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TELEWORKING AND SUSTAINABLE BEHAVIOUR IN THE CONTEXT OF COVID-19: THE CASE OF LITHUANIA

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ABSTRACT

COVID-19 played a significant role in the spread of telework worldwide, changing people's lives and behaviour. The paper aims to identify how teleworking affected the sustainable behaviour of employees during the COVID-19 pandemic. The research design applies a multi-method approach, combining systematic and comparative scientific literature analysis and a semi-structured interview. The authors of the paper present the theoretical conceptual model, which illustrates links between teleworking during the COVID-19 pandemic and the sustainable behaviour of employees. The results of empirical research revealed that teleworking during the COVID-19 pandemic changed employee behaviour in economic, environmental and social dimensions. Positive changes were identified due to reduced commuting and shopping; decreased costs for transport, food, clothing, and beauty services; better access to healthy and nutritious food; better opportunities for professional development. On the contrary, costs for home energy and household waste increased. Adverse effects on employees' physical and mental health have been identified due to teleworking and COVID-19. Despite the identified negative effects, employees would like to continue teleworking even after the pandemic.

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INTRODUCTION

The COVID-19 virus outbreak at the beginning of 2020 changed how people live and work and has brought unprecedented changes to the global economy and work (Irawanto et al., 2021). Most of these changes and a series of proactive interventions, such as social distancing, lockdown, confinement, and quarantine, were adopted to prevent the spread of COVID-19 (Nguyen, 2021; Freire González & Vivanco, 2020). Governments applied lockdowns and social distancing policies that disrupted ordinary daily life and in-person participation in activities

(ILO, 2020; Hatayama et al., 2020; Mouratidis & Papagiannakis, 2021; Olde Kalter et al., 2021; Christopoulos et al., 2021). New challenges and opportunities for business innovation have emerged, including organising and designing work (Loia & Adinolfi, 2021). Emergency related to COVID-19 forced companies compatible with teleworking modalities to choose remote activities where possible (Tokarchuk et al., 2021; Loia & Adinolfi, 2021).

As stay-at-home measures entered into force, people were asked to stay at home and work from home or to telework as much as possible (Olde Kalter et al., 2021; Christopoulos et al., 2021; Irawanto et al., 2021; Chong et al., 2020). The World Health Organization suggested that governments and organisations worldwide implement teleworking as a work innovation to protect employees' health while continuing economic activities (Irawanto et al., 2021; Minh Hieu Nguyen, 2021). Organisations sent their employees home, creating conditions for the most extensive mass teleworking experiment in history (ILO, 2020; Loia & Adinolfi, 2021). This pushed the incidence of telework to an unprecedented tipping point (Chong et al., 2020). In most countries, the importance and frequency of engaging in telework significantly increased during COVID-19; it has become a dominant professional experience for many organisations and employees, relocating workplaces to employees' homes (Olde Kalter et al., 2021; Mouratidis & Papagiannakis, 2021; Music et al., 2022; Christopoulos et al., 2021; Chong et al., 2020; Raišienė et al., 2020).

Research works show that teleworking is gaining momentum in many countries worldwide, with the number of teleworkers increasing every year (Raišienė et al., 2020; Czerniawska & Szydło, 2021; 2022). In the past, numerous studies have explored the potential of teleworking and how it relates to organisations and employees, sometimes with positive and negative results (Christopoulos et al., 2021). Although teleworking was already on the rise prior to the COVID-19 pandemic, the sudden shift to telework in public health and safety interests has most certainly accelerated this phenomenon (Music et al., 2022).

Telework and the COVID-19 pandemic play an important role in human behaviour. Schmidt et al. (2021) believe that the corona pandemic could represent an opportunity for the transition towards sustainable behaviour and, thus, a window of opportunity for sustainability. Sustainable behaviour has become an expression that is commonly used and is often substituted with other popular expressions, such as pro-ecological, environmentally friendly, eco-

friendly, and green behaviour (Čiarnienė et al., 2020). Sustainability has different dimensions; however, scientists generally agree that the focus is on the economic, environmental and social dimensions. Based on Chae (2021), sustainable behaviour reflects the use of goods and services responding to the basic needs of society and future generations, bringing a better quality of life while reducing the use of natural resources, waste emissions and pollutants.

