREM, by first attempting to understand the demand for flexibility and then further positioning flexibility in different levels of corporate portfolios.

3.6. Flexibility with CREM

After an understanding of the structure of organization and the position of the CREM within organization. This chapter will attempt to understand different kinds of flexibility explained by various authors and will further elaborate how the integration of such flexibility at the different levels has its effects on the organization. The first section will attempt to understand the demand of flexibility within organizations and CRE. Further, the next section will attempt to understand and note the different interchangeable terminology used for flexibility of boundaries in workplaces. The following section will then identify and classify different types of flexibilities from the literature. Further the last section explains the link between what type of flexibility is needed on which part of the CRE portfolio thus providing the focus on flexibility needed for this research model.

Demand for flexibility in organizations

Change and economy are indistinguishably linked together. Therefore, the main challenge for all the organizations is to be able to respond to the changing future, whether its negative or positive, as this might result in influencing the competitiveness negatively if the company fails to respond to these changes. In order to react to these changes, flexibility in resources to react to the context could be used. The term flexibility in this context refers to *the ability to make spatial, technical, organizational or juridical real estate adjustments* (G. P. R. M. Dewulf, Den Heijer, De Puy, & Van der Schaaf, 1999). To decide on the right level of flexibility of resources is interesting but at the same time challenging due to different factors that influence. And one of these current resources seen today is the real estate. These resources must guarantee the right balance between the costs of increasing competitiveness and the level of flexibility.

The changes in organizational and generic context have a strong influence on the desired portfolio. To increase the responsiveness to changing trends, a certain level of flexibility must be included in the real estate portfolio. This flexibility provides opportunities to make adjustments in spatial, organizational functional contexts in the real estate portfolio and to transform actual portfolio into desired portfolio by meeting the uncertain demands of the changing future. One of the solutions to achieve flexible boundaries at different levels of organizations. And this flexibility in the boundaries of organizations can create universe of options to generate value, this requires creation of new business models that enhances the agility

Author Gibson (2000), who is a researcher in the field of Corporate real estate, has researched about the difference of actual and desired portfolio in UK (V. Gibson, 2000). She conducted a survey with people responsible for corporate real estate of 48 organizations. Out of this, 63% of the organizations had 100,000 square meters of office space and concluded that there was a

significant difference in the desired and actual portfolios. Gibson argues that real estate managers help in the development of new real estate products, on how current ratio can be aligned with the future. Therefore, corporate real estate managers must adopt new approaches to their strategies to achieve the desired portfolio.

Demand for flexibility in CRE

The necessity for flexible real estate solutions is driven by the need to support the changing business at a strategic level on one hand. And on the other the wish to increase the productivity of users at operational level. The higher the uncertainty, higher will be the demand for flexibility by the organization, and this leads to increase in responsiveness to change. The main effect of adding flexibility is that it delays undesirability for physical and financial corporate real estate aspects (Heywood, 2011). Hidden vacancies are also prevented by applying flexible strategies. Another effect for including flexibility is that it reduces the risk by making the ability to adopt future scenarios (De Jonge & Den Heijer, 2004). Thus, flexibility in real estate makes it easier to change the supply to meet the uncertain future demand by making way for adjustments in spatial, organizational and technical. All organizations should be driven by its effect, but different organizations have different ideas about flexibility in their portfolios.

3.6.1. Classification of flexibility within the theories of CREM.

Gibson (2001) describes that flexibility in a workplace relates to the space, the infrastructure, the workforce and the work processes. She further explains that flexibility within the corporate property portfolio is multidimensional and therefore needs to be considered from the different perspectives. According to her flexibility in a property can be achieved in various ways and the three main sources of flexibility are physical, functional and financial. In the physical flexibility the focus is on the design and construction of the building rather than how it is fitted out. The functional perspective focuses on working in alternative workplace environments. The other aspect of functional flexibility is using the space as when required. Financial flexibility refers to owning or leasing of the properties.

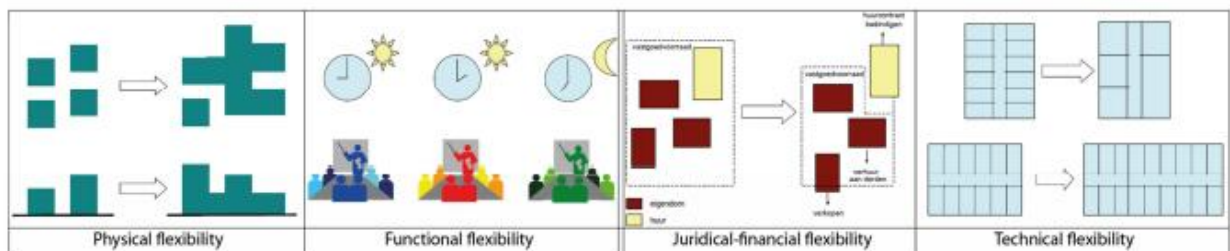


Figure 3.6.1. Kinds of flexibility in CREM

To understand the relationship of the type of flexibility required during different circumstances we investigate Gibson’s model that uses the three-tier approach to examine a corporate property portfolio. The core portfolio of an organizations provides functional flexibility, which is supported by peripheral portfolio that can provide, financial flexibility. This part is further elaborated in the next section. Another type of flexibility: technical flexibility is added by De Jonge and Den Heijer (2004), illustrated in figure 3.6.2. This type involves ability of building layout to change the shape by flexibility in construction and all the installations. Further, De Jonge and Den Heijer (2004) also differentiate between the internal and external spaces of an asset, while Gibson combines them.

	Types of flexibility				
Gibson (2001)	Physical flexibility		Functional flexibility	Financial flexibility	
De Jonge & Den Heijer (2004)	Physical flexibility	Technical flexibility	Functional Flexibility	Juridical-financial flexibility	

Figure 3.6.2.: Different types of flexibility

From the literature reviewed above flexibility can be classified as explained in the figure above (figure 3.6.2). The figure shows the three types of flexibilities categorized by Gibson (2001), which are physical, functional and financial. Further, it can be seen that De Jonge and Den Heijer (2004) added another flexibility that is technical as they have made distinction in the internal and external spaces, whereas Gibson has classified both of them under physical flexibility. The next section will further explain the kind of flexibility required on the different levels of corporate real estate portfolio using the three-tier approach of V. A. Gibson & Lizieri, (1999).

3.6.2. Relation of CRE and flexibility type.

After classifying and describing the different kinds of flexibility. This section will further analyze the type of flexibility required on the different levels of a portfolio with the help of model designed by Gibson and Lizieri (1999).

Gibson and Lizieri (1999) have designed a three-tiered approach to observe a corporate office portfolio. The reasoning behind this is from an HRM point of view and things a real estate needs to support the organization. Therefore, it’s crucial that the real estate responds to the changes of the employees in the organization. In order to do so, they have distinguished between the core real estate and the periphery real estate which support the core. The core real estate of an organization usually has high level of functional flexibility and the peripheral has the numerical flexibility.

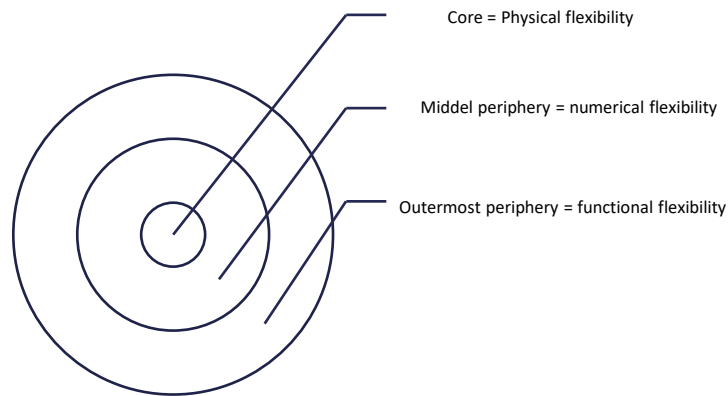


Figure 3.6.3. Illustration the relationship between portfolio level and flexibility (Gibson and Lizieri 1999).

The core portfolio, which is essential need of an organization for the long period, includes facilities which are located strategically (manufacturing), landmark properties (headquarters) and spaces that relies for the reason of competitive advantage (research and development). Because these spaces will be part of the organization’s portfolio for a longer duration, these properties can provide the functional flexibility. The first periphery offers more numerical flexibility, is introduced to respond to the fluctuating demands that occur in the business cycle of companies. The outermost periphery level, which requires the short-term flexibility. Here the physical flexibility is more important. Here two types of spaces can be identified. The first is expert spaces, like the conference areas, meeting areas etc. which are infrequently used throughout the year. Second one is the basic office space used like the serviced office spaces, required to accommodate the extra activities for short period. The figure 3.6.3 below shows the relation between the flexibility type required and the CRE portfolio.

After the classification of different types of flexibilities from the first section and illustrating the relation of flexibility type on the corporate real estate portfolio, this information can now be added to the figure 3.2.4. explained in the previous section to better analyze the relationships of all the components collected from the literature review and this is illustrated in the figure 3.6 below. Further, the different types of boundaries are elaborated along with including the type of flexibility required in those in the table 3.6 below.

Boundaries (Chapter 3.4)	Kind of shift due to flexibility (Chapter 3.4)	Examples	Type of flexibility (Chapter 3.6)
Place (External boundaries) (Vos et al., 2000)	Central to dispersed locations	<ul style="list-style-type: none"> • Distributed workplace • Mobile working (Duffy et al., 1992) (Wadat, 1999).	Functional flexibility (De Jonge Den Heijer., 2004) (Virginia Gibson, 2001) (De Jonge Den Heijer., 2004)
Space (Internal boundaries) (Vos et al., 2000)	<p>Closed layouts to more open layouts</p> <p>Personal to shared</p>	<ul style="list-style-type: none"> • Open-office layout • Non-territorial workplace. • Hot-desking. (Brunia & Hartjes-Gosselink, 2009)	Physical/ technical flexibility (Virginia Gibson, 2001) (De Jonge Den Heijer., 2004)

Figure 3.6.: Illustration relationship of components from literature studied. (own figure)

3.7. ADDED VALUE

After the classification and determining the relationship between the different boundaries and flexibility. The next aspect relates to the added value. This section will provide the added values to weigh the flexibility in different levels of organizations, which will be used in the measurement tool to analyze data collected during field work. This development of measurement tool, from the theoretical research will be elaborated in the later section

Introduction

Different strategies can be noted to align with the core business to the corporate strategy. And one such example of such strategies is by controlling added values. The different added values are defined of real estate to quantify them. De Jonge mentions seven such added value of corporate real estate that can support the corporate strategy. The added value mentioned by him are productivity; costs; risk; value; flexibility; culture; and PR & Marketing. De Vries et al. (2008) 'defined the added value of corporate real estate as its contribution to organizational performance and the attainment of organizational goals from the perspective of various stakeholders'. This definition connects added value clearly to better performance. Ree (2002) states two important approaches that contribute to organizational performance;

- Greater efficiency can be achieved by reduction of occupancy costs, this can be achieved by reducing the amount of space per employee; and
- Greater efficiency can be achieved by improved productivity of the employees, this is achieved by providing comfortable and innovative working environment.

Therefore, to increase the impact of both approaches and to reduce the negative impact of the approaches on one and other, a transparent decision support model is desirable which indicates the proper criterions of added value.

3.7.1. Definitions and classification of types of added value in literature.

To get an overview of all the added values, we look into the different definitions of added value defined by different authors through the years. As discussed in the above section (Section 3.5.3) that the focus of CREM is on the "the alignment of the real estate portfolio of a corporation or public authority to the needs of the core business, in order to obtain maximum added value for the business and to contribute optimally to the overall performance of the organization" (G. Dewulf et al., 2000). This definition states that 'added value' and contribution to 'overall performance' are the main objectives of CREM. Therefore, the added value is defined as "the multidimensional construct which includes functional and emotional benefits, as perceived by consumers, relative to the competition; these often also result in benefits for the firm" (De

Chernatony and Harris, 2000). Other definitions of 'added value' relates to the changes in the output or outcome to changes in the input in a certain time period. For instance, in pricing literature, 'value' is usually defined as the trade-off between the customers' perceptions of benefits received, and sacrifices incurred (Lezinski and Marn, 1997)(Jensen, Voordt, & Coenen, 2012):

Value = Benefits – Sacrifices as perceived by customers

Sacrifices are often linked to financial costs but can also include non-monetary factors such as time and effort (De Chernatony and Harris, 2000). Coming to the definition of added value in the terms of real estate, Keeris, (1997) refers added value to "the stakeholders' (subjective) appreciation of achieving the stakeholders' goals and purposes".

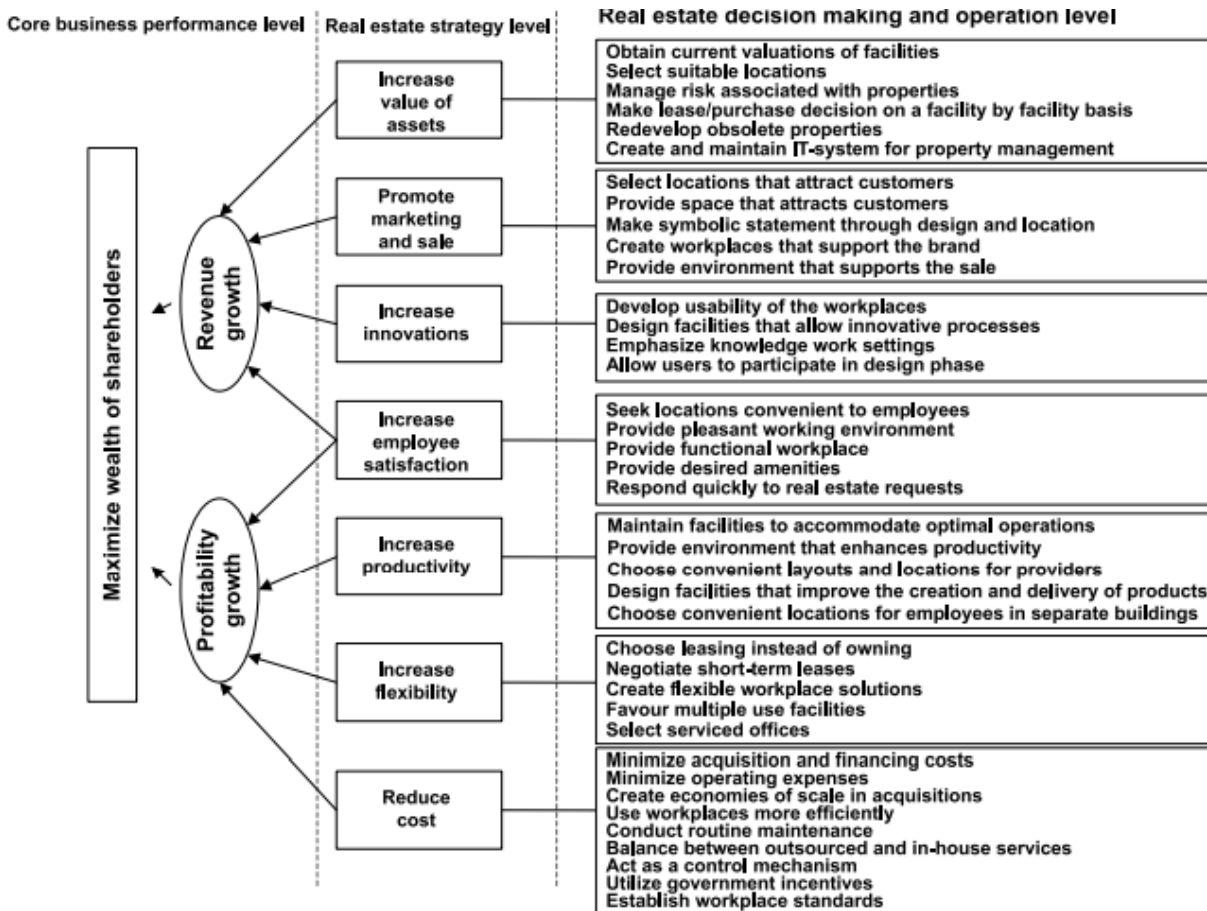
Added values identified by different authors within the CREM theories

As the main objective of this research is to identify the added value of flexible boundaries of workplaces therefore it important to first identify the components that add value to the core business. The goal then will be to develop a framework that will guide corporate real estate managers to better understand the direct and indirect ways flexible workplace boundaries can add value to the core business performance of the organizations. This will then help the corporate real estate mangers to better communicate with the top corporate decision makers how flexibility can add value to their firms. To do that the different added values classified by different authors are reviewed and then the applicable added values for this research are selected.

Within the literature of CREM, different values of corporate real estate are mentioned. And the first attempts to discern added value by real estate was made by Nourse and Roulac in 1993, by explaining the relation of aligning real estate decisions with the corporate strategy, by stating that real estate decisions are effective if only they can support the overall business objectives (Nourse & Roulac, 1993). Further, Bradley (2002) classified the added values into 6 types to be used to operationalize the different value dimensions as he added the employee satisfaction and productivity to measure the use value. And also included added value criteria that measure the environmental value. Lindholm and Leväinen (2008) used the framework of Nourse and Roulac as the starting point and examined the added values in practice, finding out seven added values of the real estate, that aligns the goals of shareholders value. By this list they refined several aspects, while maintain the overall goals of adding value. While Lindholm and Leväinen included the shareholders perspective on adding value, De vries et al. (2008) included the stakeholder's perspective to the list and defined nine added values over three core organizational performance aspects which are profitability, productivity and distinctiveness, furthermore he went on to classify these added values into tangible and intangible values. Where the intangible values are more difficult to measure which are related to the needs of the users. Further moving on, within the

research of Den Heijer (2011), she studied the literature on added value and divided the added value based on four different perspectives of different stakeholders that is;

- (1) the strategic perspective of the policy maker,
- (2) the financial perspective of the controller,
- (3) the functional perspective of the user and
- (4) the physical perspective of the technical manager.



Source: Lindholm *et al.* (2006)

Figure 3.7.1. How real estate decisions support strategies and core objectives

Therefore, finally for the development of the measurement tool for this research, I first referred to the research of Lindholm *et al.* (2006) as shown in Figure 3.7.2. The author formulated the framework by conducting interviews with the corporate real estate executives and this framework was produced that illustrates how seven real estate strategies add value to the core business, with operating decisions that may then follow from the real estate strategies. The framework reflects two basic approaches for increasing shareholder value: revenue growth and productivity. I

incorporate this as the bases for the model, as this research by the author Lindholm et al. (2006) takes into account the practical added values that organizations use.

