

Restructuring Time Use Under COVID-19 Pandemics

Bohdan Jung^{1,*}, Tadeusz Kowalski²

¹Faculty of Economic Analysis, Warsaw School of Economics (SGH)

²Faculty of Journalism, Information and Book Studies, Warsaw University (UW)

Abstract As early evidence of COVID-19 19 pandemics' impact of daily time use is beginning to emerge, the chapter documents and discusses the expected shifts in time use towards more home-based activities. These trends (more remote work and education) are not new, but the pandemics has clearly accelerated them and widened their scope. The time of media consumption has also increased across virtually all segments of the media market. Some of the less obvious effects of Covid-19 pandemics on time use is the growing hybridisation of time when both work and leisure take place at home, the relative undervaluation of leisure time (in its present restrained, home-based form of activities) and change in the perception of home as the quiet place which shields from work-related stresses.

Keywords Time Use, Temporal Order, Time Hybridization, Media Consumption, Remote Work, Remote Education, Pandemics

1. New Issues and Approaches to the Use of Time

Roughly speaking, the modern approach to the use of time was introduced in the XXth century. It consisted of viewing time as a social construct (it was conceptualised as work time, leisure time and time of obligations). Relations within this triad was theorised as 'dynamics of social time' (Dumazedier, 1974). The most dynamic element of these three social times was leisure time which increased significantly in the second half of the XXth century under unionised employees' push for shortening work time (V. A. Ramey, N. Francis, 2009). Leisure was time free from work, but also free from other obligations¹. Such was the conceptualisation of time use in time budget studies, one of the more costly social statistics done periodically to this day by national statistical offices (J. Gershuny, M. Vega-Rapun, J. Lamote Perez, 2020).

The distinction between work and leisure in the industrial era seemed deeply embedded in social practice: work was clearly anchored in time and space as a place people would go to, end of work also meant (physically) leaving the

workplace. For the bulk of employees, fixed working hours also meant relatively inflexible leisure hours. Being biologically predetermined, most of the hours needed for obligations were also relatively inflexible in terms of duration and timing (such as the time of sleep and eating). This created an industrial temporal order, which still influences us to this day (just to mention traffic congestion at the time of commuting to/from work, peak demand for entertainment on Friday and Saturday evenings, holiday patterns strongly concentrated in time). This also provided a temporal framework for many consumption patterns, including characteristic peaks for media consumption, still to be respected by today's highly individualised and flexible social media, even though work is becoming more remote and dissociated from the workplace. In this context, leisure/work choices could also be analysed as "time rich/money poor" and "money-rich/time-poor" consumer temporal strategies.

With the diffusion of such elements of the digital economy as remote work and the 24 hr economy, there rose a need to reconceptualise the use of time. Psychologists have long studied how people experience the physical passage of time (Csikszentmihalyi, 2008). Various studies showed that human beings experience time more as a subjective phenomenon than an objective (i.e. mechanical, clock-based) one, focusing on changes or events in the passage of time (e.g., Droit-Volet and Meck, 2007; Matthews and Meck, 2016). These changes or events affect how people experience time, what they pay attention to, and even what memories come to their mind (Block and Gruber, 2014).

One of the emerging theoretical approaches was to analyse relations between space-time, physical time and psychological time (Sorli, Fiscoletti, Klinar, Gregl, 2021). This was to overcome the shortcomings of using clock time

* Corresponding author:

bohdan.jung@gmail.com (Bohdan Jung)

Published online at <http://journal.sapub.org/ijire>

Copyright © 2021 The Author(s). Published by Scientific & Academic Publishing

This work is licensed under the Creative Commons Attribution International

License (CC BY). <http://creativecommons.org/licenses/by/4.0/>

1 These obligations were conceptualized as activities necessary for biological and social existence of humans (time needed for sleep, food, health, caring for the young and the old, education, training and civic activities). Given the biological, nearly organic nature of these obligations, time of obligations was viewed as a constant element of time use, with little variation over time.

as a measuring system taking into account only physical phenomena running exclusively in space and not in time. In this system, clocks are systems for measuring frequency, velocity, duration and numerical order of physical events. However, past, present and future exist as a psychological time. We project linear psychological time (i.e. “past-present-future”) into space². Time also involves ‘duration’ which is linked to our perception of its flow. Hence, we see the emergence of narratives of harried lifestyles (Schor 1999, Wajcman, 2015) so characteristic of the opening decades of the XXI century.

Another theoretical approach to the contemporary use of time is more technology-based. The main theme of this approach is time hacking or research on how technologies mediate time. The term “time hacking” is used to capture the various ways technologies mediate users’ time perception and perspective³. Time is always defined in relation to the purposes it serves (T.M. Allen, 2008). People treat time like a medium, or a resource that needs to be allocated and managed. This approach to time as a rare, limited and irreplaceable resource managed very carefully is firmly established in social sciences, which discuss it in relation to other concepts: time and value, time and space, time and life, time and work (Lingard and Thompson, 2017). In this view, time is produced rather than realised—we “make” the time to manage our life, face challenges, and stay productive and people are responsible for managing their time and they can succeed if they make the right choices. The idea that time is an asset that people need to use wisely resonates with the Western conception of time as an individualistic resource, a commodity, a sequence of events that can be mastered by means of computational expertise especially that with the emergence of digital communication technologies, people have gained new opportunities to orchestrate their life trajectories, to count the exact use of their time with ever more precise tools (Nagy, Eschrich, Finn, 2020). New technologies are also constantly sold to users as time-saving “miracle” devices that offer valuable help in achieving an exciting, fast-paced lifestyle. Yet, as a body of well-documented sociological research shows, despite these time-saving promise, people tend to feel that the speed of life has accelerated, and people increasingly, feel hurried and lagging behind (Wajcman, op.cit.). As a result, they even more frantically search for technologies that can help them to “hack” time and make use of it more effectively, hoping to the eliminate “dead time” or “downtime” in which people are

forced to rely on their own mental resources for entertainment or reflection.

