



COVID-19 pandemic control measures for real estate assets and property management companies

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Kiinteistöjen ja kiinteistöjä hallinnoivien yhtiöiden torjuntatoimenpiteet COVID-19-pandemian hallintaan

Opinnäytetyön tavoitteena oli selvittää, miten valtion toiminta ja valtion pandemian jatkuvuus suunnitelmat vaikuttavat kiinteistöliiketoimintaan ja olisiko mahdollista määrittää torjuntatoimenpiteiden tehokkuus vastaamaan tiettyä pandemiatasoa. Tarkoituksena oli nostaa esiin, mitä kansallisten hallitusten ja viranomaisten määrittämiä toimenpiteitä tulisi kehittää, ja minkä toimenpiteiden avulla tehokkaimmin ehkäistäisiin pandemian leviämistä. Opinnäytetyössä tutkitaan kiinteistöyhtiöiden turvallisuusjohtajien ja kansainvälisten turvallisuusalan asiantuntijoiden tunnistamia haasteita ja onnistumisia kansainvälisissä sekä kansallisissa COVID-19-pandemian hallintakeinoissa.

Tämä opinnäytetyö perustuu kvalitatiiviseen tutkimukseen. Kvalitatiivisessa tutkimuksessa pyritään ymmärtämään tutkittavaa ilmiötä. Tutkimuksessa selvitetään kyseisen ilmiön merkitystä tai tarkoitusta, pyrkimyksenä on saada kokonaisvaltainen ja syvempi ymmärrys tutkittavasta ilmiöstä. Opinnäytetyön toimintaympäristön kuvauksessa tarkasteltiin kansainvälisten toimijoiden, kuten WHO:n ja ECDC:n ohjeistuksia pandemian hallinnasta sekä Suomen kansallisen lainsäädännön ja viranomaisohjauksen vaikuttavuutta kiinteistötoimialan säätelyyn pandemia-aikana.

Opinnäytetyön teoreettisessa viitekehyksessä keskitytään riskien- ja jatkuvuudenhallinnan teoriapohjan lisäksi kiinteistötoimialan turvallisuusjohtamisen asiantuntijoiden luomaan COVID-19- pandemian hallinnan standardiin ja kiinteistötoimialalla parhaiksi määritettyihin pandemianhallinnan käytäntöihin sekä toimenpiteisiin. Riskien- ja jatkuvuudenhallinnan avulla pyrittiin tuomaan esiin niiden vaikuttavuutta pandemian hallinnassa keskeisiksi tekijöiksi liittyviin riskitekijöihin ja huomioimaan eritoten ulkoiset ja sisäiset sidosryhmät riskien- ja jatkuvuuden hallinnan suunnittelussa, toteutuksessa ja valvonnassa.

Opinnäytetyössä käytettiin tutkimusmenetelminä puolistrukturoitua teemahaastattelua sekä teemakyselyä selvittämään vastauksia määriteltyihin tutkimuskysymyksiin. Haastattelut suoritettiin temaattisena haastatteluna puolistrukturoidulla haastattelumenetelmällä ja haastattelut analysoitiin teorialähtöisen sisällönanalyysin avulla. Keskeisenä tuloksena tutkimuksessa saatiin kansainvälisesti hallitusten ja viranomaisten toiminnasta esille tulleet viisi kehittämiskohtaa ja kolme pandemian hallintakeinoja tukevaa toimenpidettä. Lisäksi kyselyn perusteella todettiin, että kiinteistötoimialalle luoduista parhaista käytännöistä ja standardiin perustuvista pandemian hallintakeinoista olisi mahdollista määrittää torjuntatoimenpiteiden tehokkuus vastaamaan tiettyä pandemiatasoa.

Asiasanat: pandemian hallinta, COVID-19 pandemian hallinta, riskien hallinta, jatkuvuuden hallinta ja kiinteistöalan turvallisuusjohtaminen

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The objective of this thesis was to investigate how the government operations and state pandemic continuity plans affect the real estate business and if it would be possible to determine the effectiveness of the control measures to match a particular pandemic level. The aim was to highlight which measures identified by national governments and authorities should be developed and which could be more effective in preventing the spread of a pandemic. The thesis examines the challenges and successes in international and national COVID-19 pandemic management measures identified by real estate security managers and security experts.

This thesis is based on qualitative research. Qualitative research aims to understand the phenomenon under study, this which means elucidating the meaning or purpose of the phenomenon and gaining a holistic and deeper understanding of the phenomenon. The description of the thesis's operating environment examines the guidelines of international operators, such as the WHO and the ECDC, in pandemic management and the significance and effectiveness of Finnish national legislation and regulatory guidance in the regulation of the real estate industry during a pandemic.

In addition to the theoretical basis of risk and continuity management, the theoretical framework of the thesis focuses on the best-defined pandemic management practices and measures in the real estate industry based on the COVID-19 standard developed by real estate safety management experts. The aim of risk management and continuity management was to highlight their effectiveness as key factors in pandemic management and to pay particular attention to external and internal stakeholders in the planning, implementation and control of risk and continuity management.

A semi-structured thematic interview and a thematic survey were used as the research methods to find out the answers to the research questions. The interviews were conducted as a thematic interview using a semi-structured interview method and the interviews were analyzed using theory-based content analysis. As a key finding, the study identified five areas for development and three measures in support of pandemic management internationally identified by governments and authorities. The study showed that real estate best practices and a standards-based pandemic management guide could be an effective response to manage certain levels of pandemics.

Keywords: pandemic management, COVID-19 pandemic management, risk management, continuity management and real estate security management

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1 Introduction

The coronavirus pandemic started in 2019 in the Chinese city of Wuhan. On 11 March 2020, the World Health Organization (WHO) declared the COVID-19 epidemic caused by the coronavirus a pandemic (Ministry of Social Affairs and Health 2020). As the situation in the Western countries was completely new to many sectors, and the preparedness for this phenomenon was relatively weak, leading to operating restrictions and various closures. Preparedness for this phenomenon was relatively low, both in the state administrations and in the management of companies. As a rule, the business sectors that attract large masses of people were partially or completely closed. In Finland, the closure of schools, educational institutions, swimming pools, libraries, restaurants, and cafés, as well as restrictions on the gathering of more than 10 people, have made it difficult for many companies to operate.

In Finland shopping centers and other real estate's destinations have not been directly subjected for major restrictions. Restrictions on the number of visitors have not yet been used, but the full closures of restaurants and cafés, libraries and other similar operators has already caused partial closures of shopping areas and operating restrictions on several shopping centers. Many businesses have been obliged to close their doors after the number of customers fell dramatically due to recommendations to restrict movement and social distancing. In many European countries, where the number of infections were significantly higher than in Finland, many shopping centers have also been ordered to close their centers completely (Lauren & Christina 2020).

In cooperation with the European and Nordic shopping center councils, Safe Asset Group as an official risk management partner, has developed guidelines for shopping centers to manage business continuity, close and reopen partial or complete shopping centers (Engstrand 2020). The recommendations on continuity management are intended to facilitate and assist shopping centers and individual assets in developing operating conditions during the COVID-19 pandemic. Reduces the impact of the pandemic on their operations and accelerates the smooth recovery of shopping center operations.

2 Background of the thesis

The need for the thesis was the fact that many individual assets and real estate property management companies are facing challenging times due to COVID-19. The legal requirements from the governments, WHO, ECDC, national health authorities, owners and users are putting high demands on the assets and the property management companies, that are desperately

trying to manage the pandemic control measures in the middle of constantly changing legal requirements.

Very quickly after the spread of COVID-19 in Europe, for example in France, it could be seen that business continuity management plans were not effective and not tested in preparing for a pandemic. Many were too theoretical or philosophical and did not know how to prepare for the complete closure of activities at national or international level (De La Gueronniere 2021). Although pandemics have been encountered in the past, the scale and scope of this was something that organizations had completely been ignoring and therefore were totally unprepared.

During the pandemic there has been presented many different recommendations for real estate to carry out on their assets by different official, unofficial and legal parties. Many times, during the pandemic, the given recommendations have been fragmented, unforeseen, and varied according to the issued party, the timing of the measures in a relatively short time frame is also indicated.

The aim of this thesis was to find out how the pandemic control measures of the authorities and the state's pandemic continuity plans have affected the real estate business. What kind of pandemic control measures, recommendations, and actions the safety management experts would give on the practical actions for the real estate companies. In addition, it needs to be examined whether pandemic response measures created in accordance with real estate standards could be converted into a pandemic prevention list in accordance with existing levels of prevention. The prevention tiers are assigned by WHO and processed as the three level phases of pandemic by the Finnish Ministry of Social Affairs and Health (STM).

Research questions were:

- How government operations and state pandemic continuity plans affect the real estate business?
- Would it be possible to determine the effectiveness of the control measures to match a particular pandemic level?

The pandemic control model was examined from the perspectives of the government and authorities' security and safety management and the implementation of the management model. To support the implementation of the management model, the result of this thesis is to present an example of a practical implementation model for the classification of pandemic response measures.

2.1 Objectives and limitations of the study

The topic of the thesis is COVID-19 pandemic control measures for real estate assets and property management companies. By the real estate assets and companies in this thesis are considered all assets that are providing spaces for people to shop, work, meet, eat, or stay. We will limit the research for the shopping centers, office hotels, exhibition halls and event malls. In this thesis, property management companies refer to the actors responsible for commercial premises. Real estate assets are often managed by a small number of professional retail managers. They are expected to take actions for security and safety risks of the pandemics. They also need to challenge those who are working or visiting their premises for the risk thinking.

Pandemic control measures regulations are given by the WHO, EDCD, governments and their national health authorities. The regulations are general, but there are many specific recommendations which also apply to the real estate industry and give guidance to what action they are expected to take to prevent the COVID-19 pandemic. In this thesis there are presented several regulations and recommendations that affect their actions nationally and internationally, on the national level this thesis presents Finnish regulations and recommendations as a case example.

In addition to the legal regulation and recommendation in this thesis we are looking into real estate industries COVID-19 Best Practices, that are offering more specific guidance and recommendations beyond the legal regulations. In this thesis we will focus on the company that is known as a SAFE Asset Group. SAFE Asset Group comprises of; international risk, security, retail, and real estate experts who work with industry-leading clients around the world and is an official risk management partner for Nordic Council of Shopping Centers (NSCS) and the partner of Finnish Council of Shopping Centers, the SAFE Asset Group. In this thesis we are using SAFE Asset Groups, COVID-19 Best Practice guide as a basis for the pandemic control measures to create a pandemic prevention action list for different stage of pandemic phases.

2.2 Structure of thesis

The second chapter of the thesis describes the background of the thesis, aims of the thesis, and briefly introduces the structure and key concepts of the thesis. The third chapter describes the operating environment of real estate assets and property management companies operating environment, international studies about hybrid strategy, national and international regulation related to the management of the COVID-19 pandemic. The third chapter also describes in more detailed way, by way of example, the legislation related to the management of the Finnish pandemic and its key actors. The fourth chapter contains a theoretical framework built on risk management and business continuity management. The

fourth chapter also deals with the COVID-19 SHORE standard in the real estate sector, which was developed at the outbreak of the pandemic to support business sector pandemic management measures and is therefore one very important example of the industry's own regulation. The fifth chapter describes the qualitative research, semi-structured interviews and questionnaires that were used as research methods in this thesis. The sixth chapter describes the actual part of the research of this thesis, which presents the implementation of the research and the results obtained from it. In the seventh chapter, the results are presented as a conclusion chapter. Chapter eight contains a summary and self-assessment.

2.3 Crucial concepts and terminology

Real estate assets and companies, by the real estate assets and companies in this thesis it refers to Commercial Real Estate assets and properties that generate income for the owners.

Property management companies, by the property management companies in this thesis, refers to Real estate property management companies that carries out the administrative activities of the property to its owner

Pandemic, as an epidemic of an infectious disease that has spread worldwide, in this thesis, means COVID-19 pandemic.

Pandemic control measures, as the control measures that the WHO, ECDC, governments and national health organizations, are the measures that have been given to the companies, about travelling, personal protective measures, social distancing measures or closing the public areas, restaurants, and gyms.

Best practices, best practices in the field are those that have evolved over the years into good and effective proven practices that refer to industry knowledge and experience.

3 Description of the operating environment during COVID-19

This chapter deals mainly with these topics at a general level. It will concentrate on the real estate industry and the regulation, legislation and the operational requirements that should be seen as a baseline for the pandemic control measures for COVID-19 in the commercial environment.

The description of the operating environment will give the necessary understanding of the maintaining legislation and regulations that are affecting the real estate industry during COVID-19 pandemic. It follows international best practices in the field, WHO and ECDC guidelines, as well as Finnish local legislation and government recommendations.

3.1 Real estate assets and property management companies

In the real estate industry, there are many parties that will work together as investors, owners, operators, occupiers, tenants, and subcontractors. They are providing an environment for the people who are looking every day for a place to visit, work, shop, eat, meet others, or just stay and enjoy. These places are hotels, offices, shopping centers, exhibition centers, multifunctional arenas, traffic stations etc.

Cash flows comes with customers and tenants, and this determines the success of the real estate assets. The operation of the assets is based on the rental income received by the property management companies. The tenants of the assets, in turn, receive their income from customers who use the services and other facilities they provide. Demand for entertainment and leisure services has been growing in recent years (Suomen Kauppakeskushdistys Ry 2019). To guarantee cash flow, the asset owners must invest into the safety, cleanliness, comfort, availability and versatility of the services, attractiveness, and accessibility and for the reputation of the real estate assets.

The technical functions and security of the real estate assets are maintained by a versatile subcontractor and partnership network (Suomen Kauppakeskushdistys Ry 2005). The functions of the property and the security operation of its technical and physical systems depends to a large extent on the services, contractors, the staff and other relevant factors. The real estate companies manage wide-ranging networks of subcontractors and stakeholders in both normal and exceptional situations. The competence of the shopping center's management in risk management, crisis management and communication are also at the heart of the shopping center's business continuity management during the COVID-19 pandemic (SAFE Asset Group 2020).

3.2 National and International regulation

The regulations are guided by several different health regulators internationally and nationally. In this thesis we will concentrate on the guidance of the World Health Organization (WHO) and European Centre for Disease prevention and Control (ECDC) and on the national level for the guidance of Finnish Ministry of Social Affairs and Health (STM) and Finnish institute for health and welfare (THL).

The World Health Organization (WHO) is a United Nations (UN) special organization focusing on human health, established in Geneva 1948. The mission of the World Health Organization is to ensure good health for all. Its main task is to combat diseases, especially major communicable diseases. The World Health Organization has 194 member countries, and it coordinates international efforts to combat diseases like Influenza, SARS, Malaria and AIDS, among others, and develops vaccines. (World Health Organization 2021).

The European Centre Disease Prevention and Control (ECDC) is an EU agency established 2005 in Stockholm, Sweden. The Agency is dedicated to improving the capacity of EU Member States to protect the health of their citizens through the prevention of human diseases. In addition, its scope includes new infectious diseases in humans. The Agency's mission also includes to assign information on communicable diseases. (European Centre for Disease Prevention and Control 2021).

The Ministry of Social Affairs and Health (STM) is part of the Finnish Government. STM leads pandemic response and the necessary inter-ministerial cooperation (Ministry of Social Affairs and Health publications 2012:9 2012). STM is responsible for the planning, guidance, and implementation of social and health policies, that is why it has an important role in pandemic prevention actions. STM regulates Finnish pandemic measures and assigns decisions, official instructions, and recommendations on the COVID-19 situation.

One of the key tasks of the Ministry is also to set priorities and provide guidance to competent authorities and to ensure their operational capacity through guidance and legislative preparation and financial preparation (Ministry of Social Affairs and Health VN/4947/2021 2021).

The Finnish National Institute for Health and Welfare (THL) studies and monitors the well-being and health of the population and develops different kinds of measures to promote them. THL Collects and produces research and data-based information, as well as gives its expertise and various solutions that STM can use in decision-making and in support of its work.

The National Institute of Occupational Health operates under the leadership and supervision of the Ministry of Social Affairs and Health. The National Institute of Occupational Health participates as an expert in occupational health and well-being in the activities of international organizations and the European Union (Finnish Institute of Occupational Health 2021).

Regarding occupational safety, the National Institute for Occupational Health acts as an expert institution and the areas of responsibility for occupational health and safety of regional government agencies act as competent occupational health and safety authorities. The Finnish Institute of Occupational Health and the areas of responsibility for occupational health and safety provide advice and guidance to the workplaces. Occupational health and safety monitors supervise workplaces as occupational safety and health authorities (Ministry of Social Affairs and Health VN/4947/2021 2021).

3.3 Legislation in Finland

In Finland there are several different legislations and acts that will define the acts of the pandemic control measures for real estate companies and assets as well as, it gives for the municipalities and regional government agencies officials the power to restrict private business and regulate their activities. Legislations that set the main obligations and regulation to the companies are:

- Occupational Health and Safety Act 738/2002
- Communicable Diseases Act 1227/2016
- Emergency Powers Act 1552/2011

3.3.1 Occupational Health and Safety Act

According to the Occupational Health and Safety law in Finland, the employer is responsible for the employees at work (738/2002). The employer must take the necessary measures to limit the risk of exposure. Measures in the workplace are based on an assessment of occupational hazards in accordance with the Occupational Safety and Health Act.

It also presents, that a workplace in which one employer exercises primary control and in which more than one employer or a self-employed person is employed simultaneously in such a way that the work may affect the safety or health of other workers is called the joint workplace. In the Occupational Safety and Health Act (738/2002) section 47§ is defines, in the joint workplace they must work with each other and, through adequate mutual cooperation and information, ensure that their activities do not endanger the safety and health of workers. The Occupational Health and Safety Act therefor obligates individual companies and real estate managers as in shopping centers or office, hotels etc. exercise the primary control of the joint working place.

The Finnish Occupational Health and Safety Act (738/2002) demands that joint workplace must take care of the coordination of the activities of employers and self-employed persons at work, arrange traffic and mobility at work, take care of the general order and cleanliness and other general planning of the workplace, and to take care of the general safety and health of working conditions and the working environment. Therefor the law obligates them also to give information and instructions of the risks and hazards on workplace and occupational safety guidelines.

3.3.2 Communicable diseases Act

A severe infection caused by a new type of coronavirus was added to the list of communicable diseases of general concern. The change took effect on February 14, 2020, (Finnish

Government, 2021). The responsibilities of the authorities and the cooperation between the authorities in the control of communicable diseases are defined in the Communicable Diseases Act (1227/2016). The purpose of the law is to prevent infectious diseases and their spread, as well as the harm they cause to people and society. Scope of application, this law applies to the organization and implementation of work for the control of communicable diseases and to its planning, guidance, monitoring, and control.

The Finnish parliament approved the amendments to the Communicable Diseases Act, which entered into force on 22.2.2021 (Finnish Government 26.2.2021). The temporary changes that will come into force with the law, gives municipalities and regional government agencies the power to restrict private business e.g., closure of public spaces in shopping centers, schools, restaurants, hobby activities or limiting public transport passengers etc. is determined in (1227/2016) chapter 6. In a next page (Figure 1) there is presented an overview of the jurisdiction of the Finnish authorities in relation to the issuance of general instructions and regulation.

The National Institute for Health and Welfare (FIHW) is the expert institute for the control of communicable diseases. It provides the expertise to the Ministry of Social Affairs and Health (MSAH) and for the regional government agencies (RSAA). The National Institute for Health and Welfare also maintains the national epidemiological surveillance systems for the control of communicable diseases and directs and supports the control of communicable diseases in municipalities, hospital districts and social and health care units (Ministry of Social Affairs and Health publications part 3 2021,12).