(Nourse & Roulac, 1993)	(Bradley, 2002)	(Lindholm, 2008)	(de Vries et al., 2008)	(Heijer, 2011)	(Jensen et al., 2012)
1993	2002	2008	2008	2011	2012
Promoting HRM objectives	Stakeholder perception (employee satisfaction)	Increasing employee satisfaction	Increasing satisfaction	Supporting user activities	Satisfaction
Capturing real estate value creation of business	Financial health	Increasing the value of assets	Expanding funding possibilities	Increasing real estate value	—
Flexibility	Organizational development	Increasing flexibility	Enhancing flexibility	Increasing flexibility	Adaptation
Facilitating managerial process and knowledge work	—	—	Improving culture	Supporting Culture and stimulating collaboration	Culture
Promoting marketing message	—	Promoting marketing and sales	Supporting image	Supporting image	—
Facilitating and controlling production, operation and, service delivery	—	—	Controlling risks	Controlling risk	Reliability
—	—	Increasing innovation	—	Stimulating innovation	—
—	Productivity	Increasing productivity	Increasing productivity	Supporting user activities	Productivity
—	Environmental responsibility	—	—	Reducing the footprint	Environmental
Occupancy cost minimization	Cost efficiency	Reducing costs	Cost reduction	Decreasing costs	Cost

Figure 3.7.2. Added values listed by different authors overtime.

Apart from these seven criteria to measure the contributions of the workplace boundaries to the firm, I also included another criterion which was listed in the literature. That is the sustainability, this criterion is become very crucial in the recent parts and would be important to include in the tool as it might help measuring the added value in the future as well. Therefore, the components for my resulting framework spans the traditional real estate strategies such as reducing costs till less recognized strategies such as increasing of innovation and employee productivity. Thus, the workplace strategy each firm will choose depends on the broader core business strategy and objectives of the organization.

Potential Data collection measures of added value

Further, the tool will require data as an input for measurement. And since within this research we will be measuring the added value, therefore the potential measures of how this data can be acquired is listed in the figure 3.7.3 below. One or more of these measures can be used in the case studies to gather the data for this measurement tool.

<i>Criteria</i>	<i>Potential Measures</i>
<i>Satisfaction</i>	Employee satisfaction with work environment Number of nearby amenities for employees Workplace setting
<i>Productivity</i>	Employees’ opinions on how well the workplace supports their productivity Time wasted with interruptions (due to open space layout)
<i>Innovation</i>	Amount of ideas generated. Creativity stimulated in employees
<i>Talent attraction</i>	Market image Recruitment process
<i>Talent Retention</i>	Employees willingness to continue in the organization. Employee Turnover
<i>Cost</i>	Percentage of space occupied Persons per seat Costs of underutilized space Percentage of total operating expense Occupancy cost as a percent of total operating expense Occupancy cost as a percent of operating revenue by business unit Occupancy cost as a percent of operating revenue by building Occupancy cost per unit of production Occupancy cost as a percent of total labour and overhead by business unit Occupancy cost by building Space (square feet or metres) per employee Whether workplace standards are used
<i>Sustainability</i>	Space (square feet or metres) Building footprint Time for transportation

Figure 3.7.3 Potential data collection methods to identify the added value

The following figure 3.7.4 shows the added value components that are identified from the literature that fit to measure the added value of flexibility at workplace. Hence the framework will use these seven components that are listed in the below. Also, the figure 3.7.3 explains the ways to measure the added value and how to achieve this data to add to the framework, so as to further guide us be able to develop a mathematical model and to measure the criteria.

Added value	Primary stakeholder	What to measure	How to measure (Tools to measure)
1. Satisfaction	Users	Employee satisfaction over a period (e.g. Sick leaves, spatial satisfaction, privacy)	Post-occupancy evaluation. Employee surveys.
2. Productivity	Users	Output per employee. Team productivity.	Employee surveys. (Measuring time spent working)
3. Innovation	Users	Number of ideas and solutions generated.	Employee surveys. Log books on knowledge sharing activities.
4. Image (Talent attraction)	Policy makers Users	Costs related to marketing or others. Value of company.	Post-occupancy evaluation. Company data-base. Market valuation.
5. Image (Talent retention)	Policy makers Users	Costs related to training and retaining employees Value of company.	Post-occupancy evaluation. Company data-base. Market valuation.
6. Costs	Controller	Cost saving by establishing the strategy. Process optimization. Outsourcing.	Project data base. Measuring space, number of Workstations.
7. Sustainability	Technical manager Users	Building footprint (M2 per function type or user group) Reduction of energy consumption Reduction of travel and transport activities	Project data base (critical success factors from cooperate strategy) Employee surveys

Figure 3.7.4: showing the seven added value components

3.7.3. Conclusion

After the theoretical study of the topics; organizations, CREM, flexibility in CREM and the added values, the sub-question 2 will be answered. This sub-question is further divided into 3 more questions, whose answers will provide the final answer for the sub question 2.

- i. How do organizations function and fulfil goals?

From the literature, author Lunenburg (2012) described that Organizations exist to achieve goals. These goals are further divided into tasks which become the basis of jobs. Further these jobs are grouped into various departments such sales, manufacturing, marketing and

so on. Inside of these departments further distinctions are made depending on the job that people perform. These various departments are linked with each other to form the basis of organizational structure, this structure gives the organization a form to function and fulfil its goals

ii. What is the role of CREM in organizational goals?

As the goals and objectives of CRE department is closely aligned with the organization's overall goals and objective, therefore the activities of CRE department is greatly influenced by the organization's goals. For example, if the main goal of an organization is cost-efficiency, then the CRE will have the similar goals. Therefore, one can say that the CRE department can be positioned either in the supporting staff or the operating core.

iii. What are the flexibilities classified in CREM?

From the theories of CREM the main flexibilities that were classified in the literature study are physical, functional, and financial. In the physical flexibility the focus is on the design and construction of the building rather than how it is fitted out. The functional perspective focuses on working in alternative workplace environments. The other aspect of functional flexibility is using the space as when required. Financial flexibility refers to owning or leasing of the properties.

But since the focus of this research is about the workplaces, there the flexibilities related to this are the physical and the functional flexibility. The remote workplace relates to the aspect of functional flexibility and the internal workplace relates to the aspect of physical/technical flexibility.

Sub-question 2. What are criterions used in the literature of CREM to measure the added value of flexibility?

Within the theories of CREM, different added values were identified. The added values were somewhat similar with each other with little difference in terminology. As the main focus of this research is to find out the added benefits of flexible workplaces on organizations. Therefore, the criterions were identified keeping the goal of this research in mind. Hence below are the added value that are identified from the literature. These will be further used in the measurement tool to measure data in the empirical study.

1. Increase satisfaction 2. Increase productivity 3. Increase innovation 4. Talent attraction 5. Talent retention 6. Reduce costs 7. Sustainability

3.8. The Measurement Tool

In order to measure and analyze the added value in organization from the empirical data, a measurement tool will be required. This measurement tool will be created from the framework developed from the literature review. The tool is created by first defining the alternatives and the different criteria. These are then placed in a framework so as to develop a model to provide comparison and analysis of the different added value and its impacts. After the tool is completed, the data for comparison will be used from the case studies.

Defining the alternatives

To make a decision, alternatives are required that can be measured. Each alternative has a name and may have associated properties relating to them. The alternatives that we classified from the literature review that needs to be fitted in this model are:

1. Flexibility of place (external boundaries).
2. Flexibility of space (internal boundaries).

Define the criteria

Normally, different criteria are used to evaluate the listed alternatives. Each criterion has a name and may have associated properties. In this case, we have listed the seven values derived from the literature review. These seven criteria will be used to calculate the added value created for the organizations. Therefore, the criteria used in this model are:

1. Satisfaction.
2. Productivity.
3. Innovation.
4. Talent attraction.
5. Talent retention.
6. Costs.
7. Sustainability.

3.8.1. Creating the framework to measure

After the identification of the two alternatives and the seven criterions, these are now added to the tool as shown in figure 3.8 In this measurement tool, you can observe that the seven components of added value are cross compared with the alternatives, which are the levels of flexible workplace boundaries. This will help in providing the most optimal results as each of the level added value are categorized separately. This tool (figure3.8) will use the data collected in the fieldwork and thus will be used to test the results from the case studies.

Type of Boundary	Place (Vos et al., 2000) (Remote working)		Space (Vos et al., 2000) (Non-assigned desks)		Findings
Type of flexibility	Functional flexibility		Physical/ technical flexibility		
Added value	Interview data	Survey Data	Interview data	Survey Data	
1. Increase satisfaction					
2. Increase productivity					
3. Increase innovation					
4. Talent attraction					
5. Talent retention					
6. Reduce costs					
7. Sustainability					

Figure 3.8: showing the structure of basic framework

3.8.2. Structure of the measurement tool.

The measurement tool has various components that have been identified from the literature, at the different stages within the literature study. The first row consists of the two boundary types that was identified from the chapter 3.3, which consists of the external boundary known as boundary of place and the internal boundary of space which were identified from the literature of Vos et al., 2000.

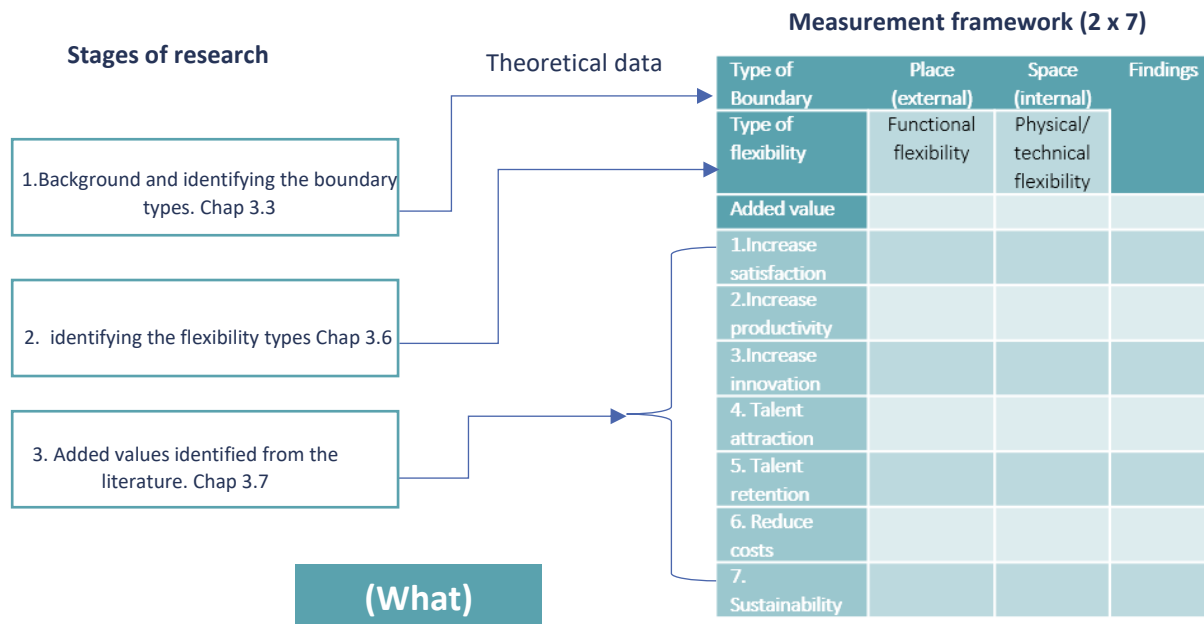


Figure 3.8.1: showing the components of the measurement tool.

The following row has the two types of flexibility of the related boundary type, namely, the functional flexibility for the external boundary and physical or technical flexibility for the internal boundary which were listed from the chapter 3.6. These columns are further divided into two sets each for the data collection. They include the column for data collected from interviews, which is the qualitative data and then the other column includes the data collected from the surveys which is the quantitative data. The quantitative data here is used to validate the qualitative data. Further, these columns will be filled out by gathering the data from the respected seven added values identified from the chapter 3.7. therefore, each column of the respected boundary will consist of the seven added value criteria. Lastly all the data will be analyzed and results or the findings will be noted in the last column (refer figure 3.8.1).

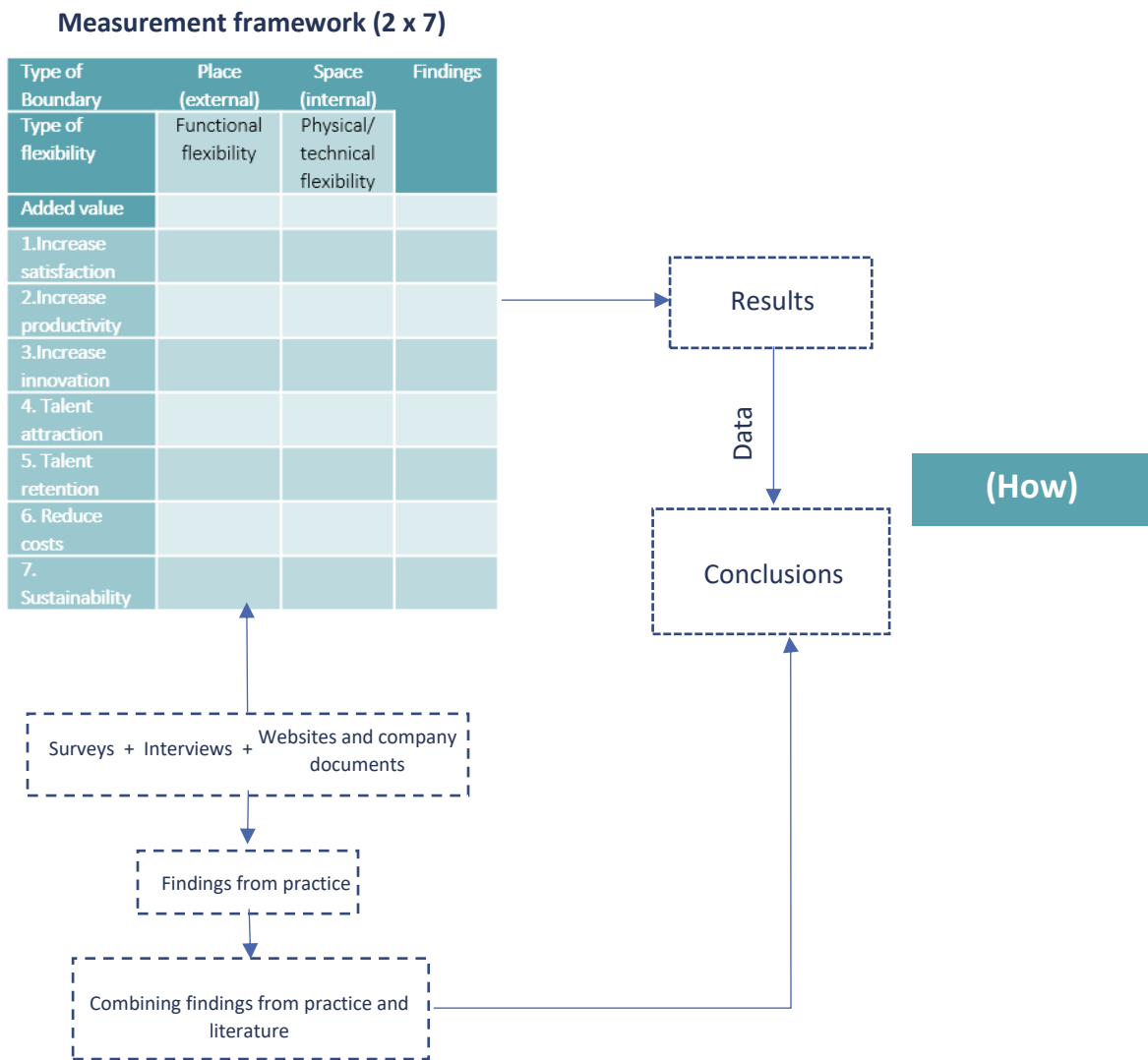


Figure 3.8.2: showing the data processing with the measurement tool.

Further moving on, this measurement tool is the bases for the data collection measures in empirical research. The data collected in the empirical research will be added to the measurement tool (as seen in figure 3.8.2). The data is collected from various sources such as the interviews and surveys and added in their respective columns. Additional data is also collected from the company documents and websites. Lastly all the data is added in the tool and the analyses is carried out. After the analyses final findings are made and noted in the last column and these findings will then be used in answering the main question. Hence the next chapter is wide elaboration of the case studies and the analysis of the data collected from the case studies in the measurement tool.



EMPIRICAL RESEARCH

CHAPTER 4. EMPIRICAL STUDY

Introduction

The main goal of this research is to identify the *perceived* added value of adopting flexible workplace boundaries in the organizations, both directly and indirectly of how it adds value to the core business and wealth of the firm. To achieve this objective, I carried out an empirical research by conducting surveys and interviews in organizations' that have adopted these kinds of flexible boundaries. My aim in the empirical research is find out the actual added values to organization by comparing the findings between the organizations and employee perceptions. To find out the organization's objectives and their perceived added values, interviews are conducted with the key persons of the organization. Further, surveys are conducted to get the perspective of employees. Furthermore, the potential benefits and challenges the organizations considered are also observed and relevant findings will be made.

This section will answer the following sub-questions:

3. Which are the most crucial added values considered by organizations and how is it valued within organization?
4. What are some of the challenges and risks of adopting flexible boundaries and how are these risks been mitigated by the organizations?
5. What are the factors and drivers for the success of adopting flexible boundaries in practice?

To answer these questions the measurement tool devised from the literature study will be used to study and measure the added values in the selected two organization. The collected data are analyzed within the cases and conclusions are drawn.

Cases overview

The two cases selected for analyses are organizations that have adopted flexible working. Both organizations are located in the Netherlands in the city of Amsterdam. However, the location of the cases is not same within the city. One is located one the central business district and the other is in New-West part of Amsterdam. The size and spread of the workplace of this organization also differed. Furthermore, the important aspect was the company culture. Both the organizations had different core value, which served as an interesting aspect in the case study analysis. The overview of all these aspects are noted below in the table 4.