Many recent studies examined different aspects of teleworking in the context of COVID-19. For example, Hatayama et al. (2020), Nguyen (2021), Chong et al. (2020), and Tokarchuk et al. (2021) investigated jobs' amenability to working from home and the determinants that affect working from home. Advantages and disadvantages of telework were analysed by Moos et al. (2006), Irawanto et al. (2021), Nguyen (2021), Loia and Adinolfi (2021), Olde Kalter et al. (2021). Irawanto et al. (2021) examined the relationship between work–life balance and work stress. Mouratidis and Papagiannakis (2021) analysed changes in the importance and frequency of engaging in online activities before and during COVID-19. Raišienė et al. (2020) and Irawanto et al. (2021) focused on employees' attitudes towards teleworking and employee satisfaction. Olde Kalter et al. (2021) examined the changes in teleworking during the lockdown and the intention to change commuting behaviour after COVID-19.

Some studies analysed sustainability issues related to telework. For example, Moos et al. (2006) analysed telework in terms of environmental sustainability. Čiarnienė et al. (2018) analysed how flexible work arrangements could contribute to sustainable development. Čiarnienė et al. (2020) investigated how employees relate to sustainable behaviour across generations, genders and different modes of education. Freire-González and Vivanco (2020) investigated pandemics and the environmental rebound effect, Loia and Adinolfi examined teleworking as an eco-innovation for sustainable development, and Music et al. (2022) concentrated on socially sustainable practices. Brzustewicz and Singh (2021) analysed the COVID-19 pandemic changes in consumer behaviour towards a healthier and more sustainable direction. Zambrano-Monserratea (2020) has highlighted the negative indirect effects of the pandemic on sustainable behaviour.

Although topics of teleworking and sustainable behaviour have been widely analysed by the scientific community during the past years, there is a gap in scientific studies examining the sustainable behaviour

of teleworkers in the context of the pandemic. This inspired the authors of this article to analyse issues related to the sustainable behaviour of teleworkers during COVID-19. The study aims to fill this gap by identifying how teleworking affected the sustainable behaviour of employees during the COVID-19 pandemic. The research design applies a multi-method approach, combining systematic and comparative analysis of scientific research works and a semi-structured interview.

1. THEORETICAL BACKGROUND

Teleworking is not a new phenomenon; it has existed for several decades. The concept of working from home was first put forward in the 1970s as a new alternative to performing work from different locations (office, home, or another place) using technological assistance (Irawanto et al., 2021). Teleworking was seen as an essential measure for reducing daily travel and coping with traffic jams and environmental pollution (Christopoulos et al., 2021). Many organisations have long offered telework as a form of flexible work arrangement to enable employees to better manage increasing work and family demands (Čiarnienė et al., 2018; Chong et al., 2020).

Speaking about the terminology, teleworking comes in the literature under various names. An array of terms is used to describe working outside the workplace, such as telework, telecommuting, remote work, distance work, home-working, e-work, flex-place, and electronic cottage (Tokarchuk et al., 2021; Nguyen, 2021; Loia & Adinolfi, 2021). Many studies have used the term "teleworking" (mostly by European and Asian scholars) interchangeably with "telecommuting" (preferred by American and Canadian authors) (Loia & Adinolfi, 2021; Nguyen, 2021). The essence of teleworking includes two main aspects: geographical dispersion and employees' dependence on Information and Communication Technologies (ICT) (ILO, 2020; Raišienė et al., 2020; Loia & Adinolfi, 2021). According to literature sources, teleworking can be defined as an alternative work arrangement for employees to conduct work elsewhere, outside the employer's locations, for at least a part of their work schedule, using ICT to cooperate and communicate with others inside and outside the organisation (ILO, 2020; Tokarchuk et al., 2021).

Compared to occasional teleworking under normal circumstances and under a typical telework arrangement, when an employee splits work time between working at the office and working from an off-site location, teleworking during the COVID-19 pandemic was "far more challenging because it is mandatory, rather than voluntary, and full-time, rather than part-time or occasional" (ILO, 2020). According to the Practical Guide of ILO (2020), switching from office-based working to teleworking was not simple or smooth for organisations and their employees, especially for those with limited prior experience with teleworking. This guide emphasises difficulties related to organisational culture and management resistance, the lack of appropriate IT tools and devices, skills and training resources, health and safety guidelines for the home office, and data secu-

Tab. 1. Factors influencing telework

FACTORS/VARIABLES		DESCRIPTION
Employee-related	Sociodemographic characteristics	Individual characteristics are of great importance to characterise who desires to and/or who is fit for teleworking (gender, age, education, income)
	Household characteristics	The presence or the number of children, especially young age, drives a choice for telecommuting
	Attitudes and preferences towards telework	Employees desiring teleworking; employees actually adopting telework when they have opportunities
	Frequency	Number of times employees actually telework within a particular period, such as a week
	Previous experience	Experience in using teleworking can be a significant factor affecting the choice and the frequency of telework
Organisation-related	Type of organisation and work	Type of organisation and job sector, the opportunities to telework
	Organisational readiness	Organisational and technological readiness: employee options to telework. Managers' ability to manage remote teams
	Burdensome commute	One-way distance between home and workplace and travel options

