UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

MASTER THESIS

THE EFFECTS OF COVID-19 PANDEMIC ON DIGITAL TRANSFORMATION OF RECREATIONAL PHYSICAL ACTIVITY SECTOR

Ljubljana, September 2023 TANJA MALOVRH

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INTRODUCTION

When COVID-19 virus started spreading on a global scale the entire business infrastructure, labor market and public finances suffered massive consequences (Gregosz, Köster, Morwinsky & Schebesta, 2020). There have been different actions taken with the aim of preventing further spread of the disease including travel limitations, closure of non-essential businesses, mandatory quarantines and going into extreme regulations such as lockdowns (Ali, Bhuiyan, Zulkifli & Hassan, 2022).

Since economic structures of each country or region have its specifics, the impacts on different industries were very asymmetric. Most difficulties experienced hotels, restaurants, and leisure facilities because of being reliant on human contact and interactions (Bel, Gasulla & Mazaira-Font, 2021). In addition to that, mobility and travel restrictions caused a sharp decline in demand for civil aviation, which plays a vital role in supporting hospitality and tourism industry (De Vet et al., 2021).

More than 90% of businesses worldwide also experienced supply chain shocks due to quarantine measures, absence of workers and reduced production (Lusiantoro, Purwanto & Rostiani, 2021). Stock shortages forced them to increase inventories and place additional orders to ensure adequate supply of resources for further production (Vidovic, 2022). Pushed into an unknown situation where it was hard to predict to what extensions the pandemic might go, businesses had to become more flexible and agile to better navigate the disruptive environment (Briedis, Gregg, Heidenreich & Liu, 2022).

As a result, new opportunities emerged and made space for most needed innovations (Gavrila & De Lucas Ancillo, 2022). Pandemic environment in this case worked as an accelerator on digitalization and increased the awareness of benefits coming with it (De Vet et al., 2021). Digital space has become one of the major drivers of the economy and enabled users worldwide not only shopping online, but also working from home, providing students e-learning platforms, solving administrative processes online and much more (Gregosz, Köster, Morwinsky & Schebesta, 2020).

Overall, the digital transformation shift extended beyond computer technologies, including customer experience, operational processes and business models. Additionally, successful implementation required digital capabilities that can be sourced internally or externally depending on company needs (Westerman, Calméjane, Bonnet, Ferraris & McAfee, 2011).

The effects of digital iniciatives were different depending on industry and prior investments into digital transformation field (Kronblad & Pregmark, 2021). Large companies were adopting more sophisticated technologies where the level of complexity is higher, while for smaller companies the transformation occurred at a different level (Kergroach, 2021). No matter the size or sector businesses had to adjust their business models to create a competitive advantage in new conditions (Feitosa Jorge, Mosconi & Santa-Eulalia, 2022).

The pandemic environment has not only supported the acceleration of digital transformation but also raised collective awareness about the importance of health and wellness in our lives. That put a whole new perspective on the possibilities in the wellness industry and in some cases created long-term positive outcomes within the context of technology use (Choudhary & Qadir, 2021). That is why I have decided to further research this industry to see how changed circumstances affected businesses and consumers. Furthermore, the reason for choosing this field lies in personal experience assisting companies with digital solutions and helping them overcome their challenges during the crisis and beyond that.

Within wellness economy there were seven out of eleven sectors that were facing severe challenges such as massive fall in retail sales that couldn't be fully replaced through e-commerce, having less visits to service providers due to closures and businesses not being able to fulfil their obligations due to supply chain disruptions (Youn et al., 2022). I went more into details in recreational physical activity sector where restrictions led towards change in consumer behavior when recreational centers, fitness facilities, forest trails, public parks and other recreational spaces were limited in use (Furman, Volz & Rothman, 2023).

Sudden changes forced businesses into choosing different digital solutions with no time to plan the transition upfront which required learning new digital skills, making decision on automation of their sales process, thinking of possible security issues and many other things related to the digital world (Kergroach, 2021). Those who were financially capable of investing into hiring digital agencies have produced more advanced digital solutions, while smaller physical activity service providers implemented simple solutions and learned how to navigate the digital space themselves (Gupta, Tuunanen, Kar & Modgil, 2023).

The purpose of the master thesis is therefore to support businesses within the recreational physical activity sector with valuable insights on how to proceed with their digital transformation process and turn it into their advantage to create long term stability. Examples from existing literature in combination with empirical results will give them better understanding of the changes that happened within this sector due to COVID-19 pandemic and provide them with answers whether the changes in consumer behavior led to a long-term shift in preference from traditional offline activities to online experiences or not.

Goals of this master thesis are:

- Presenting the effects of COVID-19 pandemic worldwide, discovering different responses countries took and how that affected specific industries.
- Showing impact of pandemic on digital transformation, narrowing it down to wellness industry and recreational physical activity sector.
- Discovering challenges companies within the recreational physical activity sector faced during COVID-19 pandemic and actions they took to alleviate the crisis.
- Presenting changes in consumer behavior and their preferences regarding use of digital technology for the purpose of recreational activities.

To better understand the consumer behavior, their engagement in recreational physical activities, acceptance of technology or digital services and post-pandemic engagement within this sector a digital survey was carried out. The survey was active at 1KA portal for one week in July 2023 where respondents were providing answers for different time periods – before, during and after COVID-19 pandemic. With all the collected data I was able to provide recommendations to business owners who are looking for information to improve their customer experience through digital transformation.

The master thesis structure is designed to present its three main fields that are strongly interconnected. The first chapter includes a broad overview of COVID-19 pandemic effects worldwide and then narrowing down to describe challenges within different levels of digital transformation field. The second chapter continues to discover a multidimensional landscape of the wellness industry where performance of 11 sectors during pandemic is explained roughly. The third chapter then goes even more into details on digital transformation of recreational physical sector and service adaptations under pandemic conditions.

The theoretical part is therefore representing groundwork for the following chapters that include research methodology and analysis of the survey results with emphasis on changes in recreational physical activity sector during the pandemic. Within the last part of the master thesis there are recommendations for future development of the sector and conclusion including valuable insights for the readers.

1 IMPACT OF COVID-19 PANDEMIC ON DIGITAL TRANSFORMATION

When the World Health Organization declared COVID-19 as pandemic in March 2020 the entire world shifted towards a completely new dimension of life in various aspects. To prevent spread of contagious disease and further impact on global economy, policy makers suggested social distancing, set travel restrictions, started closing non-essential businesses, required quarantines and went into more extreme regulations such as lockdowns (Ali, Bhuiyan, Zulkifli & Hassan, 2022).

International openness was massively affected by severe closures, dynamics of demand were suddenly different and there have been disruptions in the supply chain that put additional pressure on operations management of the companies. World leaders were forced to present solutions to mitigate the effects of pandemic crisis to help both workers and businesses survive the virus outbreak (Pianta, 2021).

Even though COVID-19 pandemic caused many negative outcomes, it also encouraged people to seek innovative solutions and new opportunities. Digital space has become one of major drivers of the economy and part of our daily lives. It was not only shopping online, but also working from home, providing students e-learning platforms, and solving administrative processes online (Gregosz, Köster, Morwinsky & Schebesta, 2020).

1.1 Global economic shifts during COVID-19 pandemic

There has been a big burden placed on businesses, the labor market, and public finances worldwide. The global supply chain disruption led to unemployment of millions within a short period of time. Simultaneously consumer behavior changed over the night and forced companies to start looking for new ways of doing business (Gregosz, Köster, Morwinsky & Schebesta, 2020).

The extent of this catastrophic event and its impact on the global economy was compared to the times of the Great Depression. Furthermore, the unemployment rates were higher than the ones in times post-war (Hutt, 2020). Even though having information on other virus outbreaks in history, forecasting the impact of COVID-19 was difficult. There were no similar events that can be used directly to compare with this pandemic (Fernandes, 2020).

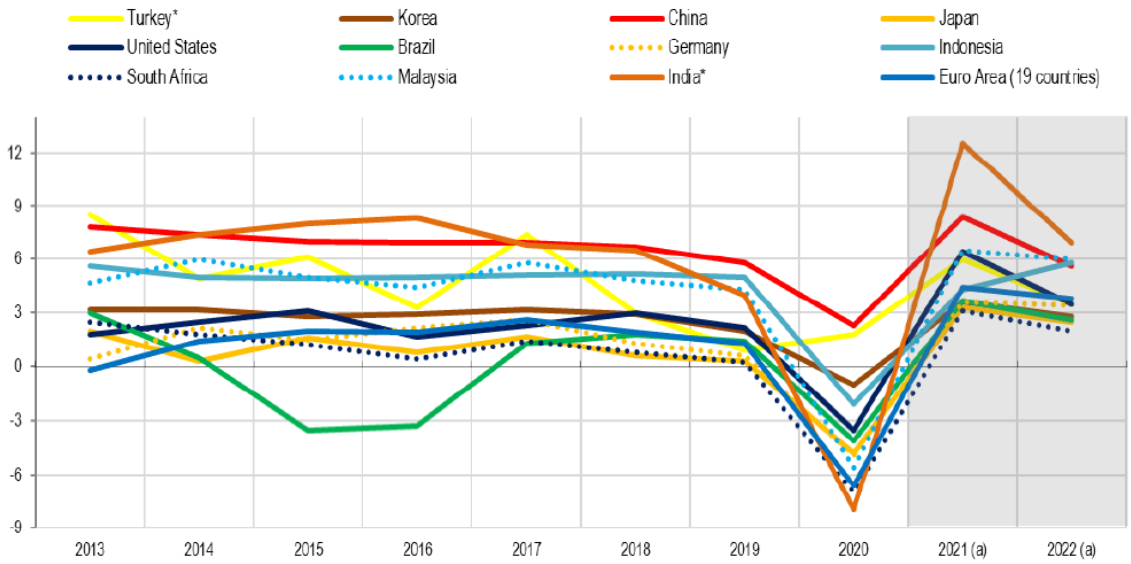
The quality of life was significantly decreased across the entire world. Estimations on how many people will enter extreme poverty due to global economy contraction moved around 100 million or above (Gregosz, Köster, Morwinsky & Schebesta, 2020). Viral pandemic expanded beyond direct health impact and became a society issue, leaving us with long-term consequences. People had to deal with movement control, severe health shocks, loss of their jobs, home schooling their kids etc. Moreover, the overburdened healthcare system was not able to process every new patient with the virus and at the same time perform the normal daily activities as they did before COVID-19 (Craven, Staples & Wilson, 2022).

When people do not have infrastructure providing them with necessary products or services that can lead to uncivil behavior like hoarding or looting and that's the reason why countries have taken different approaches towards solving job market and infrastructure problematics (Donthu & Gustafsson, 2020). Governments implemented several monetary and fiscal policies with the aim to avoid the consequences of the disease and minimize the effects of global pandemic on the economy. There were assistance packages for civilians and bigger emphasis on moving government finances towards improvement of community health care services (Bel, Gasulla & Mazaira-Font, 2021).

To prevent the spreading of the disease, mobility and transport restrictions were implemented by most of the countries which caused complete or partial shutdowns within some of the industries (Waldkirch, 2021). According to Statista Research Department (2022) the world's gross domestic product (GDP) fell by 3,4% during 2020, which shows in over two trillion U.S. dollars of lost economic output that has been the result of initial shock of the crisis.

Figure 1 is showing the recession happening worldwide hit hardest Europe, Latin America and India, not leaving far behind North America, some of the South Asian and African countries. China and few other East Asian countries were able to recover faster from the crisis and even ending year 2020 with growth (Pianta, 2021).

Figure 1: Annual percentage changes of real GDP, 2013-2022



Source: Pianta (2021)

Each country has its specific economic structure and the impacts on different sectors can be very asymmetrical (Ajmal, Khan & Shad, 2021). Governments put special care to support small and medium-sized enterprises (SMEs), since they represent 99% of all businesses and provide potential sources for jobs and economic growth (Ali, Bhuiyan, Zulkifli & Hassan, 2022). Overall, the spread of COVID-19 affected businesses at different levels such as employment, supply chains, sales and increased business uncertainty (Bloom et al., 2020).

The most impacted industries were the ones dependent on human contact and interactions like hotels, restaurants, and leisure industry (Bel, Gasulla & Mazaira-Font, 2021). Mobility and travel restrictions caused a sudden drop in demand for civil aviation by 92,8% in mid-April 2020 compared to 2019 levels. That led to closure of touristic amenities temporarily or permanently since there were no guests coming in from foreign countries (De Vet et al., 2021). The decline in tourism caused over 100 million jobs in 2020 based on approximate calculation of United Nations World Tourism Organization and led to air travel industry loss over 100 billion USD (Ali, Bhuiyan, Zulkifli & Hassan, 2022).

Furthermore, global supply chain disruption affected more than 90% of companies across the world when restrictions were put in place (De Vet at al., 2021). Industries were affected differently depending on their characteristics such as their production structures, technology levels, employee skills, market location and international openness (Pianta, 2021). Changes in the supply and demand patterns caused shocks within several industries. The supply shock was happening in non-essential industries where companies were not able to carry out work remotely. While demand shock was consequence of response to pandemic with panic buying and on the other hand reduced demand for products or services that would increase the risk of getting infected (Cherrafi, Chiarini, Belhadi, El Baz & Benabdellah, 2022).

Production facilities with technical, mechanical and technological nature were shrinking its operations inconsiderably (Dragomir, 2021). The automobile industry was having troubles due to shutdowns and stock shortages which led towards increase of inventories and placing more orders to ensure enough supplies (Vidovic, 2022). High-tech industries in automotive equipment, machinery, electrical equipment and computers recorded losses of production in 2020 around 10% up to 15% in most regions. While even higher production losses happened within low-tech industries that have low value added such as wearing apparel, textile and leather where the numbers moved around 20% in 2020 (Pianta, 2021).

Even booming industries within health sectors, pharmaceutical sector and logistics were facing difficulties since they worked at their full capacity (Stephany et al., 2022). International supply chains that were providing products with high demand during the pandemic have been under severe pressure within the first months. Personal protective equipment and pharmaceutical products were one of the core goods for fighting the virus. Restrictions also caused high trade numbers for domestic appliances and electronics since people were forced to cook at home (Arriola, Cadestin, Kowalski & Van Tongeren, 2022).

Looking from perspective of micro, small and medium enterprises (MSMEs) the pressure of reduced business activity and declining sales pushed several business owners on the edge of solvency (Dörr, Licht & Murmann, 2021). Supply chain disruptions led to losing their clients, reducing operating hours, letting go of their employees or stopping some of the operations. Moreover, smaller businesses with self-employed individuals were more affected than bigger ones, especially within hospitality, retail, personal services, entertainment and arts sector (Belitski, Guenther, Kritikos & Thurik, 2021).