Company name	JLL (Jones Lang LaSalle)	PwC (PricewaterhouseCoopers)
Industry	Real estate	Professional services
Founded	1999 (Jones Lang LaSalle)	1998 (PricewaterhouseCoopers)
Headquarters	Aon Center in Chicago,	London, United Kingdom
Area served	Worldwide	Worldwide
Revenue	\$16.318 billion (2018)	US\$41.3 billion (2018)
Total Number of employees	88,000 (2019)	250,930 (2018)
Number of employees in Netherlands	400	5000
Number of employees in Amsterdam office	Approx. 200	
Interview and Case study location	<p>Amsterdam, Netherlands. Located in the center business district of</p>  <p>Amsterdam, within walking distance from the railway station.</p>	<p>Amsterdam, Netherlands</p>  <p>Located in Amsterdam Nieuw-West the westernmost neighborhoods of the city. The office premises consist of tall high-rise buildings within their campus.</p>
Building type	<p>High-rise, 8th and 9th floor.</p> 	<p>Own company campus</p> 
Type of flexibility offered.	<p>Flexibility of place (remote working) Flexibility of space (Non-assigned desks)</p>	<p>Flexibility of place (remote working) Flexibility of space (Non-assigned desks)</p>
Company culture	JLL believes strongly believe in teamwork, ethics and excellence.	The core to the business is how the firm values and promotes “difference by building an environment where everyone can be themselves

Table 4. Overview of the organizations selected for case study.

4.1. Case: JLL (Jones Lang LaSalle)

4.1.1. About the company:

JLL is a commercial real estate services firm. It is known to be the second-largest company of its kind in the world. The company has been consistently listed by the Ethisphere Institute as one of the world's most ethical companies (2019). The company's headquarters is located in the Aon Center in Chicago, with an operational remit covering the Americas regional market. Regional headquarters are in London (covering the Europe, the Middle East and Africa markets), Singapore (covering the Asia Pacific market) and Moscow (covering Russia and the CIS markets). The company has over 300 offices worldwide in 80 countries. The interview and the survey conducted was in the Amsterdam office in the Netherlands. The office is located in the center area of Amsterdam, which is the center business district (CBD) of the location. The surrounding of the location is corporate area consisting of offices of various companies. The area is a busy area with busy streets and surroundings. The office is located within a high-rise building at the 8th and 9th floor of the building. The interview was held with the lead consultant of workplace strategy at JLL. The interview conducted consisted of open question related to the research and organization, which is listed in the appendix. Further the survey was conducted with the help of the lead workplace consultant and where the employees working at JLL were asked to fill in the survey.

Name	Owen zachariasse
Role	Lead consultant workplace strategy
Department	Strategic consultancy
Job start	April 2019
Duration at PwC	3 months
City	Amsterdam

Table 4.1. Background of the interviewee

4.1.2. Types of flexibility within JLL:

JLL has a number of different capabilities for flexible working at their office, which the lead workplace consultant of JLL classified them under two categories. The soft flexibility and the hard flexibility. The soft flexibility was called by the him as the norms and behaviors of which the organization supports and stimulates and influences. In terms of our behaviors and norms, one is provided with the capability to work from anywhere. Therefore, he or she is not required to be present at the office at all. This kind of flexibility is completely supported through the HR and is completely supported within teams and is also supported by the senior management of the organization.

The hard flexibility deals with the flexibility inside the office within their fixed location. So, within the 'hard' working environment employees have the capability to find different workplaces throughout the office premises (also, to mention the interview was also conducted at an informal meeting area). Within the hard flexibility they have the facility to choose their own desks as well as chose location for meeting in informal and formal areas, based on the exact number of people participating within those meetings.

The desk sharing ratio of JLL as a company is right around 0.8. Certain departments have a lower desk sharing ratio and certain have a higher, this is due to the quick growth of the organization in certain divisions. Therefore, within the organization nobody has a fixed desk, and all are promoted to move flexibly. Hence, it can be considered that one of the drivers to adopt this flexibility was to overcome the accommodation problem due to the organization quick growth.

These both kinds of flexibility are facilitated by the IT department of the organization, that enables all employees to access this kind of flexibility with the help of technology. The employees are able to work flexibly via the company a laptop, telephone and tablets provided by the organization depending the kind of equipment needed depending on the job profile (for example, the designers work more with tablets).

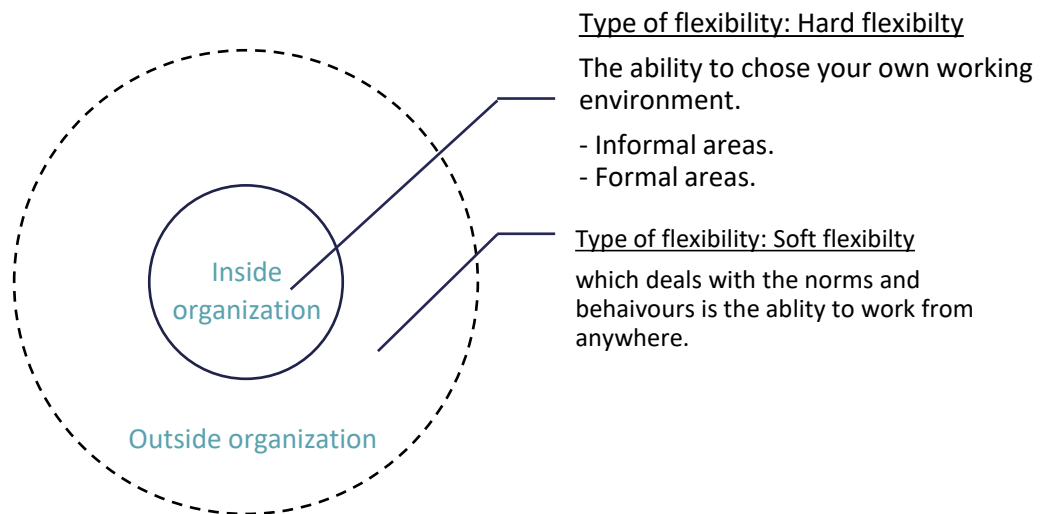


Figure 4.1.1: Types of flexibility within JLL

4.1.3. Linking the flexibilities of JLL with this research:

Both the flexibilities used at JLL can be classified under the two types of flexibilities mentioned within this research. The soft flexibility which can be classified under the flexible boundaries of

space as it deals with the ability of the employees of the organization to work from anywhere outside the boundaries of the office. And the hard flexibility can be linked to the flexible boundaries of place, which is the ability to choose or work in any work environment that suits the person, depending on the type of work he/she is carrying out. Therefore, it can be said that the flexibility mentioned in the interview and within this research with just a different terminology being used.

4.1.4. Type of Job profiles using the flexibility:

As stated by the observation of the Interviewee, the brokerage and agency division should have the ability to be more flexible on where they work, solely depending on the nature of their work. As they are required to be outside the office for the onsite work looking at potential assets for renting by potential tenants. Therefore, they are extremely mobile in nature. The interview also stated that his department that is the strategic consulting division is also flexible and often have meetings with clients outside the office boundaries.

Some other job profiles which are not very flexible simply by the nature of the job. For example, the HR department and receptionists. But they still have the ability to work anywhere with the office premises. Also, to facilitate the smooth functioning the flexible working the HR department handles it. Therefore, they facilitate to be able to use the flexibility effectively and efficiently.

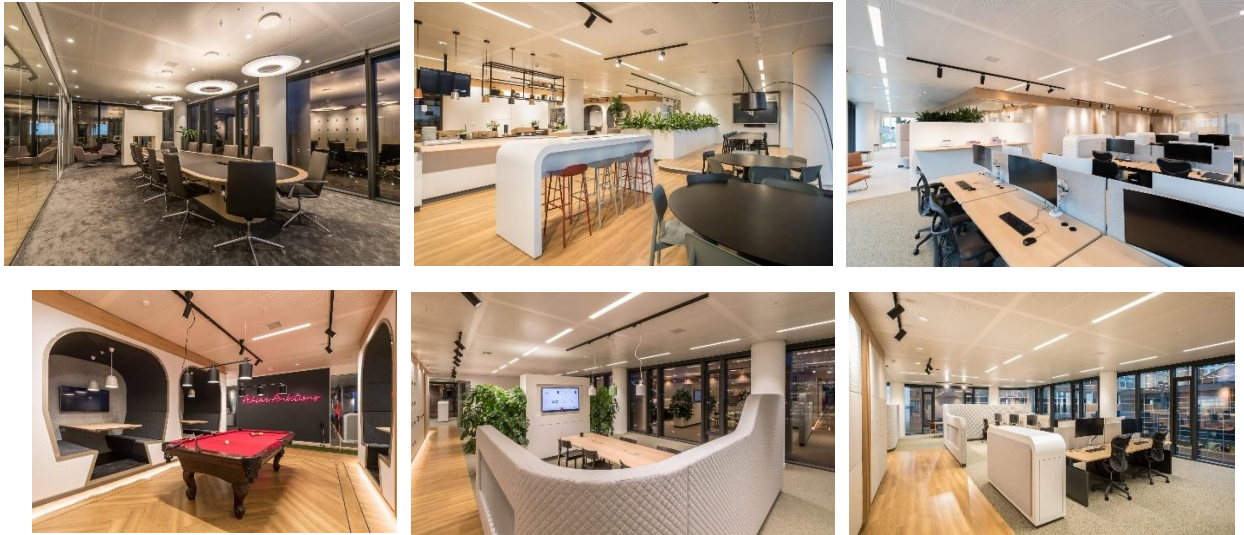
Department	Requirement.	Flexibility offered
Strategic consultancy	-spaces that provide the ability to collaborate.	- Activity based working (Flexibility of space). - Remote working (Flexibility of place).
Brokerage and agency	-ability to work away from office.	- Remote working (Flexibility of place).
Information technology	-Spaces that provide ability to concentrate.	- Activity based working (Flexibility of space). - Remote working (Flexibility of place).
HR	-required to be present at specific locations.	-nil

Table 4.1.3 showing the flexibility requirement as per the different service line.

4.1.5. Workplace design:

The main aim of the office design was to create a workplace that the employees miss when they are at home. The office consists of warm color tones and open working spaces, with a number of informal spaces for casual meetings or conversations with the colleagues. The goal of the

workplace is that it should facilitate all the needs of all the different departments within their organization and encourage collaboration between the departments.



The design concept is based on ‘the city within’. Just like the city the JLL office consists of several neighbors and areas for various activities. The different areas of the city like the central business district, food district or parks have been translated into the workplace design. The layout of the workplace is designed so that each department has their own ‘neighborhood’, but at the same time to encourage everyone to freely work outside their department, elsewhere in the office. The office has various informal and formal areas. In the informal areas, the employees can retreat or just meet the entire team. In addition, the office design also consists of a scrum room, pool table, meditation/game room, restaurant, meeting rooms and various concentration booths. The boardroom has a fireplace and a casual seating area. Also, the workplaces are equipped with the latest IT gadgets to facilitate best work experience for the employees. The acoustics is done by addition of greenery in different areas and the core of the building is covered with special acoustic fabric. The reason for this is to provide a warmer and feel at home atmosphere (EMEA, 2019).

Key Office Features

- The office is located in the Central business district of Amsterdam, within a high-rise building.
- The office consists of 2 floors, with an interior staircase connecting the floors
- Office layout consists of ‘Neighbourhoods’ with distinct features to each.
- Flexibility offered -Activity-based working
- Remote working
- 140 flexible desks for all users and desk sharing ratio is 0.8 which means that 80% flex rate – 8 desks for every 10 employees

- Multi-purpose catered lunch café with an ability to hold conferences and large meetings

Technology-enabled

- Room booking system based on activity rather than need
- Each workstation consists of Large curved screens and TVs throughout
- Reception area with front-of-house staff

Informal spaces

- Billiards table
- Built-in putting green
- Catered cafe area

Formal spaces

- Neighbourhoods
- Meeting rooms of multiple sizes.

Table 4.1.4. key office features of JLL



Figure 4.1.5: Office floor plans indicating the neighborhoods.

4.1.6. Potential Benefits observed by the organization.

The largest and the most direct benefit stated by the organization by achieving flexible boundaries was the improved work-life balance, which was also evident from the surveys. Most of the employees of JLL responded to this as greatest benefit and the greatest potential link that the organization makes by this is the retention of talent, by looking at the cost per employee. As the cost per employee are too high, there is a cost associated to attract and training the new hire



into the company. Therefore, the organization sees this as a direct cost saving for every employee retained inside the company. The organization believes that the ability to offer the work-life balance in a very complicated world, in terms of that there is a lot of demand on time and the ability to focus between the home-lives and professional lives of people is a crucial factor. And this is not only supported but also actively promoted in the organization and the employees of JLL appreciate that greatly and is also considered as one of the many reasons to stay with the organization.

And in terms of flexible working boundaries, another value creation observed within the organization is also the authenticity. As many times, when the senior management communicates down to the organization to achieve a particular objective, but the rubber doesn't meet the road, as the activities that are taken directly contradict in the worst case and sometimes the objective which was initially well intended but won't work. But that is not the case within this organization, as this also increases the trust of people all the way up to the value chain, all the way up to the organization chart, which increases the employees trust on the organizations leadership that not only has good intentions but also great ways to execute those intentions, which also provides a sense of comfort and stability in good management. And indirect value contribution observed within the organization, made by promoting flexible workplace boundaries within the working environment of business is the continuity of reputation and because this continuity that exists, the organization now has the capability to enhance their reputation and enhance their business.

4.1.7. Challenges and risks:

The biggest challenge observed by the organization was measuring the benefits. As quantifying the increased quality of life per individual employee is quite a challenge in itself. But the organization's one way of outlook to this is that, they believe that at the beginning its easier to quantify from a risk standpoint and value creation standpoint, as what would be the risk of not implementing flexible boundaries. They see this as one way to go about it. As once the organization understands what they would they stand to lose and at the same time compare what they could gain, which is by comparing value creation and risk mitigation.

Some of the risks mentioned by the lead workplace consultant of JLL were mostly the factors related to humans. As mentioned by him not everybody possesses the character or domineer to work from home as there are a lot of temptations and distractions. One way the organization sees to go about it is by building that trust. That is by proving the organization that he/she can work well beyond the boundaries of the organization. By a proven track and visible consistent track record of performance of working from home and once its proven then they should be allowed to be facilitated and empowered to do so. And if the track record shows otherwise than the organization can have every right to say that they prefer them within the office boundaries or certain boundaries. Therefore, the most potential risk it that it cannot be managed in numbers but must be managed individually. Which would add more value to organization of a smaller size but is a challenge for bigger organization like JLL.

Challenges	Key Risks	Potential impacts of the risks	Key measures to mitigate the risks	Changes in net-risks
<ul style="list-style-type: none"> • Measuring the impacts 	<ul style="list-style-type: none"> • Poor employee performance due distraction. 	<ul style="list-style-type: none"> • Financial and reputational risk. • Sub-standard service delivery and offerings • Loss of public trust 	<ul style="list-style-type: none"> • Employees duty to show consistent or improved track record. • Monitoring improved performance individually. 	
<ul style="list-style-type: none"> • Not providing enough flexibility 	<ul style="list-style-type: none"> • Reduced attractiveness of JLL as an employer • Losing the 'battle for talent' 	<ul style="list-style-type: none"> • Inability to perform complex tasks and to deliver. • Quality failures 	<ul style="list-style-type: none"> • Feedback from employees. 	




 Increased
  Decreased
  Unchanged

Figure 4.1.7. showing the challenges faced at JLL and the mitigation measures used.

4.2. Data analysis (JLL):

The survey conducted with the JLL employees generated the following response. The number of respondents for the survey were around 8-10 respondents working in different departments at JLL. The respondents were asked to rate statements from 1-5 to what extent they agree. Number 1 being strongly disagree to number 5 being strongly agree respectively. The average sum of the responses is taken to analyze the survey data. Further, additional comments made by the respondents is also considered to analyze the data. In the following table is the overview of the respondents consisting of the type of work they do and which service they belong.

Gender	Age	Joining date	Country	Job title	Main activity
Male	Between 26-35	01-04-19	NL	Lead consultant workplace strategy	Real estate consulting
Male	Between 26-35	01-01-17	NL	Strategic consultant	Linking real estate strategies to the organizational ambitions.
Female	Between 36-45	01-06-08	NL	Team assistant	Real estate advisory
Female	Between 26-35	01-03-17	NL	Team assistant	Real estate advisory
Male	Less than 25	01-05-19	NL	Data manager	responsible for data quality in the systems used.
Female	Between 26-35	01-11-17	NL	Receptionist	Answering phone calls and hosting.
Female	Prefer not to say	14-06-19	NL	Receptionist	Answering phone calls and hosting.
Female	Less than 25		NL	Graduate intern	Strategic consulting
Male	Between 26-35	01-01-19	NL	Strategic consultant	Advising corporate clients
Male	Between 36-45	01-09-16	NL	Senior strategic consultant	Strategic advice, portfolio optimization, workplace, change management.

Table 4.2. Background overview of respondents working at JLL

Selection of survey respondents at JLL:

The number of respondents for the survey depended to a large extent on the accessibility to the employees and their willingness to take part in the survey. The study was first pitched to the lead workplace consultant who was also interviewed. He further pitched the research to his colleagues working at JLL, who were working in the office premises of JLL and who were potentially using the flexible working arrangements, they were all invited to participate in the survey. This non-

probability sampling results in a disadvantage in the research because of the fact that the participants of the survey neither represent a randomized selection of all the employees using the flexible working nor of all the employees working at JLL. However, it can be noted that Bryman (2016) argued that the non-probability sampling can still be acceptable for pilot research.

