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**Title:**

*The impact of the COVID-19 pandemic on the demand for office workplaces in the Netherlands:  
reimagining the workplace*

Master Thesis, MSc Real Estate Studies

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**Abstract:**

The Netherlands has been under the spell of COVID-19 since the beginning of 2020. The real estate sector has also been faced with major issues because of this phenomenon and the future is extremely uncertain. The inhabitants of the Netherlands were obliged by the government to work from home and we now see that this measure is possibly becoming a standard for the future. Factors such as social distancing, remote work and the economic uncertainties due to the outbreak of the pandemic, caused fewer people to work in physical offices. It is extremely relevant to look at the (ultimate) impact of the COVID-19 pandemic on the demand for office space, from different perspectives. This qualitative research project investigates the relationship between the outbreak and the consequences of the corona pandemic on change in the demand for office workplaces in the Netherlands. The results show that COVID-19 has accelerated, but also fundamentally changed multiple aspects of the office market.

## **COLOFON**

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## **Preface**

As I reach the end of my academic journey, I reflect on the invaluable experiences and knowledge I have gained through the MSc Real Estate Studies at the Rijksuniversiteit Groningen. It is with deep appreciation that I say farewell to this chapter of my life. It has been very interesting and educational to conduct research on how the COVID-19 pandemic has affected the office market. During the writing of my thesis, I have been able to explore unknown terrain by investigating a subject that is still being researched in academic publications. My sincere gratitude goes out to Professor Ed Nozeman for his guidance and support throughout the whole process. Next to this, I want to thank the real estate experts who participated in this thesis for sharing their knowledge and expertise with me. I really hope that this thesis contributes to our understanding of the impact of the COVID-19 pandemic on the office market and provides insights for future research and practices.

## **1. Introduction**

### **1.1 Societal relevance**

In the beginning of 2020, the global outbreak of the coronavirus caused significant consequences. Society is still currently adapting to living alongside the virus, resulting in various implications. A retrospective analysis reveals notable changes since the emergence of the coronavirus. One significant change is the increased acceptance and normalization of remote work, recommended across different age groups. A substantial portion of society has had to navigate this measure. The traditional office-based system, previously prevalent in the Netherlands, is now largely outdated. In February 2021, the author commenced an internship at Spring Real Estate, joining as the 102nd employee. Due to space constraints at Spring's headquarters in Amsterdam, a hybrid work system was implemented. Remote work became a prevalent practice due to the COVID-19 pandemic, leading to a shift in behavior (Dockery & Bawa, 2020; Beaudoin, 2021). Remote work has brought about significant societal changes, with both negative and positive consequences. It has enabled individuals to retain their jobs during the pandemic (Dockery & Bawa, 2020). Companies were compelled to adopt hybrid work systems in response to the COVID-19 crisis. Investigating the lasting impact of the pandemic on the demand for office workplaces in the Netherlands is highly relevant. Workspaces traditionally used for office activities may undergo transformations following this major event. This aspect has implications for real estate investors and property developers, potentially altering this market segment. Hence, this master's thesis aims to examine the impact of the COVID-19 pandemic on the demand for office space. Organizations must proactively plan for the future by understanding the current requirements of their workforce. Conducting research is essential to determine the future needs of office spaces (Tichelaar, 2021).

### **1.2 Literature review**

The primary objective of the literature review is to improve the conceptual understanding of the context and underlying ideas about the impact of COVID-19 on the workplace. Then, using this knowledge, a qualitative approach will be utilized to create a structured contribution to the field's body of knowledge.

The coronavirus is a relatively new phenomenon that shocked the world, which makes it even more relevant to investigate its impact on the office workplaces. Almost everyone has had to deal with (or still has to deal with) working from home. Therefore, the expectation is that more and more data and information will become available over time. The following articles partly reflect the relationship

between the impact of the COVID-19 pandemic on the demand for office workplaces, but it has to be said that the concrete academic literature on this topic is still relatively limited.<sup>12</sup>

In this study, COVID-19 is considered as rather a catalyst or game changer, or perhaps a mix of them. The COVID-19 pandemic has caused a shock of which people differ in opinion about its severity. Some think that COVID-19 has drastically changed everything as a game changer, while others think that COVID-19 only serves as a catalyst that has only accelerated certain trends. It is important that the terms 'catalyst' and 'game changer' get a clear definition. A catalyst is a term from chemistry which speeds up the rate of a chemical reaction<sup>3</sup>. It can be seen as a broader term that speeds up change. However, according to literature, game changers are macro-trends that actually change the rules of the game. (Avelino et al, 2017) In the context of the office real estate market, from the catalyst perspective, COVID acted as an accelerator of existing trends and brought about considerable changes in the real estate industry. However, it is important to mention that these changes were already underway before COVID. The outbreak and its consequences have only reinforced and accelerated this. From the game changer perspective, COVID may be seen as a phenomenon that fundamentally altered the long-standing norms and practices in the real estate office market. In this case, it is a highly disruptive phenomenon that completely reshaped the traditional office models. Here, it is important to state that (a significant part of) the changes would have never taken place in the (near) future if COVID-19 would not have taken place.

There is no better place to work from home when an employee is an active agent of his work and therefore has a relatively strong influence on his environment. The corona pandemic ensures that we are moving to a society in which working from home is perfectly normal, so this has the potential to completely change the workplace. Offices might never be the same as they once were. (De Lucas Ancillo et al, 2021) The working environment is becoming hybrid and that is why there should be given a new definition of the workplace. We are moving from the office environment to a work environment, in which the physical area can differ. For the purposes of this research, the term "work environment" refers to the physical workplace as a whole. (Haynes, Nunnington & Eccles, 2017) For the sake of clarity, this study examines the impact on the physical workplace where people basically came every working day.

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<sup>1</sup> The author used the following search machines for the literature review: SmartCat, Google Scholar

<sup>2</sup> The author used the following keywords in the search for useful articles: COVID-19, workplace, pandemic, crisis, location, size, lay-out, WFH, structural, modification, impact

<sup>3</sup> <https://flexbooks.ck12.org/cbook/ck-12-middle-school-physical-science-flexbook-2.0/section/5.28/primary/lesson/catalysts-ms-ps/>

Earlier studies looked at the consequences of (partial) working from home due to the corona pandemic. In 2015, only 1 in 6 people worked from home. That has changed significantly due to the outbreak of the pandemic: way more people are now working from home. In 2022, 25% says that it continued to work from home full-time after the pandemic, while 18% is splitting their workdays between the workplace at home and the physical office. So, the (partially) working-from-home population nearly tripled. (Séveno, 2022) A world in which working from home is becoming the norm for many, means that the physical structure can change completely. When the house now also accommodates an office function, the original functions prior to the corona virus will be partly restructured. In the long run, this also influences property values. (Doling & Arundel, 2020) Ramani and Bloom (2021) state that the outbreak of the corona pandemic has shaken up the real estate market. The forced measure to work from home has had a very strong impact. According to the authors, working from home puts commercial office real estate at a serious disadvantage. In the short term, little has changed as the reduced amount of people going to the office is counterbalanced by the social distancing required in the office. But in the long run there is a very strong fall in the occupancy rate that will be permanent. This causes the value of commercial office real estate to fall and as a result the market segment may possibly get a different structure. However, a lower value does not directly imply a different structure of the market segment. It is possible that in the (long) term the value will increase due to circumstances without restructuring.

The transformation of our workplaces is a topic that keeps people interested. Understanding how the pandemic-induced need for remote work and digitalization has fundamentally redefined the traditional workplace is essential because the effects could last for years to come (De Lucas Ancillo, Del Val Nez & Gavriła, 2021). The physical makeover of the workplace, as well as the inclusion of elements like work flexibility and employee satisfaction, have been the areas of focus. According to studies, today's workplace has seen a significant transformation from the conventional, physical office setting, where everyone was usually seated at their workstations, to a more digital, safer and healthier environment.

This research aims to fill the gap in the literature by questioning the accepted norms of the modern workplace and evaluating its impact on various aspects of society and real estate market. the current increase in remote work has the potential to alter the very nature of the workplace, moving us closer to a hybrid setting (De Lucas Ancillo et al., 2021). According to Ramani and Bloom (2021), such a change not only affects the actual workplace but also has a significant impact on the real estate market. Although initially a required measure, the shift to remote working has decreased the occupancy rates of commercial office buildings and even had an impact on property prices. However, these findings leave open the question of whether these shifts are temporary or indicative of a long-term market restructuring.



The primary objective of this research is to go deeper into these issues and offer fresh perspectives on how the workplace is changing in the post-pandemic era. There will be a more in-depth examination of the pandemic's effects on the physical workplace (Haynes, Nunnington & Eccles, 2017), the increase in partial and full work-from-home scenarios (Séveno, 2022) and the resulting changes in the real estate market (Ramani and Bloom, 2021; Doling & Arundel, 2020). The research seeks to clarify whether COVID-19 is only a catalyst causing transient adjustments or a game changer resulting in long-term structural alterations in the workplace and the real estate market by addressing these concerns. Through this, the author aims to deliver a comprehensive understanding of the "new normal" in the world of work and its broader societal implications.

### **1.3 Research objective:**

The goal of this research project is to study the impact of the COVID-19 pandemic on the demand for office workplaces in the Netherlands.

*The primary aim of this study is to examine how the evolving preferences and needs of users are influencing the characteristics of future office spaces. Specifically, this study will investigate variations in the layout design, size, and location of these workplaces, acknowledging that there is no one-size-fits-all 'new office'.*

### **Main question:**

***Will the COVID-19 pandemic lead to a restructuring of the real estate market for office workplaces and if so to what degree original functions of this market segment will change?***

From the main question the following sub-questions have been derived:

Sub-question 1: *Which factors have influenced the demand for offices since COVID-19, according to the literature?*

This question requires a comprehensive review of academic literature and market reports. The rationale behind this choice lies in the fact that these sources offer a wide scope of diverse perspectives, and contain information backed by rigorous research and empirical evidence (Creswell, 2008). This approach helps in identifying broad trends and key influences that have shaped the demand for office spaces post-COVID-19.