Figure 1: Overview of the jurisdiction of the authorities (Ministry of Social Affairs and Health part 3 2021, 12).

3.3.3 Emergency Powers Act

In the Emergency Powers Act, Section 3, 5§ states that a widespread outbreak of the serious infection disease can be comparable to a major disaster that is why it can be defined a state of emergency. The number of very rapidly risen COVID-19 cases and the epidemic spread can place significant strain on hospitals and especially on intensive care capacity (Finnish Government 1.3.2021). The Emergency Powers Act declares that a very widespread dangerous infectious disease with a particularly serious major incidents, the government can give public authorities may be entitled to exercise such powers as are necessary and proportionate in exceptional circumstances. These powers can be e.g., work orders, restriction of movements and closure of towns or ordering the official assistance (1552/2011).

3.4 Hybrid strategy

There are many possible options for combating a pandemic threat or a pandemic control measure, that are not based on the use of vaccines or drugs, these recommended control measures for the governments are prepared and updated by WHO and ECDC. WHO has published Strategic Preparedness and Response Plans for COVID-19 during the COVID-19 pandemic to guide and coordinate national, regional, and global actions to overcome ongoing challenges and actions of COVID-19 pandemic (WHO-WHE-2021.02, 2021).

Finnish government uses the same thinking as the WHO on bases in its own preparedness and response plans, but they are not equal or directly comparable to WHO's plans. The levels of action were developed as if they were scaled up in response to epidemic-related measures when the epidemic situation was abruptly deteriorating (Voipio-Pulkki 2021). In Finland the government has published an action plan to implement the recommendations and limitations of the hybrid strategy for the COVID-19 epidemic. The government updates it if necessary, during the progress of the pandemic. Action plan for hybrid strategy is updated in favor of the Government's decision principles. The aim of the action plan is to prevent the spread of the virus in society, safeguard the capacity of healthcare and protect the people in the risk group. All measures must be epidemiologically justified, proactive and sufficiently comprehensive (Ministry of Social Affairs and Health 2021:1, 2021).

3.5 Finnish government, national contingency plan for an influenza pandemic

Finnish government has already made a national contingency plan for an influenza pandemic in 2012 (Ministry of Social Affairs and Health publications 2012:9, 2012).

It is based on WHO recommendations on control measures. The objectives of the control measures have been defined to reduce the international spread of the virus e.g., through travel restrictions and passenger security checks. The prevention of infections within the

population of each country and its different regions is recommended through restrictive measures such as the isolation and treatment of the sick and the surveillance and quarantine of those exposed. Other recommended measures are e.g., closure of educational institutions. Hygiene guidelines are recommended for individuals that reduce the risk of infection for individuals e.g., hand hygiene, cough instructions, safety margins and information to the public on risks and control measures for the individual. In the national contingency plan for an influenza pandemic (Appendix 4), are also the pandemic recommendations for control measures not based on the use of vaccines or drugs, recommendations kept as they are given by the WHO.

After the COVID-19 pandemic the Finnish government has also published the hybrid strategy action plans for COVID-19 measures to prevent the impending rapid acceleration of epidemic and spread of more infectious mutant strains. (Ministry of Social Affairs and Health publications 2021:13 2021). It contains three levels of measures that are introduced in the Finnish government action plan update. The three levels set's the measures that aim to prevent a re-escalation of the epidemic, reduce the spread of the more transmissible virus variants, and thereby gain some time for the interaction effect of COVID-19 vaccinations and seasonality in containing the epidemic.

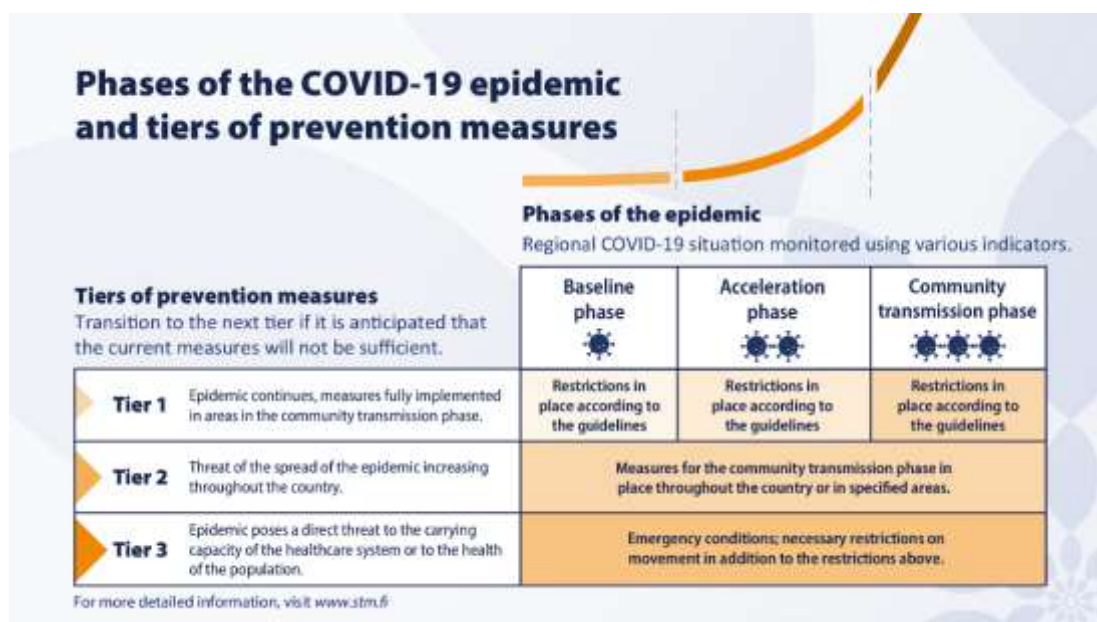


Figure 2: Phases and levels of control of the coronavirus epidemic in Finland (Ministry of Social Affairs and Health part 3 2021, 21).

The measures will be used in accordance with the applicable legislation in each of the situations presented in the plan. Levels of phases of action (Figure 2), moving from one level to another if it is assessed that existing measures are not sufficient. Levels of actions are from tier 1 to 3, the action plan describes three levels of measures to prevent the rapid

acceleration of the epidemic and a community transmission phase threatening the whole country in different situations: (Ministry of Social Affairs and Health part 3 2021).

1. Maintenance of the current level of restrictions and implementation of all community transmission phase measures in areas of the community transmission phase.
2. Control of the fixed-term and large-scale commissioning of measures during the community transmission phase.
3. Introduction of emergency conditions and restrictions on movement

Epidemiological stages are described as a Baseline level, Acceleration phase and Community transmission phase. The phases divide the measurement activities into sections that determine the strength of pandemic containment measures. The more detailed content of the provisions is presented in more detail on (Figure 3).

Measure	Baseline level	Acceleration phase	Community transmission phase
Restriction of the use/ closure of public premises	✓ (avoiding close contact)	✓ (limiting number of customers/customer places to half)	✓ (closure of premises)
Restriction/suspension of leisure activities	✓ (avoiding close contact)	✓ (restriction of adults' high-risk leisure activities indoors)	✓ (suspension of adults' group leisure activities)
Restriction of public events	✓	✓	✓ max. 10 persons
Recommendation on restriction of private events		✓ max. 20 persons	✓ max. 10 persons
Distance learning at university level		✓	✓
Distance learning at secondary level			✓
Recommendation to operators to close public premises			✓

Figure 3: Regional measures at different stages of the epidemic (Ministry of Social Affairs and Health 2021:1 2021).

3.6 International studies

The hybrid strategy for pandemic control measures is globally accepted as the recommendations for the governments. The vaccination is part of the strategies, even some says that it is the primary method for preventing influenza (Ullah, Zaman & Islam. 2012) but there are many observations and examinations that refers to that it should not be taken as an only action to prevent the spreading of the infection because the pandemic vaccination for all areas of the world will not be available without annual production and it is impossible to

produce a preparations only for those events like pandemic influenza that occurs only several time in the a century. (Monto, A., Black, S., Plotkin, S. & Orenstein, W. 2011.)

There are several international studies which suggest the effectiveness of the hybrid strategy as an effective pandemic control measure. Through active screening strategy the government of Taizhou minimized the risks of transmission with strict and effective implementation and the control measures among the high-risk populations to detect early-stage cases and effective control strategy on infected patients, probable cases, and their close contacts. (Haijiang, L., Congcong, G., Yafei, H., Hongbiao, L., Weiwei, S., Wenhui, M., Na, H. 2020.)

Also, Gengpei and Xiongdong (2021) made a mathematical model to describe the spreading dynamics of infectious diseases for simulating the SIQR epidemic spreading model (susceptible S, infectious I, quarantine Q, recovery R). They computed the vulnerability coefficient of for government measures the city lockdown with and without, infection probability of government investment, media publicity, medical treatment, and law enforcement. The results showed that the daily new deaths number was twice as low with the best government performance, and it is found that media publicity and law enforcement have more contribution to reduce transmission rates.

In an article of Effect on influenza control in wealthy and poor countries (Monto et al. 2011) presented that after 2009 swine origin influenza virus the vaccination production, sufficient production capacity and agreed global allocation will become an issue because of the shortage of vaccine especially in the countries that do not product the vaccines. That is why, the hybrid strategies are significant to put in implementation in the government actions against the pandemic efforts.

4 Theoretical framework

This chapter focuses on the theoretical framework of the thesis. The theoretical framework examines risk and continuity management concepts, frameworks and processes at a general level and becomes familiar with established real estate industry standards and their necessity.

The theoretical framework of the thesis is based on the ISO 31000, ISO 22301, ISO 22313 standard about risk- and business continuity management and for the real estate industry's best practices SHORE-standard. In real estate assets as in all companies, COVID-19 pandemic control measures begin from risk management. Risk management is based on the idea that risk is something that can be identified and controlled.

In the risk management control context, there are always questions about who will be responsible and it identifies the resources that are needed to put the risk management context into practice. The risk appetite determinations in the organization helps the organization to decide what kind of control measures should be put in place and what is the acceptable residual of the current level of risk.

4.1 Risk management

In taking care of the security risk management, the company's management and all personnel ensure, firstly, the continuity of the service received by the customer and, if the customers are companies, then often also the continuity of their operations (Viitala & Jylhä 2007, 342). In the real estate industry, risk management also secures the investments of owners and investors as well as the employees of all the working companies.

Risk refers to the risk of loss or damage that may occur in the future (Leppänen 2006, 29). Organizations of all types and sizes face external and internal factors as well as influences that make it uncertain whether an organization will achieve its goals. With the help of risk management, an organization can create value, support innovation and achievement of goals. (SFS-ISO31000: 2018.)

The protection of people, information, reputation, and property is part of the day-to-day risk management of real estate assets. There for like Erik Engstrand (Engstrand, 2019, 14) points out on the Guide to shopping center risk and security guidebook, managing the risks is always the management's responsibilities and it is important for the real estate company to develop an integrated, systematic, and structured way of identifying threats of the business and its environment. Business risks can never be completely removed, but with good planning, setting goals and objectives, monitoring operations and results, it is possible to reduce the risks (Viitala & Jylhä 2007, 342).

4.2 Risk management standard SFS-ISO31000:2018

ISO, International Organization for Standardization, is an international federation of standardization organizations. ISO standards are drawn up in committees in which representatives of each interested member organization can be represented. Authorities, various organizations, and the International Electricity Standardization Organization (IEC) also participate in the development of standards. (SFS-ISO 3100:2018, 4)

The standard has been developed as a risk management tool. All organizations face internal and external challenges that can directly or indirectly affect the achievement of goals. The purpose of risk management is to be continuous and to assist the organization in defining strategy, achieving goals, and making decisions. ISO standard is passed on its three parts

principles, framework, and the process itself (Figure 4). Effective risk management is part of the organization at all its levels, and it also covers interaction between stakeholders. (SFS-ISO 3100:2018, 5)

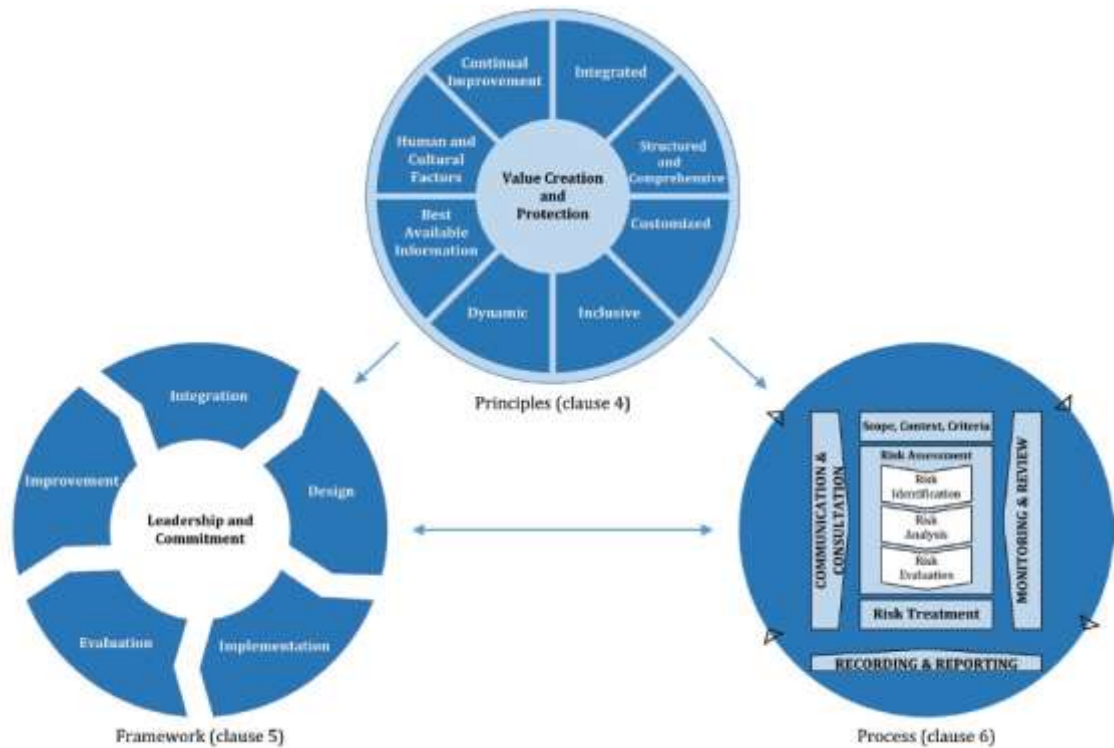


Figure 4: Principles, framework, and process (SFS-ISO 3100:2018, 5).

Risk management is an integral part of all functions of an organization, the risk management process is comprehensive and well structured, consistent, and comparable results are obtained. The ability to anticipate, detect and respond to risks in an appropriate way makes the organization less vulnerable. Continuous improvement develops an organization's risk tolerance. To have adequate resources in place, the organization must integrate risk management into the management system and strive to plan, implement, evaluate, and develop the existing risk management framework. (SFS-ISO 3100:2018, 9).

4.3 Risk management principles

There have been several different ways to define the risk management principles. Hopkin defines in the (Hopkin, 2018, p. 55) that the main principle of the risk management is to deliver value to the organization as the ISO 3100 (SFS-ISO 3100:2018, 7) defines it to be the purpose of creating and protecting the value of the organization as well as improving the performance, encourage the innovation and to support the achievement of the objectives.

ISO 3100 elements that effective risk management (SFS-ISO 3100:2018, 8-9) needs as follow, it needs to be:

- Integrated to all organizational activities.
- Structured and comprehensive.
- Customized and proportionate to external and internal context.
- Inclusive by involving the stakeholder knowledge, views, and perceptions.
- Dynamic as it anticipates, detects, acknowledges, and responds to changes and events in a timely manner.
- The best available information from the historical and current information, as well as future expectations.
- Considering the human and cultural factors on each level and stages.
- Continually improving through learning and experience.

These elements should create value to the organization through the risk management and protect it from the effect of uncertainty on the objectives as the ISO 31000 defines the concept of the risk. (SFS-ISO 3100:2018, 6).

4.4 Risk management framework

The organization should establish and support the communication and consultation to support the effective framework of risk management. The management should ensure that the relevant information will be collected and shared, the feedback needs to be provided and improvements needs to be made, according to creating awareness, improvement, and commitment to the process (SFS-ISO 3100:2018, 12). The effective risk management framework needs to be clearly supervised, managed and measured as any other management processes.

Internal environment refers to the organization itself, how it has structured governance, organizational structure, roles, responsibilities and the activities it undertakes, as well as the skills, capacities and the capabilities available in the organization. Internal environment includes internal stakeholders, their expectations and contractual relations and commitments. (SFS-ISO31000: 2018, 11.)

External environment is the environment that the organization exists in. The business sector which the organization operates, the external stakeholders and their expectations. External risks are also related to international-, national- or regional society or to the maintaining culture, politics, legislation and regulations. Also, the economical or the environmental risks are related to the external environment. (SFS-ISO31000: 2018, 11.)

For many organizations, the most important group of external stakeholders are the customers. The risks are related to identifying and securing customers and providing customer service and support. It is important to understand the needs of the customers and provide the services and support. As the risk experience changes, the relationship between customer loyalty and perceived risk also becomes more multidimensional. (Paavola 2005).

The management should express clearly its commitment to the risk management process and link it with its objectives and operating principles (SFS-ISO 3100:2018, 12). It should be a well-integrated, structured and systematic way of working and define clear responsibilities and obligations to the organization. Organization should have a clear view on how the risk management process is implemented and how it is measured and reported.

The appropriate mandates should be in place for the organization in all its levels. Everyone should get training, so that they can also work to act within the given mandate. In addition, the resources should be allocated correctly and make sure the personnel and their skills, experience and competence are in line with the responsibility and the mandates they are given (SFS-ISO 3100:2018, 12).

4.5 Risk management process

The grouping of risks is often presented to be formed according to different allocation criteria. ISO 31000:2018 defines that the first stages of the risk management process is to establish the context of risk. Scope of context in ISO 31000 is understanding of external and internal operating environment. When designing a risk management framework, an organization should review and understand its external and internal operating environments. (SFS-ISO31000: 2018) Likewise Erik Engstrand says (Engstrand 2019, 15) you must first identify the nature of the threat and understand its effects on your business.

ISO standard risk management process involves systematic policies, procedures, and practices, to the task of communicating & consultation, establishing the context, identifying, analyzing, evaluating, treating, monitoring, and reviewing risks (SFS-ISO 3100:2018, 12). But like Paul Hopking points out (2018, 81-82), that the policies, procedures and practices together with communication, consulting, and establishing the context is rather more of the risk management framework than the process of itself. It might give the management the harder set expression of the process, than it actually is, and therefore they easily will hand it out to the experts. The risk management cannot be totally outsourced, because like Erik Engstrand the risk management expert says (2019, 14) that the protection of the people, property, information and reputation of the business is always a management responsibility.

Prohibitions and restrictions are sometimes extreme and often an assurance that serious risks to operations, human health and safety can be reduced. Risk management needs to have

clear and well documented processes and procedures (SFS-ISO 3100:2018, 12). However, increasing the personnel knowledge and know-how of the processes that affect most to the business continuity, are sometime more effective ways to manage the risks (Viitala & Jylhä 2007, 347).

The risk treatment is a wider solution than just economical consideration of the options, it is balancing the potential benefits to achievements it should take into account all obligations, voluntary commitments and all the stakeholders views. The organization risk treatment decision should be taken according to the objectives, available resources, and risk criteria. Organization should select the risk treatment options by mirroring its values, perceptions, and the involvement of the stakeholders. They should also know the nature and extent of the remaining risk and it should be monitored and reviewed, for further treatments. (SFS-ISO 3100:2018, 17-18).