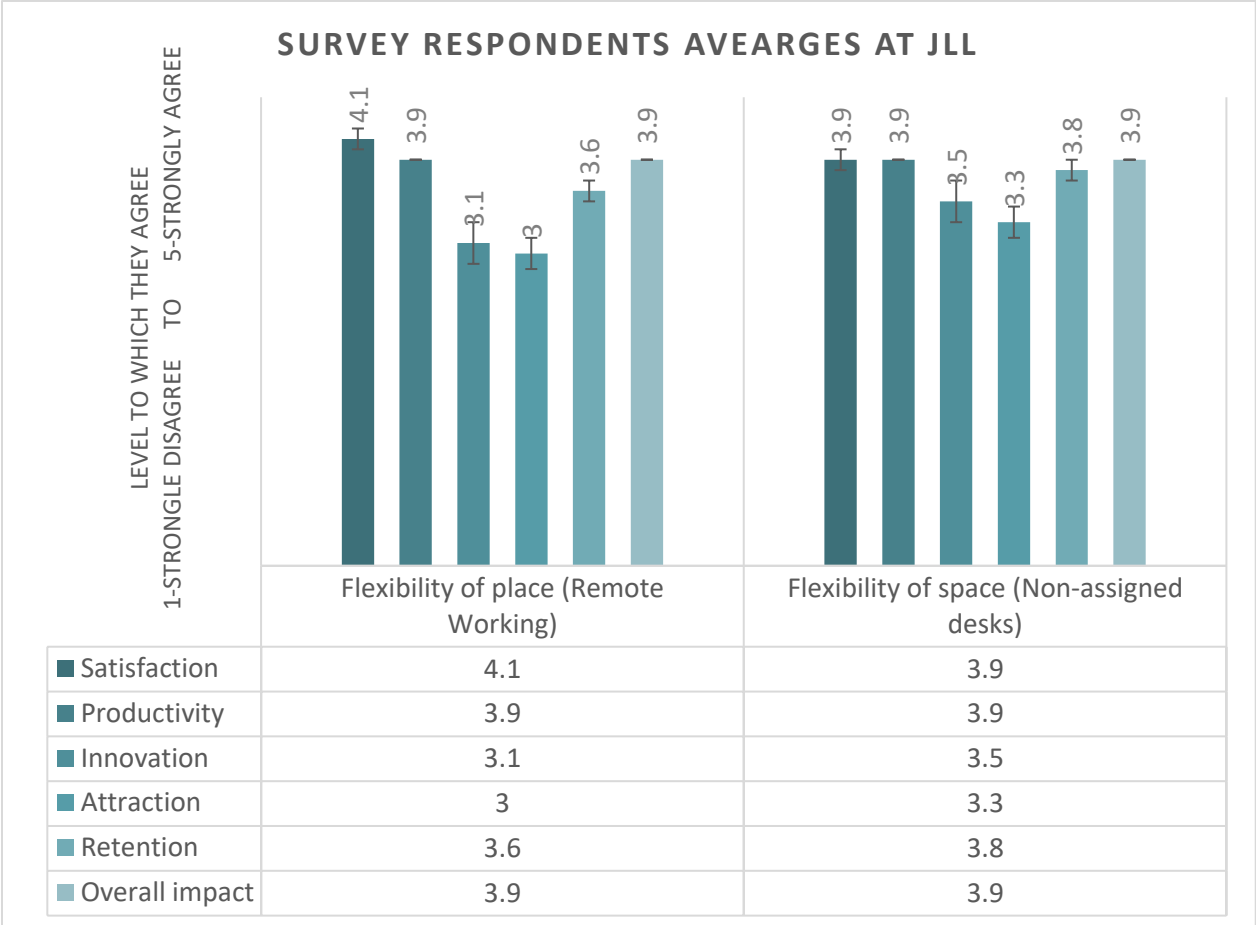


Table 4.2.1. Survey response at JLL

4.2.1. Flexibility boundaries of place (Remote working at JLL)

From the graph of the survey respondents at JLL for the remote working we can see that on an average there is a positive impact on the added value by enabling flexible boundaries of work. The respondents rated highest for satisfaction which was due to that fact that respondents felt that providing flexibility helped in a better work-life balance, which was mentioned the most among the respondents. After which was the productivity being rated the second highest positive impact. The respondents mentioned that having the ability to work from anywhere increased their productivity as the respondents felt that reduced travel time added to the extra work hours and plus some job profiles could work more closely with their clients. Followed by productivity was the talent retention as the respondents said that this ability to work away from office would

serve as a factor to continue within JLL. Innovation and Talent attraction was rated at neutral as the respondents were not aware of this flexible arrangement before they started to work at JLL.

4.2.2. Flexible boundaries of space (Non-assigned desks at JLL)

Coming to the flexible boundaries inside the organization's workplace, which are referred to as the different neighborhoods in the JLL, the overall response was positive even for the internal flexibility offered by JLL. From the response of the survey. Respondents rated the increase in their productivity and satisfaction as the highest. This was due to the fact that people at JLL felt that the ability to work anywhere within the different neighborhoods increased their collaboration with their coworkers, and thus increasing their quality of work. Also, the increase in satisfaction was because respondents felt that the ability to choose where they wanted to work, provided them with a sense of autonomy, which made them feel valued and this in turn increased their satisfaction. Followed by the satisfaction and productivity was the talent retention. The positive response for talent retention was dependent on the fact that they were satisfied working within the organization as it provided them a comfortable environment to learn and grow and this was the respondents felt that this was one of the reasons to continue working at JLL. The least rated was the attraction, which was for the same fact as mentioned in the previous section, that respondents were not aware of this flexibility offered in JLL before joining the work. Another reason was also that some respondents started working in JLL long before this flexibility was introduced in this organization and thus was rated lower in comparison to other criteria. Overall the respondents felt that it had a positive effect on the organization. As the internal flexible boundaries increased the collaboration and space efficiency at the workplace.

4.2.3. Findings of added value of flexible boundaries at JLL:

By combining and comparing the data gathered from interviews and the survey, we can see the findings mentioned in this section. The first criterion productivity was rated positive among the respondents and was also stated in the interview that the flexibility to choose where the employees wanted to work could increase the performance of employees and therefore generating more productivity. Also, it was stated that it has a positive effect on the working structure of the organization as well, due to the increase in stability in the management process. Some potential concerns indicated in the interview that could have the negative impact on the productivity of the employees was due to the possibility to get distracted and therefore could hamper the performance of the employees. But the organization considered it to be a minor disadvantage compared to the benefits and also stated that it was the duty of employees to maintain the trust. Further moving to the satisfaction criterion, it can be observed from the interviews as well as the survey that there was a high level of satisfaction among the employees of JLL. The major reason for the organization was that it increased the well-being of their employees and therefore result in added value for the organization. For the criterion innovation, the organization thinks that providing the ability to chose spaces were the employees find

employees are most creative could increase the innovation generated within the organization. Furthermore, the criterion talent attraction was considered one of the most crucial factors to add business value by the organization. As it can be seen the company’s website being used as a factor to attract top talent and is offered as a perk of working with JLL. But comparing with the respondents the response was quite neutral. As the respondents felt that this factor was not known to them prior joining JLL.

Added Value	Performance indicator		Resulting added value
	Interviews and Observation made by the organization.	Employee survey (out of 12 respondents)	
Increased productivity	<ul style="list-style-type: none"> Stability in management. Increased performance. Potential disruption due to distraction. 	High positive response for both	😊 Increased
Increased satisfaction	<ul style="list-style-type: none"> Employee well-being 	Positive response for both	😊 Increased
Increased innovation	<ul style="list-style-type: none"> Increase in creativity. 	Positive response for soft flexibility and neutral for RW*	😊 Increased
Talent Attraction	<ul style="list-style-type: none"> Continuity of reputation. 	Neutral response	😐 Neutral
Talent Retention	<ul style="list-style-type: none"> Increased well-being among and therefore continue to work. Trust of employee on organization (all the way up to the value chain.) 	High positive response	😊 Increased
Costs	<ul style="list-style-type: none"> Less requirement of furniture. 	NA	😊 Increased
Sustainability	<ul style="list-style-type: none"> Reduced traveling Less space occupied 	NA	😊 Increased

😊 Positive impact 😞 Negative impact 😐 Neutral impact

*RW- Remote working IF- internal flexibility **NA- Not applicable.

Figure 4.2.3. indicating the analysis of the added value in JLL case

4.3. Case: PwC (PricewaterhouseCooper)

4.3.1. About the company:

PricewaterhouseCooper also known as PwC is a multinational professional services network with its headquarters located in London, United Kingdom. PwC is ranked as the second largest professional services firm around the globe and it is also one of the Big Four auditors, along with KPMG, Deloitte, and EY (“Big 4 Accounting Firms - Who They Are, Facts and Information,” n.d.). PwC has network of firm located in 158 countries, 721 locations, with 250,930 people working all around the world. As of 2015, 32% in Western Europe and a total of 5000 employees work in the Netherlands. The company's global revenues were estimated to be \$37.7 billion in FY 2017 and is increased to US\$41.3 billion for the year 2018 (“Global Annual Review 2018: PwC,” 2018) . The interview and survey conducted was at the Amsterdam office in the Netherlands. The office is located in Amsterdam Nieuw-West the westernmost neighborhoods of the city. The office premises consist of tall high-rise buildings within their campus. The interview was held with the campus recruiter working at the PwC. Further details of the interviewee are mentioned in the table below.

Name	Danielle Menken
Role	Campus recruiter
Department	HR Risk Assurance
Job start	1 March 2019
Duration at PwC	4 months
City	Amsterdam
Education	Communication in Groningen.

Table 4. 3: Background of interviewee

2.3.2. Types of flexibility at PwC

PwC offers both kinds of flexibility, that is flexibility to work remotely as well as the non-assigned desks. For the remote working, employees need to send a message regarding being able to work remotely, employees have the flexibility to work away from office for couple of days in a week. For the non-assigned desks PwC provides freedom to choose your own workplace within their premises. The campus recruiter in the interview conducted mentioned that she and her colleagues from recruitment department at times even work at the coffee corner and they have the flexibility to choose a different workspace every day.

The FM director at PwC mentions, when he started working at PwC in the year 2013 noticed that the workplace didn't suit a young and innovative organization, such as PwC. The average age his

colleagues was around thirty years. From his earlier jobs, he was already familiar with new ways of working, and his biggest challenge was getting this topic on the agenda within PwC. In consultation with the HR director and the support of Veldhoen + Company he managed to write a proposal for the managing board. This proposal convinced the managing board, so they got approval to co-develop an Activity-based working concept for PwC Netherlands. Further, they decided to apply this concept initially to the Rotterdam office (ca. 1,000 employees) for learnings and to generate excitement for the new way of working. At the moment, it is also being implemented in the Utrecht and Amsterdam offices, for PwC Netherlands (PwC_Interview, 2017).

4.3.3. Type of job profile using flexibility:

Within the organization the kind of flexibility used is quite different between various departments at PwC. Employees working within the tax and law services prefer working in more concentrative work areas. And on the other end of the scale, the advisory department which deals with the organizations all kind of strategic projects, and therefore their role requires them to work as part of project teams and taskforces. This creates a requirement for spaces that allow for creative collaboration. Furthermore, the insurance division requires more the flexibility to be able to work away from office as they spend a lot of time off-site with clients. Also, within the office, they need spaces that facilitate interaction with others, and spaces to inspire and be inspired. These employees need a workplace that provides them accessibility to their colleagues. Therefore, PwC offers a variety of spaces that suit the different activity portfolios within each line of service. Every floor of PwC consists of working zones that support and facilitate collaborative, communicative and concentrative tasks. There is a real mix of spaces, meaning people can choose the area that suits them (PwC_Interview, 2017).

Department	Requirement.	Flexibility offered
Tax and law	-Spaces that provide ability to concentrate.	- Activity based working (Flexibility of space).
Advisory department	-spaces that provide the ability to collaborate.	- Activity based working (Flexibility of space).
Insurance division	-ability to work away from office.	- Remote working (Flexibility of place).

Figure 4.3.3. showing the flexibility requirement as per the different service line.

4.3.4. Workplace design

The Amsterdam office of PricewaterhouseCoopers (PwC), which consists of two tall office buildings Westgate I and wastegate II was designed by Kraaijvanger Architecten. The design was on the bases of aligning the company's new goal of developing the Activity-based working (ABW). The office design was shifted from traditional cellular office spaces to more open and generic working environments. Also, the new workplace was designed in such a way that it was supposed

to successfully portray the usefulness and effectiveness of ABW. The interior consists of combination basic interiors which are then combined with bright colored elements to match the company's graphics. The layout of all the floor are same, which consist of combination of formal and informal zones workstations and large open central points aimed at collaboration and meeting. The meeting zones are informal zones.



4.3.5. Drivers:

The biggest driver for PwC to adopt flexibility in their working environment was that PwC considers their organization as a young organization with the average age being around 30's. The original buildings did not reflect the people who were working within them. This was considered a big driver to create a more inspiring working environment for their employees. The main goal of PwC was to show to the society that they are an open and transparent organization that cares for their employee well-being. And achieving the concept of flexibility can be a testament to the fact that they are going in that direction.

The driver to shift to flexibility was further explained by the head of workplace strategy at PwC, Helen Hopkin that if they did not provide enough flexibility for the employees then it would be difficult in retaining the talent. The key turning point for PwC to adopt the flexibility to work anywhere was revealed in couple of different areas. Firstly, PwC had conducted an external research and the feedback received from this research revealed that 50% of the respondents wanted flexibility in the way in they worked. It was also reported as a key driver whether or not they preferred to work for the particular organization. Also, internally through an engagement survey conducted at PwC revealed that people preferred for flexible working arrangements to be provided to the employees. The second area was that PwC felt they were missing out on top talent because of their perspective in market was that they did not necessarily provided work flexibility (Sexton-Brown, 2018).

4.3.6. Potential Benefits observed by the organization.




PwC managed to attain both the quantitative and the qualitative goals. They used the Leesman Index to measure the effectiveness and satisfaction of employees at the different office's locations around Netherlands. The Rotterdam office received good sum of positive reviews. Furthermore, they believe to have increased internal transparency, increased collaboration between teams and together with this also managed to improve their image as a modern employer. In this sense, the philosophy of implementing the flexibility to work anywhere within the office came at the right time for PwC, as they were already looking for new ways of attracting and retaining top talent. Moreover, the employees feel there's a growing positive vibe around this kind of flexibility within PwC. Largely due to the success of our Rotterdam office (PwC_Interview, 2017).

Furthermore, the campus recruiter who was interviewed believes that employees are more motivated to do their work when they have the flexibility to choose their own space and this has increased the innovation within the company, as people are creative when they are comfortable, and the organization provides this through flexibility. Another benefit mentioned by her was that the employees feel less stressed and this in turn reflects by them providing better quality of work as one of the core values of PwC is that it trusts people and employee well-being is an important aspect at PwC. Therefore, providing this kind of flexibility serves their core value and also benefits the employees. She also considered the measure as environmentally sustainable, in terms of not having to travel to office daily, reduces CO2 emissions and also, considering that because of the activity-based working within the organization the space occupied is less, contributing to the environmental sustainability.

4.3.7. Challenges and risks:

Shifting the office environment by enabling flexibility and getting rid of the rigid boundaries, that is having no more private offices for partners and directors, was initially accompanied by some challenges, but over the time turned out to be more positive. One of the challenges was, that some freshers in the organization found it difficult to have to sit next to a partner or director. So, on one hand the flexibility offered more collaborative and connection, on the other hand being more connected to partners and directors turned out to be somewhat intimidating for some of the employees. In the end, the PwC believes both groups needed to get used to the new situation.

Furthermore, the new occupancy measurements, derived using real-time sensors, indicated that the occupancy in Rotterdam had risen from 40% to over 55%. The initial intention was to increase the occupancy rate to 70%, so there's plenty of room to further improve the efficiency of use of our current workspace. The FM director also mentions that cost savings on accommodation had never been their main goal of implementing this kind of flexibility, but indeed consider that saving money, while attaining the other goals was for sure is a pleasant cherry on the cake for them.

Challenges	Key Risks	Potential impacts of the risks	Key measures to mitigate the risks	Changes in net-risks
<ul style="list-style-type: none"> Unable to locate spaces available 	<ul style="list-style-type: none"> Delay in performance. Disruption of work. 	<ul style="list-style-type: none"> Financial and reputational risk. Sub-standard service delivery and offerings. 	<ul style="list-style-type: none"> Technology used as enabler to locate spaces. 	
<ul style="list-style-type: none"> Reduced collaboration due to awkwardness working with senior professionals. 	<ul style="list-style-type: none"> Stressful environment. 	<ul style="list-style-type: none"> Inability to perform tasks. 	<ul style="list-style-type: none"> None. 	
<ul style="list-style-type: none"> Keeping track on performance of remote workers 	<ul style="list-style-type: none"> Poor employee performance due distraction. 	<ul style="list-style-type: none"> Financial and reputational risk. Sub-standard service delivery and offerings. 	<ul style="list-style-type: none"> Duty to maintain Trust 	




 Increased
  Decreased
  Unchanged

Figure 4.3.7. showing the challenges faced at PwC and the mitigation measures used.

Another challenge that the organization faced was initially the employees were not satisfied as there have been complaints regarding the availability of space, as sometimes the spaces got occupied and employees were left with no space. Therefore, to overcome this problem, PwC developed an app, for which sensors have been set-up in all the rooms that help employees check the availability of empty spaces and chose accordingly. After, the implication of this the satisfaction of employees increased.

Another challenge mentioned by the recruiter of the Remote working was that it was difficult to keep a track on employee's work, as the company works on the core value of trust, chances are people might misuse it. Furthermore, the difficulty to meet people and the disrupted in person communication, might have potential risks that it sometimes effects the quality of work and causes delays as well as meeting need to be scheduled as not all people are available in the office or in their designated workspaces.

4.4. Data analysis (PwC):

The survey conducted with the PwC employees generated the following response. The number of respondents for the survey were around 10-11 respondents working in different service lines at PwC. The respondents were asked to rate statements from 1-5 to what extent they agree. Number 1 being strongly disagree to number 5 being strongly agree respectively. The average sum of the responses is taken to analyze the survey data. Further, additional comments made by the respondents is also considered to analyze the data. In the following table is the overview of the respondents consisting of the type of work they do and which service they belong.

Age	Joining year	Country	Job title	Main activity
Between 26-35	2018	NL	Recruiter	Recruiting
Between 26-35	2017	NL	Campus recruiter	Recruitment
Between 26-35	2019	NL	campus recruiter	Recruitment activities
Between 26-35	2018	NL	Recruiter	Recruitment
Between 26-35	2019	NL	Recruiter	Hiring and selection of new employees
Between 26-35	2015	NL	Data analytics consultant	data analytics and business intelligence engagements.
Less than 26	2019	NL	Graduate intern	
Between 36-45	2012	NL	Tax manager	Tax advisory
Between 36-45	2016	NL	Manager risk assurance	managing internal audit services
Between 36-45	2018	NL	Manager risk assurance	Risk management

Table 4-4: background overview of respondents.

Selection of survey respondents at PwC:

The number of respondents for the survey depended to a large extent on the accessibility to the employees and their willingness to take part in the survey. The study was first pitched to the Recruiter working within the HR department who was also interviewed. She further pitched the research to her colleagues working at PwC through emails and were requested to fill in the online survey forms. The email was forwarded to employees who were potentially using the flexible working arrangements, they were all invited to participate in the survey. Therefore, this non-probability sampling results in a disadvantage in the research (as described in the previous chapter), because of the fact that the participants of the survey neither represent a randomized selection of all the employees using the flexible working nor of all the employees working at PwC. However, it can be noted that Bryman (2016) argued that the non-probability sampling can still be acceptable for pilot research.