Normally market reports are not used in literature reviews, but in this study they are used in this chapter. Market reports provide timely information and practical insights into certain industries, frequently capturing nuances that academic literature may overlook. They provide latest information, which is especially important in rapidly changing industries like the real estate industry. Market reports incorporate primary data from market research businesses. While they do not replace peer-reviewed publications, they do supplement academic research by providing a more direct and applicable perspective on the market situation. To answer the first sub-question, the standard factors that drive demand and supply in the office market will be considered. Next to this, there will be taken a closer look into what earlier disruptive events meant for the office market and after this, the location, size and layout of the future office will be considered through the eyes of contemporary literature. In the end of Chapter 2, preliminary expectations will be formulated based on the existing literature.

*Sub-question 2: To what extent has the COVID-19 pandemic (permanently) altered the demand for office workplaces in the Netherlands? And in what respect(s)? Is it a game changer or just a catalyst for changes that were already in motion?*

This is a qualitative study in which the data will be obtained by conducting interviews and by considering complementing literature and market reports. The interviewed professionals will use their expertise from different angles to provide a glimpse into the office of the future.

In this research qualitative data will be used due to the following four reasons. Firstly, qualitative research allows for in-depth exploration of the subjective experiences and perspectives of individuals, which can provide valuable insights into how the workplace is changing because of the pandemic. Next to this, qualitative research is well-suited for studying complex and dynamic phenomena, such as the assumed multifaceted impacts of COVID-19 on the workplace. Thirdly, qualitative research allows the researcher to gain a sense of the "human" side of the story, adding a personal touch and emotional impact to the research topic, which in this case is important in answering the research question, as there is no universal view that is correct. Lastly, qualitative research allows for the collection of data from a diverse range of participants and perspectives, which can provide a more comprehensive understanding of the topic. (Yin, 2015; Hennink et al, 2020)

To answer this question, qualitative data will be gathered through interviews with real estate developers, investors and brokers. Moreover, these interviews will differentiate between brief incidental changes versus structural changes, as carefully structured, specific questions are used.

Sub-question 3: *How has the Dutch real estate market adapted to the impact of the COVID-19 pandemic on the demand for office workplaces, and what strategies have been implemented to deal with the effects of the pandemic on the market, as evidenced by empirical findings?*

Like sub-question 2, this question will also be addressed through interviews. The focus will be on strategies that real estate professionals have implemented to manage the effects of the pandemic on the office real estate market. Through this approach, it is possible to gain an understanding of the adaptive strategies from the experts who are directly involved in the field.

The qualitative approach aligns with sub-questions 2 and 3 as they require in-depth insight into experts' perceptions and adaptations to the post-pandemic office space demand. A quantitative approach, while valuable for identifying patterns or correlations, would lack the depth and nuance captured in subjective expert opinions. (Yin, 2015; Hennink et al, 2020)

The respondents to be approached for this study are real estate employees active in the Dutch real estate market. The author was a working student at Edge Technologies (formerly OVG Real Estate) until the end of April 2023 and aims to conduct a part of these interviews there. The professionals will all be asked the same questions and, on this basis, the data will be obtained that will lead to the answers of sub-questions 2 and 3 and consequently the main question of this research. These questions will be carefully compiled based on current trends related to this topic.

It should be noted that the questions are only available to those selected for the interviews. The author prefers to use a selective sample due to the following two reasons: Firstly, selective sampling allows to target specific groups or individuals who have relevant experience or knowledge related to the research topic. Secondly, selective sampling allows the researcher to include participants who would be difficult to find through random sampling, such as hard-to-reach populations or participants with unique experiences or knowledge. However, it should be noted that the author is aware of the limitations of a qualitative research, such as the limited generalizability and the subjectivity of the collected data. (Hennink et al, 2020) This research project will be strongly committed to overcome the limitations and aims to create a clear view of the topic.

Possible findings after this research project are diverse visions on what the office will look like after corona. At the end of this research, hypotheses on the future office market will be given. The qualitative data from the interviews that will be conducted, will (partly) constitute the elements for these adjusted hypotheses. Therefore, a qualitative study was also chosen. Together, these findings should form a structural vision that creates a clear view for the future office and provides policy suggestions.

#### *1.4 Tassel*

The remainder of this research project will be structured as follows. Chapter 2 focuses on determinants from existing literature and market reports. In Chapter 3, the proposed methodology and collected data to answer the sub-questions 2 and 3 will be considered. Consequently, in Chapter 4, the information from the interviews will be discussed and the qualitative results will be presented. Lastly, in Chapter 5 the main question will be answered. Next to this, limitations will be discussed and recommendations for future policy and research will be formulated.

## **2 Literature review**

The real estate market has experienced a great deal of uncertainty and instability because of the COVID-19 pandemic, and this includes the need for office space. This chapter aims to shed light on the elements that have impacted the demand for offices since the pandemic's onset. To start, a closer look will be taken at what the standard factors are that thrive supply and demand in the office market. By doing this, it is possible to clearly visualize the changes in the office market caused by COVID-19. Next to this, the author will look at how previous disruptive events have affected the demand for office space. This will involve a closer examination of how these events have affected size, location and layout. The author will also consider whether the changes in the demand for office space are structural in character. In this research, non-structural changes are brief fluctuations in demand that are more likely to change over time than structural changes, which are long-term adjustments that are unlikely to disappear. The author will determine the type of changes in demand for office space by a detailed examination of the existing literature. Finally, preliminary expectations will be formulated for the remaining part of this research project. These expectations, which will be supported by the information from the literature research, are based on the literature which is available on my topic and they are only here to be adjusted into common hypotheses after operationalization in the analytic process. The author wants to offer helpful insights into the office market's current situation and its expected future course by examining these ideas, conceptions and convictions. Investigating the above aspects using literature and market reports ensures that an appropriate answer to sub-question 1 can be given as close as possible, which will be done at the end of this chapter.

### **2.1 Market forces: pre- and post-pandemic outbreak**

While traditional factors like size, location and layout continue to impact the real estate office market, the COVID-19 pandemic has highlighted the significance of recognizing space users' shifting expectations. Businesses' requirements for office space are changing as they navigate the post-pandemic world. The real estate market must change in response.

Before the COVID-19 pandemic, the real estate office market was generally characterized by strong demand and limited supply, particularly in urban areas where office space was in high demand. Office rental rates were frequently high, while office vacancy rates were typically low. (Savills; Cushman &

Wakefield, 2019)<sup>45</sup> Prior to the outbreak the global economy was growing steadily because there were new companies created and multiple businesses grew during this time (IMF, 2019), which resulted in an increasing demand for workspace, while in some places the availability was scarce. (Savills, 2019) Furthermore, unemployment rates were relatively low during this period. (IMF, 2019) Because of this, there were more people in the workforce during this time and there was therefore a greater need for office space. During the years before the outbreak of the pandemic, the interest rates were low. Therefore, it was more feasible for businesses to borrow money to make real estate investments. This helped to stimulate the demand for office space.

Since the outbreak of the COVID-19 pandemic, the demand for office space has been impacted by several factors. Firstly, the rise of remote working. Due to this measure the requirement for actual office space decreased as people were from that moment allowed to work from home. (De Lucas Ancillo et al, 2021) Numerous businesses have been implementing hybrid work models that occupy less office space, even while workers return to the workplace. The pandemic's economic instability has made firms shrink office space to cut expenses, (Paredis, 2022) which has compounded this shift in demand. Next to this, shifts in industry demand have led to changes in the demand for office space across different sectors (Hoesli & Malle, 2022). For instance, the pandemic has negatively impacted the hospitality sector, whereas the tech sector has been better able to adjust to remote work. Furthermore, the pandemic has also changed the needs of the workforce and due to this, many businesses are now looking for more adaptable office space that can suit shifting work patterns. (Barath & Schmidt, 2022) For example, a lot of businesses are aiming to build more collaboration areas, smaller offices and shared workspaces. To preserve matters like social distance, the pandemic has also heightened health and safety concerns (Hou et al, 2021), changing the way offices are designed and necessitating additional space per employee.

It is yet unclear how the COVID-19 pandemic's overall effects on the supply and demand for office space will affect the market for real estate in the long run. However, it has to be stated that the pandemic has also created new insights for the commercial real estate office industry, including the creation of adaptable office buildings that can accommodate shifting work patterns and a renewed emphasis on employee health and safety. Looking optimistically at the situation, the real estate market has been woken up a bit in terms of well-being.

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<sup>4</sup> <https://research.euro.savills.co.uk/netherlands-pdfs/mim---the-netherlands---q4-2019.pdf>  
[https://www.cushmanwakefield.com/-/media/cw/marketbeat-pdfs/2019/q4/netherlands\\_marketbeat\\_office\\_q4\\_2019.pdf?rev=5568f65853ae48e09ab73aa5de5ce45f](https://www.cushmanwakefield.com/-/media/cw/marketbeat-pdfs/2019/q4/netherlands_marketbeat_office_q4_2019.pdf?rev=5568f65853ae48e09ab73aa5de5ce45f)

## **2.2 Earlier disruptive events in the office market**

According to traditional real estate theory, shocks, or unexpected disruptive events and changes, can substantially impact the real estate market and interfere with its usual functioning. These disruptive events can be caused by a variety of things, including global challenges like the COVID-19 pandemic, economic downturns, legislative changes and natural disasters. The form and severity of the shock, the particular market segment and the larger economic and political environment can all have a significant impact on how these shocks affect the real estate market. (Baker & Chinloy, 2014) The real estate office market has experienced significant disruptions throughout its history. In this section, three earlier disruptive events in the office market will be pointed out.