Despite a productivity-based bias in ‘hacking time’ approach, we also see the emergence of a more qualitative approach to contemporary time, in which psychological time is not a unidimensional concept, and can be broken down into two notions: time perception and time perspective. Time perception—the way human beings experience the passing of time—is an inherently subjective experience shaped by social and emotional factors (Wittman, Lehnhoff, 2005), but digital technologies opened up new ways for users to structure and manage their time, blurring the boundaries of time and space, home and the outside world, work and leisure. The ways people experience time influence their sense of identity, and are mediated by technological systems (Leshed and Sengers, 2011). Thus devices shape how people perceive and interact with time. This joins the earlier post-modern reflexions on how technologies replace the linear logic of clock time with a radically new time experience of instantaneous time, short-term and fragmented (Urry, 2008).

In reality, it may well be that “the tools are conduits for technology companies and their functionaries, stakeholders, and business partners to hack time for them” (Nagy, Eschrich, Finn, 2020, p.19). Yet another research agenda for contemporary use of the time that may be pertinent to the Covid pandemic era is the growing hybridisation of time (Kowalski, Jung, 2020). The blurring of boundaries between leisure and work/education (both of which under Covid sanitary regimes are conducted at home) could lead to profound qualitative changes in everyday life. Users get notifications, updates, and emails in real-time no matter where they geographically stay or live, which breaks down the boundaries between their leisure time and professional lives (Golden and Geisler, 2007).

A recent study on “Everyday life under pandemics”⁴ run on a non-representative sample of random Web-collected respondents revealed a couple of interesting qualitative dimensions in responses to the Covid pandemics in Poland. One of them was the notable trend towards autarchy (as opposed to interdependence), increased scope of do-it-yourself (DIY) activities, as well as the need to isolate oneself at home to reach higher levels of concentration and focusing of attention needed to work remotely, do distance learning and homework. Pandemics also changes our perception of time as it blurs the distinction between our work and leisure time (especially that both increasingly take place within a home). This also increases pressure on our time discipline and organisation of the day to cope with diverse needs and life patterns of persons living together under the same roof 24 hours per day. Under these temporal

2 A.Sorli, D.Fiscaletti, D.Klinar, T.Gregl, *Analysis of Relation between Space-time, Physical Time and Psychological Time*, Scientific Research Centre BISTRA from: https://www.researchgate.net/publication/235989207_Time_is_a_measuring_system_derived_from_light_speed, accessed Jan 8, 2021, p.1.

3 In popular media, people share their personal stories or “life hacks” that help them become more productive and efficient. Introduced originally by the technology journalist D.O’Brien in 2004, the term “life hacks” was originally used to describe the tricks and strategies that IT professionals use to boost their productivity (Thompson, 2005). Thus ‘hacking’ is still firmly rooted in the industrial development era and its glorification of (solely) economic productivity and not with the quality or sustainability of life.

4 R.Drozdowski, M.Frąckowiak, M.Krajewski, M.Kubacka, P.Luczys, A.Modrzyk, Ł.Rogowski, P.Rura, A.Stamm, *Everyday life under pandemics* (in Polish), Institute of Sociology, Adam Mickiewicz University, Poznań (report from the second stage of research), ISBN 978-83-957630-1-4, June 2020.

conditions increased use of the Internet ceased to be a matter of individual choice, but a necessity. There is also evidence of leisure time's (in its crippled home-based form) perception of being in oversupply, and therefore less desired, no longer a treasured and rare commodity offering a break from the monotony of everyday life routines, but now more synonymous with boredom and laziness.

In the context of time use authors of the above study also mention desynchronisation with respect to the use of time. With all activities being concentrated at home, they point to less time pressure in the areas, which were previously characterised by frantic activity (work, education, commuting). In parallel to this phenomenon, they also see more time pressure and haste in those areas of life, which were more shielded from such pressures – such as home and the family. On the other hand, this shifting of time pressures was not (yet?) felt like a disadvantage of the current pandemics. Polish respondents of the study named more time for family and its higher quality as the main advantage of Covid pandemics (28% of respondents, the top choice for the sample).

The online world is full of our traces that mark the pace of time; signify abstract time flows; and help users connect individual experiences constructing a shared, cultural time narrative. Especially in Western culture, time is seen as a measure of our productive capacity—the more users are able to manipulate and optimise time, the more successful and effective they can become. Although people cannot speed up or slow downtime, they can control it, attempt to master it as part of an effort to meet their goals (Wiberley and Jones, 2000). This view also suggests that users should prioritise and focus on the present so they can be successful by the elimination of “downtime” in which people are forced to rely on their own mental resources for entertainment or reflection.

2. Covid Restructures Time Use but Inequality Remains – Some Early Empirical Evidence

While theoretical venues of time restructuring under Covid pandemics seem to be expanding in interdisciplinary and qualitative directions, empirical evidence to support this is at best patchy and fragmented. In this section, an effort will be made to show various ways in which Covid-restructured time use can be documented.

The most talked-about element of time restructuring under Covid pandemics is the shifting of work time as the scope of remote work is quickly reaching new heights and it is widely believed that this trend will be irreversible⁵.

⁵ JP Morgan already has a plan for its 60,950 employees to work from home one or two weeks a month or two days a week, depending on the line of business. Moody's Analytics predicts that the office vacancy rate in the United States will climb to 19.4 percent, compared to 16.8 percent at the end of 2019, and rise to 20.2 percent by the end of 2022.

In the findings of a comprehensive study “What's Next for remote work: an Analysis of 2000 tasks, 800 jobs and nine countries” of November, 2020, McKinsey Global Institute confirms that the potential for remote work is highly concentrated among highly skilled, highly educated workers in a handful of industries, occupations, and geographies (China, France, Germany, India, Japan, Mexico, Spain, the United Kingdom, and the United States).