A lot of companies couldn't cope with quarantine measures, absence of workers and having low production. Complete or partial shutdowns were therefore inevitable (Lusiantoro, Purwanto & Rostiani, 2021). Longer closures of those companies could mean not only business loss but also loss of innovation potential, intangible capital, skills and might result in longer economic recovery after the crisis. Low-income countries strongly rely on small businesses for supply of goods or services and providing employment to local communities (Neklyudova, 2022). Small family businesses have therefore presented a crucial role with being more engaged in finding a solution to the crisis and have responded beyond expectation. Within a short period of time, they have changed their business model and found additional resources from different initiatives to keep their family tradition going especially because of the personal attachment to their business (Dettori & Floris, 2022).

Changes we have seen during COVID-19 pandemic usually happen in the span of 4-5 years. It will take at least this amount of time before the accumulated losses can be fully recuperated within some of the most affected industries. The recovery pattern tends to be very uneven across countries and sectors. There has been a higher decline and longer recovery process in the services trade than looking at the goods trade in the most turbulent time in the year 2020 (Arriola, Cadestin, Kowalski & Van Tongeren, 2022).

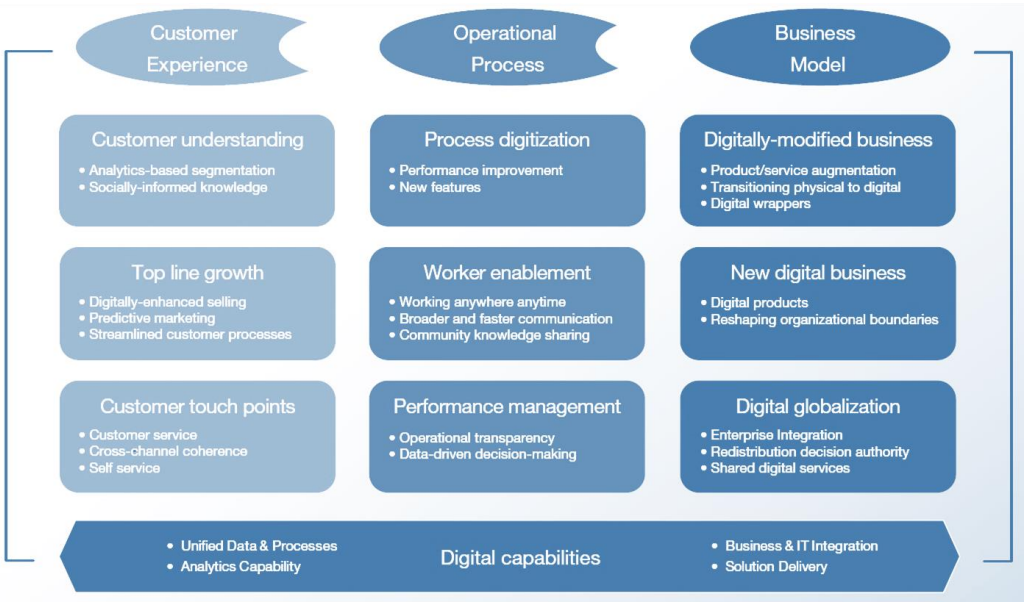
The manufacturing companies seem to be faster in recovery even though it will take years to return to the pre-pandemic levels of production and income. They have suffered mostly because of the decline in demand for their goods and supply chain disruption which can be later compensated (Pianta, 2021). The recovery of the businesses within the service sector will take longer time since their revenue loss was permanent due to the long shutdown. They cannot add up the lost orders in the restaurant by selling the same client more food or expect clients to have twice as many massages when their physical location reopens (Strain, 2020).

There have been businesses that have shown endurance and presented their work within a completely new niche. Even though some companies were struggling to follow when using digital technology, they have been forced to learn to generate sales through digital channels and even increased their income (Wan Hanafi, Wan Abdullah, Toolib, Daud & Ahmad, 2021). Those companies found ways to keep their employees, looking for solutions in reducing hours rather than letting them go. They have turned the crisis into a positive transformation that made their employees even more motivated and proactive during the change (Blake & Wadhwa, 2020).

1.2 Accelerated growth of digitalization and digital transformation

History presented several technological innovations that enabled the creation of modern business models we are witnessing now. It started with digitization where analog files were transformed to digital formats, then continued to digitalization where business processes were being automated, and we are now at digital transformation phase which represents an umbrella role. Both digitization and digitalization are core components necessary when incorporating digital transformation into an organization's ecosystem (Savić, 2020).

Figure 2: Building blocks of the digital transformation



Source: Westerman, Calméjane, Bonnet, Ferraris & McAfee (2021)

When talking about digital transformation it goes beyond just modern information and computer technologies. The change occurs in fundamental components of business in three key areas presented in Figure 2: customer experience, operational processes and business models. Each goes deeper into more specific elements that represent core building blocks of digital transformation. Furthermore, implementation of transformation requires digital capabilities that can be sourced internally or externally depending on the company needs (Westerman, Calméjane, Bonnet, Ferraris & McAfee, 2011).

Each of the three key areas of digital transformation, together with digital capabilities are presented withing the following subchapters, where the emphasis lies on changes within pandemic environment. Digital space represented the center part of our daily lives within that period and required a lot of efforts to implement proper solutions throughout different levels (Gregosz, Köster, Morwinsky & Schebesta, 2020).

1.2.1 Digital transformation of business models

When COVID-19 pandemic stopped movement of people and goods, demand for digital formats increased and businesses started looking for ways to handle the transition through digital transformation (Mueller, 2022). It was necessary for companies to become more flexible and agile to deal effectively with any internal or external changes since it was impossible to predict what extensions the pandemic might go (Briedis, Gregg, Heidenreich & Liu, 2022). Digital transformation supported the role of sharing economy with the emphasis on providing consumers access to essential goods and services at the most difficult times and moved communication online (Jha, Sindhwani, Dwivedi & Saddikuti, 2021).

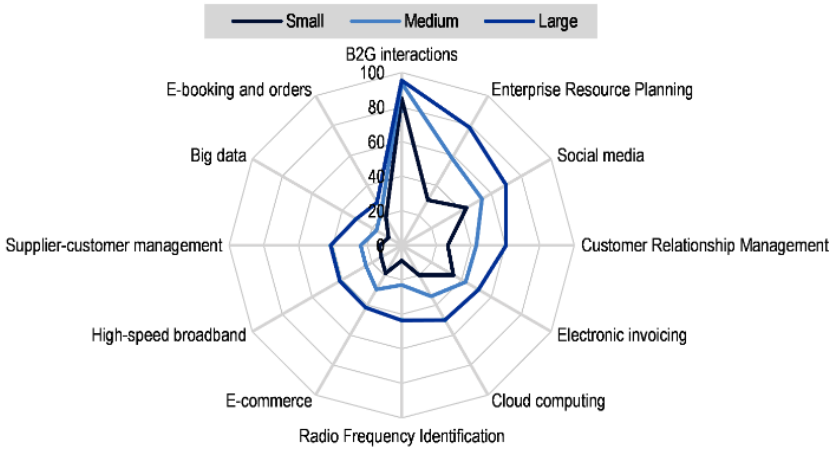
One of the major changes during the pandemic was also people acknowledging the positive usage of digital technology. Especially during social distancing and quarantine restrictions, there has been a huge boom in telecommunication and information technology services sector (Prianyshnykova & Hudenko, 2020). Companies offering online entertainment, global digital communication and social media platforms were therefore not only unaffected by the crisis but having massive potential for growth (Kronblad & Pregmark, 2021).

E-commerce represents one of the booming sectors as well since less people decided to visit physical stores and moved to online shopping. Companies like Amazon, FedEx, UPS and other delivery services therefore reported troubles with delivery delays due to higher demand. The pandemic affected online sales in a positive way but at the same time companies faced challenges with fulfillment of increased orders and had to adapt their business models (Dragomir, 2021). That opened space for business model innovation and pushed businesses to redesign their models or even create new ones to survive the crisis (Thierry, Mihai & Timber, 2020).

There have been different effects on business models during COVID-19 pandemic depending on the industry and prior investments into digital transformation. Companies that already developed their digital business model before the crisis were more successful in responding to interruptions of pandemic and built solutions on top of existing infrastructure (Kronblad & Pregmark, 2021). Furthermore, companies with more dynamic capabilities were able to pursue business model transformation faster and adopted digital tools more efficiently which acted as their safety net (Belitski, Guenther, Kritikos & Thurik, 2021).

Organizations of all sizes and sectors had to adjust their business models during COVID-19 pandemic by implementing technological solutions and create competitive advantage in new disruptive environment (Feitosa Jorge, Mosconi & Santa-Eulalia, 2022). Looking at Figure 3, implementation of digital practices varies depending on the size of the company and their needs. OECD research shows that 70% of SMEs have increased the use of digital technologies and accelerated their implementation out of necessity (Kergroach, 2021).

Figure 3: Diffusion rate, median OECD, based on country average percentages of enterprises using the technology over 2015-18



Source: Kergroach (2021)

Large companies are generally adopting more sophisticated technologies and more likely implement solutions where mass matters such as supply chain or production process integrations. The level of its complexity is significantly higher, and the adoption process is taking more time (Kergroach, 2021). Bigger transitions such as working on big data analytics, artificial intelligence, blockchain or other solutions require full digitalization of both strategic and organizational models (Garzoni, De Turi, Secundo & Del Vecchio, 2020).

When looking at smaller companies, digital transformation occurs at a different level. For most SMEs the first steps represent general administration functions and developing new marketing channels. To successfully adopt digital changes many smaller companies are looking for solutions in external system providers, support and advisory. They can optimize their operations at a very low cost using external providers and compensate for the weaknesses within the organization (Kergroach, 2021).

Increased use of digital tools affected positively on the maturity of digital technologies that are supporting smaller businesses and accelerated transformation of engagement with clients, selling touchpoints and delivery options (Mandviwalla & Flanagan, 2021). That encouraged the development of digitally modified businesses with solutions that complement their primary business which was crucial for organizational survival (Thierry, Mihai & Timber, 2020). Furthermore, researchers claim that businesses who had a chance to move online have generated revenues that they would not have generated otherwise (Nacar & Ozdemir, 2022).

Large companies were in advantage due to having more available resources such as better access to acquiring financial investments specifically for digital transformation, access to qualified experts internally or externally and their digital readiness from pre-pandemic times (Feitosa Jorge, Mosconi & Santa-Eulalia, 2022). There have been visible changes in perception of digital transformation and how complex the process can be. Businesses oftentimes take digital transformation too much as technology-related change rather than looking at it as a business model (Brunetti et al., 2020).

The crisis required fast action and didn't leave companies with time to plan and implement transition well. Companies that understood this kind of transformation requires more than change in technology were successfully building blocks to navigate through pandemic crisis. The ones that were chasing the next new technology or trend spent a lot of their resources with little or no results at all. That is the reason some companies even started shifting back to being uncertain what direction to move regarding digital transformation after the impact of COVID-19 started losing its strength (Mueller, 2022).

1.2.2 Management of operational processes

New circumstances required different crisis management approaches and formatting new smarter value chain framework incorporating digital ways of doing business (Ali, Bhuiyan, Zulkifli & Hassan, 2022). That resulted in actions such as restructuring supply chain management, updating purchasing processes, implementing new multichannel marketing and sales approaches, enabling digital human resource management practices, reforming customer relationship management and overall, it changed the course how the information within the company is managed (Savić, 2020).

Over the years companies have seen information technology as a tool that is helping them simplifying the assignments that are time consuming, transforming bulk of data into more comprehensible format, providing them with more effective management solutions and all that contributed towards creation of first digital economy (Jha, Sindhwani, Dwivedi & Saddikuti, 2021). Especially during pandemic more than ever businesses have realized that even though the most noticeable part of digital transformation is use of digital technology, the emphasis lies on establishing internal environment that can grow with transformation (Shcherbakova, 2019).

Information technology can only work within ecosystems that are able to take advantage of the assets they already possess, and it represents an enabler within transformation process (Savić, 2020). That's where business leaders need to step in to guide people through transformations, reduce their resistance when changes are being made and offer support during the process. Some employees need more time to accept new working conditions, use of new technologies and learn through the process. Those are the topics discussed on different levels within the company and not only within the IT department that is providing the technical solutions (Mugge, Abbu, Michaelis, Kwiatkowski & Gudergan, 2020).

Digital transformation of work has been one of the topics discussed even before COVID-19 emerged, many times in relation to green initiatives. To achieve increased productivity and efficiency companies started working towards organizational changes including technology into daily work routines (Nagel, 2020). This process was significantly accelerated with social distancing regulations that forced companies into remote work where specific jobs were not dependent on location and categorized as place-based job (Risi & Pronzato, 2021).

Remote working theories were put to the test when companies had to change work arrangements within a short period of time. Each organization tried different approaches that would fit their organizational structure and digital capacities (Adekoya, Adisa & Aiyenitaju, 2022). To ensure effective communication companies started using virtual or augmented reality, video conferencing and online distribution options (Thierry, Mihai & Timber, 2020). Use of different technologies for meetings and collaborations has therefore become the new normal even for those who initially refused or didn't know how to use it (Kamal, 2020).

New hybrid or work-from-home management models have emerged to solve the problematics of pandemic which can be used in future as well. But, since remote work was not implemented as part of strategic plan of companies who did it, there have been lots of negative opinions on it (Zhang, Gerlowski & Acs, 2021). Employees were describing their experience as always being reachable no matter the time, working more hours than as before pandemic and there's a blurred line between private or work time (Rožman & Čančer, 2022). There have been several digital inequalities detected related to owning a device, access to the internet and digital skills. Furthermore, some employees have small children that were homeschooled, which represented a bigger burden for parents who had to coordinate both care work and their job. Remote work was integrated into everyday business under extreme circumstances that affected the implementation and acceptance of it (Risi & Pronzato, 2021).

The challenge that COVID-19 pandemic presented is related to workplace management and change in work patterns. That requires special support when making organizational changes to have proper control of new work environment and its psycho-sociological effects on employees (Zhang, Gerlowski & Acs, 2021). If implementation of remote work practices is done properly it can encourage several positive effects such as less absenteeism, lower cost of commuting and stress related to that, better work life balance, significantly lower pollution and urban congestion (Rožman & Čančer, 2022).

Combination of both technology and human resources can support businesses at their growth, moving from local environment towards potential clients worldwide. It also gives a fair advantage to those who are getting deeper insight on tracking sales over the internet to understand interests of their clients and provide relevant solutions to them as soon as possible (Dragomir, 2021). For business leaders it's important to make decisions on real data and not make assumptions based on their gut feeling. Since we live in digitalized era the devices, machines and products have reached higher flexibility to address the market changes and became essential for making decisions (Garzoni, De Turi, Secundo & Del Vecchio, 2020).