One of the most significant disruptive events for the real estate office market was the introduction of personal computers in the 1980s. The widespread adoption of personal computers and the internet led to a significant shift in the way businesses operated. (Basakci et al, 2022) As a result, many office spaces became obsolete, as they were no longer needed for storing paper documents or for housing large numbers of employees. This disruption forced the real estate office market to adapt to new technologies and business practices, which led to the development of coworking spaces and flexible office arrangements. Businesses were able to automate many of the outdated processes with the introduction of personal computers, which made office work faster and more efficient. Computers made it possible for organizations to produce papers more rapidly and accurately while also facilitating team member collaboration and communication. As a result, the introduction of personal computers led to a significant increase in demand for office space, particularly in urban areas where many businesses were located. Businesses needed more office space to accommodate their growing workforces. (Bessen, 2016) Furthermore, the introduction of personal computers also affected how organizations conceive of office design. With the introduction of computers, firms were able to design more open, collaborative offices because they did not require as much space for storage facilities as before.

Furthermore, the rise of the sharing economy has had a significant impact on the real estate office market in recent years. The sharing economy is characterized by the sharing of resources, such as cars, homes, and also office space, which has disrupted traditional business models and led to changes in the way that businesses approach office space. The growth of coworking spaces, which provide adaptable, shared office space to entrepreneurs, startups, and freelancers, is one example of the sharing economy's influence on the real estate office market. This also resulted in effects on the design of the office. In recent years, coworking spaces have grown in popularity, especially in urban locations where office space is in high demand. (Merkel, 2015) The global market for Coworking spaces is

expected to grow by USD 14,124.67 Mn between 2022 and 2027, slowing at a compounded annual growth rate of 11.23% during the forecast period. (GlobeNewsWire, 2023) Companies can lower their overhead costs and gain access to a professional work environment by sharing office space and resources. By offering new, more adaptable methods for businesses to access office space, the sharing economy has upset the conventional real estate office market. (Bouncken & Reuschl, 2018) While these adjustments have brought up new economic opportunities, they have also presented real estate professionals with new obstacles as they must adjust to new models and shifting demand.

One more example is the adoption of sustainable building practices: The increasing focus on sustainability and green building practices has led to the development of new building standards and certifications, such as LEED (Leadership in Energy and Environmental Design). (De La Paz, 2013) This has impacted the real estate market by increasing demand for sustainable buildings, which can be more expensive to construct and operate, but which are also more attractive to tenants who prioritize sustainability. Researchers expect a compounded annual growth rate of 9.50% between 2022 and 2030 and a market size of USD 1312.12 Billion in 2030. (GlobeNewsWire, 2023) The sustainability practices also have effects on office layloutss these practices stimulate healthier work environments (e.g., sustainable materials, energy-efficient systems, etc.) (McArthur & Powell, 2020) The real estate office sector has been significantly impacted by the adoption of energy performance rules. Buildings with poor energy efficiency are frequently less desirable to tenants and buyers, who might be searching for more ecologically friendly and sustainable settings. (Hauge et al, 2011) Due to this, building owners are spending in upgrades and retrofits to enhance the energy performance of their structures, which has caused the market to shift in favor of more energy-efficient structures. The impact of energy performance regulations on the real estate office market can be observed in many countries, but also in the European Union, where energy performance certificates are mandatory for commercial real estate buildings. (Annunziata et al, 2013)

**Table 1.** Historical disruptive events and their impacts on the office market

<b>Disruptive event</b>	<b>Impact on office market</b>
Introduction personal computers (1980s)	<ul style="list-style-type: none"> <li>- Former office space became obsolete and transformed for new purposes</li> <li>- Business practices changed which caused an increase in the demand for office space</li> <li>- Introduction of more collaborative office space</li> </ul>



Rise of the sharing economy	<ul style="list-style-type: none"> <li>- Sharing office space and resources → e.g., the ‘Spaces’ initiative</li> <li>- More emphasis on freelancers, startups, entrepreneurs</li> <li>- Impact on office lay-out</li> </ul>
Sustainable building practices	<ul style="list-style-type: none"> <li>- Increasing demand for sustainable buildings</li> <li>- Decreasing demand for ‘older’ office buildings</li> <li>- Also effect on office lay-outs as there is placed emphasis on healthier work environments</li> </ul>

One of the most significant challenges facing the real estate office market today is uncertainty. The COVID-19 pandemic has created a great deal of uncertainty about the future of the market. It is unclear how the pandemic will impact the demand for office space in the future. Additionally, there are several other factors that impact the market, such as changes in technology, shifts in customer demands, and economic instability.

### **2.3 Location, size and layout**

In terms of the size of the future office, it is difficult to assess what will happen. As already stated, the introduction of remote working made it less necessary for companies to possess the big offices that they had before. It has been proven that in different industries remote working is very efficient and easily feasible. (De Lucas Ancillo et al, 2021) However, there are also a lot of companies who find that they still require a large amount of physical office space. They are now, after the pandemic, sometimes searching for new kinds of places that better meet their requirements. Some researchers expect that the use of physical office space will only change by -1.4% after the impacts of the pandemic (Barrero et al, 2022)

Today, it is also difficult to determine whether we really go to different locations for the office. There are arguments both for and against this. It can be said that due to remote working, companies downsize their physical office space to reduce costs, as working remote is now also one of the possibilities. (De Lucas Ancillo et al, 2021) Especially in areas where renting an office is really expensive, like CBDs, it is thinkable that companies abandon such places and move to less expensive areas. At the same time, a lot of businesses have looked for suburban areas with cheaper cost of living

and greater room for employees to work from home. (Ramani & Bloom, 2021) The pandemic has increased the demand for office space in these places, and some companies have even moved their operations to whole new locations. For some business it is however important to stay in a certain location, in terms of the accessibility. Think for example of service businesses or financial institutions.

Companies had already been experimenting with remote work and flexible work schedules before the outbreak. However, the pandemic caused businesses to quickly switch to remote work and demonstrated that it was feasible to do so on a significant scale. (Bick et al, 2021) As a result, a lot of businesses are now integrating remote work into their daily operations.

Along with the transition to virtual work, the pandemic has also affected how companies use office space. In addition to investing in new technology to accommodate remote work and hybrid work models, many companies are rearranging their workplaces to offer a lot of new features. The new office will be different where there is being placed more emphasis on the employee than ever before. Wellbeing will be standing central. (Barath & Schmidt, 2022) Right now, there is a rising interest in mixed-use office buildings and this is catalyzed by the pandemic. Buildings that previously were 100% office, now are being more and more transformed into mixed-use buildings that offer multiple amenities. This is partly because remote work is now very popular. (Nicholson, 2022)

However, it is important to note that authors disagree in their expectations in terms of the size, location and layout of the future office.

There are varying views on the size of the future office. Given the increase in remote work, some experts expect that the amount of office space needed will structurally decrease. Organizations may favor flexible office spaces to support hybrid work patterns, which may result in long-term shifts in the need for office space, according to McKinsey (2021). In contrast, other experts think that office space expansion may eventually give employees more facilities while maintaining social distance (Helmold, 2021). However, it is important to notice that some companies will maintain the size of their offices given the nature of their operations. For instance, industries that primarily rely on in-person collaboration or specialized working equipment might be less willing to shrink the size of their office(s). These industries simply rely on their office space and therefore there are researchers who think that the decrease in usage of physical office space will be generally low, 1.4%. (Barrero et al, 2022)

Some authors also disagree in terms of the location of the future office. On the one hand, remote work will increasingly be the norm and traditional office locations may become unnecessary. (De Lucas Ancillo et al, 2021) This would imply that businesses may avoid paying the high price of leasing or

purchasing office space in desirable areas. On the other hand, some experts contend that although corporations may choose to have smaller, more regional offices, office locations will still be crucial. For employees to have shorter commutes, these offices may be located in suburban or residential neighborhoods. (Ramani & Bloom, 2021) Due to the remote working, which went from 5% to more than 21%, the demand in CBDs will fall and also the consumer spending will reduce here by 10-15% in comparison to situation before the pandemic. (Florida, 2021) This could mean that CBDs could partly disappear. But it is also thinkable that CBDs will still be very crucial for certain businesses, as traveling by public transport becomes more and more popular and traveling by car less popular. However, currently the number of people that uses public transport is still lower than pre-COVID. The Dutch passenger carrier 'NS' expects that it in 2026 the number of passengers will be at least equal to the pre-COVID amount, so this will still take several years.<sup>6</sup> Next to this, the war for talent is also very strong. Firms that are strategically located have a beneficent position in this war. This will mean that current CBDs might stay in their prime location, as these areas are very close to transportation hubs and are in the most competitive location. Another possibility is that businesses would use a hybrid model, where employees split their time between working in the office and remotely. (De Lucas Ancillo et al, 2021) This could result in a more dispersed network of office sites.

Concerns about the long-term structural impacts on office layouts are another source of debate. According to previous research, in order to reduce the danger of infection, open-plan offices will be replaced with more private and enclosed places, signifying a fundamental change in office design (Alhusban et al, 2022). On the other hand, some authors think that open-plan offices will persist but with some changes compared to the original situation. (Mohezar, 2021) Offices are supposed to include ergonomic furniture that encourages worker productivity and well-being as well as easily changeable and modular furniture that can adapt to changing needs (Raafat, 2023)

There are of course other factors that also affect the future shape of work, like the war in Ukraine. COVID-19 plays a big role in shaping the office of the future but matters like economic instability also have a very strong effect on this.

## **2.4 Structurality**

Based on the findings from literature the author expects that the impact from the COVID-19 pandemic on the office workplace will be structural for a significant part. For sure there are changes that are in 2023 (still) necessary due to the pandemic but will disappear at a certain time soon and are thus non-

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<sup>6</sup> <https://nos.nl/artikel/2468391-nog-steeds-minder-reizigers-in-openbaar-vervoer-dan-voor-corona>

structural. But at the same time there are structural changes that are likely to shape the real estate office market for a lot of years to come. The office will likely be different than before the pandemic, as companies will continue to offer remote or hybrid work and this will possibly have a structural effect on the workplace. Next to this, the wellbeing and health of employees will be of way bigger importance than pre-pandemic, thus workplace will likely change due to this.

Relating to the findings in literature, however, there is a slight form of criticism. The lack of quantitative data on the effects of the COVID-19 pandemic on the real estate office market is a significant concern. While there is a growing body of literature on the topic, the absence of concrete numbers and figures means that, currently, it is sometimes difficult to make reliable predictions or draw firm conclusions. This lack of data is understandable, given that the pandemic is still a relatively new phenomenon and its full impact on the real estate market may not be known for some time.