4.6 Business continuity

In this thesis, I will not comment on how business continuity planning is done, but rather explain why it is needed. In relatively rare cases such as an influenza pandemic, there may be a pandemic-level epidemic once in a century, but when it happens, the consequences can be serious for many businesses. The worst case for companies is not the pandemic itself, but the more severe are the regulations and laws of the governments and health authorities, that can shut down entire countries and companies.

Now that we have been living with the pandemic since March 2020, there have been many different studies and investigations on how and why the COVID-19 came up as the pandemic. The Independent panel has made research in 2021 about what happened, what we have learned about the pandemic and what needs there are to change in processing the global health systems to avoid new pandemics to the future. The former General Director of the WHO, Andres Nordström criticized that the world had not been prepared for the outbreak of the pandemic, despite clear warnings for several years (STT 2021).

The Independent Panel reported about the findings in inadequate funding and stress testing of preparedness. Preparedness for the COVID-19 was found to be under-funded, response was too slow, procedures under the International Health Regulations was too slow, coordinated global leadership was absent and too many countries took a 'wait and see' approach rather than enacting an aggressive containment strategy (The independent Panel 2021). The pandemic took advantage of the poor preparedness of the global organizations and countries. It weakened the corporations that were not ready and didn't have continuity planning for the pandemic. It also revealed that the government's poor preparedness to deal with widespread dangerous infectious diseases and regulations designed to control them, which ultimately closed borders, businesses, and people into their homes.

Despite all the business continuity planning (BCP) standards and guidelines, many only talk about an organization's pandemic preparedness plans. Their main concerns are preparing for the allocation of additional staff, taking on key roles and improving IT capacity or creating the necessary supplies (Hopkin 2018, 203). There is no word about the major problem, that is the main fact, that almost all the countries need to close their borders. The transportation of goods will be delayed, the factories and cities will be closed off and the government needs to regulate and close spaces and businesses, to protect the vulnerable and the health care capacity.

There are however some articles like A Supply Chain View of the Resilient Enterprise (Sheffi & Rice Jr, 2005, 41-18), that encourage to taking into account in BCP the comprehensive scenario planning and the direct effects of the larger-scale disruptions. It encourages to take into account also the "secondary effects", like the public fear, resource hoarding and the governments regulations, that may exacerbate the problems. Although, like in the (The independent Panel 2021) it is said, the lack of planning and preparedness despite of all the clear warnings was one of the worldwide problems.

4.7 Business continuity management

Business continuity management (BCM) aims to reduce the effects of realized risks or eliminate these risks altogether. Creating the BCM culture the organization needs a good communication throughout the organization, and the stakeholders must be involved. ISO 22313:2020 is a business continuity management system that gives guidance and recommendations for applying the requirements of the business continuity management system (BCMS) given in ISO 22301 (SFS-EN ISO 22313:2020:en).

ISO 22301 BCMS rely on the same management systems that are identified as valid in many other management systems as well (SFS-EN ISO 22313:2020:en, 5)

- a. A policy
- b. Competent people with defined responsibilities
- c. Management process relating to:
 1. Policy
 2. Planning
 3. Implementation and operation
 4. Performance assessment
 5. Management review
 6. Continual improvement
- d. Documented information supporting operational control and enabling performance evaluation.

When the organization wants to become more resilient, it needs to have the definition of the desired state of resilience that it wants to achieve. Several standards are placed on the continuous improvement, Plan-Do-Check-Act (PDCA). PDCA is a four-step process in the quality management system that simplifies the method of achieving improvements (Bernard 2009, 26-29). The more comprehensive and analytical approach to continuous improvement management would be Plan-Implement-Measure-Learn (PIML) Paul Hopkin (2018, 108) says, but he added, that ISO standards are aligned with the PIML approach.

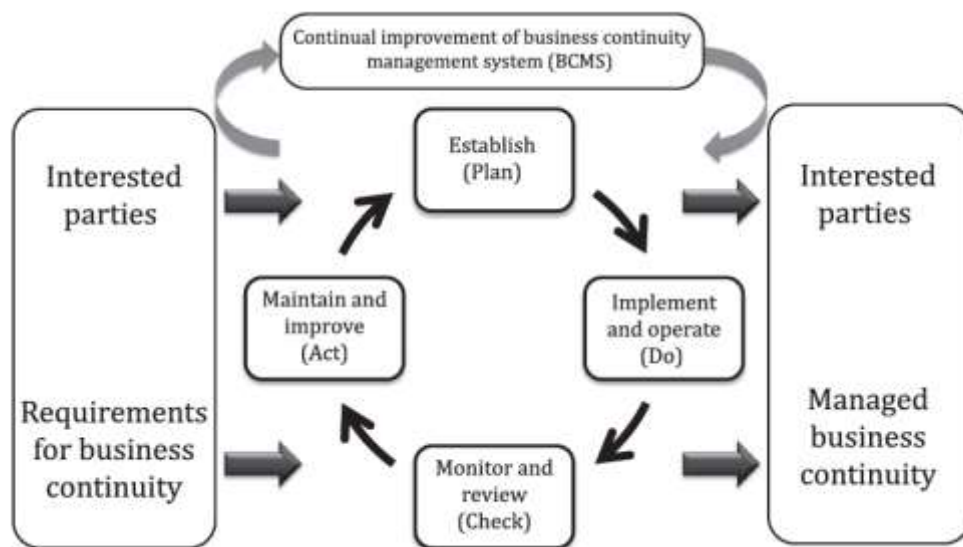


Figure 5: PDCA cycle applied to BCMS processes (SFS-EN ISO 22313:2020:en, 8)

Above shown BCMS processes cycle of the ISO 22313:2020 shows (Figure 5) how the PDA is applied to the BCMS process. It helps organizations to find out the needs and the requirements of its interested parties, customers, and employees. The needs can be shaped by the legal, regulatory, organizational or industry requirements, services, processes, the operating environment, or the organizational requirements of its interested parties (SFS-EN ISO 22313:2020:en, 13).

The organization owes a duty of care to a wide range of people who are working inside or outside the organization. The interests of all interested parties should be taken into consideration when establishing the BCMS. The organization should recognize and identify all the interested parties (Figure 6), that are related to BCMS, based on their needs and expectations they should determine their requirements (SFS-EN ISO 22313:2020:en, 13). For example, in the real estate assets, there are parties like tenants, subcontractors, suppliers, and customers etc. that are holding many responsibilities and actions that should be identified when planning and implementing the business continuity management system.

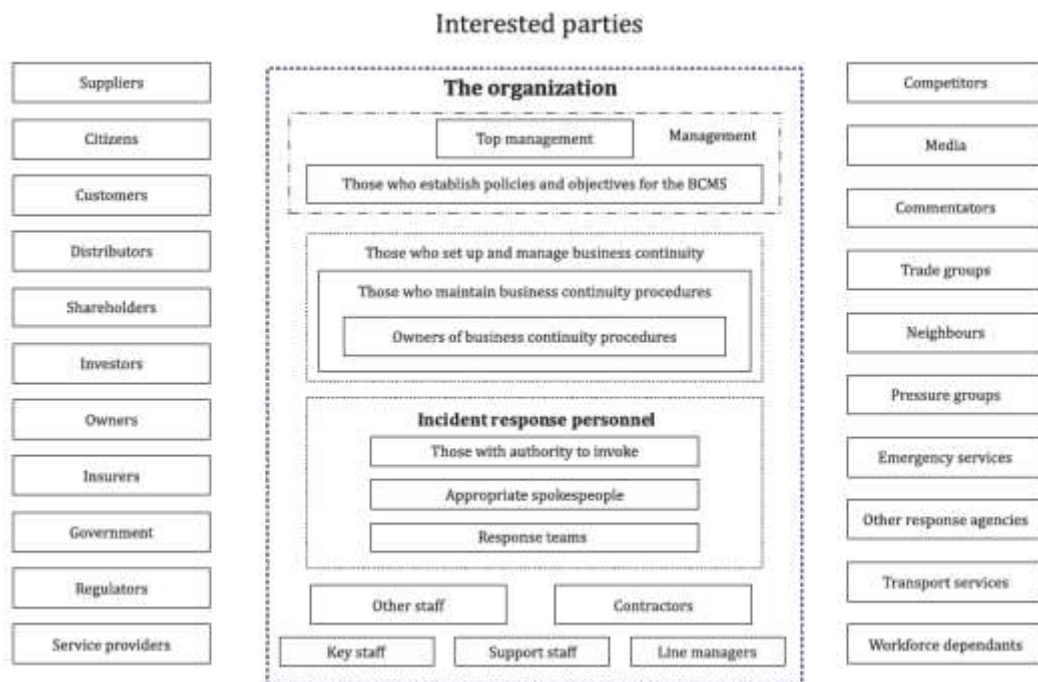


Figure 6. Example of interested parties in public and private sectors (SFS-EN ISO 22313:2020:en, 14)

In the case of the BCMS and the COVID-19 pandemic control measures, particularly legal and regulatory requirements become one of the key factors that should have structured, systematic, and well-organized follow up and the actions should be efficiently communicated through the organization. The constantly updating and rapid changes of legislation and authority regulations could have major effects on to business. The new requirements or changes should be effectively communicated to affected employees and other interested parties. The organizations that operate in multiple locations may need to satisfy requirements of different jurisdictions (SFS-EN ISO 22313:2020:en, 14).

The Elements in the BCMS (Figure 7) you must establish the control mechanism that includes deciding how the processes should be determined, planned, implemented, and controlled as well as kept up and documented. You also need to gather information on how the processes can be performed as planned and test it.

The effective operational planning and control is the heart of the business continuity management. Business impact analysis (BIA) and risk assessment enables the organization to prioritize the resumption of actions and manage them with business continuity strategies and solutions. As the business continuity plans and procedures enable the organization to see their responsibilities, actions, and communication methods the exercise will give them awareness and competency to develop and evaluate the plans (SFS-EN ISO 22313:2020:en, 29-30).

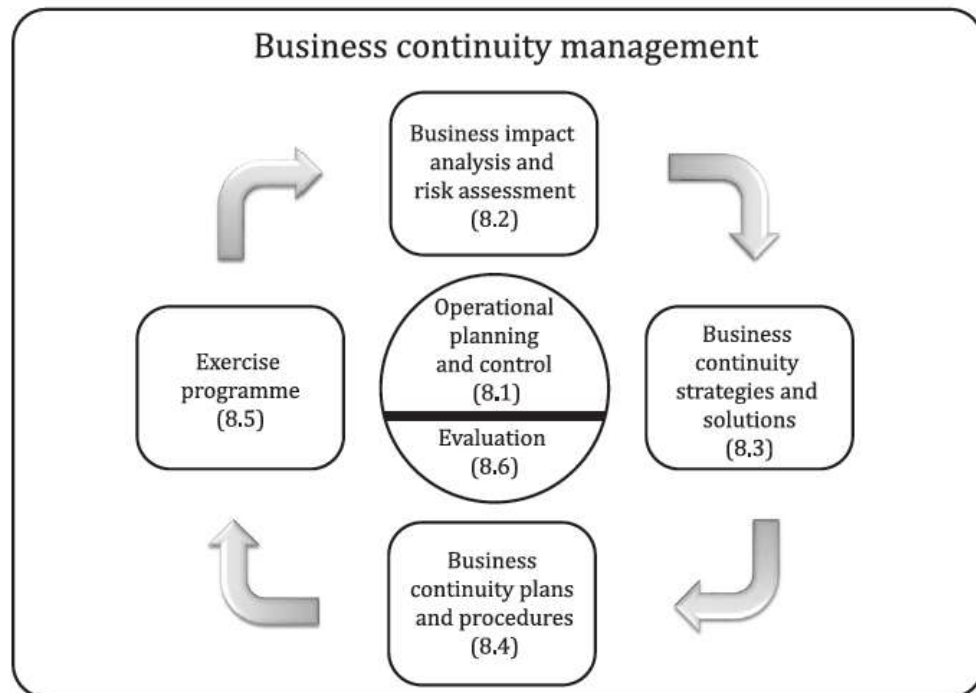


Figure 7: Elements of business continuity management (SFS-EN ISO 22313:2020:en, 2020, 30)

Some new business analysis has been made from the customer expectations in the shopping centers. The COVID-19 has made a change in consumers expectations (Deloitte, 2020) today's shoppers are demanding a safe frictionless shopping environment. "The owners and retailers should work together to invest in customer safety", says Deloitte (2020) in the article The future of the mall. Also, Julia Taari did research about, "The effects of the COVID-19 pandemic on shopping centers and the customer experience of shopping center visitors" in Helsinki (Taari, 2020). In the research she finds out that the customers feel safe in shopping malls when other people around you follow the instructions. When they asked what shopping centers could do more, the customer's answers were that they wanted more signs, guides, services, and surveillance. It gave the customer a feeling about a safe and secured mall. The owners and shopping mall managers should prioritize their BCP's to response to this demand.

From the business continuity planning (BCP) there has been written several books, guidance, and standards around the world, that are made because of the increasing concern by the potential major disruptions. These can be the extreme weather events, terrorist attacks, civil emergencies, or the pandemic influenzas. In simple terms the Paul Hopkin (2018, 203) says that BCP should cover everything from the local events like fires trough the regional disruption such as earthquakes and extend all the way to global events like terrorism or pandemics.

Too often, companies leave risk management and business continuity management to the security or insurance professionals. Building a resilient company, it should be a strategic initiative that guides the company and how it increases its competitiveness. By reducing vulnerability reduces the likelihood of a disruption (Sheffi & Rice Jr, 2005, 41-48). Successful business continuity planning will require the identification of the business risks, how likely they are to materialize and the impact of the risks on the business and the business vulnerability assessment. In the article, A Supply Chain View of the Resilient Enterprise, they give an understandable example on, what it means to build up the resilient, they say that vulnerability assessment involves answering only three questions (Sheffi & Rice Jr, 2005, 41-48):

- What can go wrong?
- What is the likelihood of that happening?
- What are the consequences if it does happen?

The Business continuity plan (BCP) is an essential part of the response planning. To create the successful businesses, it must be prepared for the unexpected disruptions and there for you are expected to do plans for it. The continuity planning sets out how the business is operating in a case of the unexpected incidents and how it expects to return to “business as usual” in the quickest possible time (Engstrand, 2019, 22). BSI Group, which guides companies in moving from the international BS 25999-2 to ISO 22301, John Sharp (2012) says that successful businesses must expect the unexpected and plan for it, that is what makes them continue the business and to deliver their services as normal in extreme cases. If the businesses do not embrace the business continuity planning, there is a risk that they can’t deliver the services as normal, or they can face the failure to deliver at all (Sharp, 2012).

There are several standards made for business continuity planning and one of them is ISO 22301 guide that has been designed to help organizations to meet up with the requirements of the international standard for business continuity management system (BCMS), it specifies the requirements for companies to set up and manage the effective business continuity plans (Sharp, 2012). ISO 22301 identifies a BCP lifecycle into the five components that are the key activities involving the BCP (Hopkin, 2018, 207).

1. Understanding your business
2. BCM Strategies
3. Developing the response
4. Establishing the continuity culture
5. Exercising and plan maintenance

The coverage of BCP should be all the operations and all the premises of the organization. Understanding your business, means straighten out your risks and opportunities, with the business impact analyses and risk assessment tools. It is possible to identify the critical points of your business, but also, to recover the enablers for the desired result. Professor Pekka Mattila says it clear in article “Recovering from COVID-19 requires coherence, innovation and courage” (Mattila, 2020) that ensuring long-term survival calls for an ambidextrous approach, as the decisions we now take and the plans we make are of crucial importance to the future of our business operations. You need to identify the strategies to mitigate losses. Compare their likely effectiveness against the business environment to be able to maintain the critical functions of your businesses and develop the responses for the potential loses.

The BCP must be practical and easy to understand. Its communication must be clear, so that it can create a focused, safe, and secure environment that is in line with the business culture, mission, and strategies. The image of the business environment has received a new revival in business continuity planning, as (Mattila, 2020) points out, it should also take into account aspects of the national, administrative and global legislation.

Continuity planning must be implemented based on strategies and practices that have been proven to be more sustainable and less vulnerable and will also enhance rapid recovery in crisis situations. All stakeholders as employees, customers, suppliers, and shareholders are needed to be established with the continuity culture, process, and awareness (Hopkin, 2018, p. 207). Through exercises, test, and audits, its processes can be maintained and developed, so it will also be cost-effective and properly proportionate to the risks and its potential losses.

4.8 Real estate industry COVID-19 Standards

In this thesis I will concentrate on one of these companies, the SAFE Asset Group, that is a global certification and advisory company, they have certified with SAFE Hospitality, Office, Retail and Environment (SHORE)-standard.

As the New York Times wrote, the World Health organization warned the world about the pandemic, but the “World was not ready for the major outbreak” (Myers & Wee 2020). Mark Schmit (2020) in National Institute of Standards and Technology (NIST) blogs wrote that the world manufacturing leaders see risks in their supply chains, their workforces, their standard practices and in pulling back from innovations. European union and Finland government did have a contingency plan in place for an influenza pandemic, but even then, the Finnish Social and Health ministry admits after the first year of pandemic that “Finland was not sufficiently prepared for the arrival of the coronavirus in the spring” (Luukka 2020). The roles and responsibilities of the ministry were not clear, and the preparedness was not enough.

Companies were not ready for a pandemic either. As in the article (Deloitte 2020) Canadian Real estate experts wrote that, once so popular meeting hubs the shopping malls, were already feeling the pressure from e-commerce and decreased foot traffic, were suddenly out of customers. As the world locked itself in trying to curb the spread of the COVID-19 virus, the biggest problem for real estate companies in COVID-19 was the closure of premises and the growing fear of people. The risk of commercial real estate operations was the loss of customers and business premises

While the governments and the health organizations struggled with the pandemic management actions and legislations the companies and associations had to start to develop their own guidelines for managing the COVID-19 pandemic and they joined their forces in the real estate industry. Like many others, there were national and international companies and associations like e.g., the German Council of Shopping Places, Simon property Group, SAFE Asset Group and the Finnish Council of Shopping Centers providing help, checklists, guidelines, and code of conducts for the use of the whole industry. Many of the companies and associations offered their knowledge for free to help the others and to market their own companies as well.

The SHORE-standard is for the risk, resilience and security and it is divided in six core areas, and it contains more than 850 criteria that are designed to cover all operational risks. COVID-19 Compliant certifications have been done for more than 400 assets in more than 27 countries. Safe Asset Group has also given out free advice for the real estate companies and produced guidelines as Shopping Centre Risk and Security management and Beyond COVID-19-reopening the shopping centers. SAFE Asset Group is also the official risk management partner to (NCSC) Nordic Council of Shopping Centers and South African Property Owners Association (SAFE Asset Group 2021).

SAFE Asset Group produced the COVID-19 Best Practices Guide in Finnish for the Finnish Council of Shopping Centers in January 2021, it was presented in webinar 19th of February 2021 (Östring 2021). The COVID-19 Best Practice Guide is used in this thesis as the official standard for the actions against the COVID-19 pandemic management measures in real estate industry.

The COVID-19 Best Practice Guide is built around six core areas for COVID-19 management: Management system and risk management, Property protection, Visitor management, Tenant management, Safety and security management, Crisis, and Business continuity management.

The document gives guidelines for shopping centers restoring business operations following a disruption or closure due to the COVID-19 pandemic. It is intended to be used to implement, maintain, and improve a real estate assets ability to protect against, prepare for, respond to,

and recover from COVID-19 related disruptions (Engstrand 2021). The more detailed opening of the six sections can be found in the Figure 8.