Source: elaborated by the authors based on ILO (2020), Nguyen (2021), Olde Kalter et al. (2021), Tokarchuk et al. (2021), Loia and Adinolfi (2021).

rity concerns and privacy issues (ILO, 2020). Based on ILO (2020), Nguyen (2021), Olde Kalter et al. (2021), Tokarchuk et al. (2021), and Loia, Adinolfi (2021), Table 1 presents the main factors influencing the prevalence of telework and its effectiveness.

As Table 1 shows, factors can be arranged into two groups: employee-related and organisation-related. From an employee's perspective, socio-demographic and household characteristics are very important. Fewer people than expected found tele-work good for them due to individual characteristics or home and family situations (Loia and Adinolfi, 2021). According to research conducted by Hatayama et al. (2020), women, college graduates, and salaried and formal workers have jobs that are more amenable to working from home than an average worker. Educational attainment is also strongly linked to telework

amenability (Hatayama et al., 2020; Olde Kalter et al., 2021). Speaking about age, older workers are less likely to have jobs amenable to telework (Hatayama et al., 2020). Employees with a higher income level tend to be more interested in teleworking (Nguyen, 2021; Olde Kalter et al., 2021). The presence or the number of children, especially young age, drives a choice for telecommuting (Nguyen, 2021). Experience in using the internet and teleworking can also be a significant factor affecting the choice and the frequency of tele-work (Nguyen, 2021). On the part of the organisation, the portion of jobs amenable to teleworking determine the size of the workforce that can work from home (ILO, 2020). Other organisation-related important factors should also be mentioned: the type of organisation and work, organisational and techno-logical readiness (basic IT infrastructure, virtual

Tab. 2. Main advantages and disadvantages of teleworking through sustainability dimensions

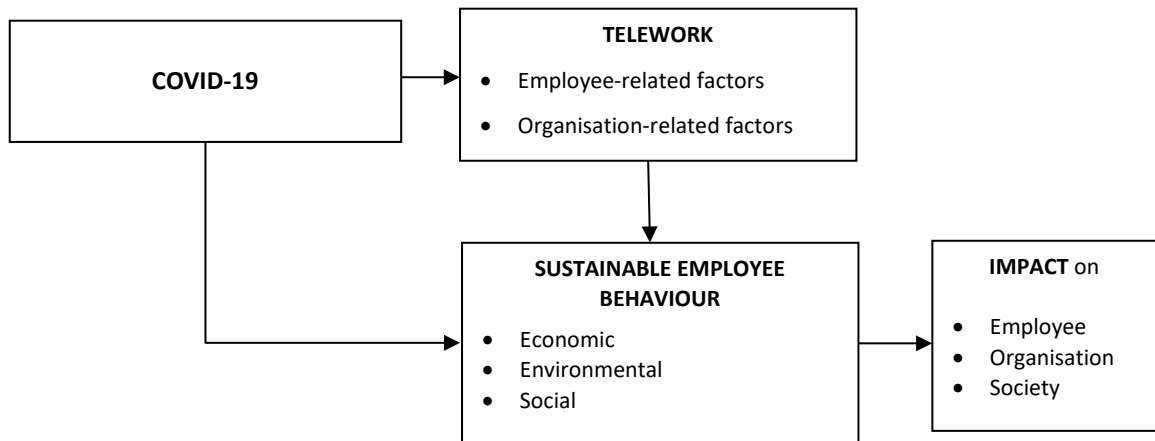| SUSTAINABILITY DIMENSIONS	ADVANTAGES	DISADVANTAGES
Economic	• Less rush-hour commutes, • Reduced consumption of time and fuel, • Avoidance of lost time and cost of commuting, • Ability to work according to own working rhythm to accomplish the most, • Increased job performance and productivity, • Reduction in expenditures on restaurant meals, • Decreased external childcare hours and costs, • Less consumer-driven lifestyle, • Decreased costs for clothing, • Reduced external laundry and dry-cleaning	• The lack of a good and quiet workplace at home, • Increase in work-related purchases: equipment, paper, furniture at the telework site, • Increased costs for electricity, communication, heating, air conditioning, • Slow or patchy internet and technology tools at home can cause productivity and work satisfaction decrease, • Data security concerns and privacy issues
Social	• Autonomy of time management, increased personal control over work schedule, • Flexibility in balancing work and personal life, • Possibility to work from home in cases of sickness, • Fewer disruptions to the office environment and other employees, • Decreased employee stress due to less formal supervisor in the workplace, • Higher levels of job satisfaction, • Increased morale, engagement, and commitment, • Reduced employee burnout and turnover intentions, • Reduction in car use and an increase in cycling and walking, • A shift to healthier diets, • Positive effect on health outcomes, • Better possibilities for education and training, • Potential to increase social wellbeing, • Positive impact in terms of social inclusion (e.g., women during pregnancy, with young children, temporarily recovering from an accident, etc.)	• Absence of social contacts, social isolation, • Technostress and technology addiction and overload, which increases fatigue and irritability, • The ergonomics of home furniture may not be optimal for prolonged teleworking, • Prolonged sedentary behaviour, working in one position over long periods increases the risk of health problems, • Increased consumption of alcohol and other recreational or performance-enhancing drugs, • Higher risk of technology-enabled violence, cyberbullying and harassment, including domestic violence, • A risk of burnout and feeling left out, • Blurred boundaries between work and personal life, • Increased work hours, disturbed balance between work and free time, • Difficulties in concentrating on the job, especially when living with young children
Environmental	• Reduced daily travel and congestion problems, • Reduced consumption of time, fuel and energy, • Reduced air pollution and climate change, • Higher recycling and waste reduction, • Less consumer-driven lifestyle, less clothing, • Reduced external laundry and dry-cleaning, • Decreased food-related environmental impacts	• Increased home energy use, • Increased wastes disposed of through domestic systems