Technological platforms have increased reach, improved awareness, enabled faster transactions and better retention of consumers. Despite changes in consumer patterns companies with proper information were able to localize their supply chains, improve their distribution models, apply safety protocols and obtain clear communication with their clients (Oluwasanmi, 2022). Furthermore, supply chain shocks were being handled with the use of complex predictions based on historical and real-time data analysis which ensured ongoing operations of global companies. But even though having digitally managed manufacturing units and supply chains, the pressure of the huge increase in demand within specific industries was still difficult to handle with lack of resources. Therefore, the digitized economy encouraged many digital startups to provide the missing part through various innovations and digital platforms (Jha, Sindhwani, Dwivedi & Saddikuti, 2021).

Especially in the time of COVID-19 crisis companies that did not take advantage of digital opportunities weren't able to follow their competitors. Digital tools supported companies with their integration into global markets, reduce transaction costs related to transport and border operations and enable quicker access to information at any given time between key stakeholders. It encouraged companies towards innovation since their ability to generate and analyze data has grown (Kergroach, 2021).

1.2.3 Consumer behavior changes and customer experience

Both the change in business model and management of operational processes supported customer experience pillar. Consumer behavior changed significantly due to restrictions and personal risk of getting sick. Some of the offline brick-and-mortar options were not available anymore or they represented too much risk, therefore consumers moved to online space (Kannan & Kulkarni, 2022).

Customer understanding became an important part of doing business during pandemic and companies with previous investments in systems had an advantage in using their analytics capabilities to lower the effects of COVID-19 pandemic (De Vet et al., 2021). They had to take quick decisions on how to remain competitive and respond to new customer expectations even though new circumstances happened over the night (Mugge, Abbu, Michaelis, Kwiatkowski & Gudergan, 2020).

Digital solutions helped companies to capture some of the customer information more easily. They have been able to understand buying behavior of certain demographics, gender and age which affected decisions being made on real data (Jha, Sindhwani, Dwivedi & Saddikuti, 2021). There are other factors as well having an impact on changes in consumer behavior, not only economic but also psychological, contextual, social, or personal. Especially in the times of crisis, normal human reaction is to put up a defense mechanism to cope with huge amount of stress (Di Crosta et al., 2021).

For example, when the pandemic started there was a sharp increase of grocery spending because of collective fear that worst case scenario will happen. That resulted in stockpiling behavior when people started stocking items that are essential for survival (Baker, Farrokhnia, Meyer, Pagel & Yannelis, 2020). Moreover, consumer perspective changed during the crisis and forced them to choose either buying a necessity or non-necessity items. They started relocating their financial resources and adjust their spending levels according to new circumstances (Di Crosta et al., 2021).

The reasons for change in spending are related to higher unemployment rate, lower income available, change of lifestyle after restrictions and generally change in perception of money (Kumar, 2022). There are certain demographic characteristics like age and family structure that influenced spending habits more than income itself. Therefore, we cannot claim changes in consumer behavior are based solely on income loss (Baker, Farrokhnia, Meyer, Pagel & Yannelis, 2020).

Sales experience during pandemic was transformed with integration of a multi-channel approach, using technology to better understand purchasing patterns and offer customized customer service. Since shopping in physical stores was impossible or less desirable due to the risk of getting sick consumers started looking for alternatives. It became more acceptable to use technology for something that we used to do in person (Kannan & Kulkarni, 2022).

New opportunities therefore came out of necessity. Companies have created features such as buying online but keeping in-store pickup to avoid the health hazard and have chosen new formats of doing business (Gavrila & De Lucas Ancillo, 2022). Digital tools have been used for different purposes like purchasing materials, optimizing production, receiving orders, making deliveries or even managing after-sales services (Dragomir, 2021).

Omnichannel approach became one of the important factors that has helped companies during pandemic in creating a wider range of services or differentiating from competitors with unique consumer experience (Salvietti, Ziliani, Teller, Ieva & Ranfagni, 2022). Businesses were able to use the collected information to build long-term relationships and offer additional services through their virtual value chain. With better understanding of their clients through their feedback, sharing interests and their problematics, they have created a win-win situation. Consumers were becoming aware of their online options and increased their trust towards buying online (Dragomir, 2021).

With the adoption of new digital technologies consumers started asking for improved services with more engagement and unique experience within the digitalized market. Especially within e-commerce and through social media, having daily communication with clients became one of the core advantages of online business (Penco, Profumo, Serravalle & Viassone, 2022). Consumers were forced into changing their behaviors and habits, including their online touchpoints that has helped increasing consumers' technology readiness (Salvietti, Ziliani, Teller, Ieva & Ranfagni, 2022).

They started accepting COVID-19 pandemic limitations as part of their lives, newer technologies became normal to do their work, recreational activities, study and various other things online. It is expected the use of e-commerce and digital platforms will stay permanently at least as a key source of information after the learning phase for both consumers and businesses. Traditional outdoor advertisement has been in decline since there is less traffic after social distancing recommendations. There has been a gradual change in technological advances and change of consumer behavior throughout the years, but pandemic played a crucial role accelerating the change (Oluwasanmi, 2022).

1.2.4 Digital capabilities

Even though there can be several benefits of digital transformation in terms of performance and competitiveness in the market, not all businesses were ready to enter the process of change when COVID-19 happened (Penco, Profumo, Serravalle & Viassone, 2022). Success of digital transformation is relying on digital capabilities that come across all three pillars – customer experience, operational processes and business models. Companies need to consider working on unified data and processes, solution delivery, analytics capabilities and most importantly integration of IT and business (Westerman, Calméjane, Bonnet, Ferraris & McAfee, 2011).

When planning digital transformation companies need to be aware about digital maturity that no longer requires only setting up the infrastructure but also covers educating employees on digital skills and changing their mindset (Thierry, Mihai & Timber, 2020). There are different generations of employees that do not always have knowledge and skills that would enable them effective use of technology. That is one of the reasons why companies need their digital education in place, work on their culture to prevent resistance towards digitalization and include talents as ambassadors of transformation (Brunetti et al., 2020).

Developing digital environment combines both innovative practices and cross-functional teams that are addressing challenges of business environment. Managers must assess digital capabilities that can be acquired within the company, work on their integration in their business process and maximize the outcome if possible (Belitski, Guenther, Kritikos & Thurik, 2021). The strategic level of digital transformation requires involvement of different departments that will implement and navigate through complex organizational changes that happen through the process (Indihar Štemberger, Erjavec, Manfreda & Jaklič, 2019).

The entry point and digital capabilities are not the same for every business. Companies are going through different stages such as digital transformation exploration phase, working on development of digital initiatives, implementing digital solutions and moving towards becoming digitally mature organizations (Garzoni, De Turi, Secundo & Del Vecchio, 2020). There are also sector-specific and function-specific elements that are affecting the process of adopting new technologies (Kergroach, 2021). Most importantly, technological skills are not enough anymore which is forcing companies to work on developing new competencies to understand new digital environments work and use it to their advantage (Feitosa Jorge, Mosconi & Santa-Eulalia, 2022).

2 MULTIDIMENSIONAL LANDSCAPE OF THE WELLNESS INDUSTRY

Together with the trend of accelerated use of digital technologies, people also started prioritizing their health and wellness. Reflecting on the previous chapters, several wellness sectors suffered because of temporary or permanent closure due to restrictions. That set a different course for wellness businesses that were not able to continue working in their physical location (Tsai & Han, 2021).

Since there are visible changes in this industry within the context of digital transformation, I have decided to continue my research within this field. Furthermore, the reason for choosing the wellness industry lies in personal experience assisting companies with digital solutions and helping them overcome their challenges during the crisis and beyond that.

To better understand changes within this industry the following chapters are dedicated to breaking down effects of COVID-19 pandemic across 11 different wellness economy sectors that are defined by a leading researcher and educator within the global wellness, The Global Wellness Institute (Yeung, Johnston & Callender, 2022).

2.1 Definition, market size and growth

Looking back in time the core elements of wellness industry models have been developed through promotion of both health care and disease prevention that the World Health Organization has led throughout the years. Their constitution does not represent wellbeing only as the absence of disease but extends to more complex combinations of different factors such as social, economic, and environmental conditions (World Health Organization, 2023).

Even though there are different definitions of wellness according to research papers, the overall concept is focused on health promotion and better quality of life across different life domains. Moreover, with the increasing complexity of life over the years, the models have expanded and understanding of factors in life has improved the models (Oliver, Baldwin & Datta, 2018).

According to Oliver, Baldwin and Datta (2018) there are three core models that represented first understanding of what wellness includes:

- Halbert Dunn (1961) defined methodology to measure health and environmental impact with high-level wellness matrix.
- Bill Hettler (1984) introduced holistic wellness model including six domains of wellness that included physical, social, emotional, spiritual, occupational and intellectual aspects.
- J. Melvin Witmer & Thomas J. Sweeney (1992) then used a multi-disciplinarian approach creating the wheel of wellness and prevention mode.

The so called "wellness revolution" and its commercial format then started in the early 2000s. At that time the wellness industry started focusing more on proactive, preventive and voluntary products or services (Grénman, Hakala & Mueller, 2019). Disease-oriented systems started moving towards using integrated approaches where different stakeholders are involved (Sørensen, Pedersen & Sander, 2022). The multidimensional landscape of the wellness industry is therefore representing a mixture of components in the offer system, where medical and wellness sector often overlapped (Majeed & Kim, 2022).

The projections for global wellness economy were positive based on previous growth from 4,3 trillion USD in 2017 to 4,9 trillion USD in 2019. But the unexpected pandemic shock caused a major fall to 4.4 trillion USD in 2020 which left the industry with serious consequences. Out of eleven wellness economy sectors seven have been negatively affected during the COVID-19 pandemic (Yeung, Johnston & Callender, 2022).

Figure 4: Size of the wellness market worldwide in 2019 and 2020, with a forecast to 2025 (in trillion USD)

Source: Statista (2023)

Despite the negative effects of COVID-19 pandemic, the wellness economy gained recognition. Collective motivation towards better health and wellness became greater since the virus affected our lives in such volume. With the intention of returning to normal life and overcoming the stress of pandemic many people were looking for wellness services to build their immunity and recharge (Choudhary & Qadir, 2021). Therefore, the projections for the future look more promising and were estimated to reach almost 7 trillion USD by 2025 which can be seen in Figure 4 (Gough, 2023).

Characteristics of the wellness industry may vary depending on the geographical area and other factors as well. Differences are seen in natural or cultural resources, through socio-cultural aspect of each country, local needs of their residents, their cultural or sports traditions or having different purchasing power (García-Fernández, Valcarce-Torrente, Mohammadi & Gálvez-Ruiz, 2022). There is also a connection between the size of population and their wealth to the size of the wellness economy. Countries that are most populated, wealthiest or combination of both result in larger wellness economy size (Yeung, Johnston & Callender, 2022).

If we are breaking it down to regional wellness spending, Asia-Pacific represents the largest region with 1,5 trillion USD in 2020, next is North America at 1,3 trillion USD and Europe at 1,1 trillion USD. All together the three regions represent 90% of global wellness economy but we must keep in mind some of the countries are dependent of selling their services or products to foreigners and not to residents of that region (Gough, 2023).

During COVID-19 pandemic the least affected was Asia-Pacific region since they were able to better contain the pandemic and restrictions were occasional in 2020. Besides that, their key sectors, wellness real estate, public health, prevention and personalized medicine have recorded very high growth rates which mitigated the effects of the pandemic on overall results. Within the period from 2019-2020 wellness expenditures in the Asia-Pacific region fell for only 6,4%, while North America which was hit the hardest expenditures fell for 13,4% and within similar range in Europe for 11,4% (Yeung, Johnston & Callender, 2022).

There have been visible differences between the performance of the 11 wellness sectors and its subsectors as well, depending on several factors and circumstances which are described more in details within the following chapter.

2.2 Wellness economy performance across different sectors

As mentioned within the first chapter, mobility and transport restrictions were implemented by most of the countries to prevent the spreading of the disease. Several physical locations were closed as one of the major concerns was protecting consumers rather than chasing profits (MacSween & Canziani, 2023). Since there is combination of different kind of consumer activities and expenditures within the wellness industry effects of COVID-19 pandemic were uneven across sectors (Dileep, Ajoon & Nair, 2022).

Table 1: Wellness economy sectors, 2017, 2019, 2020

	Wellness Economy (Billion USD)			**Average Annual Growth Rate**	
	2017	**2019**	**2020**	**2017-2019**	**2019-2020**
Personal Care & Beauty	1.021,6	1.097,3	955,2	*3,6%*	*-13,0%*
Healthy Eating, Nutrition & Weight Loss	858,1	912,3	945,5	*3,1%*	*3,6%*
Physical Activity	789,5	873,8	738,1	*5,2%*	*-15,5%*
Wellness Tourism	617,0	720,4	435,7	*8,1%*	*-39,5%*
Traditional & Complementary Medicine	376,2	431,9	412,7	*7,1%*	*-4,5%*
Public Health, Prevention & Personalized Medicine	328,3	359,1	375,4	*4,6%*	*4,5%*
Wellness Real Estate	148,5	225,2	275,1	*23,2%*	*22,1%*
Mental Wellness	N/A	122,3	131,2	*N/A*	*7,2%*
Spas	93,6	110,7	68,0	*8,7%*	*-38,6%*
Workplace Wellness	47,7	52,2	48,5	*4,6%*	*-7,0%*
Thermal/Mineral Springs	56,1	64,0	39,1	*6,8%*	*-38,9%*
Total Wellness Economy	**4.317,3**	**4.909,9**	**4.369,3**	***6,6%***	***-11,00%***

Adapted from Yeung, Johnston & Callender (2022)

Within Table 1 comparison is made between the estimated values of expenditures across different sectors in the time before and during COVID-19 pandemic. Sectors that were shrinking the most during the pandemic were personal care and beauty, wellness tourism, spas and thermal/mineral springs, also some of the physical activity related expenditures declined. While on the other hand there's an increase in expenditures for wellness and real estate, mental wellness, public health, prevention and personalized medicine, healthy eating, nutrition and weight loss (Yeung, Johnston & Callender, 2022).

2.2.1 Wellness tourism and supporting infrastructure

Wellness tourism sector was one of the most negatively affected during the COVID-19 pandemic since restrictions in hospitality and tourism caused long-term decline in tourism activities. It experienced a decline of expenditures of 39,5% annually from 720,4 billion USD in 2019 to 435,7 billion USD in 2020 (Yeung, Johnston & Callender, 2022). While overall tourism suffered a loss of one billion international tourist arrivals in 2020 which reduced tourism exports by 1,3 trillion USD within this period (Dileep, Ajoon & Nair, 2022).