Table (1). Activity Category in Relevance to Time Spent

Activity category*	Potential share of time spent remotely for select activity categories, US in %
Updating knowledge and learning	82-91
Interacting with computers	70-75
Thinking creatively	43-68
Communicating with and guiding colleagues or clients	43-63
Processing, analysing and interpreting information	54-61
Communicating and establishing interpersonal relationships	29-57
Performing administrative and organisational activities	39-52
Training, teaching, coaching and developing others	6-47
Monitoring processes, surroundings, or use of resources	34
Selling to or influencing others	24-41
Measuring products and surroundings	24-33
Assisting and caring for others	8-12
Equipment, materials and machinery	2

Source: What's next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries | McKinsey, 5.12.2020 (own presentation of data)

Without any productivity loss, more than 20 per cent of the workforce could work remotely three to five days a week. If remote work continued at that level, that would mean three to four times as many people working from home than before the pandemic. In consequence, this would have a strong and lasting impact on urban economies, transportation, and consumer spending, among other things. As not all the jobs can be made remote, the potential for remote work is determined by tasks and activities, rather than occupations. The potential for remote work depends on the mix of activities undertaken in each occupation and on their physical, spatial, and interpersonal context. Many physical or manual activities, as well as those that require the use of fixed equipment, cannot be done remotely. Additionally, employers have found during the pandemic that although some tasks can be done remotely in a crisis, they are much more effectively done in person. While teaching has moved to remote work during the pandemic, parents and teachers alike say that quality has suffered. Similarly, courtrooms have functioned remotely but are unlikely to remain online out of concern for legal rights and equity—some defendants

lack adequate connectivity and lawyers, and judges worry about missing nonverbal cues in video conferences.

Activities with the highest potential for remote work include updating knowledge and interacting with computers (see Table 1).

- Other categories with 0 minutes of remote work potential were identified as: handling and moving objects, controlling machines and mechanical equipment.

Finance and insurance have the highest potential for remote work, with three-quarters of time spent on activities that can be done remotely without a loss of productivity. Management, business services, and information technology have the next highest potential, all with more than half of employee time spent on activities that could effectively be done remotely. These sectors are characterised by a high share of workers with college degrees or higher.

Table (2). Potential share of time spent working remotely by sector in 2020 (US)

Potential share of time spent working remotely by sector in the United States, %	
Finance and insurance	76-86
Management	68-78
Professional, scientific, and technical services	62-75
IT and telecommunications	58-69
Education	33-69
Wholesale trade	41-52
Real estate	32-44

Government and administrative support	31-42
Utilities	31-37
Arts, entertainment, and recreation	19-32
Healthcare and social assistance	20-29
Retail trade	18-28
Mining	19- 32
Manufacturing	19-23
Transportation and warehousing	18-22
Construction	15-20
Accommodation and food services	8-9
Agriculture	7-8
Total	29-39

Source: What's next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries | McKinsey, 5.12.2020 (own presentation of data)

Summing up this analysis of remote work's potential, according to the McKinsey report, more than half the workforce has little or no opportunity for remote work as some jobs require collaborating with others or using specialised machinery, other jobs must be done on location and some (like making deliveries) are performed while out and about. Many of such jobs are low wage and more at risk from broad trends such as automation and digitisation. With higher rates of remote work potential (without productivity loss) in advanced economies (33 for UK, 30 for Germany vs. 18 for Mexico, 12 for India and 16 for China)ⁱ. Remote work thus risks accentuating inequalities at a social and international level.

Table (3). Employed persons who teleworked or worked at home for pay at any time in the last 4 weeks because of the coronavirus pandemic by selected characteristics (November 2020)

[Numbers in thousands]	November 2020				
Characteristic	Total employed	Total	Per cent of total employed	Total employed	Persons who teleworked because of the coronavirus pandemic ¹
Total, 16 years and over	150 203	32 737	21,8	100,0	100,0
Men, 16 years and over	79 291	15 339	19,3	52,8	46,9
Women, 16 years and over	70 913	17 398	24,5	47,2	53,1
Married, spouse present	78 917	19 459	24,7	52,5	59,4
Total, 25 years and over	132 142	30 971	23,4	100,0	100,0
Less than a high school diploma	8 585	254	3,0	6,5	0,8
High school graduates, no college ³	32 622	2 391	7,3	24,7	7,7
Some college or associate degree	33 647	5 377	16,0	25,5	17,4
Bachelor's degree and higher ⁴	57 287	22 949	40,1	43,4	74,1
Bachelor's degree only	35 317	12 402	35,1	26,7	40,0
Advanced degree	21 970	10 547	48,0	16,6	34,1

¹ Data refer to those who teleworked or worked at home for pay specifically because of the coronavirus pandemic. This does not include those whose telework was unrelated to the pandemic, such as those who worked entirely from home before the pandemic.

³ Includes persons with a high school diploma or equivalent.

⁴ Includes persons with bachelor's, master's, professional, and doctoral degrees.

Data are not seasonally adjusted.

Source: US Bureau of Labor Statistics, <https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm> accessed 07/01/2021

In general, workers whose jobs require cognitive thinking and problem solving, managing and developing people, and data processing have the greatest potential to work from home. These employees also tend to be among the highest paid so this form of restructuring time only perpetuates existing inequalities and even creates new ones as office vacancies reach record levelsⁱⁱ.

These inequalities are further accentuated by the findings from Bureau of Labor Statistics (BLS) 2021 study that in a hybrid model combining some remote work with work in an

office is possible only for occupations with high remote work potential.

3. COVID's Impact on Time of Physical Mobility

According to Google's COVID-19 Community Mobility

Table (4). Changes in mobility in Poland (March 2020) by form and place of activity (in%)

Retail and recreation	Grocery & Pharmacy	Parks	Transit stations	Workplaces	Residential	Public transport
-78	-59	-59	-71	-36	+13	-70

Source: Google's COVID-19 Community Mobility Report, Poland March 29, 2020, https://www.gstatic.com/covid19/mobility/2020-12-29_PL_Mobility_Report_en.pdf, accesses Dec.1, 2020.