### **2.5 Conclusion: answer sub-question 1**

Since the outbreak of the COVID-19 pandemic, several factors have influenced the demand for office space, as discussed in the literature. One significant factor is the increase in remote work, which has caused organizations to reduce their office space requirements and implement hybrid work arrangements. Industries have faced a variety of pressures, with some encountering difficulties, as some sectors are (highly) dependent on face-to-face contact. Generally, businesses are now looking for smaller offices, shared workplaces, and flexible, collaborative office spaces because of changing workforce needs. Location preferences have shifted, with some businesses relocating to less expensive suburban areas from central business districts, while others may still favour CBD locations for their emphasis on face-to-face connection. Additionally, changes have been made to office layout and size, with a reduced need for huge premises, the emergence of flexible and regional offices and a greater emphasis on safety and employee well-being measures. The real estate office market has seen substantial changes because of these causes, which were often hastened by the pandemic. While some modifications might only last a short while, several structural alterations are anticipated to have a long-term impact on how offices will develop in the future. To acquire a deeper knowledge of the pandemic's effects on the real estate office market, additional quantitative data and research are required.

Today, changes are taking place. The interesting thing, however, is to get to know which changes are structural. What will be the changes initiated, or reinforced, by COVID-19 that we will see back at the office in the long term. The literature contains expectations about these structural changes, but simply cannot demonstrate it concretely now. Through the prepared interview questions, the author is going to attempt to demonstrate the structural changes of the pandemic. The interviews will provide in-depth

knowledge of real estate experts' perspectives and experiences. The interviews allow to examine context-specific factors that these individuals have to discover the long-term effects of COVID-19 on the office market. Eventually, this study should form a foundation for further quantitative research. In doing so, the author aims to fill the white spot in the literature for a significant part.

## **2.6 Preliminary expectations**

Despite the ambiguity of the market direction and the disagreements among the authors, the following three preliminary expectations have been drawn up based on the most common and established literary findings (Boeije, 2009; Maxwell, 2012; Yin, 2015):

### **PE1 Size:**

*The COVID-19 pandemic is expected to decrease the demand for office space as businesses explore remote work options and reassess their needs. This may lead to a potential decrease in demand for large, centralized offices, but certain sectors with specific operational requirements may still require their current office size. Sectors adopting hybrid working models may experience downsizing, while those relying on collaboration or specialized equipment may maintain their current space. Changes in office space demand will depend on economic conditions, demographics, and technology, varying by region.*

### **PE2 Location:**

*The COVID-19 pandemic may lead to a shift in office space demand, potentially away from expensive urban centers. Businesses aiming to reduce costs and prioritize employee well-being may opt for increased flexibility in work arrangements. However, certain areas may still prioritize centralized office spaces in CBDs due to accessibility and talent acquisition advantages. While some industries may relocate from urban centers, competitive sectors are likely to maintain their centralized positions.*

### **PE3 Layout:**

*The COVID-19 pandemic is likely to drive a shift towards office layouts prioritizing health, adaptability, and employee well-being. This may involve integrating technology, safety features, and flexible spaces for diverse purposes. Employees will have a significant influence in shaping this transformation. Furthermore, the pandemic's impact may lead to a greater preference for mixed-use office buildings, driven by factors such as the increase in remote work and demand for additional amenities.*



### **3 Methodology & data**

#### **3.1 Research Design**

This study uses a qualitative approach, specifically a phenomenological design. This approach allows a thorough examination of the opinions and experiences of brokers, investors and developers in the Netherlands regarding how the pandemic affected the demand for offices. In the opinion of the author, phenomenology is appropriate for this research project, because it aims to comprehend how participants interpret their perceptions of the pandemic and its impact on office size, location and layout. (Neubauer et al, 2019) This approach forwent the collection of quantitative data, as it allowed for a thorough investigation of the COVID-19 pandemic's effects on the office sector, focusing on details and contextual factors that quantitative data would miss. This qualitative study forms the foundation for subsequent quantitative research, allowing for accurate measurements and statistical evaluations of the pandemic's effects on the office market. Conducting a qualitative study was a conscious option taken to concentrate on the complex effects of the pandemic, going beyond simple statistics to discover the reasons behind changes in the office sector. By using this methodology, we are able to explore specifics and contextual variables that a strictly quantitative approach would miss, such as the emotional and psychological effects or the particular difficulties encountered in the office sector during the pandemic. However, this qualitative technique paves the way for further quantitative study rather than undermining the value of quantitative data. It can help to clarify factors and hypotheses for next quantitative studies by understanding the experiences and subjective viewpoints of office sector experts, encouraging a more thorough understanding of the pandemic's effects. (Yin, 2015; Hennink et al, 2020)

#### **3.2 Participants and Sampling**

The participants in this study are real estate brokers, developers and investors who have been proactive in the office real estate market in the Netherlands since the onset of the COVID-19 pandemic at the start of 2020. In this research, selective sampling was done to identify people with knowledge of the office real estate market who may shed light on the research issues. In the sample, the author tried to include participants with various backgrounds, degrees of expertise and perspectives. In total, there were 12 interviews conducted. There were two approached experts who did not respond to the invitation for an interview. All groups of participants were informed about the definitions of the concept 'catalyst' and 'game changer' prior to starting the interview. The definitions that they receive can be found in **Appendix A**. Each group of experts was supposed to have different, specific opinions and insights on the topics proposed. The author approached real estate specialists by leveraging the connections he established during an 8-month internship at Edge Technologies and by utilizing his professional network in the real estate industry. The search for participants ceased once it became

evident that no new perspectives, insights, or arguments were being revealed during subsequent interviews with representatives from the same subgroup.

**Table 2.** List of participants in this study.

Philip van der Ent	Commercial Director – <b>Impact Vastgoed</b>	<u>Developer / Broker</u> → Internally responsible for leasing
Pascale Volder	Head of Agency Rotterdam - <b>JLL</b>	<u>Broker</u>
Ton van Oosten	Private investor/developer – <b>Steengoed BV</b>	<u>Investor / Developer</u>
Peter Sagijs	Executive Commercial Director – <b>Edge Technologies</b>	<u>Developer / Broker</u> → Internally responsible for leasing
Cees van der Spek	Global Corporate Affairs & Marketing Director – <b>Edge Technologies</b>	<u>Developer / Broker</u> → Internally responsible global account management
Esther de Rooij	Project Manager – <b>Impact Vastgoed</b>	<u>Developer</u>
Joppe van der Heijden	Director Acquisitions – <b>Edge Technologies</b>	<u>Developer</u>
Rik Raaymakers	Project Manager – <b>Impact Vastgoed</b>	<u>Developer</u>
Hidde Heimel	Transaction Analyst – <b>CBRE Investment Management</b>	<u>Investor</u>
Sjoerd Schaafsma	Consultant Investment - <b>Savills</b>	<u>Investor</u>
Daniël Ehrlich	Broker Offices – <b>De Mik Partners</b>	<u>Broker</u>
Ernest Wehry	Consultant Offices - <b>JLL</b>	<u>Broker</u>

### **3.3 Data Collection**

The data in this research project is collected through structured interviews. This type allows us to ask open-ended questions and thoroughly examine the participants' opinions and experiences. (Baarda et al, 2021) All the interviews were conducted face-to-face or digitally, through a video call or phone call. Every interview lasted no longer than 60 minutes. A standardized interview guide was formed by the author which consists of multiple open-ended questions that give insights about the future of the office market. The interview guide was formed after the insights that the literature provided and can be found in **Appendix B**.

### **3.4 Interview Guide**

The questions from the interview guide in **Appendix B** were carefully crafted because the author believes that the answers given to the various questions both separately and coherently determine the future direction of the office market. The various concepts contained in these questions serve as guidelines in the thinking of the interviewees in outlining the future office in the long term, after the



influences of COVID-19. It is important here that the various peripheral issues, such as flexibility, technology, lease terms, rental prices and COVID-19's magnitude in comparison with traditional factors are also included, because these factors all have major influences on the size, location and layout of the office.

### **3.5 Data Analysis**

Thematic analysis was used to examine the data. Thematic analysis is ideal for this research issue because it enables us to spot trends and themes in the information about how the pandemic has affected the office. (Hennink et al, 2020). A big part of the interviews was conducted in Dutch, as the interviewee preferred this in the concerning cases. All the interviews were eventually transcribed in English. During the thematic analysis, all relevant quotes were manually cited in the transcripts and then grouped together in an Excel file in separate sheets, in which every sheet covered a different theme. In this context, a theme means a certain idea about a topic. By doing this, all the quotes of the participants that said something about a certain topic, were grouped underneath each other in the different sheets. This helped the author to uncover the underlying meanings of the quotes within the same themes and made it a cohesive whole. The thematic analysis eventually focused on identifying and analyzing key concepts within the data. This resulted in the emergence of eight distinct concepts, from twelve themes. The themes are, as it were, limited and grouped into these eight Key Concepts, which cover all topics from the themes. In the results section, every concept will be thoroughly presented and reinforced by pertinent quotes from the interviews. This means that key concepts are used as subheadings to structure the results of this research project. These key concepts are the final outcomes of the data analysis. In selecting these concepts, the research questions as well as the hypotheses were accurately considered to make sure there was provided a focused lens in analyzing the collected data. The analytic process aligns with the ideas of Hennink et al. (2020)