This sector represents an important space where several wellness services are being provided to destination visitors who are looking for either natural or cultural resources to improve their wellbeing (Dini & Pencarelli, 2021). We can find that countries most dependent on wellness tourism are in Europe, North America and Asia-Pacific. European regions are leading in number of wellness trips, while wellness tourism expenditures are higher in North America. The annual growth rate before pandemic between years 2017-2019 within this sector was 8,1% and has been one of the fastest-growing market segments worldwide (Yeung, Johnston & Callender, 2022).

The growth originates from consumer behavior, since wellness travelers are spending more finance during their trip than an average traveler that is not coming with an intention to use wellness infrastructure and the greater percent of wellness travel is domestic due to easier access or cheaper options to travel (Dini & Pencarelli, 2021). We can also differentiate between primary and secondary wellness travelers. The first group is taking the trip with clear motivation of improving their well-being, while for the second group their focus lies on the travel but including some wellness activities (Yeung, Johnston & Callender, 2022).

Activities take place within purpose-built centers which are hosting either wellness retreats incorporating a holistic approach or offering individual services for their guests. Their offers consist of physical activities, spiritual endeavors, dietitian consultations and many other supplementary services within the wellness industry (Lyulicheva, Yap & Hyde, 2023). Strongly connected to the wellness tourism sector is therefore the spa economy where the highest revenues come from hotels and resorts. They have been pushing development of wellness infrastructure and integration of spa sector into their operating models because those services are supplementary. Personalized spa therapies and services such as aesthetics, facials or massage became a necessary element within all luxury hotels (Thorne, 2021).

Besides hotels and resort spas we can categorize service providers as well as day/club/salon spas, destination spas and health resorts, medical spas, thermal/mineral springs spas and other establishments. Furthermore, the differentiation between different spa establishments is visible through demographics advantages, unique selling propositions and other specializations (Mackman & Wall, 2017). One of the major challenges in the global spa market is shortage of skilled spa administrators and other professionals within this field, which is causing competition between beauty salons, hotels and resorts (Technavio, 2023).

Before COVID-19 the spa economy was growing extremely fast reaching 110,7 billion USD in revenues in 2019. Then a sudden drop of 38,6% happened in 2020 which resulted in only 68,0 billion USD revenues for that year (Yeung, Johnston & Callender, 2022). COVID-19 pandemic left reluctance in people to visit spas and salons due to the risk of being infected since most of the services require physical touch. However, people regained their trust with implementation of the precautions and safety measures (Choudhary & Qadir, 2021).

Moreover, within the wellness services there are also thermal and mineral springs as one of the oldest treatments supported with centuries of experience and several studies that have been proving their beneficial effects. According to water type we can define different establishments such as thermal centers using mineral water, spas offering hydrothermal services using tap water and thalassotherapy centers using sea water (Antunes, Gonçalves & Estevão, 2022). Thermal and mineral spring revenues were estimated at around 64,0 billion USD in 2019, followed with a major drop of 38,9% due to COVID-19 (Yeung, Johnston & Callender, 2022).

Even though the crisis severely affected tourism and wellness services within this scope, there have been visible positive changes as well. Those services are now crucial for people who are recovering after the disease and need support through therapies (Oliveira, 2022). The health crisis also left behind over-tourism, over-pollution and over-consumption which was not sustainable long-term. People now have different motives that are driving them towards wellness tourism and their primary concern is health (Martins & Santos, 2022).

The shift is visible in the wellness real estate sector as well, which managed to continue its growth. Since infrastructure plays an important role in providing wellness services this sector has been overtaking the overall construction growth even during the pandemic. Global wellness real estate sector was valued at 225,2 billion USD in 2019 and recorded tremendous growth to 275 billion USD in 2020, which is 22,1% average annual growth rate (Yeung, Johnston & Callender, 2022).

Not only for touristic purposes but also urban areas have been adjusted to fit the wellness aspect of construction. This sector has been raising the bar of minimum standards incorporating wellness elements through various dimensions such as choosing different designs, materials and adjusting its buildings to fit into the users' well-being concept (Gazzola, Pavione, Grechi & Ferrazzano, 2020).

Progress is visible in the number of projects that were earning wellness-related certifications which are not only focusing on wellness but also sustainability and related fields. The landscape of wellness real estate has also changed for the better during COVID-19 pandemic and pushed wellness into our home environment. Our homes became an enabler and serving us as office, school, restaurant, personal gym or self-care space that we didn't know before (Yeung, Johnston & Callender, 2022).

2.2.2 Innovating personal care and beauty shopping experience

Next severely affected were businesses within the personal care and beauty sector. This sector includes a wide range of service providers such as beauty salons, hairdressers, barbershops, and other appearance-related services. In addition to that, a very large percentage of the sector are representing everyday products for personal hygiene and cosmetics (Ferraro, 2022). Together they are the biggest sector within the wellness economy based on consumer spending which was estimated to be 1.097 billion USD in 2019. However, the outbreak of COVID-19 caused a sudden drop due to closures which resulted in lower consumer spending within this sector estimated to 955,2 billion USD in 2020 (Yeung, Johnston & Callender, 2022).

The beauty-related business premises were facing several troubles as they were considered non-essential and stayed closed for an extended time. That pushed consumer habits towards at-home beauty treatments, and they started dedicating more time to researching options online (Herich, 2021). Since COVID-19 shoppers prioritized the skin care and hair care segments, those experienced a smaller decline, while fragrance and makeup markets weren't as lucky. During this time of crisis prestige beauty and luxury beauty products were not considered as essential (Yeung, Johnston & Callender, 2022).

Few multinational companies that are leading the manufacturing of cosmetics and pushing their products through various distribution channels responded according to the market needs and transitioned their beauty stores to fulfillment centers where clients were able to pick-up their orders (Malhotra, Malhotra & Bennur, 2022). This sector also experienced the impact of supply and demand shock like many others. Increased demand for handwashing and sanitation led to shortages in raw materials, lack of necessary components, irregularities of delivery, service limitations, difficulties with supplier payments and changed the manufacturing capacities (Chowdhury, Sarkar, Saha & Anik, 2020).

Beauty shoppers have transitioned towards buying products online and moved this category among the top five on the list of e-commerce. But even though consumer habits changed, physical stores still play a vital role in driving sales and have greater influence on impulse purchases compared to online shopping (Zaczkiewicz, 2020). When shopping online the information about specific products is limited only to description and images, while shopping in the physical stores can provide a full customer experience. Positioning of the products, special promotional displays or other marketing strategies that allow customers to physically test the product are key differentiators when shopping in-store (Kim, 2020).

Overall, companies that have been focusing solely on their offline channels suffered the most, while digitally oriented brands were experiencing positive impacts of accelerated digital change due to pandemic. They have developed sales models that are automated and can support them with forecasting the supply needs or detecting opportunities at the market more accurately (Pickel, 2022).

2.2.3 Creating a bridge between wellness and medical sectors

There's a thin line between medical and wellness treatments since the services include elements of both sectors to fulfil the needs of their visitors. Nevertheless, differentiation between sectors is necessary to ensure a safe environment and quality care to the ones with medical conditions (Majeed & Kim, 2022).

Traditional and complementary medicine sector includes therapeutic products and services that lie outside conventional medical care. There is often no medical supervision when using different practices and those can vary across different regions (Karataş et al., 2021). Examples of such practice include traditional mental or spiritual approaches, chiropractic methods, acupuncture, homeopathy, ayurveda, energy healing, herbal remedies and supplements among others (Yeung, Johnston & Callender, 2022).

There is a rough estimation of expenditure within this sector due to lack of information on the number of informal practices. Nevertheless, the estimation of worldwide expenditures on traditional and complementary services or products moved around 412,7 billion USD in 2020. Even though the demand for products within this sector was higher during the pandemic, overall spending fell by 4,5% due to business shutdowns. There has been a bigger fall in retail sales, less visits to service providers and supply chain disruptions (Yeung, Johnston & Callender, 2022).

Some doubt is still present in the medical profession regarding claims made by complementary medicine but in some cases traditional and complementary medicine therapies are being practiced hand in hand to ease the patient's medical issues (Rice, 2019). Certain regions, including Africa, Asia and Latin America, have incorporated traditional medicine into their primary healthcare systems. While Europe and North America are combining both traditional and allopathic medicine. The need for a personalized and holistic approach has contributed to increased expenditures within this sector (Youn et al., 2022).

When talking about more personalized and holistic approaches we tap into the segment that plays an important role in supporting public health with preventive actions. Unlike traditional and complementary medicine where certain methods cannot be scientifically proven, there is public health, prevention and personalized medicine well supported by facts. It represents one of the fastest growing sectors of wellness economy with estimation of global expenditures around 375,4 billion USD in 2020 (Yeung, Johnston & Callender, 2022).

Especially during COVID-19 pandemic the importance of having a well-designed public health infrastructure became more evident. Depending on the country, having access to quality healthcare can be very challenging and related to finance. Therefore, people are turning to self-management of their health and taking preventive actions (Abraham, Borland & McNeill, 2023). Moreover, the increasing number of chronic diseases and age-related health issues are pushing the development of sustainable solutions to change current health systems (Hoxhaj et al., 2023).

The change is moving towards more personalized medicine that is using electronic health records to its advantage. But there is still a large potential in creating health information systems that will be able to recognize certain features of the disease and develop more targeted therapies (Abul-Husn & Kenny, 2019). Within the framework of wellness, preventive care takes place in developing digital resources that are accessed through smartphones, computers or other smart devices but all those need to be used with caution (Abraham, Borland & McNeill, 2023).

2.2.4 Importance of mental well-being and cultivating a healthy workspace

Mental wellness gained its recognition especially during COVID-19 pandemic when social isolation affected community wellbeing. There were several investments made with the aim of providing psychosocial support services to close the gap of mental distress. However, we need to differentiate between mental illness and mental wellness, as not all conditions qualify as mental health disorders (Mahomed, 2020). There have been personal experiences, social interactions or lack of those and economic consequences that caused traumatic stress, leading to development of different coping mechanisms. Most affected were the ones who were already financially vulnerable before pandemic. Facing severe health risks increased fear, caused anxiety and developed into some other symptoms that could result in severe medical conditions (Hecker et al., 2022).

To better navigate times of change people were looking to improve their mental wellbeing through different activities such as self-improvement, meditation and mindfulness, using brain-boosting nutraceuticals and botanicals and working on senses, spaces and sleep. Overall, the mental wellness sector expenditures have grown due to increased demand during pandemic from 122,3 billion USD in 2019 to 131,2 billion USD in 2020 (Yeung, Johnston & Callender, 2022).

Furthermore, when working conditions changed companies needed to reconsider the workspace wellness as well. Remote work came with troubles like being lonely, having difficulties finishing the work due to procrastination, dealing with work from home interference and having ineffective communication (Yang, Murad, Mirza, Chaudhary & Saeed, 2022). Virtual organizations had to invest their energy into establishing a different culture where each employee is well supported several different ways, including taking care of mental health. The initiatives were focusing on solving the pandemic challenges and responded with agile practices (Zapata, Ibarra & Blancher, 2023).

Even though COVID-19 pandemic put worker health first place and company's expenditures were related to safety, that didn't result in growth of the workspace wellness sector. Previous activities were related to in-person attendance which were replaced with online options, while the new activities didn't fall under the wellness category. Therefore, global workplace wellness sector expenditures dropped by 7,0% in 2020 in comparison to the year before. They were estimated to be 48,5 billion USD in 2020 (Yeung, Johnston & Callender, 2022).

Before the pandemic workspace wellness topics were strongly connected to productivity which depends on employee health and well-being. Based on that companies have been providing different types of wellness-oriented programs and incentives that would support the cause (Moore & Piwek, 2017). While after dealing with pandemic the workspace landscape changed significantly, flexible or remote work became the norm and now the workplace wellness programs require a more holistic approach incorporating mental health, emotional support, social activities and financial well-being (Yeung, Johnston & Callender, 2022).

2.2.5 Redefining physical activity sector and role of nutrition

Daily activities that are contributing to better health consist of both physical activity and proper nutrition. When COVID-19 restrictions limited options to visit some of the physical locations people were forced to move their exercise from the gym to their homes or use public spaces like parks. There has been a new trend in home cooking, changing eating habits and learning about nutrition. Also support communities were not taking place in a physical location anymore but moved online in different formats (Tsai & Han, 2021).

Despite the health crisis healthy eating, nutrition and weight loss sector continued to experience growth. This sector expenditures were estimated to grow from 912,3 billion USD in 2019 to 945,5 billion USD in 2020 (Yeung, Johnston & Callender, 2022). Obesity was already one of the biggest sources causing health problems before the pandemic but with rising mental health issues, lack of movement and not having control overeating this became even more visible (Oetoro, Permadhi & Sumarliah, 2022). There were two extremes presented in research papers where some claim that the eating habits significantly changed during pandemic for the worse, while on the other hand the awareness of healthy eating was rising (Sahin & Gul, 2023).

To fight the obesity problems consumers tried to change their habits with buying healthy-labeled foods and beverages, adding some vitamins and supplements to their diet or even went to investigate more specific solutions such as buying weight loss products and services. Several products or services within nutrition segment have been commercialized, therefore we cannot say that more engagement led to better health outcomes, but it raised awareness of how important food is (Sloan & Hutt, 2021).

Social distancing also forced consumers to change their fitness routines, skip usual workouts and go on a search for alternatives. They have moved to online space for products or services that could help them support their physical activity needs (Montemarano, 2020). Despite that the overall expenditures in physical activity sector faced a huge fall by 15.5% from 873,8 billion USD in 2019 to 738,1 billion USD in 2020 due to closures of physical locations. On the other hand, the fitness technology segment in the enabling subsector was the only one experiencing average annual growth of 29,1% which was the positive effect of digitalization trend (Yeung, Johnston & Callender, 2022).

Researchers claim the market for digital health resources has expanded but hasn't reached its potential yet. Most recent evaluations of the market have been speculating the number of health and wellness apps that are now available lie between 165.000 and 325.000. But based on health professionals' opinion some of the digital solutions might be unsuitable due to health hazards and not being scientifically proven (Abraham, Borland & McNeill, 2023). The adoption of technological changes varied across different geographical areas, leading to differences in the services that are being offered and their impact on customer loyalty. There were different solutions contributing to closing the gap among consumers who were previously using sports facilities (García-Fernández, Valcarce-Torrente, Mohammadi & Gálvez-Ruiz, 2022).

As mentioned at the beginning of this chapter, the initiative for narrowing down my research to the wellness industry lies in personal experience. Within the next chapter I will therefore go into even more detail on the topic of digital transformation of recreational physical activity sector. Different types of recreational activities encourage use of both technology and digital resources especially within the time of COVID-19 pandemic.