The above table shows how visits and length of stay at different places change compared to a baselineⁱⁱⁱ. While this data is not based on representative sampling, but on data from users who have opted-in to Location History for their Google Account, so the data represents a sample Google Account users only. As is the case of all such samples, they may not represent the exact behaviour of a wider population.

Even though at this time, this data cannot be converted in minutes of time saved on lesser physical mobility, it could be reckoned with as yet another factor in the restructuring of time use. While at this time this data cannot be converted in minutes of time saved on lesser physical mobility it could be reckoned with as yet another factor in the restructuring of time use as in Poland alone In mid-April 2020 mobility via public transport has declined by some 70% (Wielechowski, Czech, Grzęda, 2020, p.9).

A similar order of magnitude can be seen from another COVID-19 Community Mobility Report Poland (March 2020) in which data was gathered from mobile phones all point to serious shifts in all activities out-of-home.

Table 5. Time shifts during Covid-19 Pandemics in Poland Feb-March 2020 (data from mobile phones)

Activity	Change in percent of time spent (2020-2019)
Residential (at home)	+13%
Retail & recreation	-78%
Transit stations	-71%
Grocery, parks	-59%
Workplaces *	-36%

* as physical place other than at home

Source: COVID-19 Community Mobility Report, Poland, March 29, 2020, Google, available from: <https://businessinsider.com.pl/piec-najciekawszych-spraw-w-gospodarce-teraz-raport/zs9gm1b> (accessed: April 10, 2020)
This home-centered time use is also visible in US data (see table below)

Table 6. Decline in Mobility: Time Use in US in 2019 and possible time-use scenarios for COVID-19 pandemic

Activity	Average daily time in hrs	
Sleep	8,84	
Grooming	0,68	
Health related self-care	0,08	
Personal activities	0,01	
Eating and drinking	1,18	
Interior cleaning	0,31	
Laundry	0,16	

Report, Poland March 29, 2020 under the first wave of lockdown, essential changes took place with regard to Poles' mobility:

Storing interior household items	0,02	
Food preparation and cleanup	0,6	
Interior maintenance, repair and decoration	0,06	
Exterior maintenance, repair and decoration	0,05	
Attending household children activities	0,02	
Homework and research	0,19	
Watching TV	2,81	
Relaxing and thinking	0,31	
Playing games	0,26	
TOTAL time at home:	16,11	
Total time at home excluding sleep	7,27	
- Attending class	0,24	
- Work and work-related	3,61	
Average daily time at home by scenario*:	ATUS data	With additional online activity data*
Variant A (all schools lock down)	16,35	19.69
Variant B (all work remote and shifted to home)	19,72	23.06
Variant C (25% in remote work, schools open)	17,01	20.35
Time spent at home as % of the daily time by scenario*:		
Variant A (all schools lock down)	68.13	82.04
Variant B (all work remote and shifted to home)	82.17	96.08
Variant C (25% in remote work, schools open)	70.87	84.79

Source: American Time Use Survey (ATUS) 2019, <https://www.bls.gov/tus/> accessed January 11, 2021

* own estimates based on

<https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm> (Highlights of the July 2020 supplemental data)

4. Media Consumption Under COVID-19 Pandemic

One of the expected effects of the pandemic has been the acceleration of changes in the processes of the so-called

"digital vortex," that is, rapid and unpredictable changes in various areas of social, cultural, and economic life under the influence of digital technology development. Millions of people found themselves in new communication situations, including those related to their professional work, which forced the acquisition of new skills and competencies and changed the organisation of time and life in the daily cycle. To meet unexpected challenges, people increased their digital abilities, above all in taking advantage of the opportunities offered by the Internet.

Media, as one of those areas at the centre of the digital vortex, if only because in the vast majority of cases, all links of the value chain were already digital (content production, compilation, distribution, and feedback), became one of the beneficiaries of time restructuring under the pandemic. However, it is worth noting that the distribution of benefits was not even, it did not consolidate the structure of media clients' interest from before the pandemic, but on the contrary, the pandemic brought significant profits to some media and deepened the crisis of others.

4.1. New Evidence on Changes in Media Consumption Time

According to the Oxford Business Group [OBG, 2020], the pandemic has significantly increased the number of time people devoted to accessing current events. Nielsen's data indicated an increase in the time devoted to news (from the current year to the previous year of the same period) by 215% in the US, 180% in Italy, 125% in Thailand, 78% in Japan, and 52% in Australia (March 2020 / March 2019) [Nielsen, 2020]. The OBG report shows significant potential for growth in advertising spending in social media, online video, and search engines while also signalling a reduction in advertising spending in many other media. Streaming services have seen particularly significant benefits, as stated by the authors of the report: "... Broadly speaking, a shift towards streaming and digital services reflects the so-called new normal, in which people feel empowered to blend different approaches to work, life and entertainment..." [OBG, 2020].

Observation of internet activity during the pandemic showed that the number of visits (via desktops and mobile devices) to websites devoted to education, entertainment, family and youth, financial services, games, public affairs, health, information, commerce, and social media increased from 43.5 trillion in February 2020 to 64.3 trillion (April, increase by 47%) and then slightly decreased to the level of 56.9 trillion (July 2020, an increase by 31% compared to February [Comscore, 2020]).