### **3.6 Validity and Reliability**

Several strategies were used to ensure the validity and reliability of this study. Firstly, it was ensured that the sample was diverse (brokers, investors, developers) and representative for the relevant population. Please note that the people who came from the same company, all significantly differed in age and/or discipline. Secondly, to guarantee that all participants were asked the same questions and that the data gathered were consistent across interviews, a standardized interview guide was used. This allowed for consistency and standardization across all the interviews. By this, the potential interviewer bias was reduced and the internal validity of the study was enhanced. Construct validity was secured by carefully considering the design of the interview questions, based on existing literature and collaboration with the supervisor of the author. Prior to starting the interviews that were considered for this study, a pilot-interview with a colleague at Edge Technologies was conducted. As mentioned, in

this study selective sampling was used. This technique addresses the external validity because a diverse range of perspectives was considered. By this, the author aimed to enhance the transferability and generalizability of the results behind the specific context of this study. Reliability was ensured by establishing consistency in the data collection and analysis process. All interviews were conducted by the author, minimizing the possibility that variations would occur if there would be multiple interviewers. Next to this, the standardized interview protocol ensured that the participants were all asked the same questions in a consistent manner. (Yin, 2015; Hennink et al, 2020; Baarda et al, 2021)

The author is aware that his personal background and experiences may have an impact on the way the research is conducted and what is discovered. The author's method for gathering, analyzing and interpreting data is partly influenced by his educational background and expertise in the real estate industry. Despite the author's efforts to maintain objectivity, he is aware that personal viewpoints and biases may have an impact on certain aspects of the research. The author has actively engaged in reflexivity and critically examined his assumptions throughout the study in order to mitigate potential bias in this study. It was his intention to ensure the research was conducted with transparency by openly acknowledging positionality. In this way, the author dealt with reflexivity. (Yin, 2015; Hennink et al, 2020)

### **3.7 Ethical considerations**

The author prioritized ethical considerations throughout the study. Prior to conducting interviews, informed consent was obtained from all participants, hereby ensuring that they were fully informed about the study's objectives, procedures and potential impact. Confidentiality measures were strictly adhered to, ensuring that participant information remained confidential throughout the study. The purpose of the study was explained to participants, allowing them to ask questions and seek clarification before providing consent. Additionally, participants were guaranteed the freedom to leave the study at any time, without suffering any negative outcomes. (Yin, 2015)

## **4 Results**

### **4.1 Introduction**

In this chapter, the results of the data collected through the interviews will be presented. After all the concepts are described, the interlinkage between the key concepts will be presented. When this is done, a clear look will be taken in how the collected data relates to the three preliminary expectations which were formulated at the end of the literature review. This chapter strives to be as descriptive and objective as possible, because the next chapter will be interpretive and answer the main question of this research project. (Yin, 2015; Hennink et al, 2020). The analysis presents a thorough and structured explanation of the interview data, illustrating the participants' viewpoints, experiences and the interconnectedness of the discovered concepts, to describe the results as clearly as possible.

### **4.2 Key Concept Approach**

#### **→ Key Concept 1: COVID-19 and the size of office space**

The impact of the COVID-19 pandemic on office space is the first identified key concept which was a very important topic during the interviews that were conducted. Insights from the real estate brokers, investors and developers shed light on the changing dynamics and considerations related to office size requirements in the long term.

The pandemic has prompted a shift in office space size requirements, driven by the increased acceptance and adoption of remote and hybrid work models. This has led to reduced demand for traditional, larger office spaces.

*“The pandemic has led to a shift towards more home working and greater acceptance of hybrid working models, which has led to a reduction in demand for office space. Companies are therefore looking for smaller office spaces or reconsidering the way they use their current space to cut costs. A good example that shows this change is ING Bank's decision to close its head office on Fridays due to low occupancy.” - Investor*

Companies are now reevaluating their office space needs and exploring options for downsizing their current spaces to cut costs. This includes considerations for more flexible and agile office environments.

*"We just have to go to lower metrics with higher quality. This way you encourage your employees to come and let those who sometimes want to work from home do so. In that case, you create a win-win situation for the employer and employee." - Broker*

While the demand for physical workspace is decreasing, it is important to note that the concept of office size is evolving beyond physical dimensions. The rise of hybrid work models has placed greater emphasis on workplace quality, flexibility, and networking opportunities. The interviewees highlighted the importance of creating offices that provide high-quality experiences and foster connections among employees.

However, there were differing viewpoints among the specialists regarding the extent of the decrease in office space demand. Some specialists argued that the demand for office space may rebound in the longer term, while others believed that the decrease in demand will continue and thus hold on. These disagreements reflect the contextual nature of the impact, influenced by factors such as the industry in which a certain company operates. Furthermore, there are people who really enjoy working at a physical office. The disagreeing respondents were one developer and one broker.

*"I actually enjoy working with people interactively in the office, but you also have people who like to sit at home all day and do what they have to do." - Broker*

Concluding, the COVID-19 pandemic has brought about a shift in office space size requirements. 10 interviewees argued that companies are re-evaluating their needs and opting for smaller, more flexible spaces to accommodate hybrid work models. According to Cushman & Wakefield (2023), this can already be seen in the absorption of office space in Amsterdam in H1 2023, where this declined 25% in comparison with 2022. While there were a few disagreements among the experts regarding the extent of the decrease in demand, they all agree that the pandemic has reshaped the concept of office size and that this will have long-term effects. Hybrid working initially lowered office space demand due to remote work, but this was offset by sector growth until mid-2022, according to CBRE's research (2023). Due to a limited number of new office developments, vacancy rates are now rather low. But there has been a change, as evidenced by an increase in subletting, particularly among big businesses and tech companies, which is blamed on reworked growth strategies, higher interest rates and cost-driven office space reduction. The demand for office space is generally going down.

**→ Key Concept 2: COVID-19 and the location of office space**

According to nine the interviewees, competitive locations, particularly central business districts are expected to become even more important in the long term. These locations are seen as crucial for fostering physical interactions and maintaining a competitive edge in various sectors.

However, three respondents argued that the pandemic has also prompted a shift in demand from urban to suburban areas. Two were brokers and one an investor. These interviewees state that employees now prioritize office spaces that are closer to their homes, reducing commuting time and costs. Suburban areas offer more space and often come with lower costs, making them attractive options.

*"The pandemic has caused a shift in demand for office space from urban to suburban areas, as companies want offices closer to their employees' homes to reduce commuting and suburban areas often offer more space and lower costs." - Broker*

While suburban areas are gaining popularity after the pandemic, the appeal of urban areas remains for certain sectors. Industries such as finance, technology, and media find urban locations attractive due to their competitive positions, cultural benefits, and social amenities, but also in the war for talent. Nine of the interviewees noted that location plays a crucial role in for example attracting tenants and businesses. For instance, the Zuidas area in Amsterdam was considered more desirable than Sloterdijk due to its tenant interest and sustainability features.

*"We noticed that actually in the Zuidas the group of tenants who showed interest was much bigger and better compared to Sloterdijk. Where, for example, in a building that has 4000 meters available in terms of sustainability and everything, you can rent tomorrow at the best conditions you want and no one will come to that. Whereas if you now see 'De Puls' our other building on the Zuidas, rental transactions are still being done there, so I think there is a difference there. So the location is just really, really important, also in the long term after the pandemic." - Developer*

The function of offices has evolved beyond being solely a workspace. The modern office is by a big part of the respondents now seen as a multifunctional environment that accommodates various needs, including social interactions and relaxation. The interviewees recognized the shift, stating that the office has transformed into a location for both formal and informal interactions, in addition to regular work. CBRE (2023) addresses that, due to their compatibility with ESG goals (which address mobility and sustainability issues) central and accessible office locations are increasingly preferred for attracting talent. Survey results that identify travel time as the biggest obstacle to employee office attendance support this. Because of the shorter travel distances, offices in the center of town offer a wider labor pool. Central locations still provide the potential for new office construction and upgrades despite rising costs.

### → Key Concept 3: The layout of the office space after COVID-19's impact

The respondents' insights regarding the layout of office spaces after the COVID-19 pandemic provide valuable perspectives on the changing dynamics and considerations regarding the office design and layout in the long term.

After COVID-19, employees place greater emphasis on incorporating amenities within office spaces to create a desirable and functional environment, which stimulates the employees to come to the physical office.

*"There is a growing demand for multi-tenant buildings with all kinds of different amenities such as meeting facilities, restaurants and meeting places. Office users want these amenities without paying extra rent and using them can be cost-effective. This question has a direct influence on the interpretation of the meters of the building and the layout per floor. The goal is to encourage employees to come to the office by providing good amenities and this will have a big effect on the layout." – Broker*

The pandemic has prompted a shift in the perception of office design. The interviewees are all generally in the same line by arguing that there is an increased focus on providing a workspace that prioritizes employee comfort, well-being and environmental quality.

*"The office of the future simply has to be perfect. Aimed at the user and this means not just at the floor itself. In our 'Open' project in Utrecht, the main priority is to make it internally as well as externally attractive for the user. This means creating good internal facilities, but also the integration of cultural activities and other area benefits: a gym, bars, shops and a restaurants." - Developer*

The office is partly transforming into a meeting place, blurring the boundaries between home and the physical office now that remote working is 'normal'. The interviewees highlighted the need for well-designed layouts that foster collaboration, provide spaces for focused work, and create a vibrant working atmosphere.

*"You see more and more functions in the office to attract people to the office, both at the corporates and at the SMEs. A good example is that they create more open office floors and meeting places in the center of the user so that the different visions actually work together." – Investor*

All 12 participants argued that the layout of office spaces is undergoing significant changes in response to the COVID-19 pandemic. The growing demand for (more) amenities, improved environmental conditions and the transformation into a multifunctional meeting place are key considerations. Balancing private and collaborative spaces is another consideration in office layout. The real estate professionals noted the increased emphasis on employee health, safety, and collaboration, since COVID-19. Research by JLL (2023) confirms the outcomes of the interviews. Their recent research has shown that the demand for high-quality offices in the Netherlands has almost doubled compared to previous years and that a gap has therefore arisen between supply and demand of office space in H1 2023.

#### **→ Key Concept 4: The rise of flexible office space due to COVID-19**

All the participants shared a common vision on the rising interest and demand for flexible office space because of the COVID-19 pandemic. Flexible office spaces give companies the flexibility to change their space requirements as their demands change, preventing the inconveniences and expenses related to relocating and the long-term risks that are involved.