3 DIGITAL TRANSFORMATION OF RECREATIONAL PHYSICAL ACTIVITY SECTOR

The recreational physical activity sector represents one of the important elements of individuals well-being, having positive effect on psychological and physical state. When COVID-19 emerged the lack of freedom to interact with people through activities the social benefits were lost. But some businesses managed to rise from health crisis and transform the business to fight the negative impacts in different ways, including digital transformation (Castillo-Benancio, Alvarez-Risco, Morales-Ríos, Mercedes Anderson-Seminario & Del-Aguila-Arcentales, 2023).

Digital solutions in this case represented enabler to continue with previous activities in a modified version, serving both existing clients and attracting new ones that were not limited to physical location. Businesses were able to continue communication with their clients, showcase their work and promote their services even across borders through low-cost options such as social media platforms (Kaur & Kumar, 2022).

3.1 Recreational physical activity sector in details

The physical activity sector consists of two sub-sectors. The first one is the recreational physical activity sector which encompasses fitness, mindful movement, sports and active recreation. The second one represents the enabling sectors including fitness technology, sports and fitness equipment, sports apparel and footwear. Both are very much connected, especially due to digital transformation that happened during pandemic. I will be focusing more on the activities, rather than supporting sector (Yeung, Johnston & Callender, 2022).

When restrictions were put in place, facilities such as fitness centers, health clubs, swimming pools and even outdoor spaces were limited to use which led towards reduced levels of engagement in recreational activities in the community (Bagherian, Ghahfarrokhi & Banitalebi, 2021). People were forced to move their exercise from indoor spaces to their homes or find alternatives to outdoor activities. Support communities were not taking place in a physical location anymore but moved online in different formats (Tsai & Han, 2021).

Table 2: Physical Activity Market by Subsector, 2018, 2019, 2020

	Market Size (Billion USD)			**Average Annual Growth Rate**	
	2018	**2019**	**2020**	**2018-2019**	**2019-2020**
Recreational Physical Activity	**367,7**	**394,2**	**306,8**	***7,2%***	***-22,2%***
Sports & Active Recreation	230,1	238,1	200,0	*3,5%*	*-16,0%*
Fitness	108,6	122,8	77,2	*13,0%*	*-37,1%*
Mindful Movement	29,1	33,3	29,6	*14,7%*	*-11,2%*
Enabling Sectors	**468,1**	**489,9**	**445,3**	***4,7%***	***-9,1%***
Fitness Technology	32,8	38,3	49,5	*16,7%*	*29,1%*
Sports & Fitness Equipment	106,1	107,2	104,9	*1,0%*	*-2,1%*
Sports Apparel & Footwear	330,9	346,2	292,6	*4,6%*	*-15,5%*
TOTAL	**830,4**	**873,8**	**738,1**	***5,2%***	***-15,5%***

Adapted from Yeung, Johnston & Callender (2022)

Overall, all sports economic activities have gone through a massive transformation because sports clubs were closed, pools were not operating, and professional sports equipment was no longer being purchased. Therefore, the transition was not only oriented towards digital solutions but also production of sports equipment that was able to cover recreational sports at home. Changing production saved many manufacturers from bankruptcy (Keshkar & Karegar, 2022).

Going deeper into the three categories of recreational physical activity sector, the overall expenditures in 2020 were estimated to be 306,8 billion USD, which is 42% of entire physical activity market as seen in Table 2. Out of three the most impacted during pandemic was fitness segment since there were closures of brick-and-mortar locations. Sports and active recreation as the biggest segment within this sector were negatively impacted due to the drop of activities for children. The least affected was mindful movement which transitioned to online space (Yeung, Johnston & Callender, 2022).

3.1.1 Change in sports and active recreation habits

When COVID-19 restrictions took place that led to closing the schools, workspaces and recreational facilities. Daily routines have changed to having less contact with the community, which led to less physical activity and more time spent in front of screens (Ciesielski, Tkaczyk, Hycza & Taczanowska, 2023). The consequences within sports and active recreation segment have been visible especially in drastic fall of physical activity for children. While adults have found alternatives for their sports activities, children were not as active as before the pandemic. Women tend to find activities that haven't require a lot of equipment or access to facilities such as yoga or pilates. Cycling and walking were also two of the more accessible activities to maintain physical activity (Arundell et al., 2022).

People decided to choose more outdoor activities where they weren't limited with social distance restrictions, while group sports or indoor activities were pushed aside. Those have been recognized as safer and supported mental health as well because of being able to maintain social interaction (Beall et al., 2022). But even there some challenges occurred with new inexperienced outdoor recreation participants. There were additional safety measures taken and educational content created to prevent behaviors that might lead to negative outcomes (Beery, Olsson & Vitestam, 2021).

Several studies have been conducted to see the changes in behavior in use of recreational spaces with the help of mobile phones and the location-tracking data from Google. Mapping then supported understanding the effects not only on green infrastructure but also well-being of people. Outdoor recreational patterns were showing an increase in outdoor recreation which also resulted in crowding and addressed some of the urban planning problematics (Fagerholm, Eilola & Arki, 2021).

The digital transformation happened when operators of specific areas started to incorporating solutions such as easy park applications requiring no physical contact, counting devices where possible to track visitors, including access permits and ticket counting, self-registration online and other digital options that supported safety measures at the time of pandemic (Ciesielski, Tkaczyk, Hycza & Taczanowska, 2023). Those solutions were not all provided during the lockdown but throughout the entire pandemic and after the restrictions were loosened. People limited the use of recreational facilities outdoors on a voluntary basis depending on their perception of health risk (Lee, Lee, Xu, Li & Ory, 2022).

3.1.2 Reinventing communication in fitness

Within the unexpected situation fitness service providers were pushed to seek new technologies that were increasing their competitiveness and their awareness regarding the need for optimized service has risen. When measuring expenditures, the fitness segment does not only include fitness studios or gym spaces but also includes workout spaces at home, outdoor sports amenities, community centers, schools, hotels and services offered via online platforms. All formats except digital one, require frequent in-person interactions between service providers and customers. Face-to-face interactions still seem to be crucial in this sector since the client is in contact with multiple employees starting with front desk staff, membership salesperson, fitness instructors or personal trainers (Wang & Chiu, 2022).

But the fitness segment was required to compensate for the losses due to closures with an upgrade of providing their services with the use of existing digital solutions and development of mobile fitness applications. Together with fitness technology, that falls under the enabling sector, the fitness market was able to lower the effects of pandemic (Lee & Lin, 2023). Companies that have used strategies such as extended free trials for their online and app-based classes supported existing customers and reached new audiences. The reported app downloads and new sign ups estimated growth between 80% or in some cases more than 250% within the first months of the crisis (Diebner, Silliman, Ungerman & Vancauwenberghe, 2020).

Fitness wearables were in use before the pandemic, filling in the gap of gathering individual's activity data transmitted to an app that displayed reports on its dashboard. Furthermore, the use of devices is creating a unique user experience that contributes to higher motivation when setting fitness goals, seeking for support when performing fitness activities and maintenance of the daily habits (Mathavan, Vafaei-Zadeh, Hanifah, Ramayah & Kurnia, 2022). The user experience has been improved with the help of artificial intelligence algorithms and increased engagement of the users when using fitness services. Technology in this case served as a tool for communication between the service provider and their clients (Lee & Lin, 2023).

There's also a downside to fitness wearables and mobile fitness applications in different areas. Even though the pandemic increased the sales short-term, there are visible challenges affecting the future related to the motivation of the user, acceptance of technology and advancement of artificial intelligence technologies (Oc & Toker, 2022).

Information technology itself cannot fully support the user without professional guidance that can be provided through fitness facilities or online spaces where service providers such as trainers can support their clients. More than that, there has been a change in communication due to raising number of health-conscious people which are not entering the fitness segment because of features such as muscular physique, specific qualifications of the trainers or high-quality services. Having disposable income and wishing to invest into leisure

time is not the only criteria when looking for services within this segment (Park, Lee & Nite, 2022). The post-pandemic growth of the fitness industry and its new members are coming with the aim of improving or maintaining physical and mental health. Health benefits include better muscular strength, improved body composition, improved cardiorespiratory, flexibility etc. (Pu, Zhang, Sang & Ji, 2022).

3.1.3 Mindful movement online services

Mindfulness comes from practices that were developed over thousands of years and adjusted to the modern world to pursue better psychological, physical and social health. There have been critics that mindfulness-based practices do not originate in ancient practices but culturally adapted to fit the needs of societies with capitalistic intentions (Roychowdhury, 2021). That is visible through branding techniques that align with emotional and sensory aspects we can see within the luxury market and working as aspirational lifestyle brands that emphasize several benefits beyond the physical aspect (Mora, Berry & Salen, 2018).

The COVID-19 circumstances have changed the meaning of mindfulness and turned out to be a supportive factor in alleviating the stress coming from global health crisis. Sedentary behavior, limited freedom and space for movement have developed the need for innovative approaches (Roychowdhury, 2021). People were looking for combination of home exercise options and stress reliever when physical locations such as yoga and pilates studios have shut down. Therefore, many tried mindful movement practices for the first time during pandemic through free or low-cost digital platforms (Yeung, Johnston & Callender, 2022).

Online resources were quickly increasing, service providers have transformed in-person mindfulness programs or stress reduction classes based on techniques within this field to different digital formats like apps. Their offerings expanded and some even lowered their fees to avoid the negative opinions on making profits out of pandemic. A positive outcome of increased use of digital tools has been the creation of frameworks that are supporting mindful movement based on collected data even in the future. Online formats provided feasible and available mindful interventions, the market expanded across the border, delivery was fast, participation was enabled no matter location and access possible not being limited to specific time frame (Farris et al., 2021).

Since there have been different psychological conditions developed during lockdown and entire COVID-19 restrictions time the launch of accessible and scalable programs was crucial. There were several advantages when the wellness programs were delivered online. Clients have taken changes as a necessity to maintain their well-being and they have adapted for the time of closures. But in the long term they have expressed the need to return to in-person classes to have access to community support and being socially connected (Brinsley, Smout & Davison, 2021). Even though part of the expenditures transitioned to digital formats it still didn’t prevent the loss within this sector when physical locations were closed (Yeung, Johnston & Callender, 2022).

3.2 Digital transformation and service adaptation under pandemic conditions

We cannot make same conclusions of the effects of COVID-19 to the recreational physical activity segment since the perception of environment, recreational activities and patterns related to this field differentiate depending on individual preferences, social inclusiveness, cultural background, and geographical location. Not everyone had the same access or resources to get involved in recreational activities (Grzyb, Kulczyk, Derek & Woźniak, 2021). Furthermore, the number of individuals that have started using digital mediums have increased but there is still a gap between different users on how commonly they are using functions of the new mediums being provided, their intensity and usage rates (Newbold, Rudnicka & Cox, 2021).

There has been no similar situation that could predict the outcomes of disruption in consumer behavior but overall, the level of inclusion of consumers in physical activities has been determined by age, gender and partially income. Young adults were more risk-taking while older demographics emphasized self-protection measures to avoid disease. There were higher concerns about the health and financial risks perceived among women. Moreover, individuals with low income have been spending less finance on non-essential purchases and participating in activities that didn't require investments (Basu & Swaminathan, 2023).

One of the most critical elements was shaping customer experience the way the relationship quality and loyalty created over the years was not lost (Park, Lee & Nite, 2022). Customer experience was designed to support people during uncertain times, focusing more on health-related information rather than entertainment. When physical locations were closed digital mediums served as alternative to provide physical activity services and inform clients on preventive care. Upon re-opening workout facilities clients prioritized informative messages such as compliance with cleaning protocols or safety measures being taken. Protecting consumers became more important than service itself and brand communication during stressful times has significantly changed (MacSween & Canziani, 2023).

Besides the rebranding efforts that some of the businesses have made during and post-pandemic, communication has moved beyond the traditional channels such as TV or billboards. There has been more focus put on social media, releasing relevant content, engaging with consumers directly and building long-term relationships through adopting affordable pricing during the pandemic. Several good practices were visible in the physical activity sector where fitness studios transitioned to live-streaming free virtual workouts and retained their customers even after pandemic. Some businesses have experienced customer engagement like never before and have adopted their strategies to fill in the increasing demand for digital solutions (Basu & Swaminathan, 2023).

Social media marketing has gained momentum during the pandemic and represents a low-cost marketing tool that can support development of smaller businesses within the wellness industry. With the use of different social media channels companies can simplify

communication processes, showcase their work, establish a community, and promote their business across borders. This format supported many businesses especially during the pandemic, but it came with few challenges as well. With more virtual service providers, the market rates went down, there was no opportunity for personal touch and clients were sometimes having difficulties in identifying legitimate information (Kaur & Kumar, 2022).

The change in shopping behavior caused increased use of not only social media but also moved transactions online. There were new users that hadn't been shopping online before pandemic and services were more likely be used when integrating simple solutions. Physical activity service providers were using accessible platforms that didn't require additional learning for the user and adapted their offers to fit the use on mobile devices. That changed the business landscape of physical activity services and gained customer acceptance in the long term (John & Thakur, 2021).

Businesses decided to follow the necessary shift towards implementing different digital practices based on the needs of their clients that are mentioned in previous paragraphs. It was more than just setting up the application process online, moving communications to different channels and delivering the services in digital format. It was a learning phase that accelerated the implementation of different elements within digital transformation field (Algar & Griffiths, 2022). Furthermore, the crisis presented an ideal environment for many platforms to move into the mature phase and delivering solutions to the market focusing on online engagement, new sales strategies and delivery options (Kergroach, 2021).

Several businesses who were dependent on their products or services that were limited to the physical location were not necessarily ready for implementation of digital solutions (Thierry, Mihai & Timber, 2020). There was no time to plan the digital transition upfront, selecting proper digital systems, upgrading digital skills, thinking of security issues and fully understand how the digital world functions (Kergroach, 2021).The biggest difficulties for small wellness service providers happened when they had to identify the relevant solutions among many options, but their transformation was easier since there are no structural constrains like within the larger organizations (Mandviwalla & Flanagan, 2021).

Online interaction increased, the number of customers inquiries was higher than usual, they had to assist more users but not always with a positive outcome. Managing an online business requires as much time as physical location since both online marketing and client management is time-consuming. Managing content creation, promoting the work online, responding to clients and working with them simultaneously takes a lot of energy (Kaur & Kumar, 2022). However, the crisis provided an opportunity for wellness sectors to incorporate technologies into their working process and create long-lasting digital practices that can be used in the following years (Vardari, Bytyqi & Lumi, 2022).