4.4.1. Flexibility boundaries of place (Remote working at PwC)

From the graph we can find that the average values for remote working does not differ a lot, with most of the criteria being rated above 3.5 on an average except for the talent attraction which was rated considerably low by the respondents on an average of 2.6. Considering that the responses above 3.5 are positive, we can then state that the respondents believe there is a positive impact on their Satisfaction when they are able to work away from the office boundaries. As some of the respondents commented that it provides them better work-life balance. The response for productivity is close to neutral, which is lesser than 3.5 as average.

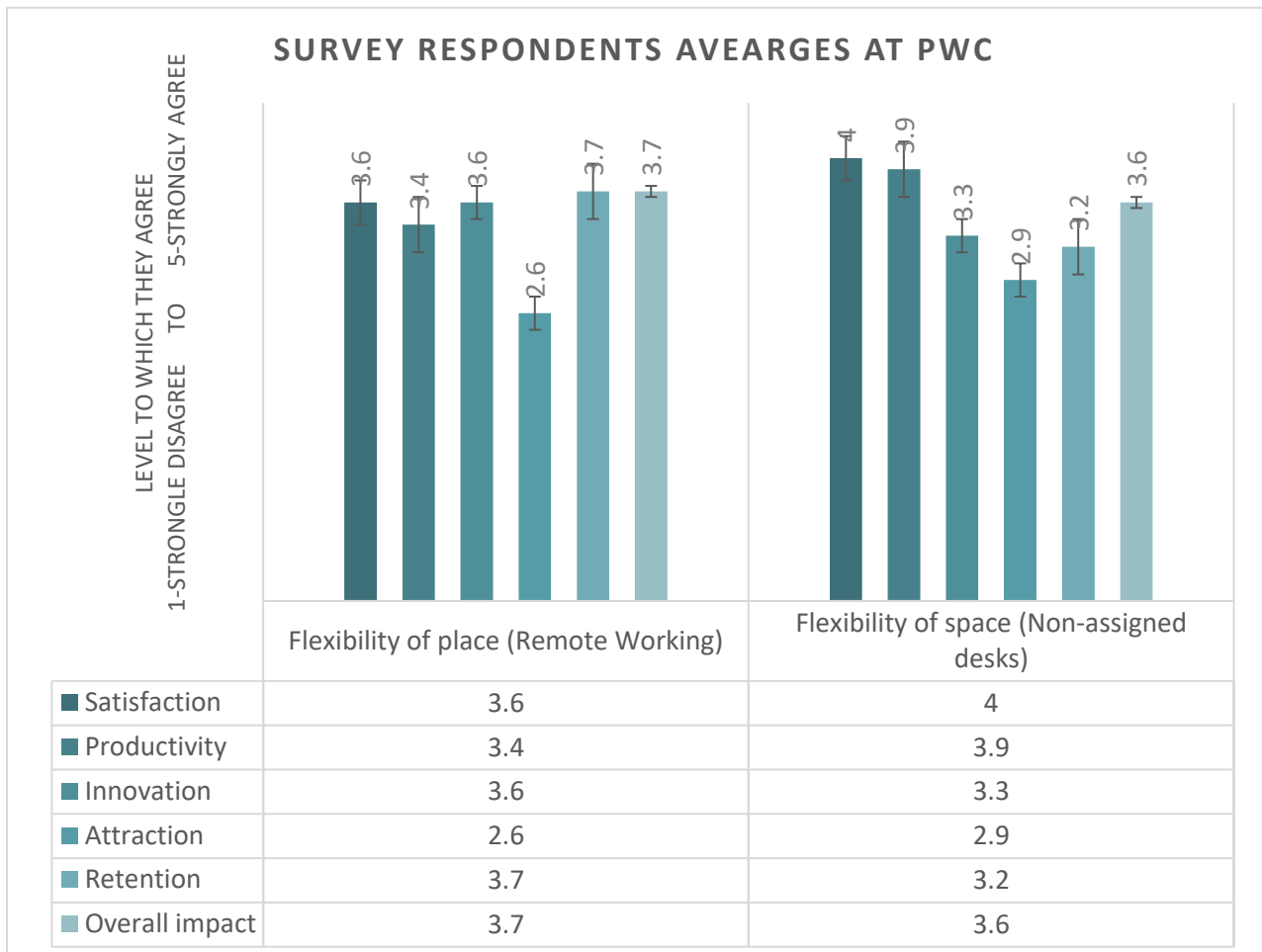


Figure 4.4.1. survey response at PwC

As the respondents were quite young and had also previously worked in organizations that provided the flexibility to work from anywhere, but few also mentioned sometimes it is not very productive to work from home as there are a lot of distractions. Further, the response for innovation was also on the positive side, which was 3.6. The talent attraction criterion was rated the lowest being on the negative side. This low rating is due to the fact that respondents were not aware of this kind of flexibility being given by the organization when they joined the company.

Furthermore, the criterion talent retention was rated quite high compared to the other criteria's as the respondents were positive to continue to work with this organization because of their provision to work beyond the office boundaries.

4.4.2. Flexible boundaries of space (Non-assigned desks at PwC)

The response for non-assigned desks was comparatively more than remote working at PwC. This could be due the fact that the organization had recently implemented the activity-based working within the organization and most of the respondents were currently using it. The overall average was much more positive than the remote working. The average for satisfaction was quite high, which was 4 on an average. As most of the respondents were very satisfied with the ability to choose their space to work be as they had the autonomy to choose their workplace with the environment that suits them. The next highest rated criterion being the productivity which was rated 3.9 on an average. The positive response was because respondents felt that there was an increase in collaboration, which in return increased their quality of work and therefore increasing their productivity. The response for the innovation and talent retention was on neutral and for the talent attraction being on the lower side. The low rating was again for the same fact that the respondents were not aware of this just as in the case of remote working.

Respondents comments on impacts of flexible boundaries at PwC
I have more autonomy
Convenient; Meeting different colleagues with fresh faces
New conversations with colleagues; Different view beside the desk
Don't think it is relevant for my case
Better ambiance.
It is an additional benefit
For sure! The culmination of flexible working spaces especially for consulting/service firms really help.
Nobody can say "This is my place!" and capture it. This brings a sense of professionalism and understanding that employees need to take their stance quite seriously " regardless of where they are located. Technology also has a role to play, since everyone has a laptop (or companies can afford to give so) and due to this portability, this flexible working space is feasible. And finally, it breaks up silos across various business units, functions, departments, lines which probably increases co-working, jointly-working and an innovative behavior.
More collaborative work.
the open ambiance improves the working and social culture.

4.4.3. Overall findings of added value of flexible boundaries at PwC:

Referring to the table 4.4, the data collected from the interviews provided us that the satisfaction of employees was initially decreased due to the problems that emerged were employees were not able to find places.
















Added Value	Performance indicator	Employee survey (out of 12 respondents)	Changes in added value
Increased satisfaction 	Interviews and Observation made by the organization. <ul style="list-style-type: none"> Employees have the autonomy to choose the workplace. Difficulty in finding space. 	Employee survey (out of 12 respondents) <ul style="list-style-type: none"> Positive response for both. 	Increased the added value
Increased productivity 	<ul style="list-style-type: none"> Increase in effectiveness. Increase in transparency. More motivated to work. Some initial difficulty in collaboration. Delay in works. 	<ul style="list-style-type: none"> Neutral response for *RW. Positive response for +ABW 	Positive Impact. Initially the productivity was decreased but has been increasing after adopting suitable measures
Increased innovation 	<ul style="list-style-type: none"> Increased creativity within the advisory department due to collaboration and interaction. 	Positive response for *RW. Neutral response for +ABW 	Positive impact on creativity.
Talent Attraction 	<ul style="list-style-type: none"> Increased image. Workplace matching the requirement of young talent. 	Negative response for both. 	Negative impact. As the objective of organization to implement this measure is not met.
Talent Retention 	<ul style="list-style-type: none"> Increased well-being among and therefore continue to work. 	Positive response for *RW. Neutral response for +ABW. 	Neutral impact.
Costs 	<ul style="list-style-type: none"> Initial investment sensors More space utilization 	**NA	Neutral Impact.
Sustainability 	<ul style="list-style-type: none"> Reduced traveling Less space occupied 	**NA	Positive Impact.

Table 4-4.3: indicating the added values of flexible boundaries at PwC

 Positive response
  Negative response
  Neutral response

*RW- Remote working +ABW- Activity-based working **NA- Not applicable.

Further this problem was handled by implication of sensors to track availability of spaces which then increased the satisfaction level among the employees. And, this is evident as the survey response was positive on the increase of satisfaction of employees. The criterion productivity was indicated as a positive impact from the interviews and the company data. Which was further supported by the survey as well by respondents stating that flexible boundaries increased collaboration with other hence increasing the quality of their work. Therefore, it can be assumed that there is a positive added value due to the increase in productivity of the employees.

The next criterion was also on the positive side as the organization stated that flexible boundaries could increase creativity within certain line of profession depending on the type of work. This was also positive response through the survey. Whereas the major observation was in the criterion talent attraction, as the PwC stated that this is a major aspect for them as attracting talent is difficult in today's times and providing flexibility could potentially attract top talent into the organization, but the response was negative in the surveys as most of the employees working were not aware of the flexibility provided before joining to work with PwC. Therefore, this criterion is been rated as negative as the organizations object does not meet with the purpose and has not been adding value. Moving on to added value by retaining the talent was somewhat neutral as the organizations mentioned that this was a main factor for organization to adopt flexible working so that employees continue to work. But this factor was rated neutral as the employees felt that this kind of flexibility was nowadays provided in most of the organizations and hence was not the reason to stay. The added value through costs can also be said to be neutral as the initial costs were balanced out by the space utilization costs. In terms of environmental sustainability, the organization says could have positive impact as travelling is reduced which hence reduces the CO2 emission.



FINDINGS

CHAPTER 5. FINDINGS.

This section will look at the major findings of the added value section both the cases. This section will elaborate the findings of the seven added value criteria and how they were valued by the two organizations, where the case studies were conducted. Furthermore, the challenges and the risk mitigation measure findings are also elaborated. Further, the sub-questions will be answered based on these findings. This section will attempt to find the notable observations in the cases and link them with the theory to arrive at final conclusions.

Main findings

This section will attempt to identify the position of the added value criteria, challenges, risk and risk mitigation measure and other success factors of flexible workplaces. These findings will be used to answer the sub-questions and finally the main question.

Satisfaction

One of the main reasons the organizations mentioned to adopt the flexible workplace boundaries was to increase the satisfaction among their employees to in return add value to the organization. This was also evident from the survey response conducted with the two companies. Satisfaction was the highest rated criterion compared to the averages of the other criteria. This was mainly due to the fact that most employees felt that the flexible boundaries had a positive impact on their work-life balance and hence increased their satisfaction at work. Also, the provision of the flexible boundaries provided the employees a sense of autonomy and therefore increasing their satisfaction at the work.

Productivity

This criterion was highly valued by the organizations. The productivity of the employees has direct impact on the profits of the organization due to the increase in amount of work done. Therefore, it became a highly valued criterion to adopt the flexible boundaries of work. The increase in productivity was also evidently seen within the responses of the survey respondents. Respondents rated that having the ability to work anywhere and the decreased boundaries within the organization increased their collaboration and increased their work performance. Therefore, it considerably increased their productivity at work. Some of the negative aspects were that the flexible boundaries could cause potential disruption and distraction. But these were considered as

minor challenges by the organizations compared to the benefit of adopting the flexible boundaries.

Innovation.

Even though the criterion innovation was valued more in the literature study, but from the field study, the observations stated that neither the organizations highly valued this nor did the respondents. One of the reasons mentioned was that the respondents were not able to measure whether it really increased their creativity at work by having flexible boundaries. But it was stated in one of the organizations that it did add value to certain departments where creativity was highly valued. And the flexible workplace boundaries increased their interaction and collaboration, thus increasing innovation within the organization.

Talent attraction.

Talent attraction was the most mentioned and highly valued criterion by both organizations. This criterion was also one of the main aspects mentioned in the literature. Organizations mentioned that attracting the talent pool is a major reason of providing the flexible boundaries. Another reason mentioned was also that it helped organizations to increase their brand image in the market and to gain a competitive advantage over other companies. But from the response from the survey, the results indicated otherwise, as this criterion was the lowest rated criterion among the employees.

Talent retention.

Retention of talent was similarly valued by the organization as the previous one. For the same factors as mentioned like employees are considered as the main resource of these organizations and the companies find it necessary to provide these flexible boundaries in order to retain the employees to continue working within the organization. The response for this criterion was comparatively higher to that of talent attraction. As the respondents of the survey felt that this provision of flexibility increased their work-life balance and was one of the reasons to continue working for the organizations.

Costs.

Though this criterion appeared to have direct impact on the profits of the organization it was not considerably valued less by the organizations. The organizations did mention that the costs are reduced due to adopting these flexible boundaries as the desks are reduced which in turn reduces the M² occupied, thus reducing furniture costs and the building costs and providing with better space utilization.

Sustainability.

Even though this criterion is of high importance. But it was difficult to quantify exactly how much it was valued within the organizations. The organizations stated that this criterion is important to achieve but is not the most highly valued criterion among the organizations.

After summarizing the findings of the seven added value criteria, the next section will now answer the following sub-questions by combining both, the findings from literature and the field study.

Sub-question 5. Which are the most crucial added values considered by organizations and how is it valued within organizations in practice?

From the analysis conducted in the above sections, organizations valued some criteria more than the others. As the both selected companies are large multi-national companies, and value human resource the most, the criteria that they value more were the talent attraction and retention. The criteria productivity and satisfaction were also equally valued. As this is also directly related to the human resource, that is the employees of the organization. The criterion costs was surprisingly not the most valued criterion among the organizations. Although they were aware of the added benefits of reduced costs of having the flexible boundaries, they still valued the other criteria more. Sustainability was similar valued as costs and was not the most value criterion and was rather seen just as an added benefit of implementing flexible boundaries. Therefore, to summarize the most valued criteria of organizations are the talent attraction and retention. As the most of these multi-national companies now face the war of attracting talent. As most of the employees being the millennials, who prefer to work in companies that have the workplace that fits their need. Therefore, more and more organizations have been looking for ways to adapt their workplace according to this changing demand. And flexible workplace boundaries being one of workplace solutions that fits the needs of the current employees, so it is been observed as the most valued criteria for the organizations.

Sub-question 6. What are some of the challenges and risks of adopting flexible boundaries and how are these risks been mitigated by the organizations?

Both the organizations (JLL and PwC) stated numerous potential and existing challenges that they faced and mentioned of possible ways to mitigate them. Therefore, following are some of the main challenges mentioned by these organizations and how these challenges were mitigated is also discussed.

- **Keeping track on the work performance:**

This was mentioned as the biggest challenge by both the organizations. They mentioned this was especially a big challenge in the case of remote workers, as there is no actual possible way to keep

track on their work. And this could possibly risk sub-standard work and have negative impact on the organizations business. The only way both organizations see a way to mitigate this challenge is by maintaining trust. Therefore, maintaining trust is the only way these companies believe to mitigate through this challenge for now.

- **Locating spaces to work in non-assigned desks:**

This is especially a major challenge in organizations that have large workplace accommodation. There the concept of having the non-assigned desks or flexible internal boundaries could have some severe drawbacks and cause a disruption at the workplace. This challenge was mentioned in the case study of PwC and further PwC used the help of technology to mitigate the risk that was caused by this challenge. Therefore, from the lessons learned from the case study, one can imply that the challenge of locating spaces can be reduced with the help of technology.

- **Reduced collaboration.**

The third challenge can be said as rather an unusual finding from the case studies. As from the literature it was stated the enabling flexible boundaries would potential increase the collaboration and increase the amount of work produced. But in the interviews with the organization it was stated that the challenge that they faced of having the reduced boundaries was that it caused a decrease in collaboration as the users felt awkward working alongside their senior professionals and thus creating a stressful environment. To mitigate the risks of this challenge, the organizations did not take any measures but just felt that it was about time that people within the organizations will be adjusted to work with the reduced boundaries.







Key Challenges	Key Risks	Potential impacts of the risks	Key measures to mitigate the risks
Keeping track on work performance 	<ul style="list-style-type: none"> • Poor employee performance due distraction. 	<ul style="list-style-type: none"> • Financial and reputational risk. • Sub-standard service delivery and offerings. 	TRUST (Duty to maintain Trust) 
Locating spaces to work in non-assigned desks. 	<ul style="list-style-type: none"> • Delay in performance. • Disruption of work. 	<ul style="list-style-type: none"> • Financial and reputational risk. • Sub-standard service delivery and offerings. 	TECHNOLOGY (used as enabler to locate spaces) 
Reduced collaboration 	<ul style="list-style-type: none"> • Stressful environment. 	<ul style="list-style-type: none"> • Inability to perform tasks. 	TIME 

Table 5-1 indicating the key challenges and measures used to mitigate the risks from these challenges.

Sub-question 7. What are the factors that influence the effectiveness of flexible boundaries?

Even though there were different added value of the flexible boundaries. The level of success of these added values were dependent on some factors that influenced their rate of success. Therefore, to answer this sub-question, we found the factors that could have potential influence on the success of these flexible boundaries from the literature and then the data gathered from the literature and field work was gathered, and the findings were noted to answer this sub-question. The important factors that influenced the success of flexible boundaries are identified below.

- **Workplace design:**

From the literature, workplace design had a significant role in increasing the added values of flexible boundaries. The workplace design should be given importance to openness and collaboration (Hua et al., 2010). This was also true as seen from the findings of case study. Both the companies had workplace design that was made to align the company's new accommodation strategy. In both cases, the workplace design consisted of formal and informal zones, with large open spaces to increase the collaboration. It was evident in both cases that the design was made to decrease boundaries and facilitate collaboration among the employees. In the case of PwC, the workplace design was especially made to increase the effectiveness of flexibility (Activity-based working). Therefore, to conclude the workplace design did play a vital role in the effectiveness of the increased added value due to flexible boundaries.

- **Job profile:**

The other factor that influenced the success of added value of these flexible boundaries was the job profiles. Combining the findings from literature and case, it was observed that the effectiveness of flexibility was dependent on the nature of work. Where different job profiles required the different type of flexibility. From the cases it was observed that some job profiles required a particular type of flexibility more than the others. Combining the findings of both cases, the strategic departments which involves in creative thinking required the flexibility to collaborate with different teams, therefore needed the internal flexible boundaries. Whereas, the departments which worked closely with clients or on-site such as the insurance or brokerage departments required more the external flexibility. And some job profile, solely on their nature of work, flexibility was not possible. Therefore, the nature of job is another factor that is important to make the flexibility more effective.