*“Flexibility in housing, such as with Spaces or WeWork, is ideal for cutting costs and facilitating growth and shrinkage. I have an example of Uber, who were looking for an office where they could grow in the future. We offered them room for growth in our building, the Cloud, with agreements with Spaces for the flexible spaces. This prevented Uber from having to move after five years and allowed them to continue to grow. In uncertain times, these types of regulations are extremely important.” - Developer*

The remaining responses from the specialists further support the importance of flexible office spaces. They emphasize the desire for high-quality, flexible office solutions, the benefits of adaptability and cost optimization, and the changing dynamics of the office market.

The real estate professionals agree that companies are increasingly seeking flexibility in their office spaces. There is a growing preference for lease terms that are more flexible and are aligned with the uncertainty of the economy. Besides this, companies want to take advantage of shared amenities. This is one of the main reasons why the participants also argued for the growing popularity of flex space providers like Regus, WeWork and Spaces. These providers offer a range of options for companies who are seeking flexible, high-quality office spaces that align with their evolving needs. The demand for traditional office spaces is expected to decrease, while flexible office spaces offer the advantages of cost savings, operational efficiency and the ability to accommodate growth or downsizing.

*“The flexibilization of office use has accelerated very quickly. Companies do not always want to be stuck with those long terms anymore. You just see that there is enormous desire and demand to be able to rent flexible, high-quality office space. So, I definitely think that's going to take off and it can be relevant in every city, but also in every building.” - Broker*

The rise of flexible office spaces is driven by the need for adaptability, cost optimization and the desire for high-quality amenities. Experts stated that the COVID-19 pandemic showed the real estate office market the urge of this, highlighting the importance of flexible lease terms and the ability to adjust office space to meet changing demands due to uncertainty. According to GlobeNewsWire (2023), the market for flexible offices is expected to be worth roughly USD 55.20 billion in 2021 and is likely to generate USD 201.28 billion in revenue by 2030, at a compounded annual growth rate of roughly 20.34% between 2022 and 2030.

#### **→ Key Concept 5: The impact of COVID-19 on building technology**

According to nearly a large part of the participants, there is an increasing importance of implementing (more) technology in building design and management in the post-pandemic era. More focus should be emphasized on utilizing technology to monitor and improve various aspects of building performance, such as energy efficiency, air quality, and occupant well-being. The integration of technology allows for data-driven decision-making, but it also supports sustainable practices.

*“With our own initiative, called Edge Next, we focus on mapping all relevant data of the buildings we develop. Not only for ourselves, but also for the tenant. He benefits if he can see what the CO2 content is in a room, for example, or what the best place to sit is in the office. With this subsidiary we tackle sustainability and customer satisfaction, but at the same time it also creates value. In The Valley, it really is our competitive advantage.” - Developer*

The interviewees also argued that we should further reinforce the importance of technology in shaping the future of office spaces. They discuss the use of technology to facilitate remote work, assess building health and efficiency, and gather data to inform space utilization, things that now become increasingly important after COVID, as people are more conscious.

They state that the COVID-19 pandemic has accelerated the adoption of technology in office buildings. Remote working practices have highlighted the need for effective collaboration tools, while data-driven technologies have become instrumental in assessing building health and ensuring the safety of occupants. This all is a result of the grown consciousness by the people in the office and it creates value.



*“... The pandemic has forced many companies to work remotely and use virtual meetings and collaboration tools. Research has shown that remote working can be just as effective as in the office. So technology will certainly continue to play an important role in how companies organize their work and how they use their space and besides this, it shows the quality of a building which is also very important today. It assesses the value of a building.” - Investor*

Two developers express skepticism towards the (short-term) potential of building technology in the office. Right now, they are still exploring how technology can support their office environment, they question its additional insights and emphasize the importance of personal perception. However, they acknowledge the benefits for building developers in the long term in showcasing for example health and efficiency, which creates a competitive advantage.

*“While others may place more importance on post-pandemic technology, I wonder what additional insight it brings that you wouldn't notice yourself.” - Developer*

#### **→ Key Concept 6: COVID-19's impact on lease terms and rental prices**

The COVID-19 pandemic has brought about changes in lease terms and rental prices in the office market, with a focus on stability, conscious choices, and flexibility. According to an interviewee, one noticeable shift is the move towards renting office space at a fixed price per square meter on an annual basis, but now it should include service costs and other charges as standard. This approach aims to provide tenants with predictability, preventing large fluctuations and surprises, such as COVID-19.

*"There is a shift to renting office space at a fixed price per square meter on an annual basis, with service costs and other charges now also included as standard. This prevents large fluctuations and surprises for tenants." - Developer*

Two experts argued that the pandemic's direct impact on rent may be limited, but it has induced side effects and financial uncertainties that influence pricing. This has led to more deliberate choices, impacting lease terms, prices and incentives offered by landlords. Companies now prefer shorter lease terms, providing flexibility to adapt to changing circumstances and mitigate crisis-related uncertainties. Cushman & Wakefield (2023) states that in 2023 there are record rents in prime locations, but this is not only due to the pandemic. The emergence of special lease clauses addresses pandemic-related crises, offering tenants increased security and adaptability.

*"Because companies are now looking for shorter lease terms and want to be hedged for situations such as the corona crisis, I expect (and we are already seeing) more lasting changes in prices and contract conditions in the long term." - Broker*

The two experts who considered the effects on terms and prices less strong than the other 10 were a developer and an investor. While there may be variations in the extent of these changes and their specific impact on the lease terms and prices, the overall trend in the office market is toward greater consideration of stability and conscious decision-making.

### **→ Key Concept 7: Traditional market factors versus COVID-19**

In exploring the interplay between the impact of COVID-19 and the traditional market factors in shaping the office market, the respondents provided insights into their perceptions. While acknowledging the lasting impact of COVID-19 on the office sector, they emphasized that the traditional market factors still held significant sway over COVID-19's impact.

The interviewees recognized the visible and strong effects of the pandemic, such as the switch to remote working and a new definition of the office. However, they believed that the enduring market dynamics, including economic fluctuations, but also demographical and geopolitical factors, played a more substantial role in shaping the office market and all its consequences.

*"I honestly think that the traditional market factors are currently having a heavier negative effect on the economy than COVID-19. Even if COVID-19 hadn't happened and a conflict had arisen between Putin and Ukraine, I think it would still have led to the crisis that we're in now." - Developer*

The respondents recognized that COVID-19 introduced new factors influencing the market, such as the demand for healthy buildings and the ability to work remotely. However, they viewed these as intersecting with the existing market conditions rather than completely overruling the traditional factors. They acknowledged the cyclical nature of real estate crises that occur occasionally and the enduring influence of traditional market factors.

*"Personally, I think traditional market factors play a bigger role. Although the pandemic has temporarily paralyzed us, market situations generally have a longer-lasting impact. We are facing a cycle of crises that can sometimes last as long as seven to nine years and have significant consequences. These economic fluctuations and crises, including wars, have a major impact on the real estate market and the office sector." - Developer*

They argued that COVID-19 has undoubtedly shaped the office market and will do so in the long term, but the traditional market factors remained relatively dominant. The experts highlighted the enduring impact of economic fluctuations, demographic factors and long-standing market dynamics. The pandemic was seen as an additional factor that partially shaped the trajectory of the office market, but they agreed that COVID did not overrule this. According to all the participants, traditional market factors generally are from a bigger scale (with bigger impacts) than COVID-19's effects.

*"The future of the office market real estate hinges on understanding and harnessing the power of demographic factors, such as the changing generational dynamics, and evolving workforce diversity. These factors hold the key to shaping the evolving needs and preferences of the workforce." - Broker*

### **→ Key Concept 8: COVID-19: A catalyst or game changer**

The impact of COVID-19 on the office environment has sparked discussions among the participants of this research project, with varying perspectives on whether it has acted as a catalyst or a game changer for the real estate office market. Some view COVID-19 as an accelerator of existing trends and changes that would have happened anyway in the (near) future, while others see it as a transformative force that has significantly altered the workplace landscape and is thus a game changer.

According to one of the experts, COVID-19 has accelerated ongoing developments in the office space:

*"It is true that we can no longer make the old, traditional offices, because what we have learned from the past must now be integrated into the design of a new building. Furthermore, I think it's an accelerator of things that were already going on anyway. COVID really hasn't suddenly taken care of that on its own. Digitization was already playing out and the future of the office in terms of location and size was already being considered." - Developer*

One developer stated that COVID-19 is not actually a game changer, but more of a catalyst. This person emphasized that the final productivity did not change due to COVID and that is why it should not be seen as a game changer, but more a catalyst.

*"The traditional production office, where everyone works at a computer, has changed because we've realized that a lot of that work doesn't necessarily have to happen in the office. So, I believe COVID-19 has accelerated the process of change and we have started to work differently, but the final productivity has not changed. As for AI becoming normal in every workplace, that's a potential game changer, but I don't see that happening anytime soon." - Developer*

However, another participant does see COVID-19 as a game changer and not as a catalyst, particularly in terms of remote work:

*"The pandemic forced them [companies] to adapt and develop policies to allow people to work from home two or three days a week because otherwise they would go to other businesses. If it wasn't for COVID-19, it never would have happened. It wasn't a trend that was already happening, but rather a sudden change." - Broker*

Eight of the participants agree on the necessity for large physical work environments and that this has been reassessed by COVID-19. The focus has shifted towards the necessity of creating flexible, adaptable and collaborative spaces that accommodate hybrid work models. This transformation positions COVID-19 as a game changer for this category, altering long-term strategies for office workplace design, which did not exist before the pandemic.

While the participants have varying viewpoints on whether COVID-19 is predominantly a catalyst or really a game changer, there is consensus that the pandemic has amplified existing trends and dynamics across all different industries. Remote work, digital transformation and agile business models have been adopted at an accelerated pace. From this perspective, COVID-19 can be seen as a catalyst.

According to the experts, COVID-19 has acted as both an accelerator and a game changer, depending on the perspective that is viewed from. It has accelerated ongoing developments in the office environment and reshaped traditional work practices. Whether viewed as a game changer or an accelerator of existing trends, the professionals agree that the pandemic has undeniably left a lasting impact on the way we work, the design of office spaces, the acceptance of alternative work arrangements and many more things.