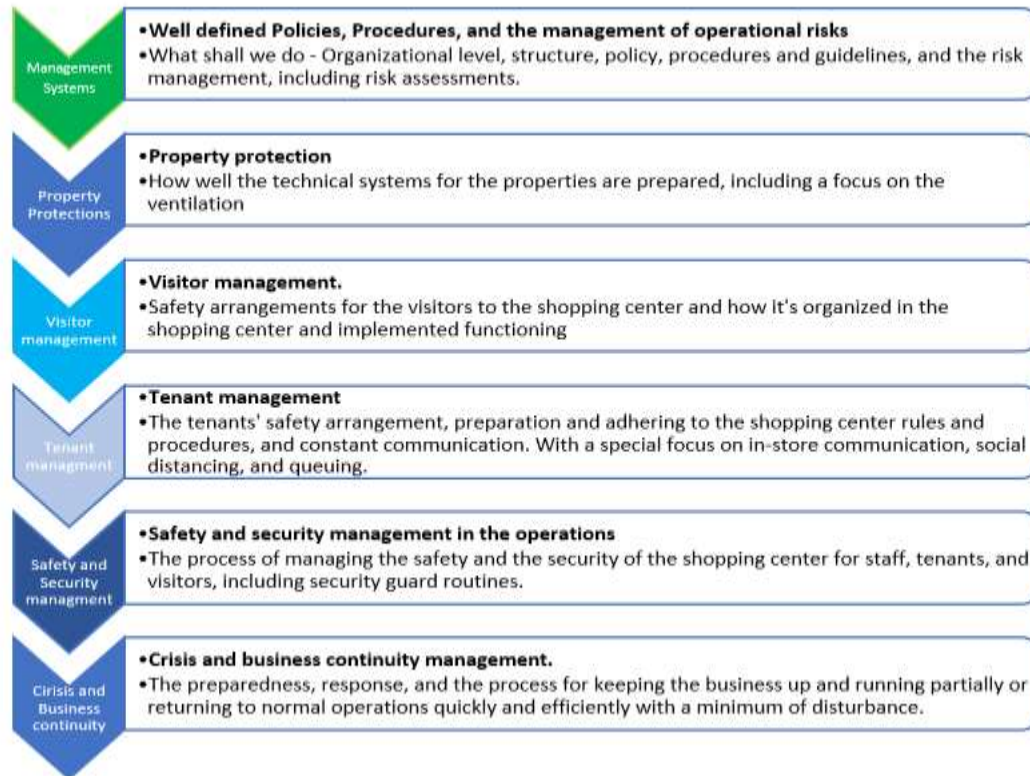


Figure 8: COVID-19 Best Practice Guide is built around six core areas for COVID-19 management (Engstrand 2021).

5 Methods

This chapter introduces the research methods used, the means and steps, the rationale for the choices, and the techniques for data analysis. This thesis is based on qualitative research, qualitative research seeks to understand the phenomenon under study. This means finding out the meaning or purpose of a phenomenon and gaining a holistic and deeper understanding of the phenomenon.

5.1 Qualitative research

In qualitative research, the researcher analyses observational data thematically and conceptually to higher meanings, seeks explanatory models and develops theoretical views (Hirsjärvi, Remes & Sajavaara. 2013, 266). The nature of qualitative research involves focusing on qualitative information alongside quantitative and seeking to understand the

subject areas as comprehensively as possible. The starting point in qualitative research is the description of real life. This includes the idea that reality is usually diverse, and events simultaneously shape each other, so it is possible to find multifaceted relationships in them (Hirsjärvi, et al. 2013, 161).

The qualitative research plan is formed in more detail as the research progresses, so that the research can be carried out flexibly and the plans can be changed according to the circumstances. In qualitative research, the researcher's purpose is to reveal unexpected facts about the material under study, therefore the starting point is not the testing of the theory or hypothesis itself, but a complex and detailed examination of the material. Qualitative research favors humans as an instrument for data collection. In the acquisition of material, methods are preferred in which the perspectives of the research subjects come to the fore. (Hirsjärvi, et al. 2013, 164.)

Qualitative analysis often speaks of inductive and deductive analysis, but often overlooks the third abductive logic of scientific reasoning (Tuomi & Sarajärvi 2018, 107). In inductance analysis, where reasoning progresses from details to generalization, theory is developed based on observations and assumptions are made based on empirical data. However, in qualitative research, there is no pure objective knowledge. All knowledge is subjective in the sense that the researcher decides the research design on his or her own understanding. In other words, the research results are not detached from the used detection method or the user. (Tuomi & Sarajärvi 2018, 109.) The methods should be communicated transparently so that the reader is informed about the background and choices of the research in order to be able to assess its reliability (Hirsjärvi, et al. 2013, 261).

5.2 Semi-structured interview and surveys

A form interview or questionnaire can be used to study different phenomena and find answers to various problems. The thematic interview, i.e., the semi-structured interview, is close to the in-depth interview, proceeding according to the pre-selected themes and their specific questions. Methodologically, the thematic interview emphasizes people's interpretations and meanings of things and seeks to find meaningful answers in accordance with the purpose and task of the research. (Tuomi & Sarajärvi 2018, 87-89.)

The advantage of surveys is generally considered that they can be used to gather extensive research data. A lot of people can be involved in research and many things can be asked in survey. The query procedure is efficient and saves time and effort, and the analysis of its data by computer can be conveniently processed to the desired format. On the other hand, Disadvantages of a survey are the researcher's ability to ascertain how seriously the respondents have taken the survey, how successful the given answer options have been, how

the respondents are aware of the research area, and in many cases non-response can become high for a reason. (Hirsjärvi, et al. 2013, 193-194)

Questions can be formulated in many ways. The following three forms are most used, open-ended questions, multiple-choice questions, or questions based on scales. The benefits of multi-choice issues are seen meaningful comparability of data, less varied answers, it helps the respondent to identify the matter and is therefore easier, and recent developments in information technology have made it easier to deal with structured questions and therefore have grown in popularity in recent decades (Hirsjärvi, et al. 2013, 199-201).

6 COVID-19 pandemic control measures

This chapter presents the sub-stages of the research interviewee and their objectives, the research methods used, and the results obtained. The data collection basis of the thesis was based on semi-structured interviews and the themed survey of the COVID-19 pandemic control measures, which are known as best practices in the industry.

The purpose of the interviews is to highlight the research problem and specify the need for a survey and a four-step action plan. Through interviews we will find out how the interviewees have experienced the governments operations and states pandemic continuity plans affecting the real estate business industry. The idea of the interview and survey is very simple. When we want to know what a person is thinking or why he is acting the way he works, it makes sense to ask him (Tuomi & Sarajärvi 2018, 84).

The cause of the survey is to determine whether the real estate best practices and standards in the industry can be developed into a four-step action plan of pandemic management measures. The survey will give a research answer to how we determine the effectiveness of the control measures to match a particular pandemic level. The survey is known as a key method of survey research. Survey refers to a form of survey, interview, or observation in which material is collected in a standardized manner and in which a sample of target individuals is formed from a specific population (Hirsjärvi, et al. 2013, 193).

In general, data collected through Survey are processed quantitatively (Hirsjärvi, et al. 2013, 194). In this thesis the analysis is not quantitative as it does not add value or deeper relevance in this case, but the context of the surveys and the responses are valued more. A qualitative form of research is more suitable when it is desired to find out the meaning and context of behavior. Qualitative research highlights the subjects' observations of the situation and the opportunity to take into account phenomena related to their experience and development (Hirsjärvi & Hurme 2014, 27).

The questions on this survey were chosen to follow one of the most used multiple-choices questioners, because of its advantage, to identify the questions of the research, get less varied answers, make it easier for respondents to get as many answers as possible and facilitates the analysis of responses. Even though many people are already tired of email-dripping surveys and are therefore often reluctant to participate in research (Hirsjärvi & Hurme 2014, 36).

6.1 Interviews

The interviews (Appendix 1) were conducted as a thematic interview using a semi-structured interview method. Three Security- and safety management experts from the real estate industry were selected for the interview, all of whom had several decades of experience from risk management, continuity planning, and crisis management. The interviewees were selected globally from three different countries, with the aim of highlighting the research problem from a broader perspective. The three interviewees were from Sweden, France, and South-Africa.

A thematic interview is an intermediate form between an open and a form interview and it typically knows the topics of the interview, i.e., the thematic areas. However, the exact form or order of the questions is often missing (Hirsjärvi, et al. 2013, 208). A semi-structured thematic interview differs in that its thematic areas and the order of the questions are clear.

Interview questions are based on the researcher's own professional experience and for the background research on the topic. The interview questions were the same for all interviewees and were presented to them in the same order. The interview questions were presented as open-ended questions so that their answers would not be too limited, and their topics would become a wider discussion. The purpose of the first question of the questionnaire was only to start a discussion and to tune the respondent to the topic. In some of the questions, in-depth questions were used to guide the discussion to certain specific topics that were sought to be clarified in the interview.

Thematic interviews can be conducted as individual, pair, or group interviews and usually last from one hour to two hours. The implementation of a thematic interview includes the following steps: arranging the interview, opening the discussions, asking questions, and directing the dialogue (Hirsjärvi, et al. 2013, 210). The interviews were chosen to be carried out on an individual basis due to the topic area, geographical location and for easier implementation of the interview schedules.

The interviews were conducted through Teams due the same reasons at 29.6, 9.7. and 13.7.2021. Interviewees were asked in advance for permission to record the interview, the recording was done only to facilitate the processing and spelling of the material. The

interview questions were distributed on the Teams screen to the interviewees, presenting the questions could help the interviewee stay in the topic area. The estimated and average interview lead time was about an hour, only one of the interviews carried out more than that. The questions that were used in the interviews can be seen in the Appendix 1.

6.2 Analysis of the interviews

The analysis was made by using the data-driven analysis. The steps of data analysis are three interrelated but quite different subtasks classification, analysis, and interpretation of the data. The task of classifying the material is to systematically review the material in a way defined by the research problem, key concepts and starting points. When the phenomena to be analyzed are placed in preliminary categories, they often live and are structured to be even clearer and often also analytically brighter. (Ruusuvoori, Nikander & Hyvärinen. 2010, 11-24.)

Tuomi and Saarajärvi (2018, 122) describe Material-based qualitative or inductive data analysis is described as a three-step process: data reduction, data clustering, and abstraction. In the first step (reduction), material that is irrelevant to the study is removed from the material. On the second step (clustering) the original expressions are reviewed and the material is searched for concepts that describe similarities and/or differences. The units of classification may be a characteristic, feature, or perception of the phenomenon under study. The third step (abstraction) is abstraction, in which information relevant to research is distinguished and theoretical concepts are formed on the basis of selected information. (Tuomi & Sarajärvi 2018, 123-125.)

The interview and its questions were firstly converted from a spoken recordings to a written text, with the help of Teams videos. The interviews were converted using the computer into a text. The texts were printed out as their own plates of interviews.

Before starting the analysis in the content analysis, the unit of analysis must be defined, which can be a word, a statement or a set of ideas. The determination of the unit of analysis is guided by the research task or problem and the quality of the data (Tuomi & Sarajärvi 2018, 122).

The units of analysis were firstly defined to be either the negative or a positive experience on the question of how government operations, communication channels and state pandemic continuity plans affect the real estate business. On the first step, the irrelevant material was removed from the other materials and the text was reviewed and classified, on the basis of expressions of positive and negative experiences. However, the data were processed and classified, broken down by countries Sweden (S), France (F) and South Africa (S-A), as this information may be needed later to conceptualize the data.

The data was transferred to an Excel file where it was easier to process. In the second step, those expressions were reduced and similarities were sought. The similarities were marked as their own color and the original expressions had been converted into reduced expressions. Contingency plan or action plan (red), Reactions (yellow), Legislation and restrictions (green), communication and information (blue), business industry (orange) and trust (white). The colors helped out to see the difference between the answers and categories. These categories were named as subcategories of the phenomena.

After categorizing the data, the classification was continued according to the upper categories describing the phenomena arising from the data. There were clearly seen five subjects that came up from the data relating to how the interviewees experienced the negative effect. The negative subjects were reaction time, public confidence, weakness in political regulation, gaps in the industry knowledge and deficiencies in the communication of the action measures. From the positive perspective, there were found three subjects that came up from the data that can be seen as a positive impacts they have experienced the governments operations and states pandemic continuity plans affecting the real estate business industry. The positive subjects were effective communication channels, good continuity- and action plans and successes in the work of the authorities and the government.

Table 1. Negative experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categorie	Subcategorie	Reduced expression
Reaction time	Reactions	<p>Too slow reactions (S), (F), (S-A)</p> <p>When they react they applied the rolls immediately (S-A)</p> <p>Crisis situation lockdowns immediately, citizens anticipated changes (F)</p>

Table 1: Interview analysis, reaction time.

The interviews revealed (Table 1) for all interviewees that, regardless of the country, the reactions of governments and authorities were initially too slow. On the other hand, there was also a problem in governments' fast reaction for the real estate industry, like in France,

when they reported the lockdowns, they didn't implement it immediately and that is why the citizens anticipated the changes and fled away from the lockdown area (De La Gueronniere, 2021). In South-Africa, the problem for the real estate industry was that, when the restrictions came, they implemented them immediately and the management didn't have time to react, and it harmed the businesses (Weyers 2021).

In conclusion there is a need to consider which restrictive measures should be put in place immediately and which restrictive measures should be given time. Measures restricting the movement of people should be put in place immediately without prior warning, while regulations restricting the activities of companies should be given time to prepare in order to minimize their negative effects.

Table 2. Negative experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categories	Subcategories	Reduced expression
Public confidence	Trust	<p>Limited trust for government because of the corruption (S-A)</p> <p>incorrect information the citizen didn't trust to the information anymore (F)</p> <p>Unexperienced government and ill prepared (S-A)</p> <p>People are protesting against vaccination passport, it limits their self-determinations rights (F)</p>

Table 2: Interview analysis, public confidence.

The issue of trust came up, with two of the three countries (Table 2), France and especially South Africa. In the pandemic control measures and how the governments and authorities succeeded in these countries, that had a limited trust for the government or for the public authorities because of corruption (Weyers 2021), given incorrect information or the limitation of the given rights (De La Gueronniere 2021). These issues were specially mentioned as a

majeure enforcement to achieve the wanted results. As a conclusion we could say that the lack of public confidence will affect people's willingness to comply with the given rules, and it can undermine the effectiveness of control measures.

Table 3. Negative experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categories	Subcategories	Reduced expression
Weakness in political regulation	Legislation and restrictions	<p>Various degrees of implementation because lack of legislation enforcement (S-A)</p> <p>Hard to apply the legislation, restrictions, orders, and guidance (S)</p> <p>No contingency plan for the pandemic (S-A)</p> <p>Effective restrictions were abused, badly received and ineffective and they led items into black market, caused distrust and abuse. (S-A)</p> <p>Restrictions are mainly self-regulating and on a voluntary basis (S-A)</p> <p>Lack of understanding and unlearning from the old mistakes of H1N1 (F)</p> <p>Quicker in inviting the important industry organizations into discussions (S)</p>

		<p>Lockdowns chain reactions from country to another (F)</p> <p>Parents cannot work from home if the young kids aren't in the schools (F)</p>
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Table 3: Interview analysis, Weakness in a political regulation.

The interviewees experienced the weaknesses in political regulation in all countries (Table 3). Mainly in South Africa there was more problems with the political regulation because the lack of contingency planning and the legislation enforcements, that is why the real estate industry had to come up with the self-regulation and the weakness of it was the reason that it was based on voluntary and there is no one that is really going to restrict them if they choose not to obey the rules (Weyers 2021). In Sweden it was seen as hard for the real estate industry to apply with the legislation, restrictions, orders, and guidance that were given and that the authorities should have been quicker in inviting the important industry organizations into discussions (Engstrand 2021).

In France the government had already experienced the pandemic of H1N1- virus. But there was still a lack of understanding, how to implement all the regulations. The lockdowns were seen as a chain reaction from one country to another and some of the given regulatory actions were seen, as not so efficient and compliance with them had to be stopped, like schools' lockdowns for the young kids (De La Gueronniere 2021).

It could be said, that even though the governments have already experienced the pandemic and they would have efficient contingency plans and legislation enforcements in place, they will still face problems with the regulation implementations if they don't learn from the mistakes and do changes to the action plans or create and discuss restrictive measures together with the important industry organizations. The lack of contingency planning and the legislation enforcements can lead to uncontrolled self-regulation.

Table 4. Negative experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categories	Subcategories	Reduced expression
Gaps in the industry knowledge	Business industry	Lack of knowledge and understanding has also been

		<p>a problem in the industry (S-A)</p> <p>Lack of understanding how the business is working (S)</p> <p>Failing to understand the time and work how long it does take to get the business going again (S)</p> <p>Failing to understand the impact of the decision to the industry (S)</p> <p>Hard to understand how to interpret the legislation to Real estate industry (S)</p>
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Table 4: Interview analysis, Gaps in the industry knowledge.

There were also seen gaps (Table 4) in the industry leaders, governments, and authorities' knowledge of the industry and how to regulate or to internalize the legislation. During the interviews, it came up that the industry did not know how to interpret the given restrictions into real estate industry. The authorities failed to understand the impacts of their decisions, like one of the interviewees said in shortly "the legislation, restrictions and the guidance given from the authorities was a bit too square to fit in the real estate industry because of the lack of understanding of the business" (Engstrand 2021). The same kind of problem was seen in South Africa. On the other hand, problems were seen within the industry, because the industry leaders did not have the knowledge or the understanding of the pandemic control actions (Weyers 2021).

Altogether, there can be seen gaps in the authorities and the government's actions because of the lack of understanding or knowledge. It can lead into situations, where the industry leaders and property management companies are suffering, on how the legislation adopted should be interpreted for the real estate industry. The impacts of the poorly primed decision can lead into situations that will affect the whole industry "were actually you have all the people coming, working, gathering, eating, drinking or shopping" (Engstrand 2021). It will lead to large-scale lay-offs, redundancies or even bankruptcies of the companies and it will cause major problems in restarting the business operations.

Table 5. Negative experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categories	Subcategories	Reduced expression
Deficiencies in the communication of the action measures	Communication and information	<p>Too complex in communication on how to work with the plan as an industry organization (S)</p> <p>Communication was quite poor at the beginning (F)</p> <p>Clearer in what to do and what they expect from real estate assets (S)</p> <p>If the rules are not clear people will start not to obey them (F)</p> <p>if the given rules and instructions are inconsistent and unequal, they are not achieving anything, actually just the opposite (S-A)</p>

Table 5: Interview analysis, deficiencies in the communication of the action measures.

The deficiencies in the communication of the action measures (Table 5) will cause uncertainties in the industry organizations and resistance in the actions of the citizens. Communication and information have been seen as too complex to understand on how to work with the given plans or what the authorities are expecting from the real estate assets and industry organizations (Engstrand 2021). From the citizens perspective the unclear, inconsistent, or unequal rules will lead to non-complied actions, and they can come as an obstacle to the achievement of management measures and objectives to prevent the spread of the virus (Weyers 2021).

If we would like to achieve an effective communication and sharing of the information, the main actions would be clear, simple, consistent, and equal rules. They should be explained,

so that the industry organizations and the citizens could more easily understand them. The government and the authorities should give clear instructions and communicate them in the language and the terms that the industry organizations use and easily understand their meanings.