The ones who were financially capable of investing into hiring digital agencies have produced more advanced digital solutions and walked the journey of digital transformation

in multiple levels. Smaller physical activity service providers on the other hand implemented simple solutions to continue serving their clients during pandemic and learned how to navigate the digital space themselves (Gupta, Tuunanen, Kar & Modgil, 2023). That is the reason why a lot of effort was invested into developing organizational capabilities to keep up with changes in the business model. They had to overcome the challenge of how to provide a balanced structure that will support both online and offline service delivery with the aim of providing a safe option for their clients (Basu & Swaminathan, 2023).

Operational processes, workspaces and business plans have been redesigned relatively quickly to avoid potential health risks. When restrictions have loosened, the in-door activities have been performed but in a smaller size to provide proper physical distancing and reduce the spread of the disease. But employees still worked in high uncertainty due to unknown development of the pandemic and business owners were under a lot of pressure to keep their business running (Gupta, Tuunanen, Kar & Modgil, 2023).

4 RESEARCH METHODOLOGY

To attain the defined purpose and goals I have conducted a digital survey focusing on consumer behavior, their engagement in recreational physical activities, acceptance of technology or digital resources and post-pandemic engagement within this sector. The survey was designed in a way that results can be compared to other studies within recreational physical activity sector and support the research purposes of this master thesis.

It consists of 15 questions, including demographic information (Appendix 2). All questions are closed-ended with a limited number of options or include a rating scale. There were two languages available to select at the beginning of the survey, English and Slovenian. I have posted the survey on all my social media profiles and within different groups. Furthermore, I have used Survey Circle platform as the largest community for online research. There were also a few local service providers that allowed me to attend dancing classes or workout sessions where I collected additional responses on site. Due to summer vacation, there have been fewer participants at organized recreational physical activities and the number of respondents was lower than it would be in the high season.

The survey was active at 1KA portal for 7 days – between 25th until 31st of July 2023. Within this time there were total units in database 283 of which 78 fully completed the survey and 10 partially completed the survey. Partially completed surveys had responses within the first section before COVID-19 pandemic and haven't continued to other sections, therefore I decided not to include partial responses in the analysis.

There are 78 surveys with full responses used for the analysis. I have collected basic demographic information that supports the research, that is gender, age and location where respondents live. Demographic questions were not obligatory with the option »prefer not to share«.

Table 3: Demographic variables

	Attributes	Percentage (%)
Gender	Male	35
	Female	64
	Prefer not to share	0
Age	18 to 24 years old	1
	25 to 34 years old	30
	35 to 44 years old	41
	45 to 54 years old	17
	55 to 64 years old	10
	Age 65 or older	1
	Prefer not to share	0
Location	Rural area	32
	Small city or town	26
	Suburb near a large city	13
	Large city	26
	Prefer not to share	4

Source: Own work

The results in Table 3 show there were more women than men among all respondents. The age of respondents was on average between 35 to 44 years old, which represents 41% of the respondents. There were 31% respondents below 35 years old and 28% above 44 years old.

Since the location of respondents also represents an important factor in deciding which recreational activity they will choose, I have included a question defining five areas where they live. The results show 32% of respondents live in rural areas, 26% live in a small city or town, 13% live in suburbs near a large city, 26% live in a large city and 3% have decided not to share this information.

Geographic location was not included in this research but with a bigger sample it could represent an important differentiatior between different consumer preferences. There were 72% respondents answering the survey in Slovenian language and 28% in English language. Based on that information we cannot make a conclusion all English speaking respondents live in a foreign country.

5 EFFECTS OF COVID-19 ON RECREATIONAL PHYSICAL ACTIVITY SECTOR AND CUSTOMER PREFERENCES

The following analysis is exploring the change in level of engagement and what are preferred locations for recreational physical activities both before and during COVID-19 pandemic. Furthermore, within the next segment the questions address the use of technology as support for activities performed. To have a brief insight into post-pandemic time the survey also includes customer digital preferences for future engagement in physical activities.

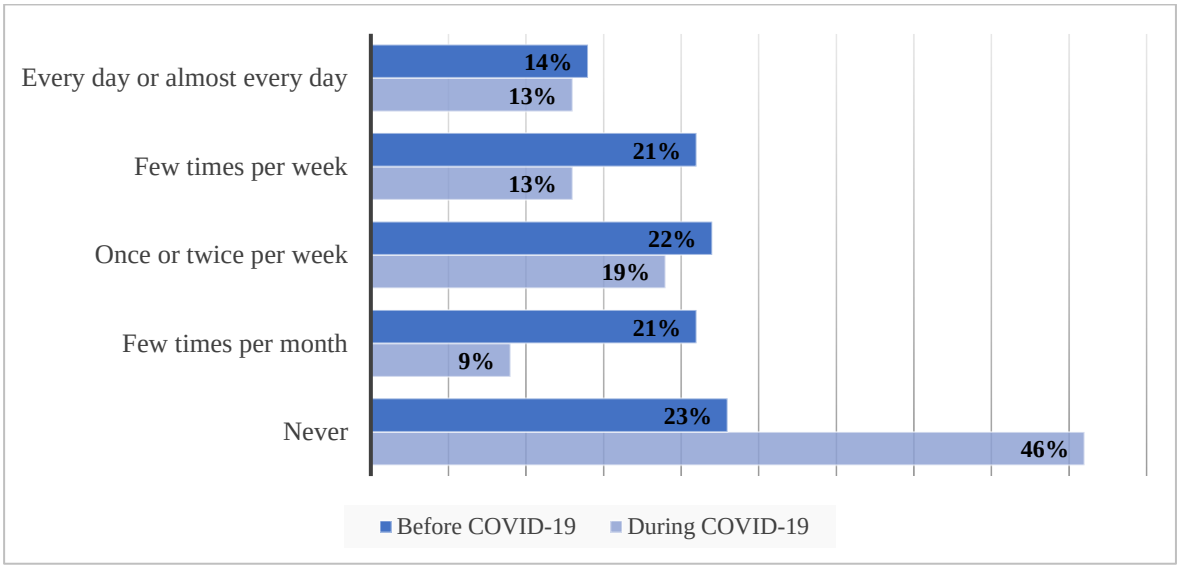
5.1 Level of engagement in recreational physical activities and location

The first part of the survey consists of three questions measuring frequency of participation in sport-related physical activities, engagement in non-sport related physical activities and participation at defined locations before COVID-19 pandemic. To compare the results the same three questions have been repeated in the second part of the survey measuring frequency during COVID-19 pandemic.

5.1.1 Participation in sport-related recreational physical activities

Within the first and fourth question respondents answered how frequently they participated in recreational physical activities that are sport-related such as fitness, group workouts/sports, yoga classes, dance lessons or other similar activities. They have responded for the time before and during COVID-19 pandemic.

Figure 5: Participation in recreational physical activities that are sport-related before and during COVID-19 pandemic



Source: Own work

Results in Figure 5 show that 23% of respondents haven't been participating in recreational physical activities that are sport-related before COVID-19 at all. On average, respondents active within this period have been participating in recreational physical activities that are sport-related once or twice per week.

During COVID-19 pandemic the results show fall of participation in sport-related recreational physical activities in comparison to the time before COVID-19 pandemic. Almost half of the respondents haven't participated in recreational physical activities that are sport-related during COVID-19 pandemic.

When comparing the same respondents within two different time periods it is interesting that not in all cases the frequency of participation in sport-related physical activities is lower as it seems in Figure 5. Therefore, we cannot claim that frequency of participation has lowered for all respondents during COVID-19 pandemic and caused an increase of the respondents who never participated.

Table 4: Participation in recreational physical activities that are sport-related

Level of participation	**Male (%)**	**Female (%)**
Not active before, nor during COVID-19 pandemic.	5	17
Active before but stopped participating during COVID-19.	9	15
Participating at a lower frequency as before.	6	9
Participating with same frequency as before.	12	12
Participating at a higher frequency as before.	3	12

Source: Own work

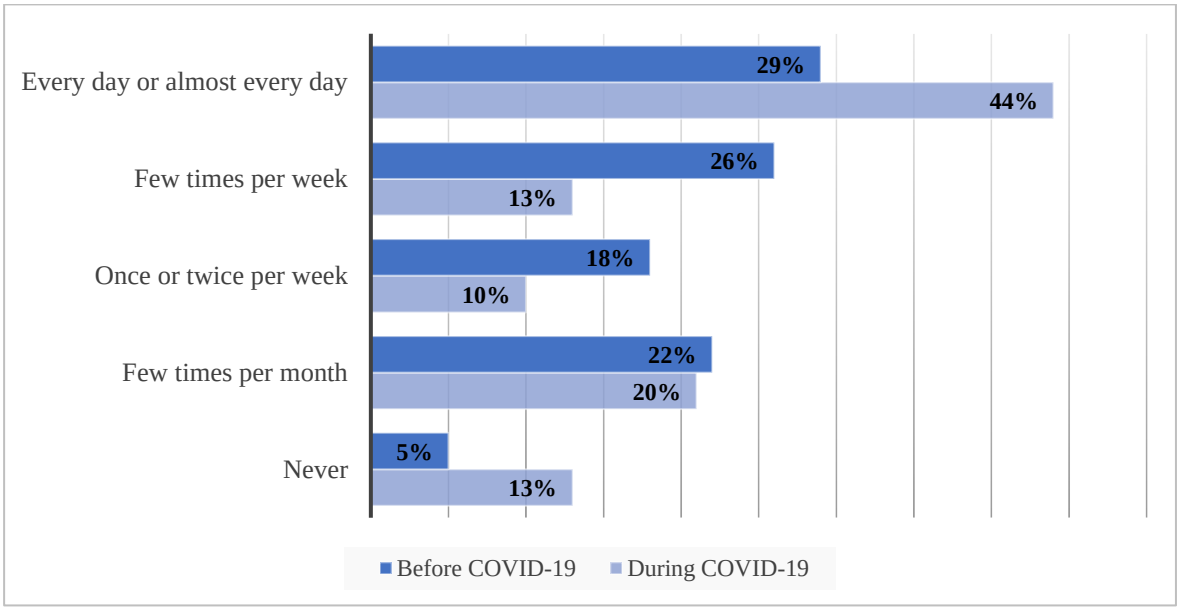
Results in Table 4 show the level of participation in recreational physical activities that are sport related show that 22% of respondents were not participating in these types of activities before the pandemic, nor during the pandemic. While 24% of respondents were previously active and stopped participating in these types of activities during the pandemic. There is a bigger percentage of women who were either not active or stopped being active. Some respondents were participating in sports activites with the same frequency as before pandemic.

It is interesting that there are similar percentage of respondents who lowered their frequency of participation to the ones whose frequency of participation increased within the two time periods. Which confirms that not all participants lowered their participation during the COVID-19 pandemic in comparison to the time before. Furthermore, there were more women among the ones who were participating at a higher frequency as before than men.

5.1.2 Engagement in not sport-related recreational physical activities

Within the second and fifth question respondents answered how frequently they engaged in other recreational activities that are not sport related such as cycling from one place to another, taking a walk in the park, doing outdoor activities (e.g., gardening, playing with kids, hiking) or other similar activities.

Figure 6: Engagement in recreational physical activities that are not sport-related before and during COVID-19 pandemic



Source: Own work

Results in Figure 6 show that most of the respondents have engaged in recreational physical activities that are not sport-related before COVID-19 pandemic at least a few times per month or more. There are only 5% of respondents who were not engaging in these types of activities at all, which is less in comparison to sport-related physical activities.

While during COVID-19 pandemic, the results show that frequency of engagement in not sport-related recreational physical activities have changed in comparison to the time before pandemic. There has been a visible increase in the number of respondents who were engaged in not sport-related activities every day or almost every day and at the same time also an increase in respondents who were not engaging in these types of activities at all.

I have compared the same respondents within two different time periods to better define the change that happened and present them in Table 5. There was a higher number of respondents who either engaged in not sport-related activities with the same or even higher frequency than before. It is interesting that a few respondents that were not active at all started engaging in those activities during the pandemic. We cannot claim COVID-19 pandemic was the reason for the increase in engagement.

Table 5: Participation in recreational physical activities that are not sport-related

Level of engagement	Male (%)	Female (%)
Not active before, nor during COVID-19 pandemic.	0	1
Active before but stopped engaging during COVID-19.	5	6
Engaging at a lower frequency as before.	4	8
Engaging with same frequency as before.	14	29
Engaging at a higher frequency as before.	12	19

Source: Own work

I have further looked for a connection between participation in sport-related activities and engagement in not sport-related activities. I wanted to know whether respondents who were participating less frequently in sport-related activities during COVID-19, increased their engagement in not sport-related activities within the same time.

There were 39% of respondents who were participating in sport-related activities with a lower frequency or completely stopped participating in those activities during COVID-19. Looking at the same respondents, their frequency of engagement in not sport-related activities has either lowered, remained the same or was higher.

There were 10% of respondents who never engaged or lowered their engagement in not sport-related activities, while 16% of respondents remained the same and 13% increased their level of engagement. I cannot make assumptions that respondents were changing their preference in choosing different types of activities because of the pandemic.

5.1.3 Location of recreational physical activities

Recreational physical activities can take place in a wide range of locations, but some were limited to use due to restrictions and closures. To see the difference between two time periods respondents were asked within the third and sixth question how frequently they participated in sport-related or other recreational activities at the locations defined in the list before and during COVID-19 pandemic.

Results have shown that respondents participated in sport-related or other recreational physical activities before COVID-19 pandemic the least frequently within school or university premises, within workspace or elsewhere. Respondents participated in activities within health centers, sport clubs, gym or fitness centers and within home recreation space on average a few times per month. While most respondents have participated in an outdoor activity within a park, forest, beach or other location on average a few times per week.

During COVID-19 pandemic the respondents participated in recreational physical activities less frequently within in-door recreational spaces which were limited in use. There has been increased participation in an outdoor activity or within home recreation space. Respondents who were choosing outdoor activities, the change is visible especially in increase of participation frequency where almost half of respondents have been participating in activities outdoors every day or almost every day. More detailed results are presented in Appendix 3.