There are generational differences in the use of media⁶. Interesting research carried out on a large sample of 20 million households by Epsilon Data Management shows that the pandemic affected media consumption in all generations

[Epsilon, 2020]. As many as 27% of Internet users used conference applications (e.g., Zoom, Teams, or Google Meets), 18% used remote medical advice for the first time, 14% downloaded new news applications that help overcome stress or facilitate fitness exercises. Simultaneously, the number of those who spent more time browsing the Internet than before the pandemic was almost equivalent to those who spent less time browsing (48% and 47%, respectively). More than half (53%) declared the same amount of time to watch TV, but more than a third (35%) spent more time on this activity. More than one in three households (37%) had more time for streaming than before the pandemic, nearly four in ten spent more time on browsing social media (39%), and more than one in four spent more time on reading print media (26%). In the period before the outbreak of the pandemic, Millennials spent the most time per week surfing the Internet (15 hours), while people from generation X and Z not much less, i.e., 14 hours. In turn, the oldest, the Silent generation, devoted much attention to watching TV - 14 hours weekly, which turned out to be much less interesting for Gen Z and Millennials (9 hours). The interest in streaming tends to decrease with age so generation Z watched streaming services for 13 hours per week, Millennials for 12 hours, Generation X 10 hours, Baby Boomers 7 hours, and the Silent 6 hours. A similar trend occurred in social media, from 12 hours in the Z generation up to 7 hours in the Silent group and listening to podcasts, respectively 8 and 5 hours weekly. On the other hand, the reading of printed matter (books and press) turned out to be the oldest domain (10 hours a week), generation Z and Baby Boomers read for 8 hours, selling out millennials and X - 7 hours. The data show that the highest activity in using the media, according to the classification presented above, is shown by the youngest, i.e., generation Z - 38% of the weekly time, then millennials - 35.6% of the time, Generation X 35.1%, Baby Boomers - 31.6% and among the Silent - 31% of the weekly time.

Similar conclusions can be drawn from the extensive research conducted by Statista, which shows that in the vast majority of countries worldwide, the interest in consuming news (in all forms), using social media, and reading and audiobooks has increased. Correspondingly, the increases compared to the pre-pandemic period were 36% in the case of news, 21% in social media, and 14% in the use of books and audiobooks [Statista, 2020, 1].

The British Ofcom recorded a specific breakthrough in the downward trend in television viewing, which was noticeable in the years 2014-2019 when from year to year there was a decrease in interest in television to which viewers devoted less and less time (a measure of the average monthly time devoted to television). The pandemic increased the viewing time, especially in the February-April 2020 period (an increase of over 20%, from about 180 minutes a day to 220 minutes). The result was better than in 2019 until the end of 2020 [OFCOM, 2020].

The British market is one of the most competitive media markets globally, with a considerable number of media of all

⁶ Generation Z was born in 1994, or later, Millennials (Y) are born in 1983-1993, Generation X was born in 1964-1982, Baby Boomers are 1943-1963, and the Silent Generation is born before 1943.

kinds, but also with numerous Internet companies competing for customer interest. Even before the pandemic, Great Britain was a mature media market. Research carried out for Ofcom [Comscore, 2020] provides exciting information on the impact of COVID on internet consumption. The first conclusion is quite surprising because it turned out that the average daily time spent on the Internet by an adult (18+) remained unchanged on an annual basis and amounted to 3 hours, 30 minutes. In the initial period of the pandemic, all age groups saw a significant increase in Internet usage time, especially from February to June. However, then the interest decreased significantly, reaching a similar level in November as a year ago. The largest increase was recorded in the 18-24 age group - the duration of use increased from 4:21 (November 2019) to 5:03 in April 2020. Similar increases were also seen in other age groups. The British NHS health service websites were trendy (in November 2019, the websites were visited by 15.5 million internet users and a year later 24.7 million) and the WHO (363,000 and 3 million, respectively, with a peak of 10.2 million in March 2020).

Government websites also became more popular (in January 2019, they had 19.9 million visitors, and in November - 27.3 million). Apple news applications (audience growth from 10.2 million in August 2019 to 13.7 million in October 2020) and the Uday application (8, 3 million, and 10.7 million, respectively) were top-rated. In social media, Tik Tok has become the most successful. In January-November, the website recorded a spectacular increase in the number of users from 5.4 million to 11.3 million (210%), and WhatsApp also increased interest (27.4 and 30.8 million, respectively). Facebook (from 42.6 to 42.1 million) and Twitter (24.3 to 22.5 million) were doing significantly worse. The daily time devoted to using social media significantly increased in Tik Tok (from 15 to 20 minutes); the largest decrease in interest was in Twitter (18 and 9 minutes, respectively). Internet users used Facebook and Messenger less time (24 and 22 minutes, respectively). The success was achieved by Telegram (the number of users increased from 1.17 to 1.87 million, with nearly 700,000 new customers arriving in October. From stationary to remote, the change like work resulted in a large increase in interest in conference applications. These applications gained the most customers with Microsoft Teams (increasing by 356% from 3 to 10.7 million), but Zoom's spectacular success (growing from 659 thousand in January to 9.5 million in October, i.e., 1441%).

The online German research on a sample of 3,245 people aged 18 to 55 and more combined quantitative and qualitative observation elements. Over 70% of respondents stated an increase in online activity, with nearly one in five stating that it was a significant increase. Apparent differences were marked in the areas of the growing interest of women and men. Women used social media more often, searched for information, and were interested in streaming services. In turn, men declared greater interest in online games and erotic services (it was solid in the 18-24 age group). People over 55 were less interested in streaming and

social media [Lemenager, T. Neissner, M. and others, 2021].

Invoke research in the USA shows a substantial increase in media consumption during the pandemic crisis [Invoke Corp, 2020]. Three-quarters of Americans declared an increase in media interest (with this indicator rising to 80% in the age group of 35 and less). There was a strong consumer preference for streaming services, as many as 73% declared their willingness to use Netflix, Hulu, Amazon Prime, and Disney +, while for the vast majority (2/3), the cost did not affect the changes in subscription conditions. Interestingly, as many as 85% of households decided to subscribe to streaming services directly (usually via appropriate internet applications). The widespread feeling of crisis caused by the pandemic, concerns about the stability of work and the financial situation triggered the desire to move away from the problems of everyday life. The media offered a different reality that was attractive. More than half of the respondents (55%) watched more news programs than before, more than one in three (35%) liked to watch comedies, there was a clear trend of returning to their favorite movies and series. Many Americans were eager to watch the new programming, which, as they stated, they probably would not have watched earlier due to lack of time. In the conditions of a pandemic, the scope of the phenomenon known as "binge-watching" has increased, i.e., intense watching of many episodes of series and even entire seasons in one sequence. The time of the pandemic also encouraged people to view longer programs. Streaming is preferred by women (69%) more than by men (48%), definitely younger people (under 35), as much as 88% more than older people - 42%. Also, streaming services are characterised by the lower price elasticity of demand than, for example, cable TV services (only 13% of Americans are ready to give up streaming services if their price increases compared to 28% in a similar situation for cable TV).