Table 6. Positive experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categories	Subcategories	Reduced expression
Effective communication and information channels	Communication and information	<p>Communication channels was quite ok (S)</p> <p>Information about pandemic and the control measures, weekly speeches (F)</p> <p>Information straight to the people (F)</p> <p>Governments and authorities' communication systems (F)</p> <p>Effective communication through all the media (S-A)</p> <p>Good open sources of communication and getting the information (S)</p>

Table 6: Interview analysis, effective communication channels.

By the time of COVID-19, there are not only negative practices that the interviewees have experienced. The positive experiences (Table 6) have been related on the other hand also to the effective communication and information channels. The weekly speeches, like those given in France (De La Gueronniere 2021) were experienced as an effective and straightforward way to communicate about the changes in the legislation and restrictions. In South Africa, effective communication has been seen to take place through all media channels (Weyers 2021). In Sweden they feel that the real estate industry has got the information quite easily

through the government and authorities good and open official notification channel (Engstrang 2021).

Although communication and information have been seen as complex, too difficult to understand or unclear, the channels and technologies through which information is shared have still been seen as good and effective. The effectiveness seems to join with the experience of good open sources, effective media channels usage and to the straight up to date given information.

Table 7. Positive experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categories	Subcategories	Reduced expression
Good continuity- and action plans	Contingency plan or action plan	<p>Good industry-based action plans (F)</p> <p>Use of an emergency power act, fast changes in laws when needed (F)</p> <p>Contingency planning was comprehensive (S)</p> <p>The industry leaders SACSC had implemented industry voluntary measures (S-A)</p>

Table 7: Interview analysis, good continuity- and action plans.

The other positive experience by the interviewees was focused on the (Table 7) good continuity- and action plans that the government and the authorities have created. In the interview the on upcoming issue that was seen as a majeure accomplishment was the France government industry-based action plans (De La Gueronniere 2021). Also, the usage of the France emergency power act was experienced as an effective premise for the fast changes in legislations, whenever it was needed. In South Africa the industry leader (SACSC) South African Council of Shopping Centers implemented the voluntary based pandemic control actions for the industry (Weyers 2021). It was executed because of the lack of national pandemic control measures and continuity and action plans.

The industry-based implementation of the control measures could be seen and experienced as a good and responsible effort to try to control the spread of virus by the industry itself. Although “it was not an enforced situation, many shopping centers had various degrees of implementation of the measures and government never forced the measures on a national basis” (Weyers 2021).

The good continuity- and action plans can be seen as a great help to the real estate industry, especially when they have been implemented as an industry-based action plan. For that, the government needs to hear and understand the industry-based business environment, as well as the views and impacts of management measures on the industry. The governments should also verify that the national emergency power acts will allow the fast changes in national legislation during the pandemic.

Table 8. Positive experience to the governments operations and states pandemic continuity plans affecting the real estate business industry		
Main categories	Subcategories	Reduced expression
Successes in the work of the authorities and the government	Legislation and restrictions	<p>Quite comprehensive action plans, 25-30 different plans (F)</p> <p>Government three principals were easy to understand (S)</p> <p>Managing to keep society open from business and healthcare perspective (S)</p> <p>Government working quite ok, but trust is low (S-A)</p>

Table 9: Interview analysis, Successes in the work of the authorities and the government.

The last interviewee’s positive experience was the legislation and restrictions work of the authorities and governments (Table 8). As well as they experienced the weaknesses in the national legislation and restrictions for the real estate industry, they also have experienced the authorities and governments succeeded in their work as in general pandemic control (Weyers 2021). In France they have succeeded to implement 25-30 different industry-based plans. In Sweden, the work of the government and the authorities was seen as successful in

keeping society and the real estate sector open to business and ensuring the resilience of healthcare workers and institutions during a pandemic (Engstrand 2021).

Based on the interview, we could conclude, that the experience of successful work of the government and the authorities can be guaranteed at least by the following four measures, industry-based action plans, easy-to-understand guidelines, keeping the businesses open and maintaining the capacity of healthcare.

6.3 Review of the interviews

The three interviews provided additional information about how government operations and state pandemic continuity plans have affected the real estate businesses during the COVID-19 pandemic 2020-2021. The pandemic certainly had more negative than positive effects on the industry, as more than a hundred years had passed since the last pandemic, leaving countries ill-prepared for a global pandemic.

The interview shows the biggest negative experiences were explained as the slowness of reactions, lack of the public confidence, weaknesses in political regulation, gaps in the industry knowledge and as a deficiency in the communication of the action measures. It would be important for the authorities and governments to understand the effects of the actions and regulation they are making, on the other hand, people will personally expect quick action, but the industries need time to adapt their actions to the given regulations.

The regulations should be easily understood and interpreted to the industry practices and expressions. They should be clearly communicated to the industry leaders, what they must do and what the authorities expected from real estate assets. In addition to national contingency plans, there should be specific industry-based action plans, describing in more detail and more clearly the legislation, restrictions, and guidelines for the industry, taking into account the nature of the sector and how its business opportunities could be ensured during different phases of the pandemic.

The data is showing that the positive impact was mainly experienced in the successful work of the authorities and governments, with good continuity and action plans as well as the effective communication and information channels. The successful work of authorities and governments were seen in the opinion of the interviewees as the comprehensive continuity- and action plans for the industry perspective. According to the interviewees, clear and simple instructions were also seen as having the positive effect, ensuring that companies were easy to manage, and they were able to keep their businesses open.

In the absence of any law enforcement, the interviewees felt the need for “a national and international control standard that would be ready and easily pulled out when referring to

different levels of pandemic management” (Weyers 2021). Through the given data, we could say, that there would be the need to determine the effectiveness of the control measures to match a particular pandemic level to make it easier for industry to respond to the consequences of future pandemics.

6.4 Survey

In the first part of the survey the themed questionnaire was designed. The questionnaire were based on the Guide to best practices for managing a corona pandemic (Suomen Kauppakeskisyhdistys Ry 2021) and its safety management checklist, that were conducted to the Finnish Council of Shopping Centers, by Safe Asset Group on January 2021 by Erik Engstrand and Minna Länsimies.

The checklists were condensed into simple instructions and translated into English. The survey contained 71 guidelines for which the respondent had to determine the correct level choosing an option from four different tiers of a pandemic spread.

The tiers used in the survey were built on the basis of a four-level threat level assessment already known in the security industry. The same four-level rating scale is used in SUPO's (Finnish security and intelligence service) terrorist threat assessments. In order to describe the tiers of the stages of the spread of the pandemic, the three-stage description introduced in Finland by Finnish Ministry of Social Affairs and Health as earlier presented in (Figure 2) in this thesis, was chosen to be used.

The used tiers were, as seen from the (Appendix 3):

- Tier 1: There is no pandemic at this phase
- Tier 2: At this phase, the epidemic is at a stable level.
- Tier 3: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.
- Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

In the survey there was a possibility to choose also more than one tier and also to add one or two pandemic control measures, if they thought some essential pandemic control measure was missing from the list. This was added because, although the researcher believes that the ready-made answer options, which are very comprehensive and clear, rarely reach the respondent's world of thoughts (Hirsjärvi & Hurme 2014, 37). Also the open-ended questions were intended to give respondents the opportunity to answer in their own words, rather than

the respondent being chained to only certain answer options. Multi-choice questions, on the other hand, can provide more consistent answers that are easier to analyze afterwards (Hirsjärvi, et al. 2013, 201).

Due to time and resource constraints, the survey was sent through the Webropol. The link was sent out through email at first time on 28th of June, 2021. It was sent out to 48 different Real estate managers with the cover letter (Appendix 2). The survey was open until 30.7.2021, but it did not get any answers. The main reasons that could be seen, were the timing (summer vacations), the lack of personal contact and also that the survey was long and the language was not their native language.

The second try was on 9th of August, 2021, the link was sent only to 28 different Real estate managers with the same cover letter, but the response time was given now until the 30th of September, 2021 and instead of only sending out the link and the cover letter through the email, this time they got also personal calls, emails or text messages about the survey and the time schedule. The answers were still hard to get. The social media channels like LinkedIn were also used to get more interested respondents. Also the other students, teachers and other personal networks were all used to get as many responses as possible.

The number of final respondents was fifteen. The respondents were from Finland (9), Sweden (3), France (1), Bulgaria (1) and South Africa (1) holding responsibility to manage COVID-19 actions measures in their work. The survey questions are shown in (Appendix 3.). At the beginning of the survey (Appendix 3.), four questions were used to determine a person's status, company, domain, and country. Their sole purpose was to check that the open questionnaire link did not include respondents who did not represent the subject of the research team. The geographical question was intended to measure the prevalence of the survey. These questions are not otherwise relevant to the study and therefore are not published in this work either.

The survey consisted of seven sets of questions about managing the pandemic control, each addressing its own contribution to control methods.

- management
- risk assessment, preparedness and continuity planning
- property protection
- tenant management
- safety and security management
- visitor management
- signs and instructions

It can be seen from the responses that more than one respondent has answered the question at more than one level. This is based on the fact that in a telephone conversation (on 29th of September 2021), one of the respondents said that he had responded to more than one tier on several points, as the preparation of measures to combat the pandemic, would have to start before the measures themselves were introduced at a certain tier. Other respondents may have had the same thinking. But otherwise, it will not affect the results. However, the table shows mainly the level at which respondents believe that pandemic management measures should be included.

In this thesis, the second research question was to consider whether control measures could be defined to correspond to a certain pandemic level. The research question was answered by conducting a survey. In the survey, respondents can determine the level of pandemic to which, according to their experience and development, the control measure belongs. It is not necessary in the study to analyze in more detail the answer to each question, but whether it would be possible to determine such a level. In this thesis, it was decided to display the results of the survey as bar charts in the work to illustrate the distribution of responses more clearly to readers.

6.4.1 Results for Management

The eleven questions covering the management pandemic control measures (Figure 9), we can clearly see that in all questions the answers vary from tier one to tier four. If we look at the averages of the survey, we can see that most of the measures get an average that varies between 1,70 to 2,30. The variation may be because of the questioning or because of the respondent's understanding of the meaning of the classification. However, it is easy to see which questions get the most of the endorsement from the respondents.

In seven of the eleven questions, the majority of respondents answered that the measures belong to Tier 1. before the start of the pandemic. These questions concerned:

- Develop a clear COVID-19 policy and set goals and priorities.
- Establish a preparedness / crisis team and ensure its guidance and expertise.
- Define and record responsibilities and obligations for the asset management, also consider and prepare for various shifts, successions, and surrogate practices.
- Develop policies and plans for the asset, for part- and full-time closures, as well as reopening
- Develop communication plans and ensure communication channels, as well as communication effectiveness.
- Establish clear policies for overseeing property operations
- Make sure your management team is ready for the remote work or quarantine.

Three of the questions were clearly classified as Tier 2. These questions were related to:

- Prepare and maintain a asset and rental-specific snapshot of open, closed spaces or their special arrangements and create contact lists for closing and opening and keep them up to date
- Secure that you know a clear way to deal with rent arrears and what action you can legally take.
- Create clear routines and channels for the cooperation between authorities to maintain a clear picture of changes in legislation and guidelines for a pandemic control measure e.g., health monitoring, hygiene practices, mask recommendations, distance practices, and parallel movement

one question caused more dispersion between Tiers 1 and 2, it was:

- Secure insurance and any claims of insurance companies in exceptional circumstances

For the open-ended question (Other, What?) in the Management questions the respondents gave four different control measures:

- To have framework in place before
- Risk Assessment and counter measures
- Prepare the unemployment process in case of lockdown
- To have in agreements before with tenants

The average of these measures they gave 1,80 and they determined these actions to the Tier 1 or 2. This was the only question they gave extra measures that were not already in the survey.

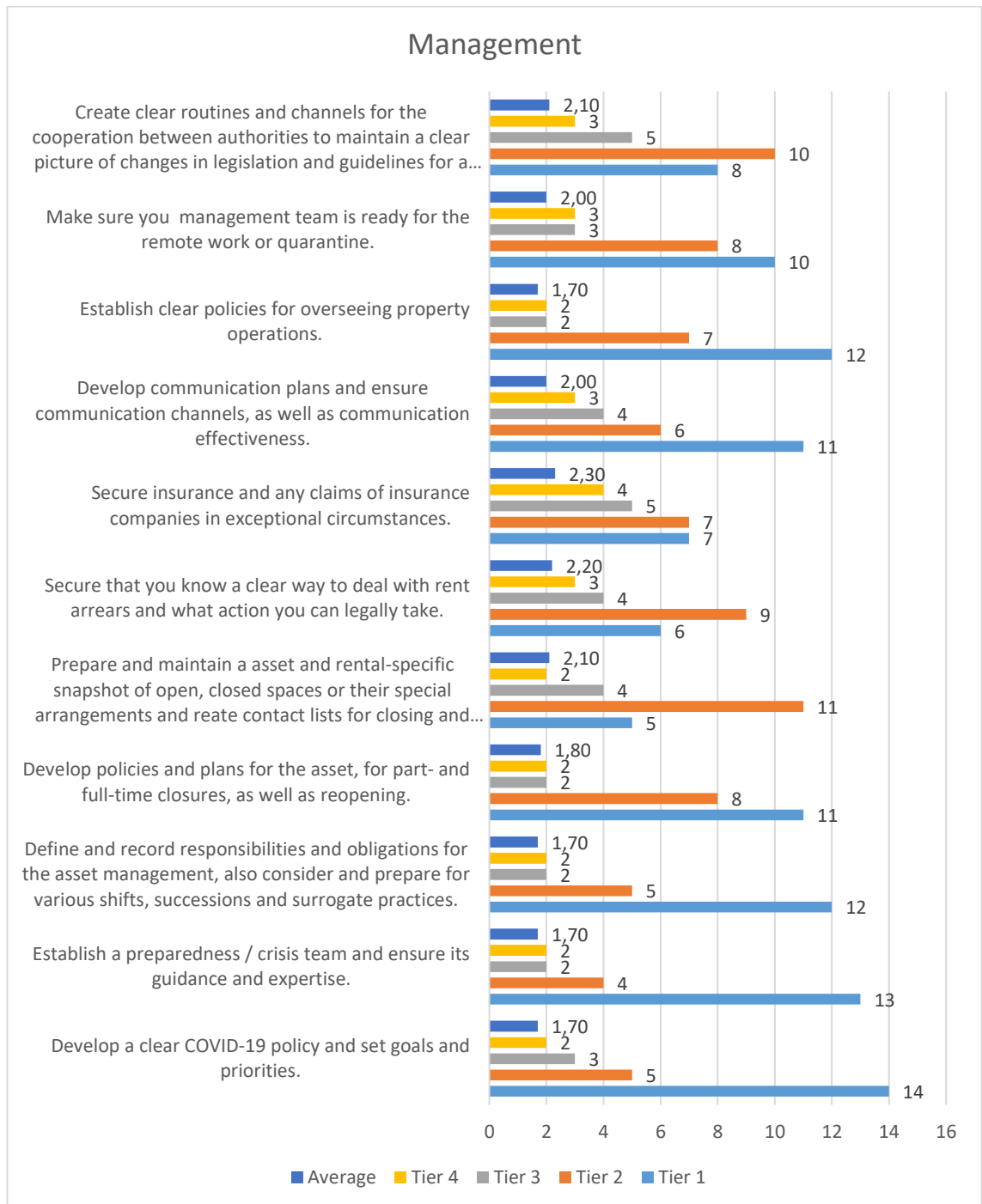


Figure 9: Survey, Comparison chart for the results, question 2. Management

6.4.2 Results for Risk assessment, preparedness, and continuity planning

The eleven questions covering the risk assessment, preparedness, and continuity planning pandemic control measures (Figure 10), we can clearly see that in all questions the answers vary in this area from tier one to tier four too. If we look at the averages of the survey, we can see that most of the measures get an average of more than 2, only two average questions are nearly under two (1,90).

In seven of the eleven questions, most respondents answered that the measures belong to Tier 2, at this phase, the epidemic is at a stable level. These questions concerned:

- Make sure you have clear routines and checklists in place to ensure the tenants compliance with the rules. Establish a preparedness / crisis team and ensure its guidance and expertise.
- Define and record responsibilities and obligations for the asset management, also consider and prepare for various shifts, successions, and surrogate practices.
- Plan and mark the isolation area, as well as practices for evacuating the affected person from the asset
- Design queue management and event management practices for different situations.
- Design policies to prevent access and calculate customer numbers if the authority issues restriction orders
- Ensure that COVID-19 guidelines and safety practices are in place for oversight of tenants, customers, and subcontractors
- Update evacuation, crisis and contingency plans and ensure their effectiveness

Two of the questions were clearly classified as Tier 1. These questions were related to:

- Create contingency and continuity management plans based on reduction, necessary or transferable of the risks on your assets
- Perform a risk assessment and determine its effects on the real estate's operations.

Two of the questions caused more dispersion between Tiers 1 and 2, they were:

- Ensure the availability and functionality of equipment used for different situations and their management, such as fences, strips, etc.
- Ensure that safety and evacuation instructions work for a variety of threat and crisis situations, including partial and full-time closure of the assets.

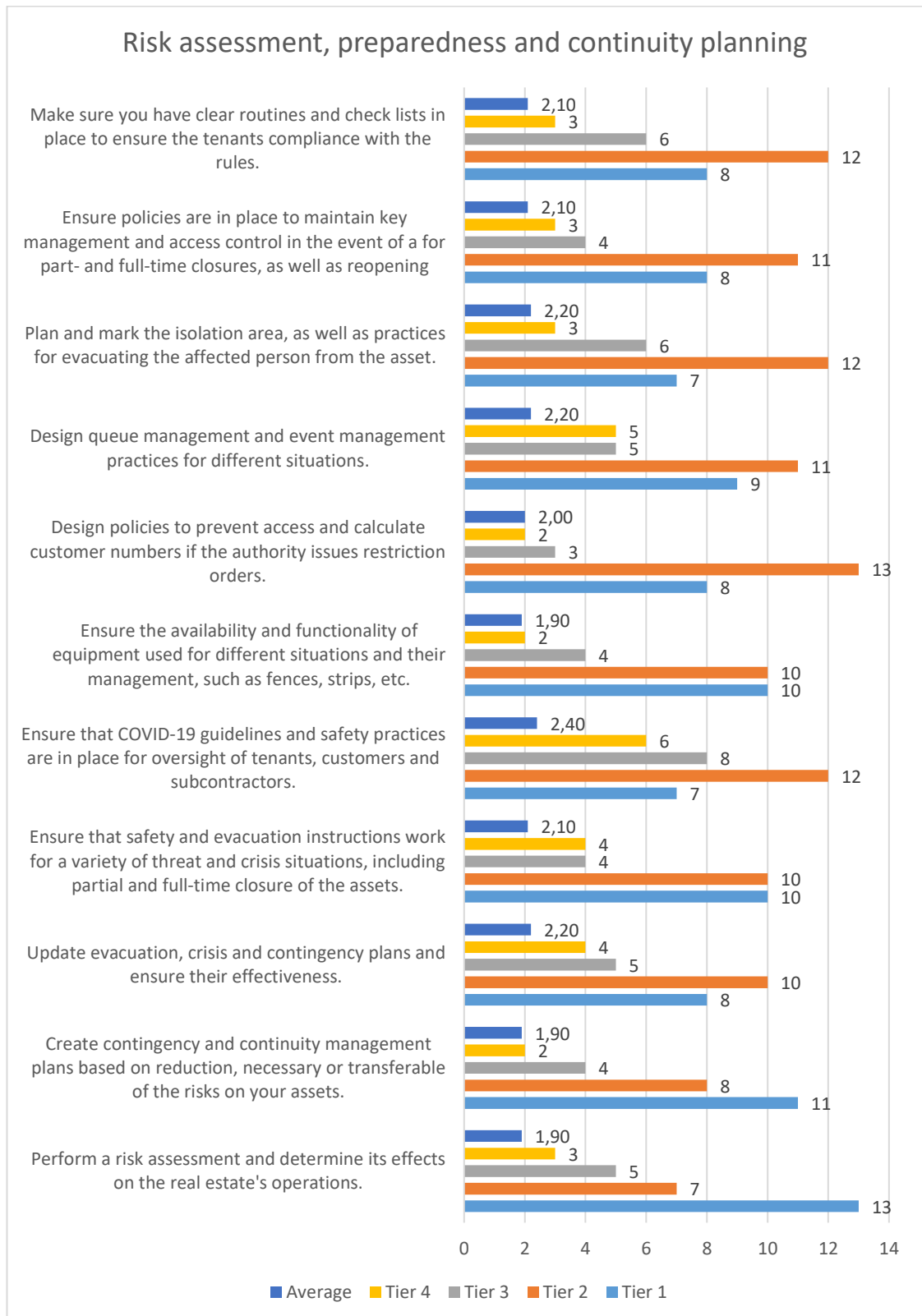


Figure 10: Survey, Comparison chart for the results, question 3. Risk assessment, preparedness, and continuity planning

6.4.3 Results for Property protection

The twelve questions covering the property protection control measures (Figure 11), we can also see that in all questions the answers vary in this area from tier one to tier four too. If we look at the averages of the survey, we can see that most of the measures get an average that varies from 1,90 to 2,40.