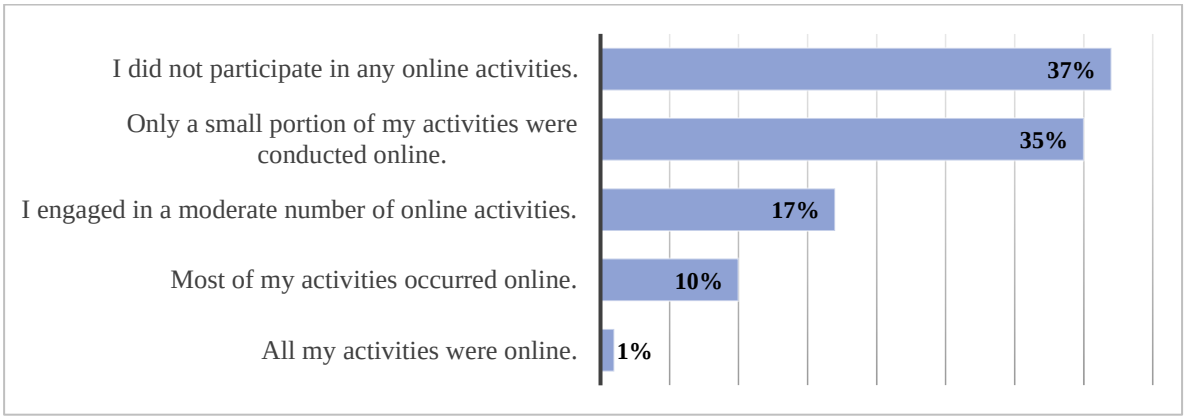
5.2 Use of physical activity technologies during COVID-19 pandemic

There has been a major shift in overall consumer behavior due to limited access to products or services which caused increased use of different digital resources during COVID-19 pandemic across different sectors. Therefore, questions within the next segment of the survey were focusing on customer preferences and their use of online platforms or other digital resources for physical activity during that period.

5.2.1 Engagement in recreational physical activities online

Since the use of digital options within other sectors became necessary, I wanted to assess how this change affected the recreational physical activity sector. Within the seventh question the respondents answered how many of their sport-related or other recreational physical activities took place at online platforms or using other digital resources during COVID-19 pandemic.

Figure 7: Engagement in recreational physical activities online



Source: Own work

Results in Figure 7 show that more than half of the respondents have participated in online activities during COVID-19 pandemic within different scope, while 37% haven't participated in any online activities. There was no connection found between frequency of participation in recreational physical activities and participation in online activities. Some respondents were active every day or almost every day but haven't participated in online activities during COVID-19 pandemic at all.

5.2.2 Influence of digital options on decision-making process

Furthermore, the respondents have rated the importance of given factors in the decision to participate in recreational physical activities through online platforms or digital resources during COVID-19 pandemic.

Table 6: Importance of factors in making decision to use digital mediums

	Not important at all	Somewhat important	Important	Very important	Extremely important	N/A
Convenience and flexibility of accessing activities from home.	8%	13%	19%	23%	13%	23%
Variety and availability of online classes or programs.	8%	13%	37%	17%	5%	21%
Cost-effectiveness compared to in-person options.	12%	12%	32%	13%	10%	22%
Ability to track progress and receive personalized feedback.	14%	17%	26%	18%	5%	21%
Social interaction and community engagement with other participants.	17%	18%	23%	14%	6%	22%

Source: Own work

Results in Table 6 show that the last four factors were important for respondents. While the first one, convenience and flexibility of accessing activities from home, is very important for 23% of respondents and extremely important for 13%, which represents more than a third of responses. This is also related to the accessibility of recreational activities that was mentioned within the previous chapters.

Compared to the responses from the previous question half of the respondents that haven't participated in online activities have chosen the "not applicable" option which can be result of either not being interested in this format of activities or decided not to answer due to other reasons. Other respondents have shared their opinion even though they haven't decided to participate in online activities.

5.2.3 Effects of technology and other digital resources on participation

The respondents were given five sentences describing the use of technology or other digital resources to rate its effects on participation in recreational physical activities compared to before COVID-19 pandemic. With extreme regulations and closures of physical locations there were few options left – to stop being physically active, choose different types of activities or decide on using digital formats that represented alternative to usual choice.

Table 7: Comparison of technology use before and during COVID-19

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A
I was not able to participate in my usual recreational physical activities despite the digital options.	27%	28%	6%	14%	4%	21%
I continued to be physically active and discovered new types of activities through digital options.	8%	10%	17%	35%	15%	15%
I got more engaged in physical activities due to digital options in comparison to before pandemic.	15%	36%	14%	17%	4%	14%
I was already using technology or other digital resources before COVID-19 pandemic and increased the use of it during pandemic.	15%	17%	19%	27%	8%	14%
My level of engagement was about the same as before the pandemic and digital options did not affect me at all.	21%	18%	9%	28%	17%	8%

Source: Own work

The first answer within this question has captured the respondents who were not able to participate in their usual recreational physical activities despite the digital options. Results in Table 7 show that only 18% of respondents agree or strongly agree with the first statement, while more than half respondents disagree or strongly disagree.

I have compared the answers from respondents who lowered frequency of their recreational physical activities or stopped being active completely within at least one of the two categories with answers on the first statement. There is equally devided opinion on both sides of agreement or disagreement with the statement among respondents who stopped being active. Since the pandemic environment was out of normal conditions, the reasons behind the lower activity could be different and not related to accessibility of digital options.

Within the next two statements active respondents have been included and measuring the effects of digital options. Half of the respondents agree or strongly agree they continued to be physically active and discovered new types of activities through digital options. While more than half of the respondents disagree or strongly disagree that their levels of engagement in physical activities have increased due to digital options in comparison to before pandemic.

Furthermore, more than one third of respondents agree or strongly agree they were using technology or other resources before COVID-19 and increased the use of it during pandemic. The last statement captured respondents who feel digital options did not affect them at all and their levels of engagement were about the same as before pandemic. Almost half of the respondents agree or strongly agree with the statement.

Based on this information we can assume that respondents were aware of the digital options, but it was a matter of choice whether to use them or not and within what extent. When looking at the results related to use of online or digital resources during COVID-19 pandemic, more than third respondents were using streaming services such as Youtube, Instagram, Facebook and other resources very often or every day. Those were the most frequently used mediums to access information related to recreational physical activities. A comparison between the use within different periods is made within the following chapter.

5.3 Customer use of digital resources during and after COVID-19 pandemic

The third part of the survey consists of questions related to the use of digital resources during and after COVID-19 pandemic for the purpose of recreational physical activities. Furthermore, the last question is researching future preferences of respondents when participating in organized recreational physical activities.

5.3.1 Use of online or digital resources for assistance or guidance

The respondents have answered how frequently they used online or digital resources from the given list to assist or guide them in recreational physical activities during COVID-19 pandemic and in the time after pandemic.

Results of the survey show that among online platform or digital resources before COVID-19 pandemic respondents used the least frequently active electronic games such as Xbox Kinect and subscription based online fitness courses/videos. The most frequently used were streaming services, such as Youtube, Instagram, Facebook or others. Followed by sport/activity mobile applications and facilitated online live or recorded classes.

Table 8: Use of online or digital resources during and after COVID-19 pandemic

	During COVID-19 pandemic		**After COVID-19 pandemic**	
	Mean	**Std. deviation**	**Mean**	**Std. deviation**
Streaming services (YouTube, Instagram, Facebook)	2,8	1,37	2,3	1,24
Subscription based online fitness courses/videos	1,7	1,16	1,7	1,02
Facilitated online live or recorded classes via platforms such as Zoom	2,2	1,32	1,7	1,06
Sport/activity mobile applications	2,2	1,33	2,1	1,36
Active electronic games such as Xbox Kinect	1,1	0,57	1,1	0,53

Source: Own work

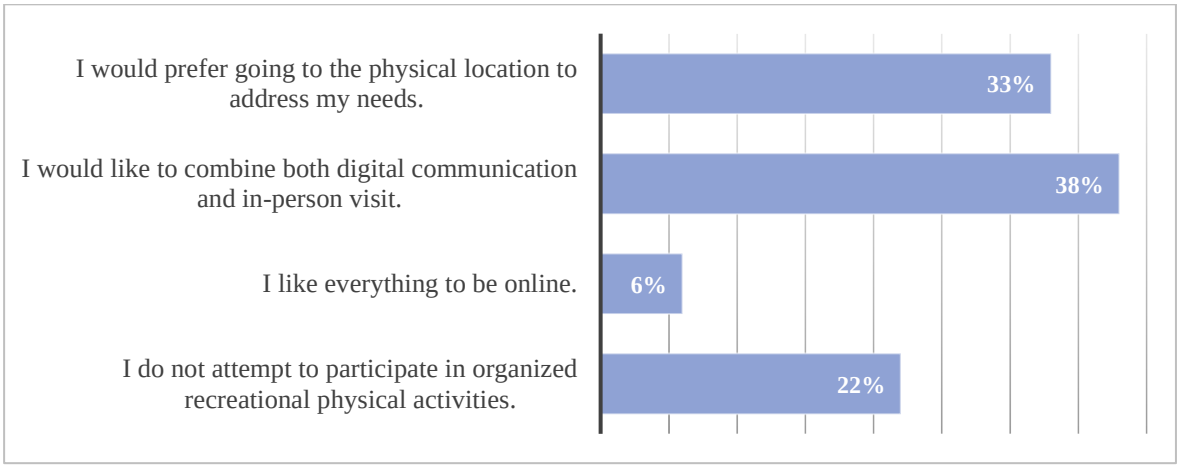
After COVID-19 pandemic active electronic games such as Xbox Kinect remained as the least frequently used. While there is a different share of respondents using other online platforms or digital resources in comparison to the time during pandemic. Results in Table 8 show the biggest change happened for facilitated online live or recorded classes via platforms such as Zoom. They are on average less frequently used after COVID-19 pandemic. More than half of respondents never use it now that pandemic is over. Also, respondents are using streaming services less frequently for the purpose of supporting them in doing physical activities.

What is interesting there are more respondents willing to use subscription based online fitness courses/videos but less frequently than before, while slightly more respondents are willing to use sport/activity mobile applications in comparison to before pandemic with similar frequency as before.

5.3.2 Engagement in recreational physical activities online

Within the last question the respondents have answered what kind of engagement they would prefer when participating in organized recreational physical activities in the time after COVID-19 pandemic. This refers to their consumer preferences in using digital ways of communication with service providers.

Figure 8: Engagement after COVID-19 pandemic



Source: Own work

There is still a smaller percentage of people who prefer to have everything online, despite the change in preferences during COVID-19. Results in Figure 8 show that 33% of respondents would prefer going to the physical location to address their needs and 38% would combine both digital communication and in-person visit. For those who are not planning to participate in organized recreational physical activities this does not play a role when being active.

6 RESEARCH FINDINGS AND RECOMMENDATIONS FOR FUTURE DEVELOPMENT OF THE SECTOR

Within this chapter I will shortly recap the research findings, point out some of the limitations when conducting the research and give recommendations to the reader of this master thesis on how to use the given information. I compared the information from existing literature with data collected through the survey to present the topic through different lenses.

6.1 Research findings

I covered three fundamental topics – change of participation levels for different types of activities within different periods, influence of technology use on participation levels especially during the pandemic and post-pandemic engagement within the sector.

Overall, the research results from the survey show that frequency of participation in recreational physical activities that are sport-related lowered, while frequency of engagement in not sport-related activities increased. The increase in outdoor activities would be a logical explanation of how COVID-19 affected the change in preferences when looking only at the basic analysis. But when comparing the same respondents within two different time periods, the levels of participation haven't lowered or increased for all respondents in the same way.

Therefore, we need to be cautious when reading papers that are claiming people preferred choosing outdoor activities since they were not limited with social distancing and recognized this as a safer option to remain active (Beall et al., 2022) or other claims similar to this. We cannot say the entire population lowered their participation in sport-related activities and switched to outdoor activities. When reading articles additional statistical tests might give more accurate information on the levels of participation and the effects of changed circumstances during COVID-19.

Responses regarding the location confirmed some of the observations from the literature. The frequency of performing recreational physical activities indoors has lowered. That could be the result of restrictions that caused closures of fitness centers, health clubs or other recreational spaces (Bagherian, Ghahfarrokhi & Banitalebi, 2021) in combination with indoor activities being less desirable due to health risks (Yeung, Johnston & Callender, 2022). The frequency of choosing outdoor or at home activities for performing recreational physical activities has increased, which was also mentioned within the theoretical part.

Furthermore, regarding the use of technology there were changes in consumer behavior. Not all respondents were using digital options to support their participation or engagement in recreational physical activities and there were different levels of use depending on the technology or other resources being available. That is also dependent on how the service providers reacted to COVID-19 pandemic and its limitations.

For respondents who were using technology to participate in recreational physical activities either through online platforms or digital resources, the most important factor when deciding was convenience and flexibility of accessing activities from home. There were split opinions on how technology use influenced participation levels. Some were not affected by digital options at all, while others felt some effects, mostly discovering new activities through digital options or increasing existing levels of technology use.

I cannot claim that the results of my survey can confirm the increase in use of digital technologies or other resources within the extent that articles were mentioning. Especially within the fitness sector there was a massive increase in app downloads (Diebner, Silliman, Ungerman & Vancauwenberghe, 2020) or increased use of fitness wearables (Mathavan, Vafaei-Zadeh, Hanifah, Ramayah & Kurnia, 2022). There are several factors that affect the use of both, which also includes the geographical location of the respondents.

Within the last part I was comparing the use of technology during and after COVID-19 pandemic. The frequency of using different online platforms or digital resources has changed in some cases lowered or remained the same. It is interesting there are more people willing to use subscription based online fitness courses/videos and sport/activity mobile applications that support their physical activities but less frequently. Despite the increase in use of technology, consumer preferences after pandemic are still more prone to physical interaction or combination with digital communication, rather than having it all online.

Change in consumer behavior and acceptance of digital solutions is presented within the literature as an opportunity for the recreational physical activity sector to incorporate technologies into the business and develop long-term digital practices (Vardari, Bytyqi & Lumi, 2022). Furthermore, the pandemic was a learning phase where companies needed to react quickly, therefore they have gained valuable practical knowledge for further development of this field (Algar & Griffiths, 2022).

6.2 Research limitations and further recommendations

For further research, questions or research topic could go even more into detail such as focusing for example on indoor activities that were affected the most by COVID-19 closures. Moreover, there is a difference between different types of recreational physical activities where use of digital resources can be implemented at different levels. Participation in sport-related activities also does not require the same resources as the ones not sport-related.

Other studies are in some cases investigating the effects of COVID-19 pandemic only on population that is already physically active while this survey was not limited only to physically active population. There are some individuals that were not active before the pandemic and changed their habits or vice versa. Since the pandemic is an extreme event, we cannot use the data related to digital transformation and claim increased use of technology is a long-term change.

More in-depth analysis would be required with a more detailed survey but for that incentives for the respondents in this case are necessary. I have detected the current survey was taking a lot of time for respondents to get through and might discourage some from participating. This master thesis can represent a framework for further research which can be focused on one specific element within recreational physical activity sector to get more accurate results.

CONCLUSION

Numerous studies have shown that the COVID-19 pandemic accelerated changes within a significantly shorter timeframe compared to normal circumstances. Businesses were forced to implement solutions at several different levels out of necessity without sufficient time for planning. The pandemic environment was therefore both challenging and innovative at the same time due to disruptive circumstances.