Research conducted by the Global Web Index on representative samples in the USA and GB confirms many consumer trends observed in other countries [GWI, 2020]. A particular aspect of these studies was the analysis of variations in generations' in response to the pandemic situation. More than two-thirds of respondents indicated that they searched intensively for new information about the coronavirus, which became the leading online activity in virtually all markets, in various age groups, and by gender, with some deviation in the case of Generation Z. In this group, music was the most frequently listened to (71%), and 67% were looking for information about the coronavirus. Men (73%) were more active in searching for information than women (62%). For the respondents, the pandemic period increased the demand for various forms of online entertainment. Listening to music (58%), watching movies/shows (49%), funny videos (42%), games on mobile devices (40%), and searching and viewing memes (32%) are the most common forms of entertainment. The pandemic situation, providing many negative emotions, favoured the search for positive content offering humour, detachment from reality, and counterbalancing the coronavirus. The

interest in social media increased, the growth in the frequency of use was declared by 49% of US consumers and 39% in the UK. At the same time, some generational differences were revealed, the Baby Boomers generation made more use of social media to keep ties with friends and acquaintances (30%) than to read the news (27%), Millennials used these media primarily for news (54%). US consumers were more likely to share their opinions on social media (30%) than the British (16%). Gen Z is particularly eager to listen to music (53%) and spend their time playing games (45%), while Millennials are more likely to find and share memes. Among men, the interest in journalistic publications in social media increased three times more often than among women (25% - men vs. 8% - women). The growing media consumption is primarily in the form of video transmission, with apparent generational differences; for Baby Boomers, the most crucial thing is a television (42% declare an increase in usage time), for the Z Generation, the leaders are YouTube and Tik Tok (over 50%), Millennials prefer television online (41%). The type of home entertainment that dominates the pandemic prompts 40% of households to consider subscriptions to paid services. In the group of streaming services among US consumers, the intention to buy Netflix (18%) dominates, while in GB, the most significant interest is in Disney+ (15%). Spotify in the paid version is also very popular. The percentage of consumers ready to subscribe to the New York Times newspaper (19% declared such intention) in the USA also turned out to be significant. For British consumers, the prospect of buying paid news services seems quite distant, unlike consumers in the US, who are willing to pay for content they trust.

4.2. Coping with Increased Interest in Media Consumption

Increased interest in media consumption meant that in some cases, media companies, despite the crisis caused by the pandemic, achieved outstanding results and strengthened their market position. A successful example of accelerated digital conversion may be the NYT, whose quotations during the year increased by over 52% (as of 22/02/2021), the number of paid subscriptions increased to nearly 7 million (from 4.7 million in the previous year), and the revenues from this title exceeded the level achieved by subscription to the paper edition. (\$ 155 million versus \$ 145 million) [NYT.com, 2020]. Spotify also saw good results (increase in ratings by 131%, 320 million users, of which 144 million (in 2019 - 113 million) used the paid version [Statista, 2020, 2]). Netflix, whose quotations increased by (60%), exceeded the number of 200 million paid users, announcing the achievement of financial independence enabling the financing of new productions [Comparitech, 2021]. Many other media companies were also successful in the crisis, for example, Disney (23%), Facebook (27%), Twitter (25%), Apple (76%), Alphabet (Google) increase by 29%. A record holder was the company producing conference software - Zoom, whose ratings on the capital market rose by 426%.

However, the media's situation in the pandemic was not as clear-cut as it might seem from the examples cited. An example can be the media market in Poland. Undoubtedly, the crisis hit hard the daily press sales, which in 2020 was lower by approx. 9%. (three quarters of 2020/2019, sales of 460 thousand copies). Moreover, a year earlier, in 2019/2018, the decline rate was lower (7.9%, with sales of 539 thousand copies) [Wirtualnemedi, 2021, 1]. As a result of the pandemic and limited availability of points of sale, declining sales prompted some publishers to limit their offer (Bauer publishing house closed 34 titles) and merging editorial offices [Wirtualnemedi, 2021, 4].

The Kantar company's research shows that many phenomena observed in other countries of the world are also confirmed in Poland [Kantar Media, 2021]. More frequent use of traditional television than before the pandemic was declared by 49% of consumers in Poland (7% indicated less interest, further data respectively), compared to the radio this proportion was 17% to 9%, newspapers 14% to 13%, magazines 6% up to 13%, cinemas 3% up to 42%. Much better proportions of increased interest were recorded in relation to online media, and so: surfing the Internet 39% to 2%, visiting websites 40% to 3%, activity in social networks 38% to 5%, instant messaging 18% to 4%, email 21% to 3%, online video 23% to 7%, TV on-demand / streaming 21% to 7%, online radio including 10% to 10% and similar for podcasts and music streaming 8% to 8%. Among social media, the largest increase in interest was the share of Facebook (34 declared an increase in interest), Messenger (33%), and Instagram (20%). Due to the increased interest in streaming, Netflix expected a nearly 30% increase in the number of paid subscribers in Poland in 2020, from 775,000 to over 1 million, although this figure is difficult to verify as the company consistently fails to report the number of paid subscribers [Antyweb, 2020].