- **Another factor: location of the organization within the city**

Another interesting observation made from the survey data was that location of the office also played a role as a factor that could have influence on the success of the flexible workplace. Comparing the graphs of both the organization (refer to figure 5.2), it can be seen that employees

of JLL gave a high positive rating for being able to work away from office compared to the employees working in PwC. One reason for this positive response could be the location of the



Figure 5-2 Showing the graphs of survey data, of PwC and JLL.

offices. As the office of JLL is located within the CBD (central business district) of Amsterdam and could possibly be very busy and congested at times, making the employees difficult to commute, compared to the location of PwC, which is located on the outer edge. Therefore, this reason of difficulty to commute due to traffic could have resulted in the employees of JLL preferring to work remotely rather than having to travel to office on a daily basis.

Finally, to conclude some of the factors that influenced the effectiveness of flexible boundaries, observed within this research were the workplace layout/design, job profiles of the employees and location of the office within the city (figure 5.3).

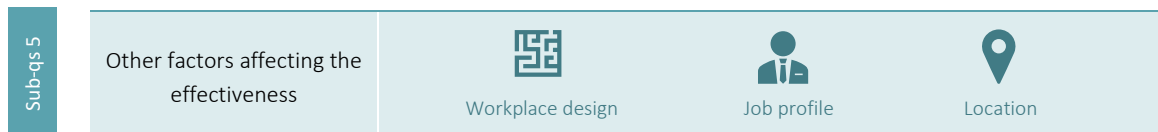


Figure 5-3 Showing the factors that influence the effectiveness of flexible boundaries.



CONCLUSIONS

CHAPTER 6. CONCLUSION.

The last chapter will elaborate on the conclusion of the research process. First the main conclusion is formulated by answering the main question. The main question will be answered based on the answers of all the formulated sub-question to arrive at a conclusion. After deriving the conclusion, recommendation will be made on further research and how the results of this research can be used in practice and provide inspiration for further research. This is followed by discussion, where the limitation of this research will be discussed and finally a reflection will conclude this report.

6.1. Main Conclusion

From the problem statement in the chapter one, the problem regarding the concept of flexible workplace was addressed ‘although the flexible workplace environment is gaining popularity among organizations, but the actual benefits or the added value of this flexibility is not known.’ The theories of corporate real estate management on flexibility can help identify and measure the added value of the flexible workplace.’ Therefore, to answer a part of this question, the main research question was formulated with relating sub-questions. Therefore, to answer the main question all the answers and findings from the sub-question will be summarized to arrive at a conclusion.

Main question: Does flexibility in workplace boundaries adds value to the organizations?

The theoretical research provided us that boundaries at workplace were created mainly for three reasons privacy distinction and protection, but over time the definition and the need for these flexible boundaries changed at the workplace giving rise to more open and flexible boundaries to accommodate the needs of today’s employees. But the direct benefits to organizations are difficult to quantify. The theoretical research helped identify the criteria to measure the added values were identified and used in the field work (chap 2). A mix method strategy was used to answer the main question. Where the qualitative research was combined with part of quantitative research. Two case studies were used to analyze and identify the added values, challenges and other factors from practice. Data was obtained from interviews and survey, as a method to quantify added values of flexible boundaries in organizations.

Thus, the answer for the main question is that flexible boundaries does add value to the organizations. However, the exact extent to which it adds is difficult to quantify and within this research only the perceived added values are identified. Another, important observation was that different companies value different added value more than the other, which makes it furthermore difficult to arrive at one answer. Adding to this, another observation was that, even within the

organization there was a difference between the added values perceived by the organization and its employees. This was especially evident in the two cases, as the organizations mentioned that talent attraction and retention was their main motive to achieve flexible boundaries and considered it the most important added value criterion. But from the findings of survey conducted with the employees of these organizations indicated that the employees were not even aware of this flexibility being offered by the organization prior joining the firm. Also, regarding the talent retention which was rated negative in the surveys, was because flexibility now a days is offered by many top firms and hence does not really help organization get a competitive advantage over others. But however, the criterions productivity and satisfaction, which were mediocrely valued by the organizations had a direct impact as perceived by the employees. The reason being that the employees perceived that flexibility increased their work-life balance and productivity was improved by saving time to travel. And surprisingly the criterion costs were not the most valued criterions among the organizations but had the most positive impact. As the costs had directly reduced in both the organizations because the desks to employee ratio was less, which directly added value to the organization.

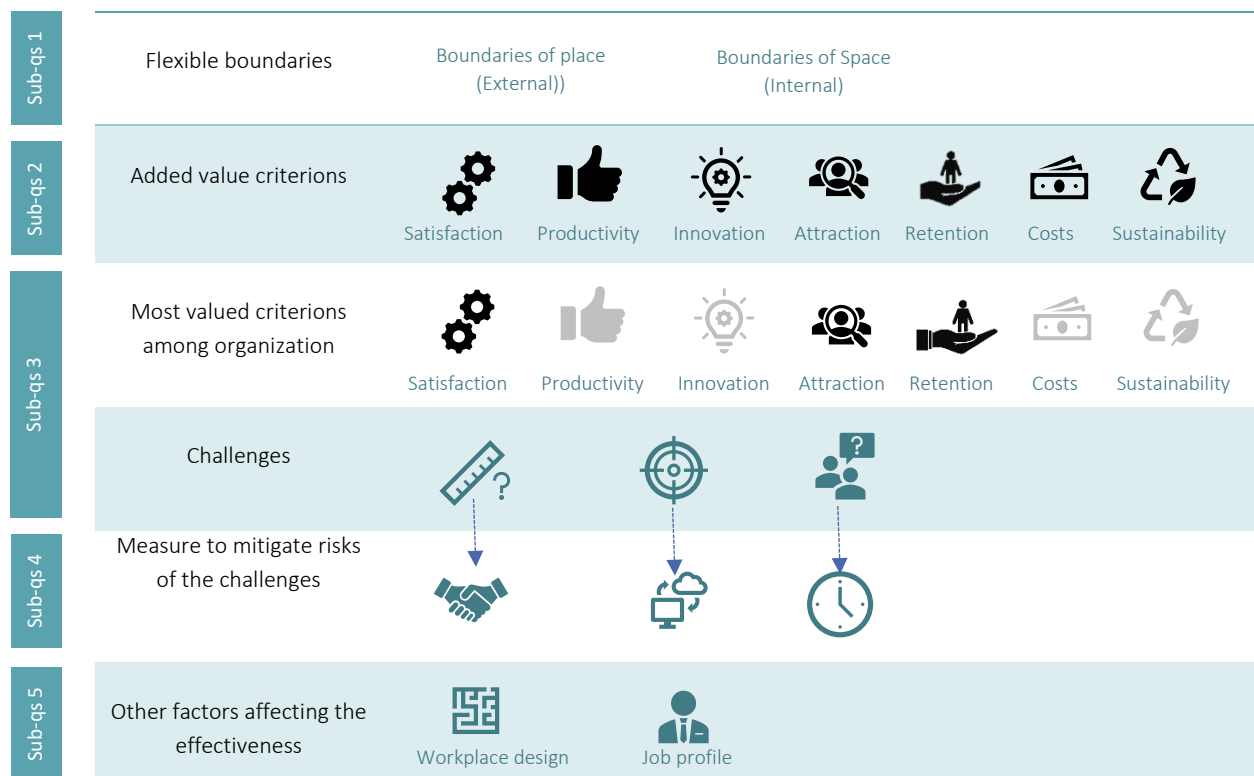


Table 6.1 showing the research framework used to answer the main question along with findings

Apart from these added values the organizations also faced some challenges such as locating of available spaces, increased awkwardness and difficulty to keep track on the employees' work.

These issues were mitigated by the organization by use of technology, allowing time and trust respectively. This lessened the risks of flexible boundaries. Furthermore, organization also considered other factors such as the workplace design and job profile to increase the effectiveness of the success of flexible boundaries.

In conclusion flexible workplace boundaries does add value to the organizations in terms of increased productivity, satisfaction and costs. But the extent of the added value depends on the main objectives and core values of the organization. Adding to this, flexible workplace boundaries also have some challenges such as, difficulty to monitor the progress of employees and tracking of available places. These challenges can be overcome by maintaining trust on both sides and with the use of technology respectively. Also, the success of flexible boundaries can be enhanced by considering factors such as workplace design, where a design that accommodates this flexibility by having less boundaries and more places to collaborate can increase its effectiveness. Also, the factor job profile plays an important role. As different work profiles require a different type of flexibility and therefore it is necessary that organizations provide the right flexibility for all the work profiles that exist within their organization to increase the added value accordingly.

6.2. Recommendation

As this research was bound by time and means, certain aspects could not be explored completely. These recommendations can serve as a foundation or inspiration for other researchers. The following paragraphs provide recommendations for further research and for practice.

Recommendation for further research

- More cases can be studied to measure the added value and to identify the benefits and challenges to extend the overview of these criteria. This can help in increasing the validity of this research. Furthermore, cases with different characteristics can be chosen to cover the different situations. Since both of the selected cases were consultancy companies with similar characteristics, the results might have been oriented only to consultancy firms.
- Another recommendation for further research is to include more focus on the technology implementation aspect. By this I mean that similar research with an aspect of how technology can be used to increase the effectiveness of flexible boundaries and how it can add value to the organization can be studied.

Recommendation for practice

- In order to increase the effectiveness and maximize the benefits of flexible working, different department should work together closely to provide maximum benefits to the organization. The disciplines of Human Resources (HR), Facility Management (FM) and Information Technology (IT) should be working together in an integrated way. As mentioned during the interviews and even in the literature, this integration is essential to align the built environment with the organizations way of working and with the help of right technological infrastructure that will increase the overall success. Therefore, by integrating these disciplines can provide shared incohesive strategies and can link the various domains of the overall organization
- Another recommendation for the organizations is that in order to successfully implement the right flexibility and optimize it use, the involvement of the users can be included. Within this process the users are the employees or knowledge workers. The reasoning behind this is that it provides the users with an opportunity to express what factors are crucial for them to support in their work and performance. This was also evident from some of the responses in the survey, done within this research.

6.3. Discussion

After the conclusions and the recommendations of this research, this section will consist on the discussion on the limitations of the research. Apart from the discussion on the limitation of this research, the validity and the generalizability of this research will also be discussed.

Limitations of the research

- The research aims to identify the added value, benefits and challenges of flexible workplace boundaries on organizations. But however, speaking of organizations, the applicability of the findings in this research is limited to just a specific part of the office sector, namely bigger organizations. This is mainly because the bigger organizations have the capacity and money to house such innovative concepts, like the flexible working. Because of this selection of the interviewees, the research considers, only the bigger corporations and leaves aside the challenges of smaller organization.
- The second limitation is related to the people's personal perception. People tend to have personal preferences towards ideal office conditions. Some people prefer working in crowded places, in presence of background noise. Whereas, some people prefer working in places with less distractions. Therefore, making this aspect crucial to understand the actual added value of being able to work flexibly. This research did not take into account personal perception of people because of the fact that it would have expanded the research till a point where it would have made it impossible to execute in the given time frame.
- Lastly, the research has some limitation with the aspects such as measuring the satisfaction and productivity of the users. As these aspects are not only influenced by personal perception but also by multiple other factors influencing their perspective towards the workplace performance. For instance, peoples home situation, health and age etc. can have an impact on the satisfaction and productivity of that person on work. The fact that these criteria depend on multiple factors makes it challenging to measure how the physical environment can improve their satisfaction and productivity.

Validity and generalization of the results

- In general, the research was qualitative in nature, which might have resulted in possible biased results. This is because the interpretations within the literature findings can deviate its actual purpose. The literature study within this research involved studying of various concepts therefore the way the concepts understood within this research could be different from what the author intended the knowledge to be used for. Therefore, this might challenge the validity of this research.

- Another aspect in the qualitative aspect was the interviews, which was an important part of the data collection used in the research. The interviews were semi-structure interviews with open questions, this structuring is mentioned in section 2.2. This semi-structured interview was done to provide enough space for spontaneous inputs from the interviewees. Though this decision helped in including different opinions and perspectives, but on the other hand also challenged the validity of the findings as they were influenced by their own perceptions. Leaving space for own inputs resulted in less guidance for the interviewees to structure their interview making the answers less coherent.
- But also, to note is that, in order to increase the validity and quality of this research, the quantitative aspect was also included. The quantitative aspect, that is the surveys were used in order to validate the results and help overcome these biases. But within the surveys also had its own limitation relating to the sample size. Jamrozik et al. (2018) explain that the limited sample size can be a disadvantage, as it does not allow to generalise the findings.
- The last aspect is the conclusions. The final findings within this research were completely based on my own interpretations and conclusions. Therefore, my own perceptions might have somehow influenced the final results within this research. Hence, the conclusion requires a critical evaluation so that it increases its accuracy and applicability in final practice.

6.4. Reflection

The following sections will provide my personal reflection on the process and outcome of my master thesis research. The reflection consists of three elements. First section provides the relation between the research and its position within the graduation laboratory theme and the master track. Second section provides the reflection on the chosen methodology and the resulting outcome. Lastly, my personal reflection touching the ethical areas is provided.

6.2.1. Position of the research within the graduation laboratory and MBE

This research falls under the graduation laboratory REM (real estate management), which is organized under the master track MBE (Management in built-environment). The main goal of this research was finding the perceived added value of adopting flexible office boundaries on the organization. And recognizing the added value of flexibility in real estate directly links to the (C)REM practice (corporate real estate management) (De Jonge et al., 2009). As the main research not only focuses merely on the physical aspect of the office work environments but also on the perceived benefits for the organizations by proper management which could improve the added values. The final outcome of the research is expected to help the CRE managers, organization and the different stakeholders in making a decision of choosing the right type of flexibility by measuring the risks, challenges and benefits. Therefore, this topic fits well within the master track MBE and the master program architecture urbanism and building sciences. As it touches not only the physical designing aspect of work environments but also managing of accommodation with proper strategies which aligns the goals of organization.

6.2.2. Reflection of research method and outcome

The main goal of this research was to identify the added values of flexible boundaries (to improve the workplace accommodation strategies of organizations). The research tool used the criterions from CREM literature. The research had three main stages, the theoretical study, empirical study and explorative study.

- **Theoretical research**

The theoretical study served as a primary source of information, where the four main aspects of this research were explored: Flexibility, workplace boundaries, added value, and organizations. The theoretical research served as a good starting foundation for the empirical research. During the process some parts of the theoretical research were altered such as the topics of organizational structure, the other factors that influence the effectiveness of added value were

added. This was done to correct the weak spots of the theoretical research which had started without a clear goal and lack of relevant information with the research topic,



	
Methodology: Strong features	Methodology: Weak features
<p><i>Theoretical research</i></p> <ul style="list-style-type: none"> • Throughout the research was adjusted, where addition and refining were made by going back and forth depending on the research progress. • Literature study served as a good starting foundation for the empirical study 	<p><i>Theoretical research</i></p> <ul style="list-style-type: none"> • Lacked refinement of topic and clear goal at the beginning due to availability of less relevant information on the topics.
<p><i>Empirical research (interviews and survey)</i></p> <ul style="list-style-type: none"> • Interviews with corporate real estate executives and Human resource covering the data collection aspects that were not possible with survey alone. • The semi-structured interview format helped provide in-depth information. • Semi structured surveys with open and closed questions provided quantitative and qualitative data for the research. 	<p><i>Empirical research (interviews and survey)</i></p> <ul style="list-style-type: none"> • The data collected from interviews for subjective data, that is it was from the perspective of the interviewer. • Lack of clear company selection for data collection. • Small survey sample due to limitations of time and money and hence this data cannot be generalized.
<p><i>Explorative research</i></p> <ul style="list-style-type: none"> • Literature is used to generate to compare and to link. And to define the characteristics and emergence of boundaries. 	<p><i>Explorative research</i></p> <ul style="list-style-type: none"> • Larger samples and more interviews could have provided better perspective and variety in findings.

Table 6-2. Showing an overview of strong and weak features of the research

• **Empirical research**

The second part of the study consisted of case study which consisted of interviews and surveys. The interviews with corporate real estate executives and Human resource were conducted because not all aspects of the data collection was possible with survey alone and hence the interviews provided the qualitative data required for the research. The semi-structured interview format provided freedom for extra say and helped provide in-depth information. The surveys were also structured in similar fashion and these semi structured surveys with open and closed questions provided quantitative and qualitative data for the research. However, the data collected from interviews was subjective data, that is it was from the perspective of the interviewer. And

the results of survey were not generalized because the sample size was small due to limitations of time and money. Also, the explorative study lacked clear company selection for data collection, and this selection could have been better done and could have further increased the validity of this research.

- **Explorative research**

The extensive literature study on all aspects helped to generate data and then to compare and to link. If only the literature study was done on time, then there would have been more time for the empirical study and larger samples could have been selected and more interviews could have been conducted to provide better perspective and variety in findings. In the table 6.2 the strong and weak features of this research are presented.

6.2.3. The scientific relevance

There have already been many scientific researches done on the prevalent topic relating to the topics of employee well-being, but not many researches have touched upon the connection of benefits to organizations rather than the users. This research not only showed the connection between these two aspects but also touched upon the challenges and how organization have been using measures to mitigate these risks. This final research indicates the possible added values the organizations can benefit by proper planning and aligning the accommodation strategy to the company goals.

As mentioned previously in the limitations section, the data collected was based on personal opinions of people making it subjective. As each person experiences the workplace differently measuring the real effectiveness might become were difficult and indefinite process. These perceived opinions of people not only influenced the research but also might have impacted the outcomes of this research. Also, the qualitative data collected from interviews with corporate real estate executives and managers were also subjective, as the interviewees' answers were subjected to their own perspective and could have been biased. One attempt to balance the complications of data collection bias was that data was also collected from survey with the employees, in order to consider their opinions as well.

6.2.4. Practical relevance

As we know that people spend most part of their day working or at workplaces, therefore focusing on the enhancement on the workplace strategies can contribute to the overall betterment of society. Each alteration can impact on employee's well-being. The research also intended to look at the user experience side, where the challenges and concerns about the flexible workplaces are studied. Besides that, awareness among organization on the employee wellbeing is becoming a top priority. Therefore, this research can provide insights for organizations to improve well-being of their employees through flexible workplaces.

The research also intends to create awareness among organizations to make better decisions by aligning the accommodation strategies with the company goals by considering also the factors that influence this decision.

Another aspect of this research is that it contributes to the sustainability of the built-environment. As flexible working enables the office buildings to be used more efficiently, by reduction of space and energy used and also contributes to the circularity goals. Therefore, it's necessary that people are aware of all the benefits and challenges of flexible workplaces so that they can better contribute to overall sustainability.