In eleven of the twelve questions, most respondents answered that the measures belong to Tier 1, before the start of the pandemic. These questions concerned:

- Test fire protection systems and related alarm systems
- Ensure the operation of backup power tools and UPS
- Test run the pumps and ensure operation in exceptional circumstances
- Ensure the function and accessibility of emergency exits and emergency exits, even in special situations / opening hours.
- Adjust the lighting and its automation to suit the usage of the space
- Check the condition and controls of HVAC equipment, as well as their locks in exceptional circumstances
- Check CCTV, access control and burglar alarm system controls, timings, maintenance, and operation in exceptional circumstances.
- Ensure that water quality and drainage are monitored and functional.
- Switch off the LPG supply and make sure that the line is depressurized
- Conduct property inspections indoors and outdoors
- Make sure that maintenance is up to date in all circumstances

One of the questions caused more dispersion between Tiers 1, 2, 3 and 4 it was:

- Ensure your HVAC systems are using 100% outside air and increase the ventilation on 2 hours before opening and 2 after closing hours

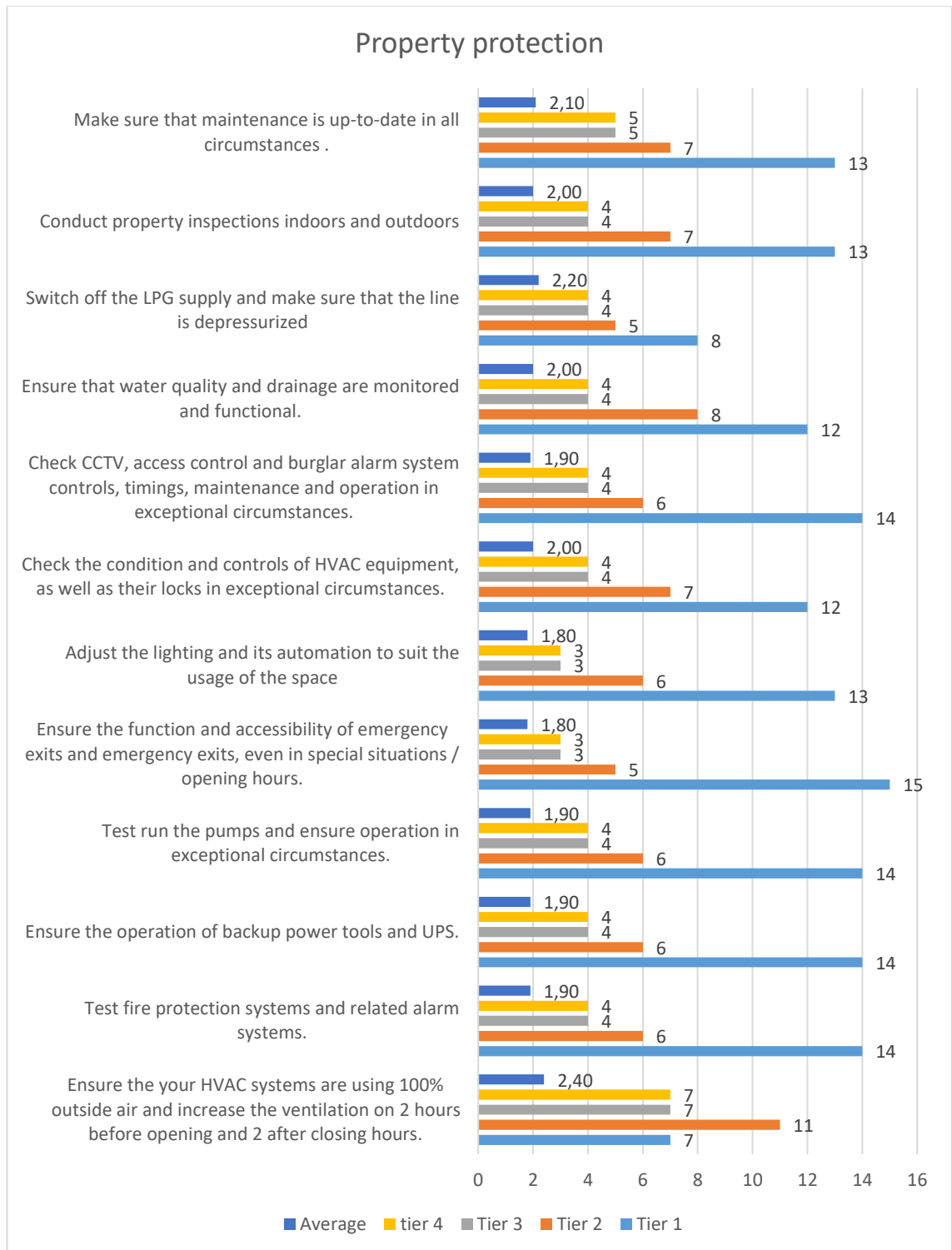


Figure 11: Survey, Comparison chart for the results, question 4. Property protection

6.4.4 Results for Tenant management

The eight questions covering the property protection control measures (Figure 12), we can see that the answers vary in this area also from tier one to tier four too. If we look at the averages of the survey, we can see that most of the measures get an average that is higher than in the questionnaires before and they vary from 2,20 to 2,30.

In two of the eight questions, the respondents answered that the measures belong to Tier 2, at this phase, the epidemic is at a stable level. These questions concerned:

- Ensure effective communication and follow-up with regular visits or online meetings
- Collaborate, support and plan, together with tenants, possible restrictions on the number of customers, management of queuing practices, customer guidance, etc. special situations
- Make delivery and storage plans for part- and full-time closures, as well as reopening

Two of the questions were clearly classified as Tier 1. These questions were related to:

- Maintain and update tenants' contact information lists for the communication, key management, and access policies.
- Keep the instructions and signs for the staff visible in all areas.

Three of the questions caused more dispersion between Tiers 1 and 2, they were

- Guide and make sure that the tenants will follow all the instructions given by the management about hygiene, distances, and protection
- Make sure that all infected areas are cleaned properly also in the tenants' spaces
- Create guidelines and policies for dealing with various closure and payment issues

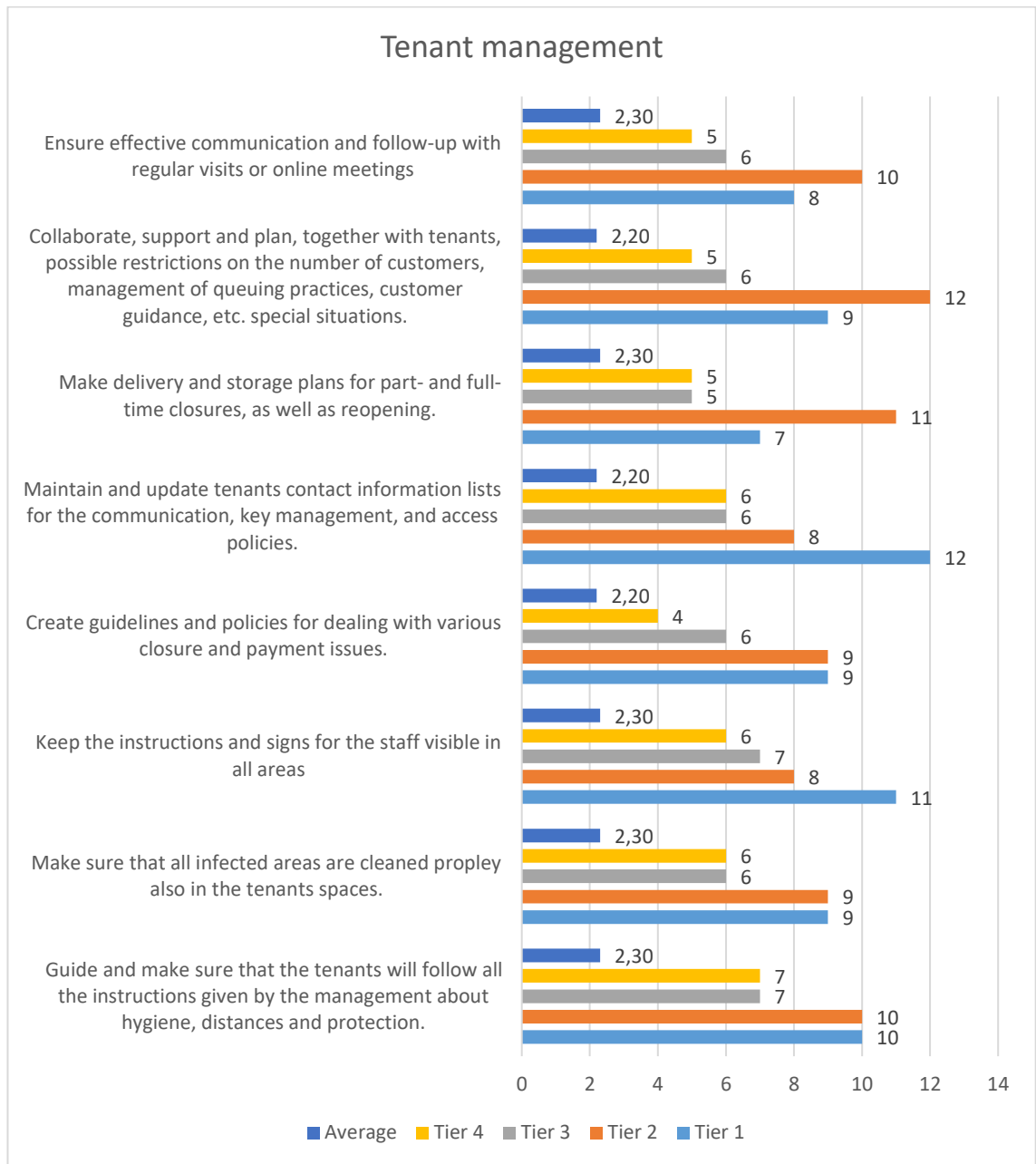


Figure 12: Survey, Comparison chart for the results, question 5. Tenant management

6.4.5 Results for Safety and security management

The thirteen questions covering the safety and security management control measures (Figure 13), we can see that the answers vary also in this area from tier one to tier four. If we look at the averages of the survey, we can see that most of the measures get an average that varies from 1,90 to 2,50.

In seven of the thirteen questions, most respondents answered that the measures belong to Tier 2. At this phase, the epidemic is at a stable level. These questions concerned:

- Require quality control and reporting on facility cleaning.
- Ensure that the cleaning chemicals used comply with the ECDC and WHO recommendations and ensure their availability.
- Make sure that the enhanced cleaning covers all contact surfaces, especially high-risk areas.
- Improve cleaning: in all spaces staff, office, storage, meeting, loading, waste station, goods handling, sanitary, and customer facilities.
- Ensure the resourcing, protection, and hygiene instructions of the subcontractors.
- Ask service providers to report checklists related to property maintenance for part- and full-time closures, as well as reopening.
- Check the practices for receiving and picking up goods, as well as their proper hygiene, safety distance, etc. practices.

Three of the questions were clearly classified as Tier 1. These questions were related to:

- Make a checklist and instructions on how to close, partially close, and open different spaces.
- Create the necessary contact list of services and the service providers with their contact information in connection with the closure, maintenance and opening of the asset.
- Maintain service lists, key, and contact information for stakeholders.

One question caused more dispersion between Tiers 1 and 2, it was

- Monitor and liaise with service providers and ask them for contingency and resourcing plans.

There were also two questions that varied more between Tier 1,2,3 and 4, these were about:

- Ensure that plans are in place to close, isolate, and disinfect the infected area and that they are operational in all situations.

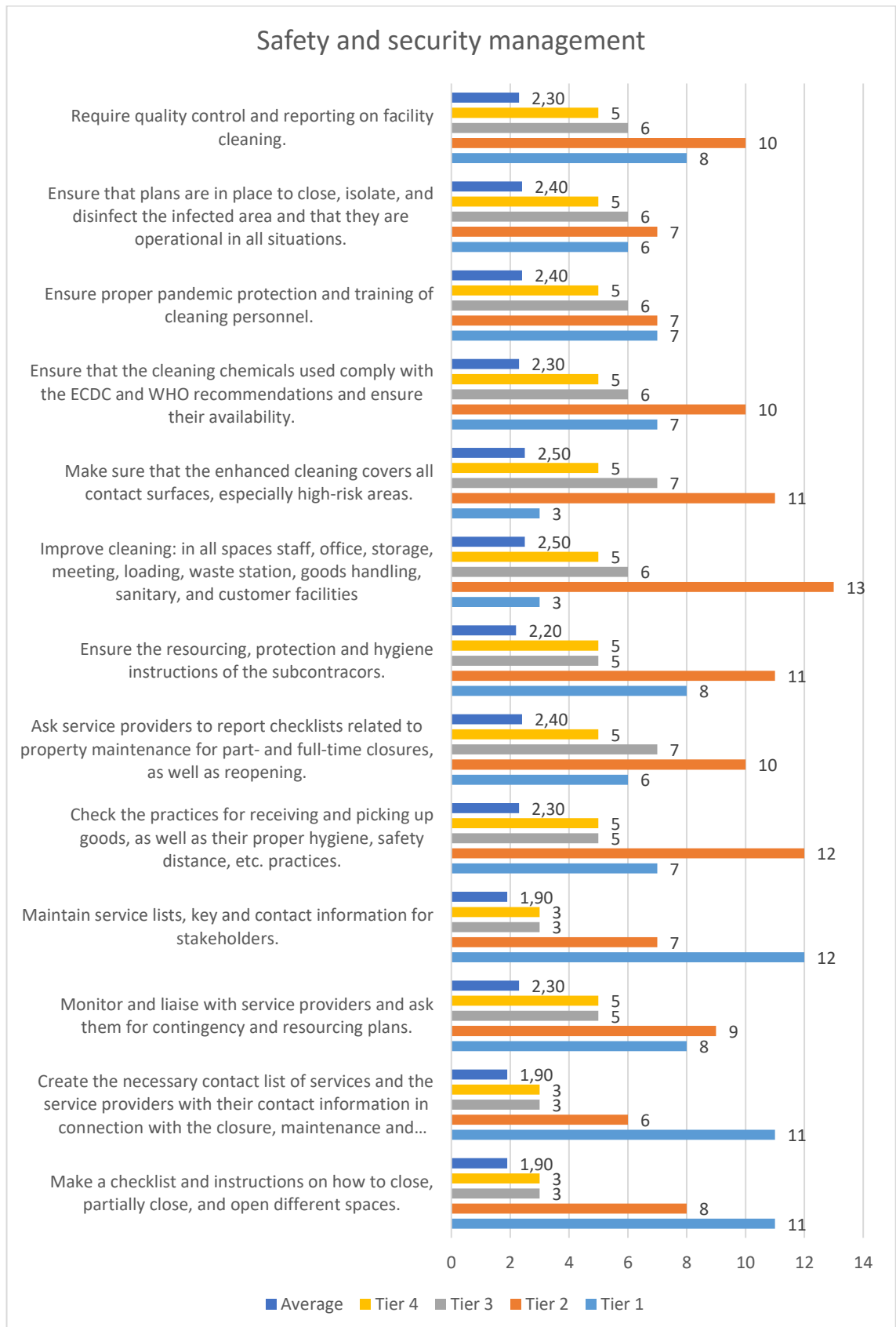


Figure 13: Survey, Comparison chart for the results, question 6. Safety and security management

6.4.6 Results for Visitor management

In the six questions covering the visitor management control measures (Figure 14), we can see that the answers vary in this area also from tier one to tier four. If we look at the averages of the survey, we can see that most of the measures get an average that is also higher than two and the average varies from 2,10 to 2,50.

In four of the six questions, the respondents answered that the measures belong to Tier 2, at this phase, the epidemic is at a stable level. These questions concerned:

- Consider using delivery services, especially for at risk-groups and quarantined persons.
- Consider offering differentiated / extended / early opening hours as a service, especially for those people who are at risk-group.
- Observe maintaining safety distances, directions of travel, queuing practices, hygiene practices, instructions, and signs in all customer premises, and in particular in places where queues may form, congestion or, if it is impossible to keep safety distances, the maximum number of persons allowed in the premises, etc.
- Also take into account people with physical and sensory impairments, as well as restrictions related to the language or age of the guidelines.

One of the questions was clearly classified as Tier 1. These questions were related to:

- Provide clear guidance on the premises, direction and information to customers on the COVID-19 guidelines.

One of the questions caused more dispersion between Tiers 1 and 2, it was:

- Make plans and practices to monitor and limit the number of visitors to the facilities, both in the asset premises and associated outdoor areas, parking garages, warehouses etc.