Undoubtedly, one of the consequences of the coronavirus pandemic has been the disruption of the traditional structure of daily time use of a significant number of people. Although symptoms of hybrid time use (for example, performing personal and domestic activities while working and enjoying leisure time at work) had already occurred [Kowalski, T., Jung B., 2020] the pandemic widened this phenomenon's scope to include numerous social groups (students, teachers, office specialists, traders, and many other). In many cases, the personal and home space became a space for professional work. Numerous social groups remained at home due to the development of remote work, mobility restrictions, and the closure of many types of economic activity. On a social scale, vast resources of additional time have been created, for example, due to the lack of work-related commuting and restrictions in trade and services. As research shows, a large part of this time was devoted to the media. Increasing time spent with the media can initially be considered as one of the hallmarks of social behavior during a pandemic. There are many indications that the media have become a catalyst for social sentiment, providing knowledge, engaging in the exchange of opinions, and becoming a tool of escapist

attitudes, enabling many people to "escape from reality". The wealth of media forms, an abundance of content, and relatively easy access to it, which were also associated with their high level of media digitisation, became the source of success for many companies. In the pandemic, digital media won, while the process of market erosion of media in analog forms has in many cases accelerated. The current state of research and knowledge does not allow to make valid statements about the future state of media consumption. Will it be possible to rebuild the printed media's reach and influence, especially the daily press? Will viewers return to cinemas and theaters? Will work and distance learning become permanent elements of many people's lives? How will the pandemic affect the organisation of social life in cities? What will be the impact of this phenomenon on economic development, especially on sustainable development? Many of these questions will remain open and likely to be probed by emerging research. While even patchy empirical evidence indeed confirms time use restructuring during Covid pandemics, with much-reduced mobility and record amounts of time spent at home, we are yet to understand its implications. Some of the early findings point to relative undervaluation of leisure time (in its constrained form under lockdown) and to the home becoming a more stressful place, in which many functions were cumulated, with little possibility to escape. We also see a further collapse of boundaries between time for work, leisure and obligations. This tendency was already visible prior to the pandemics, but COVID quickened the pace of its expansion.

REFERENCES

- [1] Antyweb, <https://antyweb.pl/netflix-w-polsce-statystyki/>, (retrived 10/1/2021).
- [2] Allen T., (2008) *A Republic in Time. Temporality and Social Imagination in Nineteenth-Century America*, the University of North Carolina Press, 2008.
- [3] Block A., Gruber P., (2014) Time perception, attention, and memory: A selective review, *Acta Psychologica* 149 (2014) 129–133.
- [4] Comparitech, <https://www.comparitech.com/tv-streaming/netflix-subscribers/> (retrived: 20/1/2021).
- [5] Comscore, <https://www.comscore.com/Insights/Blog/Revisited-Media-Consumption-during-the-Coronavirus-Pandemic> (retrived: 16/01/2021).
- [6] Comscore, 2020: https://www.ofcom.org.uk/__data/assets/pdf_file/0030/209298/covid-19-news-consumption-week-thirty-seven-comscore.pdf.
- [7] COVID-19 Community Mobility Report, Poland, March 29, 2020, Google, available from: https://www.gstatic.com/covid19/mobility/2020-12-29_PL_Mobility_Report_en.pdf, accesses Dec.1, 2020.
- [8] Droit-Volet, S., Meck W. (2007) How emotions colour our perception of time, *Trends in Cognitive Sciences*, Dec. 11(12): 504-13. doi: 10.1016.
- [9] Drozdowski R., Frąckowiak M., Krajewski M., Kubacka M., Luczyn P., Modrzyk A., Rogowski Ł., Rura P., Stamm A. (2020) "Everyday life under pandemics", [in Polish] Institute of Sociology, Adam Mickiewicz University, Poznań (report from the second stage of research), ISBN 978-83-957630-1-4, June.
- [10] Csikszentmihalyi M. (2008) *Flow: The Psychology of Optimal Experience*, Harper Perennial Modern Classics, New York.
- [11] Dumazedier J. (1974) *Sociologie Empirique du loisir*, Paris, Seuil.
- [12] Epsilon.com, <https://us.epsilon.com/core-content/how-covid-19-has-impacted-media-consumption-across-generations> (retrived: 16/01/2021).
- [13] Gershuny J., Vega-Rapun M., Lamote Perez J.(2020) *The Multinational Time Use Study*, Tech. Rep. CTUR, UCL.
- [14] Global WebIndex, [https://www.globalwebindex.com/hubfs/1.%20Coronavirus%20Research%20PDFs/GWI%20coronavirus%20findings%20April%202020%20-%20Media%20Consumption%20\(Release%204\).pdf](https://www.globalwebindex.com/hubfs/1.%20Coronavirus%20Research%20PDFs/GWI%20coronavirus%20findings%20April%202020%20-%20Media%20Consumption%20(Release%204).pdf).
- [15] Golden A., Geisler C. Work–life boundary management and the personal digital assistant, *Human Relations* March 1, 2007, <https://doi.org/10.1177/0018726707076698>.
- [16] Invokecorp, <https://invokecorp.wpengine.com/assets/Invoke-Report-Week-1-Impact-Coronavirus-Streaming-Media-Consumption.pdf> (survey on a sample of US residents, aged 18-54, conducted March 30, 2020, the sample of 102 people, online) – (retrived: 22-01-2021).
- [17] Kowalski T., & Jung B. (2020) Emergence of Hybrid Time for Media Consumption. Towards a New Research Agenda. *Studia Medioznawcze*, 21(3), 607-614. <https://doi.org/10.33077/uw.24511617.ms.2020.3.284>.
- [18] Leshed, G., Sengers, P. (2011). "I lie to myself that I have freedom in my own schedule": Productivity tools and busyness experiences. *Proceedings of CHI 2011*, Vancouver, Canada, 905-914.
- [19] Lemenager, T.; Neissner, M.; Koopmann, A.; Reinhard, I.; Georgiadou, E.; Müller, A.; Kiefer, F.; Hillemacher, T (2021) COVID-19 Lockdown Restrictions and Online Media Consumption in Germany. *Int. J. Environ. Res. Public Health* 2021, 18, 14.
- [20] Lingard B., Thompson G. (2017) Doing time in the sociology of education, January, *British Journal of Sociology of Education* 38(1):1-12 doi: 10.1080/01425692.2016.1260854.
- [21] Kantar Media, <https://consulting.kantar.com/the-global-impact-of-covid-19/> - retrived (21/1/2021).
- [22] McKinsey (2020) What's next for remote work: An analysis of 2,000 tasks, 800 jobs, and nine countries <https://www.mckinsey.com/featured-insights/future-of-work/whats-next-for-remote-work-an-analysis-of-2000-tasks-800-jobs-and-nine-countries#>, access 5.12.2020.
- [23] Matthews W., Meck W. (2016) Temporal cognition: Connecting subjective time to perception, attention, and memory, *Psychological Bulletin* 2016 Aug; 142(8): 865-907.

doi: 10.1037/bul0000045. Epub. May 19.