When looking at the total effect, three interviewed experts saw COVID-19 as a game changer, while the other nine experts saw it as a catalyst that accelerated effects. What is interesting here is that the three people who thought it was a game changer all held a junior position within their company and therefore have relatively little experience. It concerns one person from each category. The other experts, except for one person, all had more years of experience.

#### **4.3 Relation to preliminary expectations**

At the end of chapter two, preliminary expectations regarding the results have been formed based on the literature. After analyzing the results, the three expectations relate to this as follows:

### Relation to PE1: Size

The findings generally provide strong evidence in support of the expectation that the pandemic has led to a decrease in demand for large office spaces. The real estate professionals acknowledged the impact of remote work on office size requirements, as more businesses adopt hybrid work models and downsize their physical offices because of this. They mentioned that companies are reevaluating their office space needs and are therefore opting for smaller, more flexible spaces to accommodate the changing work patterns, cut costs and be less harmful during times of crises. This confirms the expectation that there will be a decrease in demand for large office spaces. The effect of COVID-19 on the lease terms and prices also strengthens the rising importance of flexibility.

Nevertheless, the professionals also noted that the impact of the pandemic on office size is not uniform across all sectors. They mentioned that certain industries or businesses that require larger spaces will continue to have a need for larger office sizes, as these companies just cannot pursue their business in the most suitable way when they occupy less physical space. This partially disagrees with the expectation, as there are cases where office size remains unchanged due to specific needs. However, the overall trend of decreasing demand for office size due to remote working options and more flexible arrangements is supported by the experts and is thus in line with this expectation.

### Relation to PE2: Location

The statements by the experts partially support the expectation that the pandemic has influenced the demand for office spaces in terms of location. Three interviewees acknowledged the shift in demand away from expensive urban centers for multiple reasons. They mentioned that they see some companies are already considering suburban areas to reduce commuting time and lower their costs. This aligns with the expectation that there will be a decrease in demand for office spaces in urban centers and a potential shift towards suburban areas.

However, there were also nine experts who recognized that the biggest companies still value central locations for accessibility purposes, to maintain a competitive edge in attracting talent and multiple other reasons. They mentioned that multiple industries like for example finance, technology, and media prefer urban locations due to their competitive positions and the availability of cultural and social amenities. This partially disagrees with the expectation, as there are cases where central locations remain important. There is therefore a certain level of bifurcation in this expectation, with corporates expected to favor central locations due to the numerous benefits they offer.

### Relation to PE3: Layout

The results from the interviews strongly support the expectation that the pandemic will lead to a shift towards more health-conscious and adaptable office layouts. The real estate professionals who participated mentioned specific design considerations such as incorporating technology, prioritizing employee well-being and safety, but also creating flexible and collaborative spaces. They emphasized the need for office layouts that can be easily reconfigured for different uses and that provide a high-quality experience for employees, as this now is way more important than pre-COVID. This aligns with the expectation that there will be an emphasis on technology, well-being, safety features, as well as flexible and collaborative office spaces.

However, there were some disagreements among the professionals regarding the extent of the shift in office layouts. While ten experts believed that the shift will be significant and permanent, there were two who expressed a more cautious view. They stated that the extent of the shift will be dependent on various factors such as the specific industry, company culture and the preferences that employees have. Nonetheless, the consensus among the interviewees is that COVID-19 has indeed brought about a greater emphasis on creating office layouts in which the employee is stimulated to come to the office, as it offers multiple benefits for them.

### 4.4 Answer SO 2 and SO 3

The data gathered from interviews were analyzed in this chapter using the Key Concept Approach, as described in Hennink (2020). This approach led to the identification of eight Key Concepts. The insights from real estate experts who were interviewed demonstrate a comprehensive view on the future of the office market. These concepts highlight the impact of COVID-19 and its implications for various aspects of the office environment. The results provided in this chapter form the foundation for further discussion in the upcoming chapter.

The professionals emphasize the shift in office size requirements because of the pandemic, with a growing acceptance of hybrid working models. Empirical results show that the pandemic has significantly changed several market characteristics. Office space needs have changed as businesses reevaluate their requirements and generally choose smaller, more adaptable locations to support remote and hybrid work patterns, but also in seeking cost-cutting measures. This aligns with the changing dynamics of office space location, where central business districts and suburban areas both play a significant role in meeting the evolving needs of employees. Furthermore, the interviewees agree that the layout of office spaces has and will undergo significant changes. They emphasize the

importance of designing a workspace that places priority on employee well-being, comfort and collaboration. This entails integrating amenities and blending the boundaries between social and business relationships in the workplace. Additionally, the rise of flexible office spaces has been accelerated, providing companies with adaptable solutions for changing needs and operational efficiency. COVID-19 has also accelerated the adoption of technology in building design and management. The professionals recognize the increasing importance of utilizing technology in offices to monitor and improve various aspects of the building performance. They stress that technology is also important to create asset value. The impact of the pandemic is also observed in lease terms and rental prices. The interviewees highlight the growing demand for flexible lease terms aligned with the uncertain economic landscape. Developers have responded by offering rent discounts and incentives to accommodate the changing needs of tenants. While COVID-19 has left a significant mark on the office market, the participants acknowledge the enduring influence of traditional market factors. Economic fluctuations continue to shape the office environment, intersecting with the impact of the pandemic, but they all stated that the traditional market factors weigh heavier. All these concepts together shape the future office market after COVID-19's effects.

Overall, the interviews offered different viewpoints and visions, but two things stood out. First, within the three different groups of experts, there is a tendency toward somewhat similar views about the future of the office. Of course, there are differences, but it was clear that developers, brokers and investors had a particular viewpoint. The interviewed brokers often answered in a way that is clearly focused on the tenant themselves. It was striking among the interviewed investors and developers that their answers were with a clear focus on the building itself. This ensured that questions were answered from various angles, which gave a good overview of the whole. It provided a healthy mix of answers that created diverse perspectives on the future of the office. Second, it was noticeable that the interviewees with relatively more years of experience in the industry than the less experienced ones were virtually all inclined to label COVID-19 as a catalyst, rather than a game changer. The author's expectation is that this is likely due to the various market fluctuations that these experts have already experienced in the past and are therefore able to somewhat nuance the (long-term) effects of COVID-19 relative to the less experienced interviewees. Simply put, COVID-19 has accelerated most of the trends that affected the office market, forcing businesses to change more quickly than they otherwise might have. These trends were mostly already in motion at the time the pandemic broke out. In most cases, the market has shifted more in terms of its rate of movement than its general direction. However, employee well-being is now really at the center of everything. This is a comprehensive concept, but the effects of this can be labeled as a game changer based on the interviewees. Next to this, the new layout of the office can also be considered as a game changer, as the focus has shifted completely towards offices which are able for employees to collaborate with each other.

## **5 Discussion**

### **5.1 Purpose of this study**

The purpose of this study was to investigate how the COVID-19 pandemic affected the demand for office workspaces in the Netherlands, with a particular emphasis on the size, location and layout. A qualitative research approach was used to accomplish this purpose. Interviews with real estate investors, developers and brokers were conducted. Thematic analysis was used to analyze the data and identify eight key concepts related to the impact of COVID-19 on the office market. The results of this study suggest that the COVID-19 pandemic has had a significant impact on the demand for office spaces in the Netherlands. The emergence of new trends which were accelerated, but some also introduced by COVID-19 challenged the traditional office market. The key concepts identified in this study provide a comprehensive view of the future of the office market, highlighting the impact of COVID-19 and its implications for various aspects of the office environment. Overall, this study contributes to the corpus of knowledge on the topic by providing insights into the multifaceted impacts of COVID-19 on the office market. This study was able to capture the individual experiences and viewpoints of real estate agents by using a qualitative research approach, giving the research issue a more personal touch and emotional connection. The influence of the COVID-19 pandemic on the demand for office space is timely and thoroughly analyzed in this study, bridging the gap between theoretical understandings of workplace dynamics and the real-world challenges that businesses face. This study adds to academic conversations and expands the body of work on workplace dynamics and real estate by concentrating on the specific context of the COVID-19 pandemic. Policymakers, real estate developers, investors and brokers who want to comprehend how the office market is developing in the post-COVID-19 age may find the findings of this study helpful.

### **5.2 Interpretation broader context**

This study aimed to provide a substantial contribution to our knowledge of the effects of disruptive events on the office real estate market in the broader context of the academic literature. Like other disruptive historical events, the COVID-19 pandemic mostly acted as a catalyst for change, but also partly as a game changer. The type of this transition, however, is specific to the pandemic and has resulted in a market restructuring that is currently still taking place. This research adds to this by demonstrating how, in the long run, the pandemic is reevaluating the size, location and layout of the office. This also includes the aspects that form these three concepts, such as flexibility, technology and rental prices and conditions. However, the pandemic's effects are still unfolding. It will take some time before the full effect on the office real estate market becomes evident. To properly comprehend the implications of these changes, more research and data collecting are required. This study forms the



foundation for further quantitative research on the several topics that are covered in the effect of COVID-19 on the office market.

### **5.3 Conclusion: answer main question**

The COVID-19 pandemic has unquestionably had an enormous impact on the office market. The pandemic has profoundly changed the landscape of this market segment by accelerating existing trends as well as by introducing new dynamics. The future of the office market is currently still uncertain due to the pandemic. Once a given, the demand for office space is now in doubt due to a variety of variables, including the global acceptance of hybrid working, changing needs of organizations and unstable economic conditions. This uncertainty clearly differs from the pre-pandemic situation, pointing to a considerable market reorganization. The pandemic has served as a catalyst, accelerating established trends that were already underway before the pandemic, forcing businesses to adjust more quickly than they otherwise might have. But it also permanently altered the direction of the market in some cases, for example the office layouts and working from home. This makes COVID-19 a game changer for these cases.