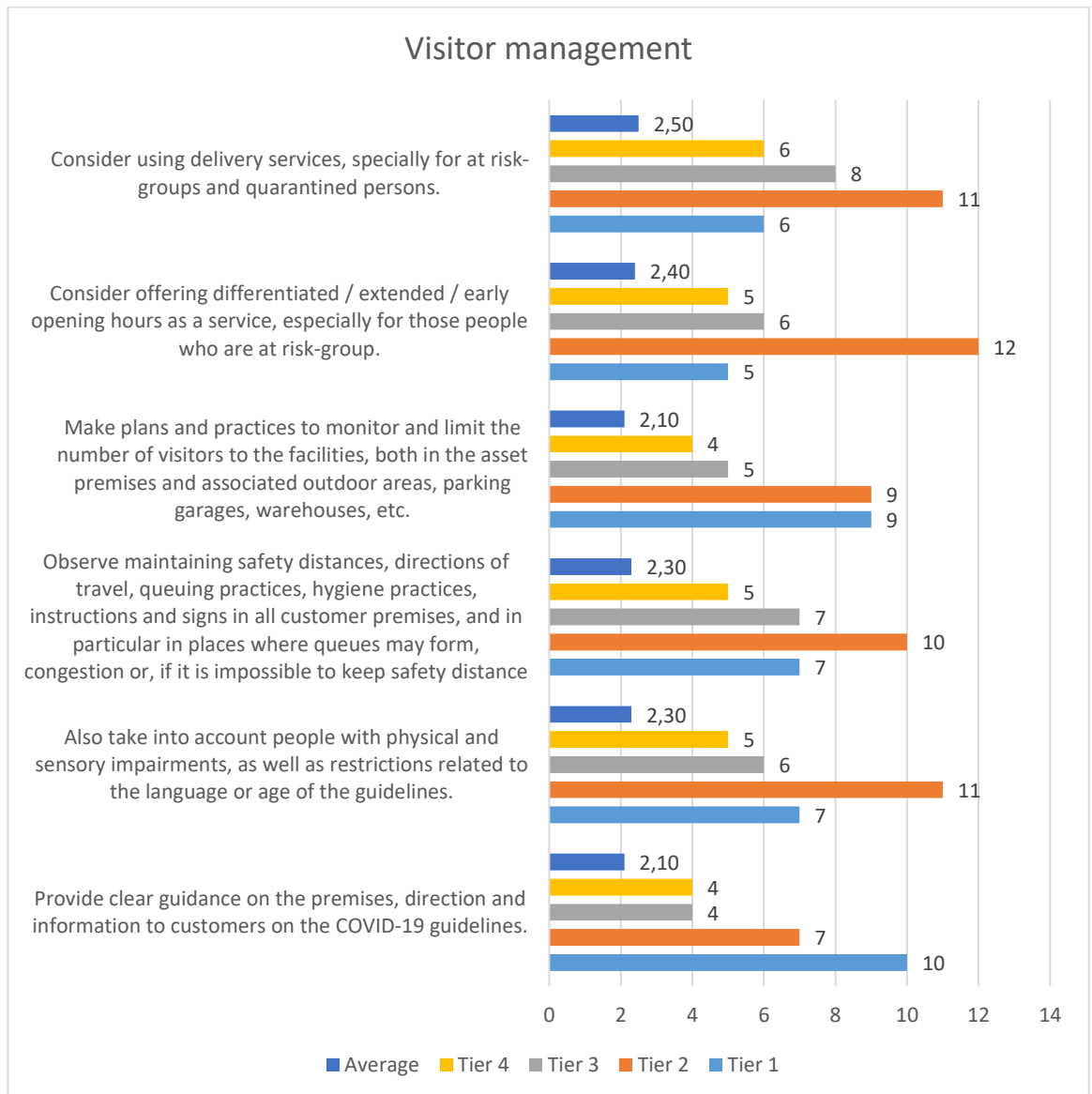


Figure 14: Survey, Comparison chart for the results, question 7. Visitor management

6.4.7 Results for Signs and instructions

In the ten questions covering the signs and instructions control measures (Figure 15), we can see that these answers also vary in this area also from tier one to tier four. If we look at the averages of the survey, we can see that also on this most of the measures get an average that is also higher than two and the average varies now from 2,40 to 2,60.

In six of the ten questions, the respondents answered that the measures belong to Tier 2, at this phase, the epidemic is at a stable level. These questions concerned:

- Modify the interiors in all rooms so that the safety distances in the seats, chairs, tables, etc. are implemented automatically. Stick, disperse, move or remove furniture so that safety distances are met automatically.
- Safety distances can be observed in all areas, e.g. toilet facilities, hand washing and toilet areas. Close every other device if it is not otherwise possible to observe the distances.
- All points collecting the queue should have distance labels clearly indicating the safety distance to be kept (Info, ticket machines, elevators, ATMs, etc.)
- Use the premises announcements and information boards to guide people with disabilities through the guidelines, rules and restrictions to be followed in the asset.
- Guide the entrances and exits through different doors, with clear signs in the guide.
- Directs people to follow only certain routes when needed, mark the routes to be used, e.g. with stickers.

One of the questions caused more dispersion between Tiers 1 and 2, it was:

- Provide the possibility to wash / disinfect hands in all places with tactile equipment, sanitary facilities, or food services (elevators, information boards, ATMs, restaurant facilities, loading docks, waste points etc.)

In three questions caused more the dispersion between Tiers 2 and 3, these were:

- Control the direction of people by dividing the aisles and guiding the parallel direction.
- Display instructions and signs at all entrances and provide hand washing or disinfection points at all entrances.
- Dismantle areas and objects that cannot be hygienically and controlled, such as unmanned playgrounds, children's shopping carts, amusement

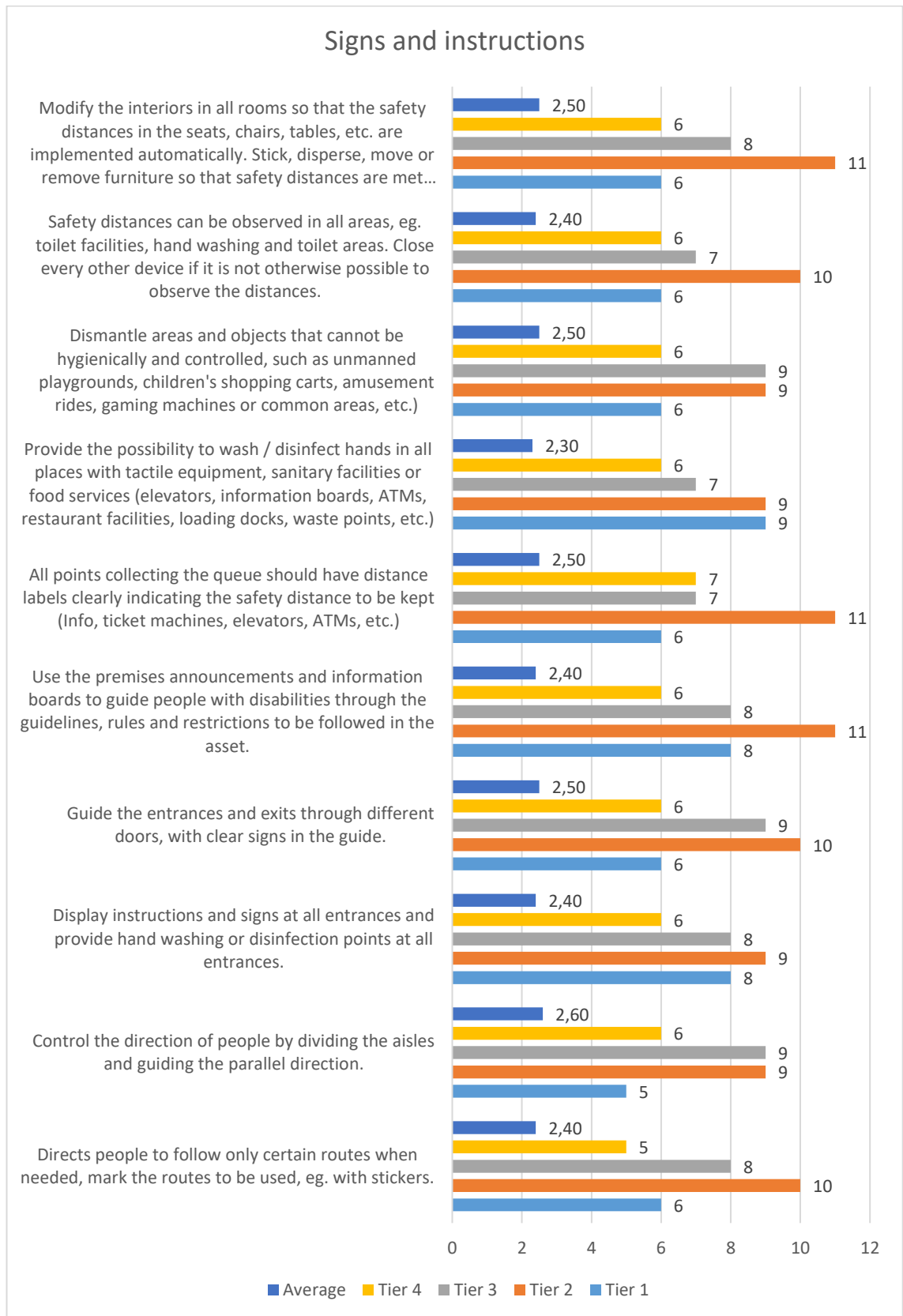


Figure 15: Survey, Comparison chart for the results, question 8. Signs and instructions

6.5 Analysis of survey

This chapter includes a theme review of the survey results, analysis of the results, and conclusions to the second research question. The analysis answers the question of whether it is possible to determine the effectiveness of control measures to correspond to a certain level of pandemic.

Based on this study and its responses, it is shown that mainly the respondents determined the control measures either for the tier one, before there is no pandemic, or to the tier two, when the epidemic is at a stable level. For the tier three, in the acceleration phase, the respondents determined clearly only three actions that were from property protection and the signs and instructions of the assets, to ensure that your HVAC systems are using 100% outside air and increase the ventilation on 2 hours before opening and 2 after closing hours, to control the direction of people by dividing the aisles and guiding the parallel direction and dismantle areas and objects that cannot be hygienically and controlled, such as unmanned playgrounds, children's shopping carts, amusement gaming machines or common areas and etc.

The survey consisted of seven sets of questions, it can be seen that questions in sets like risk management, preparedness and continuity planning, visitor management, tenant management, safety and security management and signs and instructions included more specific issues related to pandemic response. The sets in management and property protection clearly included more issues related to normal security management protocols and property maintenance measures.

Most of the measures were determined to Tier 1 in Management and Property protection. The results of the control measures and the reasons why the respondents have decided to take quite a number of measures before the start of the pandemic (Tier 1) may be that the questions raised relate to normal aspects of corporate related safety management. The actions could be seen as Juha Leppänen writes in (Leppänen 2006, 58) about the corporate security is an integral part of a company's overall risk management and continuity planning, so it is also an essential part of the management practices and day-to-day routines of the organization and its personnel.

In questionnaires about Risk assessment, preparedness and continuity planning-, Safety and security management- and Visitor management measures most of the actions were determined to Tier 2. These questions and measures could be seen more clearly as part of the actions against the pandemic itself, and it was easier to conclude that they were defined to (Tier 2.) the pandemic stable level.

It was clearly more difficult for respondents to identify measures that would clearly be limited to the stages of (Tier 3) pandemic acceleration- or to the (Tier 4) community transmission phase. Only in Signs and instructions measurements, the scatter was larger, and the measures were more clearly seen to belong to (Tier 2) the pandemic stable level and a few measures even in the (Tier 3) pandemic acceleration phase. From the risk management and continuity planning perspective this is quite relevant, in the pandemic acceleration and community transmission phase the pandemic has already spread widely, and the authorities' actions could already cause harm to conduct the business, so to manage the risk it is more important to everything you can to prevent the risk from materializing.

The results of the survey suggest that a list of measures to combat pandemics could be possible to form a coherent action plan for the real estate industry based on the different pandemic levels. But as we could see from the survey and the responses, that it might not be the best way to execute it through the survey model. The survey design could be too complex or inadequate way to get the best results.

This kind of survey model shows out the disadvantages of the survey. The challenges of the survey are that we cannot know how seriously the respondents have taken the survey, how successful the questions or the answers given have been, and we cannot be completely sure how clear and familiar the respondents are about the topic in general (Hirsjärvi, et al. 2013, 195). The respondents can draw different conclusions about the questions, as well as the pandemic levels created, or they might misunderstand the ratings. From the surveys, it is said that it is not clear how successful the options given, have been from the respondents' point of view, which is why misunderstandings are difficult to control or impossible to avoid. (Hirsjärvi, et al. 2013, 195.)

7 Conclusions

The aim of this thesis was to find out how the pandemic control measures of the authorities and the states pandemic continuity plans have affected the real estate business and would the created pandemic control measures by Real estate industry standards, could be categorized as a pandemic prevention action list, according to the levels of existing tiers of pandemic phases.

State legislation, pandemic control measures and the related legislation, as well as the regulations, recommendations and instructions issued by the authorities, guide the entire industry, and affect the ability of companies and organizations to survive and continue their operations. On the other hand, the operating culture of the industry and organizations, risk

management capability and continuity management plans, as well as implementation also affect the success of the pandemic management.

To get the understanding about pandemic continuity management model and control measures, the pandemic control model was examined from the perspectives of the government and authorities' security and safety management model. The model used was the pandemic management model presented by the WHO and Finnish legislation, and its implementation at the national level and through the authorities of the Ministry of Social Affairs and Health (STM) was presented.

Risk management and business continuity management belong inextricably together. In order to implement and lead pandemic response measures effectively, the principles, framework and processes of risk management and continuity management need to be understood. Risks and the severity, effectiveness, duration, and object of their consequences can be used as a starting point to determine its consequences. (Eerola & Louto 2000, 34.)

To manage safety in a way that is appropriate for the industry, it is important to understand the requirements of the operating environment. The understanding of the business is needed and to control the pandemic, it is needed to understand where you have most of the people, there you need to monitor and control the spread of the virus. All activities that are significant for strategic management, should be defined as protected activities. The objects to be protected, are all those functions and parts of the processes, which have an impact on the results. (Leppänen 2006, 72.)

The purpose of the interviews was to find out the challenges and successes of the national pandemic continuity management and authorities control measures. The results of the interviews showed that five areas for improvement were found. Of course, country-specific differences need to be considered, but in general, research can highlight the reaction and response times, maintaining public confidence, weaknesses in legislation and policy regulation, gaps in industry knowledge and understanding the effects of actions and gaps in communication of the action measures. The successes were reflected in well-functioning communication and information channels of authorities, in general governments' good continuity and action plans and the successful work of the authorities and governments in the hard situation.

The aim of this thesis was not to produce a directly implementable model of pandemic response measures, the implementation remains the task of the industry leaders, authorities, and other stakeholders. In this thesis, only the possibility of its implementation and the example of a practical implementation model for the classification of pandemic response measures was investigated.

Through effective measures, recommendations, and guidelines, developed in collaboration with industry leaders, authorities, and other stakeholders, combined with the spread of a pandemic the interpretation and enforcement of legislation, requirements and restrictions would be more effective and would ensure business continuity even in difficult pandemic situations.

However, in order to be effective, these kinds of international guidelines should also take into account cultural behaviors and risk thinking. Theoretical concept of risk in cultural theory is always both structural and constructive. According to the cultural theoretical view, the perception of risk is part of a larger whole and risk is the result of the interaction of different social groups. Cultural models influence the value choices of individuals and social groups, values in accordance with the adopted model are monitored, and models that oppose them are rejected. (Leppänen 2006, 39.)

Like earlier presented on risk management, the companies should take in to account also the comprehensive scenario planning the direct effects of the larger-scale disruptions as well as the secondary effects to take into account also the stakeholders' expectations as in article A Supply Chain View of the Resilient Enterprise (Sheffi & Rice Jr, 2005) were presented. Also Julia Taari made an researched in her thesis about the behavior of people in shopping malls during the COVID-19, the results of feeling safe to go to the shopping malls showed (Taari 2020, 31) that the feeling of security varied between centers, many (32%) respondents felt, that because you cannot influence other people's behavior and the compliance with the rules were not monitored, they felt unsafe.

To support the implementation of the pandemic management model for the Real estate property management companies and assets, the result of this thesis is to present an example of a practical implementation model for the classification of pandemic response measures (Table 9). As a result of this thesis, it has been possible to produce a model, where applicable, for the classification of pandemic control measures according to the stages of pandemic spread. According to the author of the thesis, the development of a fully completed model requires further research and development.

Management	
Tier 1	<p>Develop a clear COVID-19 policy and set goals and priorities.</p> <p>Establish a preparedness / crisis team and ensure its guidance and expertise.</p> <p>Define and record responsibilities and obligations for the asset management, also consider and prepare for various shifts, successions, and surrogate practices.</p> <p>Develop policies and plans for the asset, for part- and full-time closures, as well as reopening.</p> <p>Develop communication plans and ensure communication channels, as well as communication effectiveness.</p> <p>Establish clear policies for overseeing property operations.</p> <p>Make sure your management team is ready for the remote work or quarantine.</p> <p>Other, What? To have framework in place before</p> <p>Other, What? Risk Assessment and counter measures</p> <p>Other, What? To have in agreements before with tenants</p>
Tier 2	<p>Prepare and maintain an asset and rental-specific snapshot of open, closed spaces or their special arrangements and relate contact lists for closing and opening and keep them up to date.</p> <p>Secure that you know a clear way to deal with rent arrears and what action you can legally take.</p> <p>Secure insurance and any claims of insurance companies in exceptional circumstances.</p> <p>Create clear routines and channels for the cooperation between authorities to maintain a clear picture of changes in legislation and guidelines for a pandemic control measure e.g., health monitoring, hygiene practices, mask recommendations, distance practices, and parallel movement.</p> <p>Other, What? Prepare the unemployment process in case of lockdown</p>
Risk assessment, preparedness, and continuity planning	
Tier 1	<p>Perform a risk assessment and determine its effects on the real estate's operations.</p> <p>Create contingency and continuity management plans based on reduction, necessary or transferable of the risks on your assets.</p>
Tier 2	<p>Update evacuation, crisis and contingency plans and ensure their effectiveness.</p> <p>Ensure that safety and evacuation instructions work for a variety of threat and crisis situations, including partial and full-time closure of the assets.</p> <p>Ensure that COVID-19 guidelines and safety practices are in place for oversight of tenants, customers, and subcontractors.</p> <p>Ensure the availability and functionality of equipment used for different situations and their management, such as fences, strips, etc.</p> <p>Design policies to prevent access and calculate customer numbers if the authority issues restriction orders.</p> <p>Design queue management and event management practices for different situations.</p>

	<p>Plan and mark the isolation area, as well as practices for evacuating the affected person from the asset.</p> <p>Ensure policies are in place to maintain key management and access control in the event of a for part- and full-time closures, as well as reopening</p> <p>Make sure you have clear routines and check lists in place to ensure the tenants compliance with the rules.</p>
Property protection	
Tier 1	<p>Test fire protection systems and related alarm systems.</p> <p>Ensure the operation of backup power tools and UPS.</p> <p>Test run the pumps and ensure operation in exceptional circumstances.</p> <p>Ensure the function and accessibility of emergency exits and emergency exits, even in special situations / opening hours.</p> <p>Adjust the lighting and its automation to suit the usage of the space</p> <p>Check the condition and controls of HVAC equipment, as well as their locks in exceptional circumstances.</p> <p>Check CCTV, access control and burglar alarm system controls, timings, maintenance, and operation in exceptional circumstances.</p> <p>Ensure that water quality and drainage are monitored and functional.</p> <p>Switch off the LPG supply and make sure that the line is depressurized</p> <p>Conduct property inspections indoors and outdoors</p> <p>Make sure that maintenance is up to date in all circumstances.</p>
Tier 2	<p>Ensure the HVAC systems are using 100% outside air and increase the ventilation on 2 hours before opening and 2 after closing hours.</p>
Tenant management	
Tier 1	<p>Keep the instructions and signs for the staff visible in all areas</p> <p>Maintain and update tenants contact information lists for the communication, key management, and access policies.</p>
Tier 2	<p>Guide and make sure that the tenants will follow all the instructions given by the management about hygiene, distances, and protection.</p> <p>Make sure that all infected areas are cleaned properly also in the tenants' spaces.</p> <p>Create guidelines and policies for dealing with various closure and payment issues.</p> <p>Make delivery and storage plans for part- and full-time closures, as well as reopening.</p> <p>Collaborate, support and plan, together with tenants, possible restrictions on the number of customers, management of queuing practices, customer guidance, etc. special situations.</p> <p>Ensure effective communication and follow-up with regular visits or online meetings</p>
Safety and security management	
Tier 1	<p>Make a checklist and instructions on how to close, partially close, and open different spaces.</p> <p>Create the necessary contact list of services and the service providers with their contact information in connection with the closure, maintenance and opening of the asset</p> <p>Maintain service lists, key, and contact information for stakeholders.</p>