- [24] Nagy, P., Eschrich, J., & Finn, E. (2020). Time hacking: How technologies mediate time. *Information, Communication & Society*, ahead of print.
- [25] New York Times, <https://www.nytimes.com/2020/11/05/business/media/new-york-times-q3-2020-earnings-nyt.html> (retrived: 17/1/2021).
- [26] Nielsen, <https://www.nielsen.com/us/en/insights/article/2020/covid-19-tracking-the-impact-on-media-consumption/> (retrived: 20/1/2021).
- [27] OFCOM, https://www.ofcom.org.uk/__data/assets/pdf_file/0029/209297/covid-19-news-consumption-week-thirty-seven-barb.pdf (retrived: 17/01/2021).
- [28] Oxford Business Group, <https://oxfordbusinessgroup.com/news/how-has-covid-19-changed-media-consumption> (retrived 6/1/2021).
- [29] Ramey V. A., Francis N., A (2009) Century of Work and Leisure, *American Economic Journal of Macroeconomics* 1(2), pp.189-224.
- [30] Schor J. (1999) *The Even More Overworked American*, Harper Perennial, New York.
- [31] Sorli, A; Fiscaletti, D; Klinar, D; Gregl, T (2020) Analysis of Relation between Space-time, Physical Time and Psychological Time, Scientific Research Centre BISTRA from: https://www.researchgate.net/publication/235989207_Time_is_a_measuring_system_derived_from_light_speed, accessed Jan 8, 2021.
- [32] Statista, 2020, 1, <https://www.statista.com/statistics/1106766/media-consumption-growth-coronavirus-worldwide-by-country/>.
- [33] Statista, 2020, 2, <https://www.statista.com/statistics/244995/number-of-paying-spotify-subscribers/> (retrived: 10/1/2021).
- [34] Thompson C., Meet the Life Hackers, <https://www.nytimes.com/2005/10/16/magazine/meet-the-life-hackers.html>.
- [35] US Bureau of Labor Statistics, <https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm> accessed 07/01/2021.
- [36] Urry J. (2008) Mobile sociology, the *British Journal of Sociology*, 21 August. <https://doi.org/10.1111/j.1468-4446.2000.00185.x>.
- [37] Wajcman, J. (2015) *Pressed for Time: The Acceleration of Life in Digital Capitalism*. The University of Chicago Press, Chicago.
- [38] Wajcman, J. (2007) Life in the fast lane? Towards a sociology of technology and time, *British Journal of Sociology*, Volume 59, Issue 1.
- [39] Wiberley S., Jones W. (2000) *Time and Technology: A Decade-Long Look at Humanists' Use of Electronic Information Technology*, College & Research Libraries, Vol 61, No 5.
- [40] Wielechowski W., Czech K., Grzęda Ł (2020) Decline in Mobility: Public Transport in Poland in the time of the COVID-19 Pandemic study, *Economies* 2020, 8, 78; doi:10.3390/economies8040078 www.mdpi.com/journal/economies.
- [41] Wirtualnemedi (2020), 1: <https://www.wirtualnemedi.pl/artykul/sprzedaz-dziennikow-2019-fakt-gazeta-wyborcza-gazeta-polska-codziennie-rosnie-puls-biznesu> (retrived: 19/1/2021).
- [42] Wirtualnemedi (2020), 2: <https://www.wirtualnemedi.pl/artykul/wyniki-sprzedazy-dziennikow-listopad-2020-fakt-przeglad-sportowy> (retrived 19/1/2021).
- [43] Wirtualnemedi (2020), 3: <https://www.wirtualnemedi.pl/artykul/sprzedaz-tygodnikow-opinii-lipiec-2020-polityka-gosc-niedzielnny> (retrived: 19/1/2021).
- [44] Wirtualnemedi (2020), 4: <https://www.wirtualnemedi.pl/artykul/zwolnienia-pani-i-twoj-styl-polaczenie-redakcji> (retrived: 19/1/2021).
- [45] Wittmann M., Lehnhoff S. (2005) Age Effects in Perception of Time, *Psychological Reports* (Sage Journals), <https://doi.org/10.2466/pr0.97.3.921-935>, <https://journals.sagepub.com/home/prx>.
- [46] Wyborcza.pl, (2020) <https://wyborcza.pl/7,156282,26359696,wyborcza-na-10-miejscu-w-europie-w-liczbie-prenumeratorow.html> (retrived: 22/1/2021).

i "What's next for remote work", McKinsey 2020 report, op.cit., Exhibit 3.

ii Residential real estate is very sensitive to the impact of remote work. As tech companies announced plans for permanent remote work options, the median price of a one-bedroom rental in San Francisco dropped 24.2 percent compared to a year ago, while in New York City, which had roughly 28,000 residents in every square mile at the start of 2020, 15,000 rental apartments were empty in September, the most vacancies in recorded history (McKinsey, op.cit.). It is also doubtful whether the shift to remote work leads to spreading prosperity to smaller cities. Previous research in the United States and Europe has shown a trend toward greater geographic concentration of work in megacities which attracted younger, highly educated workers who can best work remotely (McKinsey, op.cit.).

iii These changes were calculated using the same kind of aggregated and anonymized data used to show popular times for places in Google Maps.