6.2.5. The ethical issues

Enabling boundaries to be reduced can have can pose ethical problems. One such issue is of privacy. To what extent are the organizations allowed to blur the boundaries without curtailing the privacy of the employees? Also, blurring these boundaries can also result in blurred boundaries of work-life and personal-life making it difficult for employees on where to draw a line.

On the other side, the ability to work from anywhere might put the organization in vulnerable situation, as employees could possibly manipulate organizations and hence the issue of how much trust should the organizations provide on the employees?

One way of looking at the possible solution is that trust should be built from both the side. It's the employee's duty to maintain a consistent track record of his work. And the organizations duty to perform timely feedback within the organization to check with the employee needs.

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Appendix I: Questionnaire

Questionnaire for Employees

Date:

(Approximate time taken to fill the questionnaire is less than 10 minutes.)

Hello, my name is Sanjana and I'm a master student at the Delft university of technology and this survey is part of my master thesis titled 'Added value of flexible workplace accommodation on the organizations'. It would be of tremendous help if you would fill out this short survey on your experiences at work. Be assured that all the information collected will be treated in the strictest confidence.

SECTION A: GENERAL INFORMATION

1. Respondents Name (optional): _____

2. Gender: Male Female

3. How old are you?

< 25 25 – 30 31 – 40 41 – 50 51 – 60 > 60

Prefer not to say

4. Pin code:

5. Country:

5. Organization/Company Name: _____

6. Job title : _____

7. When did you begin your present employment? month year

8. What is the main activity of the department under where you work: _____

9. Which kind of flexible workplace accommodation does your organization provides? (select all that apply)

- Remote working. *(Flexibility to work away from office)*
- Non-assigned desks. *(Flexibility to work anywhere inside the office premises)*
- None.
- Other.

Specify: _____

10. Which kind of flexible workplace accommodation do you use? (select all that apply)

- Remote working. *(Flexibility to work away from office)*
- Non-assigned desks. *(Flexibility to work anywhere inside the office premises) **
- None; I do not work flexibly.
- Other.

SECTION C: NON-ASSIGNED DESKS

If you use the flexibility to work anywhere inside the office premises, please answer these following questions:

I usually like to work in: Open spaces Closed spaces Both equally

Because (optional): _____

	<i>Tick that applies</i>				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. My satisfaction at work has significantly increased by being able to work anywhere inside the office premises. Because (optional): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. My productivity* at work has significantly increased by being able to work anywhere inside the office premises. (*By productivity, we mean the amount and the quality of work done.) Because (optional): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. My innovation at work has significantly increased by being able to work anywhere inside the office premises. (*By innovation, we mean stimulation of creative ideas.) Because (optional): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The flexible workplace setting inside the office was one of the main reasons I joined the firm. Because (optional): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The flexible workplace setting inside the office is one of the main reasons I continue to work here Because (optional): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The 'non-assigned desks' has a positive impact on the organization's overall success. Because (optional): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Are there any other benefits of *the non-assigned desks*? If yes, please mention the reasons below.

8. Are there any challenges of *the non-assigned desks*? If yes, please mention the reasons below.

Thank you for filling out the form!

SECTION B: REMOTE WORKING

If you use the flexibility to work away from office, please answer these following questions:

	<i>Tick that applies</i>				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. My satisfaction at work has significantly increased by having the flexibility to work remotely. Because (optional): _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. My productivity* at work has significantly increased by having the flexibility to work remotely. (*By productivity, we mean the amount and the quality of work done.) Because (optional): _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. My innovation at work has significantly increased by having the flexibility to work remotely. (*By innovation, we mean stimulation of creative ideas.) Because (optional): _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The flexibility to work away from office was one of the main reasons I joined the firm. Because (optional): _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The flexibility to work away from office is one of the main reasons I continue to work here Because (optional): _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The 'Flexibility to work away from office' has a positive impact on the organization's overall success. Because (optional): _____ _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Are there any other benefits of <i>the flexibility to work remotely (away) from office</i> ? If yes, please mention the reasons below. _____ _____ _____					
8. Are there any challenges of <i>the flexibility to work remotely (away) from office</i> ? If yes, please mention the reasons below. _____ _____ _____					

Appendix II: Interview transcripts

A. Interview Protocol

1. Introduction:

- Introducing myself and explaining my research by stating objectives and goals of the research.

My name is Sanjana studying at the Delft University of Technology (TU Delft). I am currently enrolled in Management in the built-environment track and am in the process of writing my master's Thesis and this interview is part of my data collection. My thesis is entitled as 'The added value of flexible workplace accommodation on organizations. The main objective of my research is to find out the perceived benefits of flexible workplaces (mostly two of them the remote working and non-assigned desks) on the organization's overall success. And also, to identify the potential challenges and risks of adopting this flexibility.

- Next stating that the information will be treated with confidentiality and will be used only for the academic study purpose.
- Permission to record the interview.
- Approximate time for interview is less than 30mins (depending on the answers)
- All the questions are open-question.
- Could you introduce yourself?

2. Motivation for choosing JLL to interview:

3. Below is the format of the structured interview questions.

Main question	Follow-up question	
<p>Which all types of workplace flexibility does your organization offer? (Example: Remote working, activity based working or non-assigned desks.)</p>	<ul style="list-style-type: none"> • Briefly describe • How does it work? • From when it was implemented 	
<p>Which job profiles use the flexibility arrangements the maximum</p>		
<p>The seven criteria to measure the added value of flexible workplace arrangements on organizations</p>		
<p>Has there been significant improvement in the productivity of the employees who use these flexible arrangements? (*By productivity, we mean the amount and the quality of work done.)</p>	<ul style="list-style-type: none"> • Why? • Are there some instances? 	
<p>How satisfied are the employees with the flexible workplace arrangements?</p>	<ul style="list-style-type: none"> • Do you often receive complaints or is more positive feedback? 	
<p>Do you think that these measures have increased the generation of innovative and creative ideas? (*By innovation, we mean stimulation of creative ideas.)</p>		
<p>Do these FWA serves as a factor that to attract the best talent?</p>	<ul style="list-style-type: none"> • Are there some instances? 	
<p>Having said that do you think that FWA is one of the factors for employee or talent retention also?</p>		

<p>Has there been any benefits to your organization in terms of costs by adopting FWA?</p>	<ul style="list-style-type: none"> • Could you specifically point out how it benefited? • What were the major savings or costs? 	
<p>Do you think that FWA is sustainable or contributes to sustainability?</p>	<ul style="list-style-type: none"> • For example, has it reduced the space required? • Or in terms of commutation? 	

*FWA– Flexible workplace arrangements

Open-end questions:

<p>What do you think are some of the major benefits the organization has observed by adopting remote working/ non-assigned desks?</p>		
<p>Are there any challenges of adopting FWA?</p>	<ul style="list-style-type: none"> • Are there any measures being taken to reduce these complications? • Are there any potential risks? 	
<p>What do you think is the overall impact on the success of your organization?</p>	<ul style="list-style-type: none"> • What's been the feedback across the business? 	

Thank you for your time and help.

B. Mock Interview transcript

Personal Information:

Respondent Name: Herman Vande Putte.

Gender: Male.

Type of work: Teacher.

Kind of accommodation flexibility offered by the company.

- ✓ Outside office boundaries. (E.g. work from home, café etc)
- ✓ Workspace without partitions (E.g. No walls, No high cubicles or separate room)
- ✓ Non-assigned desk

Satisfaction. (happy/ comfortable with the surrounding

1.Flexibility of place

Q. How satisfied are you while working at home than in the office?

A. Most of the time I like working at home, compared to office. Because office is noisy, so I like to work in space without noisy. I don't like more people around.

2. Flexibility of Space

Q. Do you like to work in spaces with which provide more isolation (e.g. walls, partitions, separate cubicle)?

A. I definitely prefer walls, rather than an open office setting.

3. Flexibility of use

Q. Are you satisfied using or working in non-assigned workspaces?

A. I have no problem, unless the infrastructure is good (e.g., large screen, and big chair) and I do not have problem with hygiene's like some of my other co-workers have. But having said that, cleaning of desks and chairs should be taken care by the organization.

But I have preference for the type of workspace I like to work in (e.g. I like to work with my back facing a wall) And because of this reason you can see in the office that some spaces are preferred more often than the others.

Conclusion: the organization should take care of standardising and cleanliness off workplace that it definitely adds value to the organization. People like to work in specific type of spaces and take time to adjust to the new workspace.

Productivity (ease to carry out tasks/ time taken for tasks to be done/number of tasks)

1.Flexibility of place

Q. Do you find yourself more productive when you work outside office?

A. I am able to do more work when I'm at home compared to when I'm at the office. Therefore, yes, I'm more productive at home than in office. For quite a lot of tasks I feel more productive at home, but there are few other tasks that im more productive at the office.

2.Flexibility of space

Q. Do you feel more productive with or without partitions/divisions?

A. The more walls I have the more productive I am.

3.Flexibility of use

Q. Do find yourself more productive in non-territorial work spaces?

A. I'm neutral.

Innovation.

1.Flexibility of place.

Q. Are you able to generate more creative ideas when you work outside office?

A. Yes, I'm able to generate more ideas when I work away from office.

2.Flexibility of space.

Q. Are you able to generate more creative ideas when you work with flexible boundaries?

A. Yes, for me the idea is that you should be able to go in and out from more closed spaces to open spaces. It is true that when I work in open spaces, I have many unforeseen contacts, sometimes they are very interesting, but it depends on the attitude of people in these open spaces. Sometimes people just try to show off or build image and do not give useful information. Also, for me ideas come from interaction, but the reflection for most of the ideas generated take place in isolation. But also, most of the ideas pop up while reading and surfing the internet.

3.Flexibility of use.

Q. Are you able to generate more creative ideas when you are mixed with other departments or tribes?

A. I think it's true, that if you mix people then I have more encounters with my colleagues and certainly information is spread better and I learn more from each other. But people have to be ready to go out of their tribe. It is advantageous in knowledge sharing. About Quality of ideas, fundamental or major innovations come from working outside your tribe. But you don't have major innovation every day. So, for me the effects on innovation is neutral.

Image

1.Flexibility of place.

Q. Is this reason you joined the organization because they offered these kinds of flexibility?

A. No, they changed it later, after I joined.

Q. Is this the reason you want to continue working in this company?

A. Yes, I think it's no longer feasible to ask everyone to come to office every day, given the difficulty of traffic and the possibilities of communication.

2.Flexibility of space.

Q. Did you join the office for their provision of open space working?

A. Before joining the company, I had checked the office work type environment. Not that I chose it for this but not that I would have decided not to come. If it was totally open space I would working in other organization. I would prefer to work in offices, with more partition or separate rooms and not small walls. Blurring boundaries in my case will be reducing value.

3.Flexibility of use.

Q. Did you join the office as they allowed mixing of people?

A. Yes, I would like to work in companies that allow mixing of people more.

Sustainability

1.Flexibility of place.

Q. Do you think working outside office is sustainable?

A. Well, there are lot of opinions about it some say that the heating that we save in the office building is largely compensated by the heating that we use at home. Because when I was working at home this morning, I had to use the heating system to make my house warm whereas that would not be necessary if I worked at office. Therefore, I'm consuming fuel and more energy as I have a large house. But I save on the transport.

3.Flexibility of use

Q. Do you think non-territorial working is sustainable?

A. It has no impact on sustainability. (territory). But we can have a system, where people are assigned workspaces according to when they arrive and could allow to use space more efficiently. Has huge potential for sustainability.

{There is an amount of work to be done. For the amount of work to be done you need resources, (Human to fuel and building and pens) part of these resources are owned or hired by the organizations and some

are private, and some are public. Sum of all resources used. Lowering the consumption of resources.
Reduce resources.

The question should ask to the real-estate department.

How would you scale the different kinds of flexibility in terms of sustainability?}

Costs

1.Flexibility of place.

Q. Does the organization save money by providing flexibility for people to work from anywhere? (outside office)

A. I think it is definitely cheaper for the organizations when I work at home. Because they save in heating, desks etc.

2.Flexibility of space.

Q. Did/ does open space, reduce the costs/ savings?

A. NA

C. JLL interview transcripts

1. Which all types of workplace flexibility does your organization offer?

We have a number of different capabilities for flexible working at JLL, we have several inside the office within our fixed location and then we have others in terms of more soft flexibility and I'm going to call it more norms and behaviours of which the organization supports and stimulates and influences, so within the hard working environment we have the capability to find different workplaces throughout the office premises for example the interview is conducted at the moment is in a informal meeting area for two persons, as you can hear some of noise in the background it is close to the coffee area. But its great for facilitating meetings exactly like this. We also have the capability to really pick and chose not only the informal meeting but also formal meeting areas, based on the exact number of people participating within those meetings.

Our desk sharing ratio, as a company is right around 0.8. certain departments have a lower desk sharing ratio and certain have a higher, but it has to do with the how quickly the organization is growing in different divisions. So, inside the organization nobody has a fixed desk and we all promoted to move flexibly.

Externally, in terms of our behaviours and norms I am provided with the capability to work actually whenever I want and wherever I want, so I am not required to even be at the JLL office at all. I personally find it very helpful to be connected to the team and I will work just about 5 days a week on a primary work week. May be one day a month or two days a month I find myself working from home when I really need to crunch on something serious focus work. But it is completely supported through HR and is completely supported in my team and is completely supported through our senior management, that employees are able to work from home if they should need.

And to connect both of these aspects is our IT department, that facilitates all employees with the help of technology. That is, we all our provided via the company a laptop and a telephone and there are tablets as well if you need them, so our designers would understandability like to work more with tablets. We are supported technically speaking as well.

2. Which job profiles use this kind of flexibility?

You know, I want to be careful, as this is a great question for HR, but I can comment through my observation, from what I have observed is that typically speaking our brokerage and agency division must have the capabilities to work anywhere at any time because they are frequently outside of the offices onsite looking at potential assets for renting by potential tenants. So, they are extremely mobile, extremely flexible. Our strategic consulting division is also mobile. It is much of we are doing onsite visits with our clients and even where necessary embedding for a week with a client. So, we quite flexible but not as flexible as the tenant representation and agency division

There are certain elements that are less flexible simply by their nature and these are things of HR, back office services where they really need at least someone to be here, but probably they are also working at least one day a week from home as well.

Therefore, everyone uses some or the other form of flexibility.

So, the HR department knows who is working on what day and who is not working on certain days so them. So, the individual that handles training she is off on Monday so if I have questions on training, then I know that Tuesday to Friday those are the days she is always available.

Productivity:

3. Has there been significant improvement in the productivity of the employees who use these flexible arrangements?

So, I can only talk about mine and I cannot speak on behalf of the entire organization as that would be out of line of me. I find my productivity as highly positively influenced by the capability to work flexibly I find that my job requires various activities. And these are the activities of concentration work or communication work, like we are doing right now. And we are communicating externally from the organization to students or reporters and things like that, where we have a lot of collaboration or we are in groups or teams or cross departments collaborating on projects. And also, contemplation where I take the time if I want to work for an hour or a half and need a quick 5 to 10 min of brain reset. I like to read articles related to my work most of the time but that is mostly deep thinking and learning about the craft that we are working on. And of course, there is some kind of creativity work that is also needed so ideation or something like that and the capability that JLL provides a variety of working environment for whatever type of activity I am engaged in at the moment. I find this extremely helpful and be successful engage in that activity, so I would not only say productivity but also performance as well.

Satisfaction.

4. How satisfied are the employees with the flexible workplace arrangements?

I remember that in my interview process that this was an aspect that was not only indicated but also repeated time and time again that this means that we really do work anywhere at any time.

do you think that FWA is one of the factors for employee or talent attraction and retention also?

I would say yes, it has a positive influencing factor read the way people why people leave the organizations is for many reasons, but this would be attractive to a point where people would find it a positive reason to stay.

Costs:

5. Has there been any benefits to your organization in terms of costs by adopting FWA?

I believe so, again that is something to look more in the financial control division. But I do know that parking in this environment is extremely high, in the south of the business location where we are located right now so the ability for people to work from home or also chose when they want to come to work, so that they are not necessarily sitting in a traffic jam as much as possible. Has a direct financial benefit as well in terms of specifically parking costs.

Ya in terms of hardware and office furniture, you also have to look at the trade off as our new desks is our laptop, you can look through that perspective that if we are encouraged to work flexibility than our laptop is really our desk and we can choose which ever environment we want

to engage on or want to work on with that device. Each employee is given a laptop and telephone, so we need not necessarily have to provide desk. Although I would say its minimal, but I would say that the spin off value creation, so its not just the cost savings but also what are the value creation, what would be higher to quantify is higher than the cost savings.

Sustainability.

6. Do you think that FWA is sustainable or contributes to sustainability?

Sure, I mean if we have every person who works from home and does not use car to come in to work that day is a direct CO2 savings so that has to go savings on our CO2 emissions

Benefits.

7. What do you think are some of the major benefits the organization has observed by adopting remote working/ non-assigned desks?

The largest and the most direct savings that I can see right now is the work-life balance, so I think the greatest potential link that you can make is through the retention of talent, looking at the direct cost per employee are too higher, so there is cost associated with what it is to attract a new hire into the company and also to train them those would be the direct cost savings for everybody that stays longer. The ability to offer the work-life balance and in a very complicated world in terms of there is a lot of demand on our time and the ability to focus between our home-lives and professional lives that is not only supported but also actively promoted in the organization and as an employee of JLL I appreciate that greatly and so I think that gives me a reason to stay with the organization, well there are plenty of reasons to stay but this is among them. And I would also say that in terms of flexible working, another value creation is also the authenticity. So many times, you see that from senior management communicated down to the organization this is what we hope to achieve but the rubber doesn't meet the road, that the activities that are taken directly contradict in the worst case and sometimes you have some that are well intended but wont work. But that is not the case here, this also increases our trust in all the way up to the value chain, all the way up to the organization chart, that I can really trust that our leadership can not only has good intentions but also great ways to execute those intentions and that also provides a sense of comfort and stability in good management.

There is an indirect value contribution made towards promoting flexibility within the working environment of business, continuity of reputation and because that continuity is there, we now have the capability to enhance our reputation and enhance our business.

So, you mean it serves as a brand image?

Wouldn't necessarily say brand image but more of an internal driver right, so like if we go out there from JLL pitching to new clients for new business and telling them. We care about the talent we have and the talent that has been with us for a long time and so we are going to provide certain incentives programs that make working at JLL effective, efficient and enjoyable.

Challenges.