Tier 2	<p>Monitor and liaise with service providers and ask them for contingency and resourcing plans.</p> <p>Check the practices for receiving and picking up goods, as well as their proper hygiene, safety distance, etc. practices.</p> <p>Ask service providers to report checklists related to property maintenance for part- and full-time closures, as well as reopening.</p> <p>Ensure the resourcing, protection, and hygiene instructions of the subcontractors.</p> <p>Improve cleaning: in all spaces staff, office, storage, meeting, loading, waste station, goods handling, sanitary, and customer facilities</p> <p>Make sure that the enhanced cleaning covers all contact surfaces, especially high-risk areas.</p> <p>Ensure that the cleaning chemicals used comply with the ECDC and WHO recommendations and ensure their availability.</p> <p>Ensure proper pandemic protection and training of cleaning personnel.</p> <p>Ensure that plans are in place to close, isolate, and disinfect the infected area and that they are operational in all situations.</p> <p>Require quality control and reporting on facility cleaning.</p>
Visitor management	
Tier 1	<p>Provide clear guidance on the premises, direction, and information to customers on the COVID-19 guidelines.</p>
Tier 2	<p>Also take into account people with physical and sensory impairments, as well as restrictions related to the language or age of the guidelines.</p> <p>Observe maintaining safety distances, directions of travel, queuing practices, hygiene practices, instructions, and signs in all customer premises, and in particular in places where queues may form, congestion or, if it is impossible to keep safety distances, the maximum number of persons allowed in the premises, etc.</p> <p>Make plans and practices to monitor and limit the number of visitors to the facilities, both in the asset premises and associated outdoor areas, parking garages, warehouses, etc.</p> <p>Consider offering differentiated / extended / early opening hours as a service, especially for those people who are at risk-group.</p> <p>Consider using delivery services, especially for at risk-groups and quarantined persons.</p>
Signs and instructions	
Tier 2	<p>Directs people to follow only certain routes when needed, mark the routes to be used, e.g., with stickers.</p> <p>Display instructions and signs at all entrances and provide hand washing or disinfection points at all entrances.</p> <p>Guide the entrances and exits through different doors, with clear signs in the guide.</p> <p>Use the premises announcements and information boards to guide people with disabilities through the guidelines, rules, and restrictions to be followed in the asset.</p> <p>All points collecting the queue should have distance labels clearly indicating the safety distance to be kept (Info, ticket machines, elevators, ATMs, etc.)</p>

	<p>Provide the possibility to wash / disinfect hands in all places with tactile equipment, sanitary facilities, or food services (elevators, information boards, ATMs, restaurant facilities, loading docks, waste points, etc.)</p> <p>Safety distances can be observed in all areas, e.g., toilet facilities, hand washing and toilet areas. Close every other device if it is not otherwise possible to observe the distances.</p> <p>Modify the interiors in all rooms so that the safety distances in the seats, chairs, tables, etc. are implemented automatically. Stick, disperse, move, or remove furniture so that safety distances are met automatically.</p>
Tier 3	<p>Control the direction of people by dividing the aisles and guiding the parallel direction.</p> <p>Dismantle areas and objects that cannot be hygienically and controlled, such as unmanned playgrounds, children's shopping carts, amusement rides, gaming machines or common areas, etc.</p>

Table 9: Action Plan for Real estate industry pandemic control measures and tiers.

8 Summary and self-assessment

The COVID-19 pandemic has affected the whole world and led into a dramatic loss of human lives, over 270 000 000 people has been affected until 12th of December 2021, by the Coronavirus and more than 5 320 000 lives has been lost (World Health Organization 2021.) The economic and social disruption caused by the pandemic is devastating, it has challenged the public health, food systems and to the working environment.

As a purpose of this thesis was to investigate through the interviews, that how government operations and state pandemic continuity plans has affected the real estate business and would it be possible to determine the effectiveness of the control measures to match a particular pandemic level.

The research should always begin with an understanding of the research environment. At the beginning of the thesis, was reviewed the international recommendations and guidelines for the operation of real estate business during the pandemic by ECDC and WHO, which are guiding international actions during the pandemic.

As national legislations and authorities' activities play a significant role in the real estate industry management, but it varies greatly from one a country to another, this thesis examined the impact of the Finnish government's and the authorities' pandemic management and continuity planning activities on the industry. In addition, the phases, and levels of control of the coronavirus epidemic's that were used in this thesis to describe the tiers of the stages of the spread of the pandemic, the three-stage description was determined by Finnish Ministry of Social Affairs and health.

The thesis progressed through a theoretical framework of risk- and continuity management, which have been identified as key tools for the organizations in security and crisis management. The risk management approach was described in the ISO 3100 standard through its threefold principles, framework, and the processes themselves. It illustrates risk management in external and internal operating environments, and all the organizations needs to be understood in managing the pandemic related global risks.

The aim of this thesis was approached through two research questions.

- How government operations and state pandemic continuity plans affect the real estate business?

The government's operations and states pandemic continuity plans affect real estate businesses in many ways. The effects are determined by the legislative and regulatory provisions and guidelines related to the current pandemic situation, which ensure that the state administration manages the pandemic and prevents it from spreading. By these measures the government ensures the resilience of health care through various restrictions, closure measures, hygiene requirements and staff numbers.

In the real estate sector, their effects can mainly be managed through different kinds of risk and business continuity management tools, but at worst, they should be ready even in the closure and reopening of the businesses. The government's continuity and action plans are mainly built on to protect the carrying capacity of public health services and the operation of public services in a pandemic situation, it was not designed to consider the sectoral differences between the industries and the applicability of the guidelines and regulations to their business. The legislation was at times too straightforward to fit into the business industry and the authorities failed to understand the impact of their decisions or the legislation was too hardly presented to understand how to interpret it to an action.

- Would it be possible to determine the effectiveness of the control measures to match a particular pandemic level?

The survey was based on the guide to industry best practices for managing a corona pandemic and its safety management checklist, produced for a Finnish Council of Shopping centers. The purpose of the survey was to find out, would it be possible to determine the effectiveness of the control measures to match a particular pandemic level and therefor to help the management to clear out the priority of the pandemic prevention actions. The survey showed that it would be possible, but it was not the most comprehensive manner to do so, because the disadvantages of the surveys became clear in the collection of responses.

The Action plan (Table 9) for pandemic control measures can be used as a basis for the real estate assets and property management companies. Understanding your business, means straighten out your risks and opportunities, with the business impact analyses (BIA) and risk assessment tools. There should be own action plan for every six core COVID-19 management areas, they should be created through this pandemic control measures and tiers. To create such action plans the management team must identify the risks create a business impact analysis. Evaluate key and likely scenarios affecting your operations.

When the pandemic accrues, then the Action plan (Table 9) can be used as a framework for creating the plans and checklists as finding solutions to keep the business running. As it was earlier mentioned (SFS-EN ISO 22313:2020:en, 29-30) the business continuity plans, and procedures enable organization to see their responsibilities, actions, and communication methods the exercise will give them awareness and competency to develop and evaluate the plans. Short business continuity framework for real estate assets and property management companies has been described in (Appendix 4).

If we wanted to make the list of the pandemic control measures and tiers more efficient for the whole real estate industry, it should be done in collaboration with industry leaders, authorities and other stakeholders and it should also take better account of the various voluntary standardized and certified pandemic management measures, population management actions, vaccine certificates and different kind of possibility to give negative test results, which could prevent for example the complete closure of several premises in the pandemic acceleration- or to the community transmission phases.

The goal of the thesis was ambitious, but perhaps even too ambitious due to the ever-changing pandemic situation, legislation, and recommendations. Also, the timing and the interest of the people for the pandemic was quite low at the time of the interviews and the survey because the pandemic situation had improved. The vaccinations in many countries had started and the number of infections had fallen during the summer and fall 2021. But as we could see, only just before December 2021, there came up a new variant from South Africa called Omicron variant, that could spread more easily than Delta variant and could possibly bypass the protection afforded by vaccines. Most of at least European countries and U.S.A. for example, cut off the air traffic from South Africa, and restricted entry from some of the countries from the southern Africa, but it did not help, the virus spread anyway.

The situation is constantly alive. New more or less dangerous variants can still emerge anytime and anywhere. Governments must be prepared to adapt control measures to ensure the capacity of health care and the functioning of society as well as ensuring the operation of companies. Now that the pandemic has run out of hands and the variant currently in power is

highly susceptible but does not nearly as often cause serious disease transformation, authorities have also criticized the treatment of the state pandemic.

Mika Salminen, Director of the Health Security Department at the National Institute for Health and Welfare (THL), criticizes the way in which the treatment of the corona crisis has been managed. He says that “he sees problems, especially in the fact that the effects of various measures on the treatment of non-coronary epidemics have not been sufficiently assessed” and that “Some kind of multi-sector team could have been good at bringing things together between politicians and experts. Not deciding but thinking of alternatives”. (Niemi, L. 2002).

What should be further explored and considered would be different global international pandemic management measures for different sectors, not only from a health care perspective, but also to ensure the functioning of societies, the functioning of national and international trade through various commonly agreed management measures.

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Appendix 1: Interviews

Interviews

1. What do you think is the most important things that should be in place in the COVID-19 pandemic control measures for real estate assets and property management companies?
2. What kind of national contingency plan for an influenza pandemic for your country has been made?
 - a. has it been communicated to the public?
3. How well has the plans been working?
 - a. what do you think is the main success/ fails in it?
4. How have the authorities succeeded to communicate the phases of pandemic and the changes in legislation, restrictions, orders, or guidance's?
5. What channels they are using to communicate these changing roles to real estate companies?

Appendix 2: Survey

Cover letter

Summer 2021

Minna Länsimies

Laurea University of Applied Sciences, Finland

Master's Degree Program in Safety, Security and Risk Management

Dear Sir or Madam,

I am doing my MBA thesis on COVID-19 pandemic control measures for real estate assets and property management companies. The purpose of survey is to create a 4-level of action approach to pandemic management control measures. I would kindly ask you to fill up the survey and to answer each question carefully by choosing the most appropriate answer option from the level 1 to 4, that you think is the right option to take the alleged action.

Before every claim I have a reminder of the levels and what they mean. Then you only have to choose one of the levels of the pandemic that you think, this kind of option should be taken into action.

What measures do you consider adequate at level tier 1, tier 2, tier 3 or tier 4

Tier 1: There is no pandemic at this phase

Tier 2: At this phase, the epidemic is at a stable level.

Tier 3: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.


Answering the survey is optional. Questions will be answered anonymously. All information is treated confidentially, not individual responses cannot be identified. The survey is completed in 15 to 20 minutes. It is important that you answer all the questions. Your answers will help develop the Pandemic control measures for the upcoming generations.

Yours faithfully,

Minna Länsimies

Appendix 3: Survey questions

Covid-19 pandemic control measures for real estate assets and management companies

 Pakolliset kentät merkitään asteriskilla (*) ja ne tulee täyttää lomakkeen viimeistelemiseksi.

1. Identification *

Position

Company

Region

Country

2. Management *

What measures do you consider adequate at level 1, 2, 3, 4

Tier 1: There is no pandemic at this phase

Tier 2: At this phase, the epidemic is at a stable level.

Tier 3: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

	Tier 1	Tier 2	Tier 3	Tier 4
Develop a clear policy and set goals and priorities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Establish a preparedness / crisis team and ensure its guidance and expertise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Define and record responsibilities and obligations for the asset management, also consider and prepare for various shifts, successions and surrogate practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Develop policies and plans for the asset for part- and full-time closures, as well as reopening.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepare and maintain a asset and rental-specific snapshot of open, closed spaces or their special arrangements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Tier 1	Tier 2	Tier 3	Tier 4
Make sure you know a clear way to deal with e.g. rent arrears and what action you can legally take.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Secure insurance and any claims of insurance companies in exceptional circumstances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create contact lists for closing and opening and keep them up to date.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Develop communication plans and ensure communication channels, as well as communication effectiveness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Establish clear policies for overseeing mall operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Follow the instructions and require all parties operating in the asset to follow health monitoring, hygiene practices, mask recommendations, distance practices, and parallel movement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make sure you have a computer and the necessary relevant papers with you if you need to stay away from work or quarantine.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create clear routines and channels for the cooperation between authorities to maintain a clear picture of changes in legislation and guidelines for a pandemic control measures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Risk assessment, preparedness and continuity planning *

What measures do you consider adequate at level 1, 2, 3, 4

Tier 1: There is no pandemic at this phase

Tier 2: At this phase, the epidemic is at a stable level.

Tier 3: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

Tier 1 Tier 2 Tier 3 Tier 4

	Tier 1	Tier 2	Tier 3	Tier 4
Perform a risk assessment and determine its effects on the real estate's operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create contingency and continuity management plans based on reduction, necessary or transferable of the risks on your assets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Update evacuation, crisis and contingency plans and ensure their effectiveness in nearby areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that safety and evacuation instructions work for a variety of threat and crisis situations, including partial and full-time closure of the assets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that COVID-19 guidelines and safety practices are in place for oversight of tenants, customers and subcontractors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure the availability and functionality of equipment used for different situations and their management, such as fences, strips, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design policies to prevent access and calculate customer numbers if the authority issues restriction orders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design queue management and event management practices for different situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan and mark the isolation area, as well as practices for evacuating the affected person from the asset.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure policies are in place to maintain key management and access control in the event of a partial lockout and lockout.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure you have clear routines and check lists in place to check the tenants compliance with the rules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Property protection *

What measures do you consider adequate at level 1, 2, 3, 4

Tier 1: At this phase, the epidemic is at a stable level.

Tier 2: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional

incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 3: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

	Tier 1	Tier 2	Tier 3	tier 4
Ensure the your HVAC systems are using 100% outside air and increase the ventilation on 2 hours before opening and 2 after closing hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test fire protection systems and related alarm systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure the operation of backup power tools and UPS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test run the pumps and ensure operation in exceptional circumstances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure the function and accessibility of emergency exits and emergency exits, even in special situations / opening hours.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adjust the lighting and its automation to suit the usage of the space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the condition and controls of HVAC equipment, as well as their locks in exceptional circumstances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check CCTV, access control and burglar alarm system controls, timings, maintenance and operation in exceptional circumstances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that water quality and drainage are monitored and functional.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Switch off the LPG supply and make sure that the line is depressurized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conduct property inspections indoors and outdoors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make sure that maintenance is up-to-date even during shutdowns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Tenat management *

What measures do you consider adequate at level 1, 2, 3, 4

Tier 1: At this phase, the epidemic is at a stable level.

Tier 2: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 3: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

	Tier 1	Tier 2	Tier 3	Tier 4
Guide and make sure that the tenants will follow all the instructions given by the management about hygiene, distances and protection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make sure that the infected areas are cleaned properly also in the tenants spaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Keep the instructions and signs for the staff visible in all areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create guidelines and policies for dealing with various closure and payment issues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintain and update tenants contact information lists for the communication, key management, and access policies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make delivery and storage plans for lockouts and reopening.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaborate, support and plan, together with tenants, possible restrictions on the number of customers, management of queuing practices, customer guidance, etc. special situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure effective communication and follow-up with regular visits or online meetings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Safety and security management *

What measures do you consider adequate at level 1, 2, 3, 4

Tier 1: There is no pandemic at this phase

Tier 2: At this phase, the epidemic is at a stable level.

Tier 3: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

	Tier 1	Tier 2	Tier 3	Tier 4
Make a checklist and instructions on how to close, partially close, and open different spaces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Create the necessary contact list of services and the service providers with their contact information in connection with the closure, maintenance and opening of the asset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitor and liaise with service providers and ask them for contingency and resourcing plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintain service lists, key / pass and contact information for service center staff and stakeholders, including in exceptional circumstances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the practices for receiving and picking up goods, as well as their proper hygiene, safety distance, etc. practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ask service providers to report checklists related to maintenance, movement monitoring, closure, or partial closure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure the resourcing, protection and hygiene instructions of the company providing the security services.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve cleaning: in all spaces staff, office, storagemeeting, loading, waste station, goods handling and sanitary, and customer facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make sure that the enhanced cleaning covers all contact surfaces, especially high-risk areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communicate effectively and make sure the cleaning of infected areas is under the control of the management team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure that the cleaning chemicals used comply with the ECDC and WHO recommendations and ensure their availability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ensure proper pandemic protection and training of cleaning personnel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Tier 1	Tier 2	Tier 3	Tier 4
Ensure that plans are in place to close, isolate, and disinfect the infected area and that they are operational in all situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Require quality control and reporting on facility cleaning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Visitor management *

What measures do you consider adequate at level 1, 2, 3, 4.

Tier 1: At this phase, the epidemic is at a stable level.

Tier 2: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 3: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

	Tier 1	Tier 2	Tier 3	Tier 4
Provide clear guidance on the premises, direction and information to customers on the COVID-19 guidelines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the guidance, also take into account people with physical and sensory impairments, as well as restrictions related to the language or age of the guidelines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Observe e.g. maintaining safety distances, directions of travel, queuing practices, hygiene practices, instructions and signs in all customer premises, and in particular in places where queues may form, congestion or, if it is impossible to keep safety distances, the maximum number of persons allowed in the premises, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make sure you have plans and practices in place to monitor and limit the number of visitors to the facilities, both in the asset premises and associated outdoor areas, parking garages, warehouses, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Tier 1	Tier 2	Tier 3	Tier 4
Consider offering differentiated / extended / early opening hours as a service, especially for those at risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider using delivery services, specially for at-risk groups and quarantined persons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider the use of facilities and the possibility of preventing contamination, based on a risk assessment. If the use, hygiene and control requirements of the premises cannot be met, consider whether it is possible to close the premises indefinitely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Signs and instructions *

What measures do you consider adequate at level 1, 2, 3.

Tier 1: At this phase, the epidemic is at a stable level.

Tier 2: In the acceleration phase, the spread of the epidemic is beginning to speed up, the regional incidence of cases is higher than at the baseline level and there are several local and regional transmission chains.

Tier 3: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

Tier 4: During the community transmission phase, the epidemic continues to accelerate and cases are spreading regionally or more widely throughout the population. Tracing is becoming more difficult.

	Tier 1	Tier 2	Tier 3	Tier 4
Directs people to follow only certain routes when needed, mark the routes to be used, eg. with stickers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If necessary, control the direction of people by dividing the aisles and guiding the parallel direction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Display instructions and signs at all entrances and provide hand washing or disinfection points at all entrances, Remind to keep safety clearances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If necessary, guide the entrances and exits through different doors, with clear signs in the guide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use the premises announcements and information boards to guide people with disabilities through the guidelines, rules and restrictions to be followed in the asset.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Tier 1	Tier 2	Tier 3	Tier 4
Make sure that all points collecting the queue have distance labels clearly indicating the safety distance to be kept (Info, ticket machines, elevators, ATMs, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Also provide the possibility to wash / disinfect hands in all places with tactile equipment, sanitary facilities or food services (elevators, information boards, ATMs, restaurant facilities, loading docks, waste points, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dismantle areas and objects that cannot be hygienically and controlled, such as unmanned playgrounds, children's shopping carts, amusement rides, gaming machines or common areas, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Make sure that safety distances can be observed in all areas, eg. toilet facilities, hand washing and toilet areas, if necessary, close every other device if it is not otherwise possible to observe the distances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Modify the interiors in all rooms so that the safety distances in the seats, chairs, tables, etc. are implemented automatically.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stick, disperse, move or remove furniture so that safety distances are met automatically.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other, What? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 4: Business continuity framework