Digital transformation has become a global trend, helping mitigate the effects of pandemic where possible and introducing new perspectives on the use of technology. Also, the acceptance of digital solutions has moved development within this field to the next level but with caution. Not all companies managed to execute digital transition that could last beyond the pandemic time with success.

Within the context of digital transformation of recreational physical activity sector there has been a visible change in consumer preferences in favor to activities that don't involve being in a crowded indoor space. However, that doesn't mean that consumers were choosing to participate in activities exclusively online to substitute the lost options. They started using technology more than before to search for alternatives and became aware of other digital resources that can support their recreational activities.

Within demanding conditions not only consumer preferences have changed but also other business-related elements who affect the digital transformation of this sector. There has been a bigger effect on businesses that offered in-person services and needed a solution for their existing clients that wanted to continue their membership despite restrictions. During closures those businesses increased communication through different online channels and started offering digital options. The positive outcome in this case was increased digital maturity within this sector with great potential for future digital steps.

I believe the purpose and goals of this master thesis were partially captured since the topic is extensive. The results of this massive disruption will be shown within the upcoming years when it will be possible to determine whether consumer preferences have really changed in favor of increased levels of digital transformation within different sectors. With the future in mind there are several possibilities for research within this field that could provide information on more specific factors that influenced participation in recreational activities and include digital transformation topics.

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Magistrska naloga obravnava vpliv COVID-19 pandemije na digitalno preobrazbo sektorja rekreativne telesne dejavnosti. V tem obdobju so bile vidne hude posledice v poslovnem okolju, na trgu dela in v javnih financah (Gregosz, Köster, Morwinsky & Schebesta, 2020), saj so z namenom preprečevanja širjenja bolezni države sprejele različne ukrepe kot so omejitve potovanj, zapiranje vseh nenujnih dejavnosti, uvedba strogih karanten in podobno (Ali, Bhuiyan, Zulkifli & Hassan, 2022). Posledično se je zaradi odsotnosti delavcev in zmanjšane proizvodnje več kot 90% podjetij po vsem svetu soočalo s težavami v oskrbovalni verigi (Lusiantoro, Purwanto & Rostiani, 2021). Prav tako so bile prizadete industrije odvisne od stikov in interakcij z ljudmi, saj so jim dolgotrajna zaprtja onemogočala opravljanje dejavnosti na fizični lokaciji (Strain, 2020).

Digitalni prostor je tako postal v težavnih razmerah ena od glavnih gonilnih sil v gospodarstvu in omogočil uporabnikom po celem svetu ne le spletno nakupovanje, vendar tudi delo od doma, spletne učilnice za študente, reševanje administrativnih postopkov prek spleta in še več (Gregosz, Köster, Morwinsky & Schebesta, 2020). Digitalna preobrazba ne zajema le tehnološke rešitve, vendar vključuje tudi izkušnjo potrošnikov, operativne procese in poslovne modele. Za uspešno implementacijo pa so potrebne tudi digitalne zmožnosti podjetja, ki so na razpolago znotraj podjetja ali v sodelovanju z zunanjimi partnerji (Westerman, Calméjane, Bonnet, Ferraris & McAfee, 2011).

Sočasno s pospešeno digitalno preobrazbo je bilo čutiti tudi dvig kolektivnega zavedanja o pomembnosti zdravja in dobrega počutja na več ravneh (Choudhary in Qadir, 2021), zato sem te dejavnike podrobneje raziskala v nadaljevanju znotraj okvirjev wellness panoge. Sedem od enajstih sektorjev te panoge se je med pandemijo soočalo s hudimi izzivi zaradi množičnega padca prodaje na fizičnih lokacijah, ki je ni bilo mogoče nadomestiti preko e-trgovine, zmanjšanega obiska ponudnikov storitev zaradi zaprtja ter nezmožnosti izpolnjevanja obveznosti zaradi motenj v oskrbovalni verigi (Youn et al., 2022).

Znotraj sektorja rekreativne telesne dejavnosti so omejitve spremenile navade potrošnikov ter njihovo uporabo rekreacijskih centrov, fitness objektov, gozdnih poti, javnih parkov in drugih prostorov za rekreacijo (Furman, Volz & Rothman, 2023). Zaradi varnostnih ukrepov so posamezniki spremenili svoje običajne rutine in določene aktivnosti izvajali v domačem okolju. Prav tako različni viri navajajo povečano rabo tehnologije ali drugih digitalnih virov z namenom udejstvovanja v dejavnostih kljub omejitvam (Montemarano, 2020).

Podjetja znotraj te panoge so tako morale nadgraditi svoje digitalne veščine, izbrati ustrezne rešitve za podporo strankam ter zagotavljanje storitev skozi digitalne medije. Ker ni bilo časa za načrtovanje digitalnega prehoda vnaprej, so se mnoga podjetja srečevala s težavami pri izbiri pravih rešitev (Kergroach, 2021). Tudi po sprostitvi omejitev poskušajo podjetja ohraniti uravnoteženo strukturo z zagotavljanjem storitev na fizični lokaciji v kombinaciji s spletno komunikacijo (Basu & Swaminathan, 2023).

Appendix 2: Survey COVID-19 and physical activity

INTRODUCTORY PAGE

Dear Participant,

The following survey will take 5-7 minutes of your time.

It consists of three core topics: how the pandemic has influenced your engagement in recreational physical activities, your acceptance of digital services and post-pandemic engagement in this sector.

All your responses will be anonymous and used solely for the research purposes for my master thesis *"The effects of COVID-19 pandemic on digital transformation of recreational physical activity sector"*.

Thank you for taking the time to participate in this survey.

Best Regards,

Tanja Malovrh

Language:

- o English
- o Slovenščina

PAGE 1 - TIME BEFORE COVID-19 PANDEMIC

Please take a moment to reflect on the time **before COVID-19 pandemic** and your participation in recreational physical activities.

Q1

How often did you participate in recreational physical activities that are **sport-related** such as fitness, group workouts/sports, yoga classes, dance lessons or other similar activities **before COVID-19 pandemic**?

o Never	o Few times per month	o Once or twice per week	o Few times per week	o Every day or almost every day

Q2

How often did you engage in other recreational physical activities that are **not sport-related** such as cycling from one place to another, taking a walk in the park, doing outdoor activities (e.g., gardening, playing with kids, hiking) or other similar activities **before COVID-19 pandemic**?

○ Never ○ Few times per month ○ Once or twice per week ○ Few times per week ○ Every day or almost every day

Q3

Please rate the frequency of participation in sport-related or other recreational activities at the locations defined below **before COVID-19 pandemic**.

	Never	Few times per month	Once or twice per week	Few times per week	Every day or almost every day
Health centers, sport clubs, gym or fitness centers	○	○	○	○	○
Within school or university premises	○	○	○	○	○
Outdoor, in a park, forest, beach etc.	○	○	○	○	○
Within workspace	○	○	○	○	○
Home recreation space	○	○	○	○	○
Elsewhere	○	○	○	○	○

PAGE 2 - TIME DURING COVID-19 PANDEMIC

During COVID-19 pandemic restrictions were limiting some of the in-person activities. Please evaluate your participation in recreational physical activities within that period.

Q4

How often did you participate in recreational physical activities that are **sport-related** such as fitness, group workouts/sports, yoga classes, dance lessons or other similar activities **during COVID-19 pandemic**?

○ Never ○ Few times per month ○ Once or twice per week ○ Few times per week ○ Every day or almost every day

Q5

How often did you engage in other recreational physical activities that are **not sport-related** such as cycling from one place to another, taking a walk in the park, doing outdoor activities (e.g., gardening, playing with kids, hiking) or other similar activities **during COVID-19 pandemic**?

- ○ Never
- ○ Few times per month
- ○ Once or twice per week
- ○ Few times per week
- ○ Every day or almost every day

Q6

Please rate the frequency of participation in sport-related or other recreational activities at the locations defined below **during COVID-19 pandemic**.

	Never	Few times per month	Once or twice per week	Few times per week	Every day or almost every day
Health centers, sport clubs, gym or fitness centers	○	○	○	○	○
Within school or university premises	○	○	○	○	○
Outdoor, in a park, forest, beach etc.	○	○	○	○	○
Within workspace	○	○	○	○	○
Home recreation space	○	○	○	○	○
Elsewhere	○	○	○	○	○

Q7

How many of your sport-related or other recreational physical activities took place at online platforms or using other digital resources **during COVID-19 pandemic**?

- ○ I did not participate in any online activities.
- ○ Only a small portion of my activities were conducted online.
- ○ I engaged in a moderate number of online activities.
- ○ Most of my activities occurred online.
- ○ All my activities were online.

Q8

Please rate the importance of the following factors in your decision to **participate in recreational physical activities through online platforms or digital resources during COVID-19 pandemic**. *Please select N/A in case you don't know, you have no opinion, or you haven't participated in online activities.*

	Not important at all	Somewhat important	Important	Very Important	Extremely important	N/A
Convenience and flexibility of accessing activities from home.	○	○	○	○	○	○
Variety and availability of online classes or programs.	○	○	○	○	○	○
Cost-effectiveness compared to in-person options.	○	○	○	○	○	○
Ability to track progress and receive personalized feedback.	○	○	○	○	○	○
Social interaction and community engagement with other participants.	○	○	○	○	○	○

Q9

Please rate the frequency of **using the following online platforms or digital resources during COVID-19 pandemic** to assist or guide you in recreational physical activities.

	Never	Rarely	Sometimes	Very often	Every day
Streaming services (YouTube, Instagram, Facebook)	○	○	○	○	○
Subscription based online fitness courses/videos	○	○	○	○	○
Facilitated online live or recorded classes via platforms such as Zoom	○	○	○	○	○
Sport/activity mobile applications	○	○	○	○	○
Active electronic games such as Xbox Kinect	○	○	○	○	○

Q10

Please rate the following sentences describing **how the use of technology or other digital resources affected your participation in recreational physical activities compared to before the COVID-19 pandemic**. *Please select N/A in case you don't know, you have no opinion, or it doesn't apply to you.*

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A
I was not able to participate in my usual recreational physical activities despite the digital options.	○	○	○	○	○	○
I continued to be physically active and discovered new types of activities through digital options.	○	○	○	○	○	○
I continued to be physically active and discovered new types of activities through digital options.	○	○	○	○	○	○
I was already using technology or other digital resources before COVID-19 pandemic and increased the use of it during pandemic.	○	○	○	○	○	○
My level of engagement was about the same as before the pandemic and digital options did not affect me at all.	○	○	○	○	○	○

PAGE 3 - TIME AFTER COVID-19 PANDEMIC

Within the last segment think of your participation in recreational physical activities **after COVID-19 pandemic** and your future preferences.

Q11

Please rate the frequency of using the following online platforms or digital resources in the time **after COVID-19 pandemic** to assist or guide you in recreational physical activities.

	Never	Rarely	Sometimes	Very often	Every day
Streaming services (YouTube, Instagram, Facebook)	○	○	○	○	○
Subscription based online fitness courses/videos	○	○	○	○	○
Facilitated online live or recorded classes via platforms such as Zoom	○	○	○	○	○
Sport/activity mobile applications	○	○	○	○	○
Active electronic games such as Xbox Kinect	○	○	○	○	○

Q12

What kind of engagement would you prefer when participating in organized recreational physical activities in the time **after COVID-19 pandemic**?

- ○ I prefer going to the physical location to address my needs.
- ○ I would like to combine both digital communication and in-person visit.
- ○ I like everything to be online.
- ○ I do not attempt to participate in organized recreational physical activities.

PAGE 4 - DEMOGRAPHIC QUESTIONS

There are just a few demographic questions for you to answer and you are done. Questions are optional.

Q13

What is your gender?

- ○ Male
- ○ Female
- ○ Prefer not to share

Q14

What is your age range?

- 18 to 24 years old
- 25 to 34 years old
- 35 to 44 years old
- 45 to 54 years old
- 55 to 64 years old
- Age 65 or older
- Prefer not to share

Q15

What best describes the place where you live now?

- Rural area
- Small city or town
- Suburb near a large city
- Large city
- Prefer not to share

FINAL PAGE

Thank you for taking your time to participate in this survey.

The results will contribute to a comprehensive understanding of the changes experienced within the recreational physical activity sector and add value to my master thesis.

Best Regards,

-Tanja Malovrh

Appendix 3: Survey data for analysis

Within the following tables there is additional data that has been used for the purpose of analysis.

Table 1: Frequency of participation in recreational physical activities at given locations before COVID-19 pandemic

QUESTION 3: Please rate the frequency of participation in sport-related or other recreational activities at the locations defined below before COVID-19 pandemic.								
Subquestions	Responses						Mean	Std. deviation
	Never	Few times per month	Once or twice per week	Few times per week	Every day or almost every day	Total		
Health centers, sport clubs, gym or fitness centers	37 48%	15 19%	12 16%	7 9%	6 8%	77 100%	2,1	1,31
Within school or university premises	64 83%	8 10%	4 5%	1 1%	0 0%	77 100%	1,2	0,61
Outdoor, in a park, forest, beach etc.	4 5%	18 23%	18 23%	20 26%	18 23%	78 100%	3,4	1,22
Within workspace	59 76%	7 9%	3 4%	4 5%	5 6%	78 100%	1,6	1,19
Home recreation space	29 37%	21 27%	7 9%	15 19%	6 8%	78 100%	2,3	1,35
Elsewhere	45 58%	17 22%	6 8%	9 12%	1 1%	78 100%	1,8	1,09

Source: Own work

Table 2: Frequency of participation in recreational physical activities at given locations during COVID-19 pandemic

QUESTION 6: Please rate the frequency of participation in sport-related or other recreational activities at the locations defined below during COVID-19 pandemic.								
Subquestions	Responses						Mean	Std. deviation
	Never	Few times per month	Once or twice per week	Few times per week	Every day or almost every day	Total		
Health centers, sport clubs, gym or fitness centers	67 86%	6 8%	2 3%	2 3%	1 1%	78 100%	1,3	0,75
Within school or university premises	75 96%	2 3%	0 0%	0 0%	1 1%	78 100%	1,1	0,48
Outdoor, in a park, forest, beach etc.	5 6%	16 21%	13 17%	10 13%	34 44%	78 100%	3,7	1,38
Within workspace	65 83%	4 5%	4 5%	3 4%	2 3%	78 100%	1,4	0,94
Home recreation space	18 23%	13 17%	11 14%	21 27%	15 19%	78 100%	3	1,47
Elsewhere	53 69%	13 17%	3 4%	6 8%	2 3%	77 100%	1,6	1,06

Source: Own work