8. Are there any challenges of adopting FWA?

The biggest challenge is measuring it. The objective that many people are going for is that what is the direct contribution to the organization of people not spending their time in traffic, what is the direct contribution of someone being able to spend some more time with their kids in the morning drop them off at day care and miss the traffic and come here at 10 o'clock, what is the quality of life increased to the individual employees that is a very recent discussion that has taken place in the corporate world one that is honoured and respected and that is very important but we don't yet have any tools to quantify what that direct benefits is.

I would say that in the beginning it would be easy to quantify from out of a risk standpoint from value creation standpoint. Of what is the risk of not doing that. This would be one way to go about it and once you have the understating of what you stand to lose, then you can look at ok at the same time what do I gain. Look at the two halves of the coin value creation and risk mitigation.

Potential Risks

9. Are there any potential risks?

Sure, absolutely and these are human factors of course as we are still dealing with human beings at the end of the day. Um at the impression that not everybody should be able to work from home not everybody possesses the character or domineer to work from home as there are a lot of temptations. In the beginning, as an employee like myself, it's up to me to prove to JLL that I work well from home and once that is proven and shown a consistent track record of performance of working from home is good then I should be facilitated and empowered to do so but if my track record shows that I'm less productive working at home then JLL should have every right to say that from now on we would prefer that you would come to the office to work and we would make that a requirement. So, the risks are much that, you cannot manage on numbers, but you have to manage in individuality, which is easier when you are looking at a company of 20-50 it is already hard when it starts to get close to 50. But when you have several hundred people of employment then it becomes quite a challenge.

How many people work at JLL?

Globally 80000, NL 400, Office 200

Overall impact:

10. What do you think is the overall impact on the success of your organization?

Its positive in a number of fronts, and the contributions that we discussed during the interview so far and also the indirect contributions as well is that. Our job in strategic consulting is working to help create highly effective workplaces for our customers and there is nothing better than being able to learn it by doing.

So, do you use your own instances of benefits of flexibility to your clients?

Absolutely yes, but you always have to take it like a grain of salt as not all firms behaves the same way so what we first do is, go in with a blank mind and a blank slate to understand the organization with which we are going to work with and to generate real hard data and do quantitative analysis on this is what the numbers are telling us of how you engage with your office. We also do conduct

interviews to get a little bit of sense of people's thoughts and feelings and perceptions are behind those numbers but we are to build trusted relationships and repos with our customers that I understand what you are going through as we also experience this in our working environment so that does a positive contribution to being able to build trust and long term relationships with our customers in the beginning.

Feedback;

11. What's been the feedback across the business?

I hear a lot of great feedback from JLL employees about what is like to work at JLL they really enjoy, and they have an honest and sincere thought that the organization values them.

We also have good positive feedback when we engage with our customers and clients what is that JLL does well and what is it that you see JLL could do better, we ask that quite regularly, is that the people have always scored quite high at JLL , is that our quality of people and quality of service and engagement that we have for our customers is extremely high.

So, would by this statement do you mean flexibility has impacted positively on the productivity of employees?

I would say yes, but that is obviously not the sole reason as there are number of reasons that converge on each other to create what plays effectiveness. But what I would say that our employees are more productive with better performance and have a higher probability that they will be proud of the organization and supportive of the organization that they work for being in JLL

Do you have an idea when was this implemented?

Unfortunately, I do not, as this was implemented before my tenure.

D. Interview Transcript PwC

I am Danielle, am a campus recruiter of the risk assurance department

Working from 3 months, started in first of march. Had a first event last week which was the energy day TU delft. Lives in Amsterdam's. (joke: getting old enjoy your time at college)

Background studied communication in Groningen.

Background of Interviewee

Name	Danielle Menken
Role	Campus recruiter
Department	Risk Assurance
Job start	1 March 2019
Duration at PwC	3 months
City	Amsterdam
Education	Communication in Groningen.

1. Types of flexibility offered at PwC?

PwC offers both kinds of flexibility, that is flexibility to work remotely as well as the non-assigned desks. For the remote working, employees need to send a message regarding being able to work remotely, employees have the flexibility to work away from office for couple of days in a week. For the non-assigned desks PwC provides freedom to choose your own workplace within their premises. That is, you can sit anywhere, My colleagues from recruitment department at times even work at the coffee corner and you can chose a different work table every day.

2. Which job profiles use the flexible working option the most?

Everyone uses the flexibility of workspaces equally, irrespective of their department.

3. Productivity.

Has there been significant improvement in the productivity of the employees who use these flexible arrangements?

Its hard to say, from my personal experience I have always worked flexibly even in my previous job, where they provided both kinds of flexibility. But yes, it increases the employee's productivity, as it gives them the space and a sense of autonomy.

4.Satisfaction.

How satisfied are the employees with the flexible workplace arrangements?

Regarding the satisfaction, initially the employees were not satisfied as there have been complaints regarding the availability of space, as sometimes the spaces get occupied and employees are left with no space. Therefore, to overcome this problem, PwC developed an app, for which sensors have been set-up in all the rooms that help employees check the availability of empty spaces and chose accordingly. After, the implication of this the employees are more satisfied.

5. Innovation.

Employees are more motivated to do their work when they have the flexibility to choose their own space and this has increased the innovation within the company, as people are creative when they are comfortable, and the organization provides this through flexibility.

7. Image

Having said that do you think that FWA is one of the factors for employee or talent attraction and retention also?

This is a future trend and yes employees seek for this kind of flexibility, and also companies are able to do this more easily because of the help of technology.

8. Costs-

Has there been any benefits to your organization in terms of costs by adopting FWA?

Investment- sensors

9. Sustainable

Do you think that FWA is sustainable or contributes to sustainability?

In terms of not having to travel to office daily, it is sustainable measure. And also, the space occupied is less.

Benefits.

What do you think are some of the major benefits the organization has observed by adopting remote working/ non-assigned desks?

The pressure is not high. The employees feel less stressed and this in turn reflects by them providing better quality of work. And since one of the core values of PwC is that it trusts people and employee well-being is an important aspect for us. Therefore, providing this kind of flexibility severs our core value and benefits the employees as well.

Challenges

Are there any challenges of adopting FWA?

Remote working- difficult to keep a track on employee's work, as the company works on the core value of trust, chances are people misuse it.

Non-assigned desks- availability of space. If you are late there are possibility that you have to sit without your team which makes it difficult.

Risks.

Are there any potential risks?

Difficult to meet people, disrupted in person communication, which sometimes effects the quality of work and causes delays as well as meeting need to be scheduled as not all people are available in the office.

And for the same for the non-assigned desks its difficult to find people, as they do not have designated workspaces.

Overall Impact,

What do you think is the overall impact on the success of your organization?

One of the positive impacts is health benefits for employees, as flexibility has resulted in improving employee well-being.

Another impact is the Competitive advantage over the other companies.

Using of the Flexibility, depending on the job profiles.

Appendix III: Other

Pwc excel data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1																		
2	Remote working			Country	Job title	Main activity	Satisfaction	Productivity	Innovation	Attraction	Retention	Overall impact						
3	Organization name			NL	Recruiter	Recruiting	4	4	3	3	4	4						
4				NL	Campus recruiter	Recruitment	3	3	3	3	3	3						
5				NL	campus recruiter	Recruitment activities	4	4	4	1	1	4						
6				NL	Recruiter	Recruitment	3	3	3	4	4	4						
7				NL	Recruiter	Hiring and selection of new employees												
8				NL	Data analytics ci	data analytics and business intelligi	3	4	4	3	4	4						My quality of living has increased.
9				NL	Graduate intern		3	3	3	3	4	3						
10				NL	Tax manager	Tax advisory	4	3	5	3	4	4						
11				NL	Manager risk as	managing internal audit services	4	3	4	2	5	4						
12				NL	Manager risk as	Risk management	5	4	4	3	5	4						
13	Total Average						3.7	3.4	3.7	2.8	3.8	3.8						
14																		
15																		
16	Non-assigned desks																	
17	Organization nam	Age	Joining date	Country	Job title	Main activity	Satisfaction	Productivity	Innovation	Attraction	Retention	Overall impact						
18		Between 26-35	01-02-18	NL	Recruiter	Recruiting	3	4	3	3	3	3						I have more autonomy
19		Between 26-35	01-11-17	NL	Campus recruiter	Recruitment	3	4	4	3	4	3						Convenient; Meeting different colleagues with
20		Between 26-35	01-03-19	NL	campus recruiter	Recruitment activities	4	4	4	3	3	4						New conversations with colleagues; Different v
21		Between 26-35	01-01-18	NL	Recruiter	Recruitment	4	3	3	3	3	3						Don't think it is relevant for my case
22		Between 26-35	03-06-19	NL	Recruiter	Hiring and selection of new employe	4	3	3	2	2	4						Better ambience.
23		Between 26-35		NL	Data analytics ci	data analytics and business intelligi	4	4	3	3	3	3						It is an additional benefit
24		Less than 26		NL	Graduate intern		4	4	3	3	4	3						For sure! The culmination of flexible working sp
25		Between 36-45		NL	Tax manager	Tax advisory	4	4	3	3	4	4						Nobody can say "This is my place!" and capture
26		Between 36-45		NL	Manager risk as	managing internal audit services	5	5	4	3	3	5						More collaborative work.
27		Between 36-45		NL	Manager risk as	Risk management	5	4	3	3	3	4						the open ambience improves the working and s
28							4	3.9	3.3	2.9	3.2	3.6						
29																		

JLL excel data

	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																	
2				Country	Job title	Remote working	Satisfaction	Productivity	Innovation	Attraction	Retention	Overall impact					
3				NL	Lead consultant workplace strategy	Real estate consulting	5	5	3	4	3	3					Benefits: Ability to work closely with clients (at their
4				NL	Strategic consultant	Linking real estate strategies to the organizational i	4	4	4	5	4	4					Benefits: provides flexibility; Challenges: None, you i
5				NL	Team assistant	Real estate advisory	4	4	3	1	4	4					Benefits: Work-life balance; Challenge: I miss a big st
6				NL	Team assistant	Real estate advisory	5	4	3	3	4	4					Benefits: work-life balance; Challenges: no face-to-fa
7				NL	Data manager	responsible for data quality in the systems used.	4	3	3	2	3	4					Benefits: It can save a lot of travel time and allows f
8				NL	Graduate intern	Strategic consulting											
9				NL	Strategic consultant	Advising corporate clients	4	4	3	3	3	4					
10				NL	Senior strategic consultant	Strategic advice, portfolio optimization, workplace,	3	3	3	3	4	4					
11							4.1	3.9	3.1	3.0	3.6	3.9					
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20	Age	Joining date	Country	Job title	Main activity	Satisfaction	Productivity	Innovation	Attraction	Retention	Overall impact						
21	Between 26-35	01-04-19	NL	Lead consultant workplace strategy	Real estate consulting	5	5	4	4	4	4	3					
22	Between 26-35	01-01-17	NL	Strategic consultant	Linking real estate strategies to the organizational i	4	4	4	4	4	4	4					
23	Between 36-45	01-06-08	NL	Team assistant	Real estate advisory	4	4	3	1	4	4	4					
24	Between 26-35	01-03-17	NL	Team assistant	Real estate advisory	4	4	3	3	3	3	4					
25	Less than 25	01-05-19	NL	Data manager	responsible for data quality in the systems used.	4	4	3	3	4	4	4					
26	Between 26-35	01-11-17	NL	Receptionist	Answering phone calls and hosting												
27	Prefer not to say	14-06-19	NL	Receptionist	Answering phone calls and hosting												
28	Less than 25		NL	Graduate intern	Strategic consulting	3	3	4	4	4	4	4					
29	Between 26-35	01-01-19	NL	Strategic consultant	Advising corporate clients	4	4	4	4	4	3	4					
30	Between 36-45	01-09-16	NL	Senior strategic consultant	Strategic advice, portfolio optimization, workplace,	3	3	3	3	3	4	4					
31							3.9	3.9	3.5	3.3	3.8	3.9					Initial learning of where activit
32																	make sure you have sufficient alt

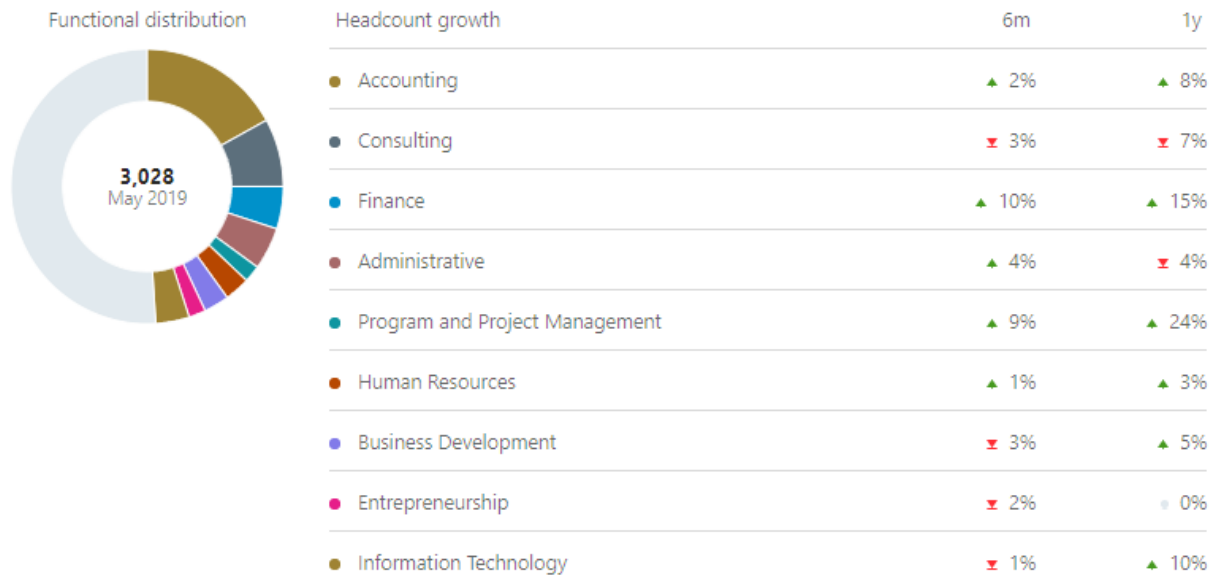
E. Data extracted from websites

PWC services extracted from linkenIN

Employee distribution and headcount growth by function

Functions 

Based on LinkedIn data. Excludes subsidiaries.



JLL services extracted from linkenIN

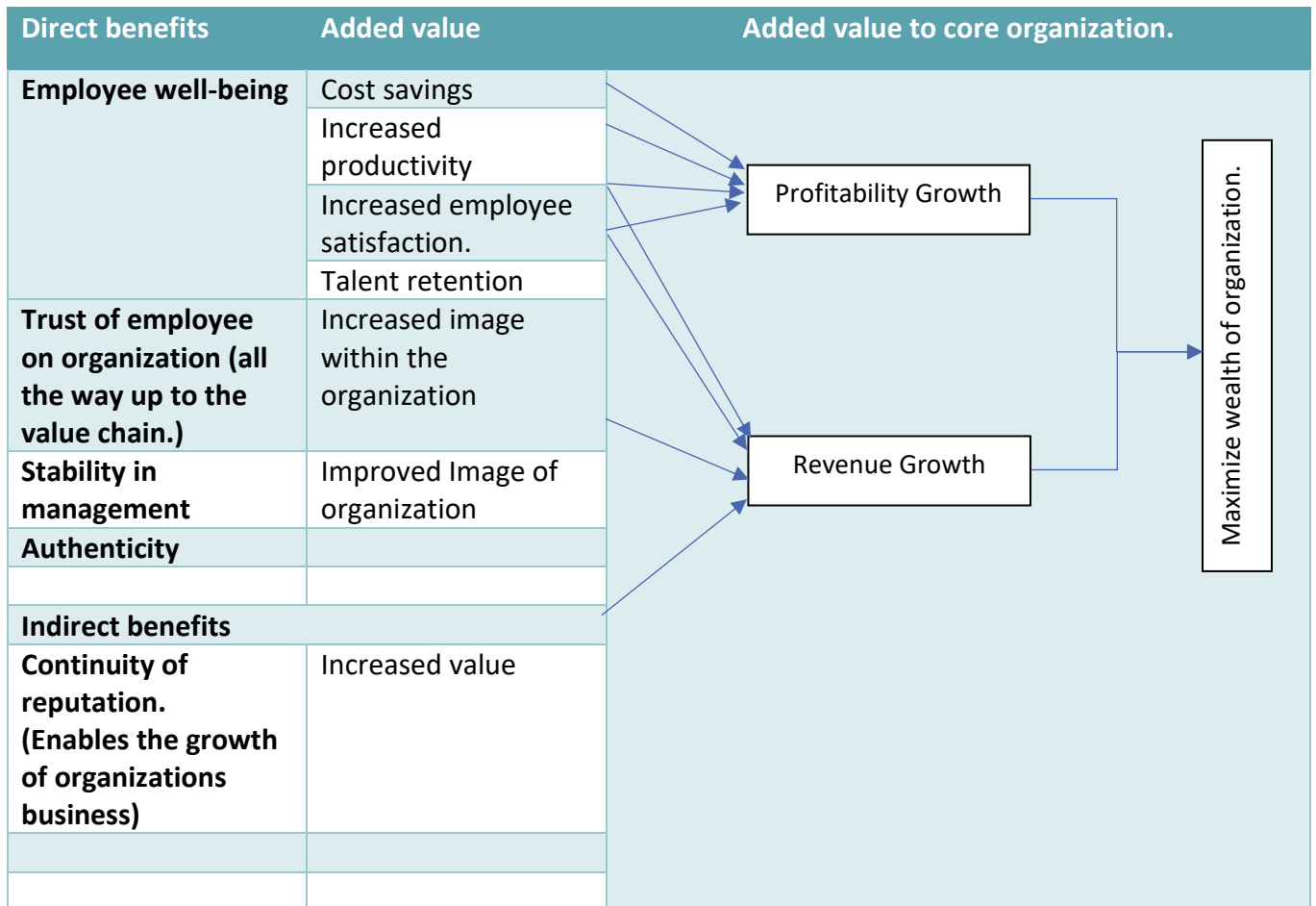
Employee distribution and headcount growth by function

Functions 

Based on LinkedIn data. Excludes subsidiaries.



F. Other



The objective that not JLL but many organizations facing is the quantify employee well-being's direct contribution to the organization. This topic the increased quality of life per individual employees is one of a very recent discussion that has taken place in the corporate world one that is honored and respected and that is very important, but we don't yet have any tools to quantify what that direct benefits are.