In terms of size, it is obvious that businesses need less office space than before the pandemic, due to the normalization of working from home. There are other studies who already confirmed this phenomenon. (McKinsey, 2021; Ramani & Bloom, 2021; De Lucas Ancillo et al, 2021). However, the experts that participated in this study emphasized the growing importance of facilities, different spaces and facets in the office. This could ensure that the number of square meters per employee does grow compared to the situation before the pandemic outbreak. (Hou et al, 2021) The rise in the demand for flexible office space is very influential for the office market, because this has exploded during the pandemic. This urge stems from the need for adaptability, cost optimization and desire for high quality amenities. It is therefore expected that companies that offer these flexible spaces will play an even more significant role in the market.

When looking at the location of the future office, it is striking that the importance of the 'best' locations is still very important after COVID-19. However, this does apply to certain types of companies and sectors. Multinational corporations and other 'big' companies will continue to benefit greatly from establishing themselves in the most competitive locations for a variety of reasons. Mainly responsible for this is the war for talent and accessibility. Nevertheless, the experts do see a migration of smaller companies to suburban areas. This is closer to home and comes with lower costs. This aligns with the perspectives of earlier researchers. (Ramani & Bloom, 2021) This is expected to lead to an even clearer demarcation between SMEs and larger companies in terms of location of offices. However, the biggest changes will be seen in the layout of the office.

Almost all facets associated with COVID-19 and its effects on the office market also have a direct impact on layout. As expected, the employee will play a much more central role in the layout of the new office. After COVID-19, there is a much stronger focus on interaction, amenities and technology in the workplace. Interaction here means facilitating collaborative spaces and an easy focus on reconfiguration, so that different types of people can experience the perfect working conditions needed in different situations. This is contradictory to previous literature, which suggested that future architecture will be more private and enclosed. (Alhusban et al, 2022) Quality will really be on top and stimulating employees to come to the office is important as never before. This is in accordance with previous research on this topic. (Helmold, 2021; Barath & Schmidt, 2022; Nicholson, 2022; Raafat, 2023)

In conclusion, the COVID-19 pandemic has led to a significant restructuring of the real estate market for office workplaces. It has served as both a game changer and a catalyst, accelerating current trends but also permanently altering the direction of the office market. Due to variables including hybrid working, shifting organizational needs and economic uncertainty, demand for office space became very different. Office sizes are expected to decrease, while the importance of facilities and amenities within the office environment is growing. Best locations remain crucial for certain companies, but suburban areas are also becoming more popular than before. Significant improvements are being made to the office layout, with a focus on collaborative areas, employee well-being and flexibility. Overall, the pandemic has caused significant changes in the market for the future office.

#### **5.4 Adjusted hypotheses**

Proof of the long-term effects of COVID-19 on the office market can only be provided in several years when there is more quantitative data to show the relationship between the effects. For this reason, after considering the results of the interviews in Chapter 4 and their interpretation in Chapter 5, the preliminary hypotheses at the end of Chapter 2 have been adjusted as follows:

##### **H1 Size:**

*The exploration of remote work options and reassessment of physical office needs may lead to a decrease in demand for large, centralized office spaces. This shift is accompanied by an increased demand for flexible workspaces. It is important to acknowledge that certain offices with specific operational requirements may still require their original size. Sectors that can adopt hybrid working models are likely to experience some degree of downsizing, while sectors reliant on collaboration or specialized equipment may maintain their current office size. On average, the number of square*

*meters per employee might increase compared to pre-COVID situations. Overall, the long-term trend suggests a potential decrease in total demand for office space due to the normalization of hybrid working systems.*

## H2 Location:

*The COVID-19 pandemic has the potential to prompt a change in the location of office spaces, with some instances of a shift away from expensive urban centers. However, it is important to recognize that certain areas may still maintain a concentration of office spaces in CBD). Businesses understand the significance of central locations for accessibility and talent acquisition. A distinction can be made between SMEs and large companies, as SMEs are more likely to show a stronger pull towards suburban areas, while large companies continue to prefer CBDs.*

## H3 Layout:

*The COVID-19 pandemic has the potential to drive a shift toward office layouts that prioritize health, adaptability and employee well-being. There is a possibility of an increasing demand for mixed-use buildings with diverse amenities, which could influence building metrics and floor layouts. Offices may strive to provide enhanced natural light, improved acoustics, optimal air quality, and comfortable temperatures. It is anticipated that the post-COVID office will evolve into a meeting place that blurs the boundaries between home and work, featuring both areas for focused work and vibrant collaborative spaces. Greater emphasis will be placed on understanding and meeting the wants and needs of employees. The traditional office layout might transform into a flexible and multipurpose space that caters to various user requirements.*

## **5.5 Limitations and recommendations**

Like all research, this study also has its limitations. These are important to acknowledge to fully appreciate the context and the scope of the findings and their interpretation. Next to this, lighting out the limitations offer opportunities for future research on this topic, as it paves the road for further exploration. Firstly, as already mentioned, there is a lack of quantitative data regarding the impact of the COVID-19 pandemic on the office real estate market. To flesh out certain claims in studies, more quantitative data would be very useful. However, it is important to note that the pandemic is a relatively ‘new’ phenomenon and as such, the accumulation of quantitative data on this topic is still in progress. As time progresses and the situation continues to unfold, it is anticipated that more quantitative data will become available in the nearby future. Secondly, to add a kind of nuance to the answers of the three different types of experts, an explicit attempt was made to interview relevant

experts at the Netherlands Environmental Assessment Agency and the CPB. Unfortunately, this did not work out. This would have ensured that the COVID-19's impact on the office market would be looked at from an additional angle, which is at a relatively further distance than the distance between the investors, developers and brokers.

Considering the findings, a few policy and research recommendations emerge. Firstly, policymakers should actively encourage the development of mixed-use office buildings. This suggestion is based on the observed trend toward these types of buildings after COVID-19's impact, which not only accommodate the changing demands of companies, but also support dynamic, multipurpose urban environments. These areas, which combine both professional and personal facilities, can boost productivity and employee satisfaction, making them a desirable option in the post-pandemic world. Additionally, policies could be created to guarantee that workplaces focus on employee well-being. The COVID-19 pandemic has made employee well-being a top priority, which has forced a reconsideration of the office. The employee now really is at the center of everything. Providing tax incentives for companies who are actively promoting the new way of working could be an idea. These incentives could serve as a catalyst for a more flexible work culture and encourage businesses to adapt to the evolving demands of the workforce.

Future research should prioritize acquiring more quantitative data on the pandemic's impact on the office real estate market, providing a more objective view of the evolving dynamics. This approach will not only enhance the reliability of predictions but also offer a more robust foundation for decision-making in both policy measures and practice in the post-pandemic world. This qualitative study establishes the groundwork for future quantitative research. This study has gone deeply into the effects that COVID-19 has brought about, such as the expected decrease in size, spread in location and transition in layouts, it is time to quantify this with further research. When this is done, it is possible to make concrete decisions about the new office. This makes it clear how certain issues such as the above can be responded to accurately. Next to this, further research should focus on how existing office space could be repurposed in the short and long term. This namely addresses societal issues like the housing shortage and it promotes the efficient usage of urban space. By this, it contributes to multifunctional developments.

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## **Appendices**

### **Appendix A: Definitions ‘game changer’ and ‘catalyst’**

In this study, COVID is considered as rather a catalyst or game changer, or perhaps a mix of them. It is important that the terms ‘catalyst’ and ‘game changer’ get a clear definition. A catalyst is a term from chemistry which speeds up the rate of a chemical reaction<sup>7</sup>. It can be seen as a broader term that speeds up change. However, according to literature, game changers are macro-trends that actually change the rules of the game. (Avelino et al, 2017) In the context of the office real estate market, from the catalyst perspective, COVID acted as an accelerator of existing trends and brought about considerable changes in the real estate industry. However, it is important to mention that these changes were already underway before COVID. The outbreak and its consequences have only reinforced and accelerated this. From the game changer perspective, COVID may be seen as a phenomenon that fundamentally altered the long-standing norms and practices in the real estate office market. In this case, it is a highly disruptive phenomenon that completely reshaped the traditional office models. Here, it is important to state that (a significant part of) the changes would have never taken place in the (near) future if COVID-19 would not have taken place.

### **Appendix B: Interview guide real estate developers, investors and brokers**

This interview guide is intentionally created to make links between the study topics and thus far unexplored areas of the literature. It explores the opinions of real estate experts on topics that are not as extensively researched in the literature, like the long-term effects of COVID-19 on office space needs, location choices and layout changes. This guide assists in uncovering ideas that can close the knowledge gap between the body of current literature and the actual dynamics of post-pandemic office environments by being in line with the research objectives.

1. Please shortly introduce yourself (age, function, years of experience in real estate industry)
2. Has COVID19 affected the demand for office space or will it on the long run\* and if so in what respect(s)?
3. In your experience, have businesses' size requirements for office spaces changed in response to the pandemic? Are they looking for smaller or larger spaces in the long term?
4. Have you observed any shifts in the demand for office spaces in urban versus suburban areas and if so, do you believe those shifts will persist post-pandemic?

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<sup>7</sup> <https://flexbooks.ck12.org/cbook/ck-12-middle-school-physical-science-flexbook-2.0/section/5.28/primary/lesson/catalysts-ms-ps/>

5. Do you think the design and layout of office spaces has been and will be affected in the long term by the pandemic? Are there any changes you anticipate in the way offices are designed and laid out? And if so could you be specific on those changes?
6. Do you think businesses will continue to show more interest in flexible office spaces in the long run, and if so, how will this trend impact the office market?
7. Do you think technology will continue to impact the demand for office spaces in the long term due to the pandemic?
8. Do you anticipate any lasting changes to the lease terms and rental prices of office spaces as a result of the pandemic?
9. Do you think that COVID-19 is overruling the traditional market factors that determine supply and demand in the office market, or are these market factors still relatively dominant in your opinion?
10. Various effects have already been discussed in the previous questions, which effect(s) of COVID19 on the real estate market do you consider as most significant and are these impacting the office market?
11. Lastly, do you consider COVID-19 as a catalyst or a game changer?
12. Are you currently aware of any publications that say something about the future of offices in terms of layout, size and location? If yes which one?

\* = 'long run' and 'long term' in this context means a minimum of fifteen years from 2023