Fig. 1. Theoretical conceptual model illustrating links between teleworking during the COVID-19 pandemic and sustainable behaviour of employees

platforms), and managers' ability to manage remote teams (Tokarchuk et al., 2021). Another factor worth mentioning is the burdensome commute. The longer the distance, the greater the likelihood and frequency of teleworking and having positive attitudes toward telework (Nguyen, 2021). According to Olde Kalter et al. (2021), car users are less likely to adopt teleworking than frequent public transport users.

Interest in teleworking has been fuelled by its flexibility and resulting benefits. It can be a win–win strategy for all stakeholders, such as employees, employers, and societies (Čiarnienė et al., 2018; Raišienė et al., 2020; Irawanto et al., 2021; Nguyen, 2021). Also, the transition to teleworking has indirect consequences for the transformation towards more sustainable behaviour. Sustainable behaviour can be defined as a personal concern about sustainability issues (Elhoushy & Lanzini, 2021) or as decisions that are simultaneously economically, ecologically, and socially responsible (Moos et al., 2006; Villa Castaño et al., 2016; Czerniawska & Szydło, 2021). It is a set of deliberate and effective actions that result in the conservation of natural and social resources; it encompasses pro-ecological, frugal, altruistic and equitable behaviours (Tapia-Fonllem et al., 2017). These behaviours allow the conservation of the natural environment, cost reduction, and the protection of the integrity of society. Based on research works by Čiarnienė et al. (2018), Irawanto et al. (2021), Nguyen (2021), Loia and Adinolfi (2021), ILO (2020), Olde Kalter et al. (2021), Moos et al. (2006), Brzustewicz and Singh (2021), Xin et al. (2020), Zambrano-Monserratea (2020), Music et al. (2022), and Schmidt et al. (2021), Table 2 provides the main advantages and disadvantages of teleworking through sustainability

dimensions. Benefits and traps are presented from an employee perspective.

Scientific literature shows that sustainable behaviour encompasses several different aspects, such as more moderate use of energy and water, minimisation of emissions and waste, less food buying and consumption, sustainable fashion, a relative increase in bike use and in the coverage of distances by foot, urban gardening, promoting better access to healthy, safe, and nutritious foods. This also leads to cost savings, positive health and safety issues and social changes.

However, teleworking during the COVID-19 pandemic is far more challenging and has more traps that should be empirically investigated. Based on the conducted systematic and comparative literature analysis, the authors present a theoretical conceptual model which illustrates the influence of telework on sustainable employee behaviour in the context of the COVID-19 pandemic (Fig. 1).

Telework and the COVID-19 pandemic influenced sustainable employee behaviour that can be assessed through economic, environmental and social dimensions. In turn, sustainable employee behaviour impacts employees, their organisation and society as a whole.

2. RESEARCH METHODS

To explore the links between teleworking during the COVID-19 pandemic and the sustainable behaviour of employees, qualitative research was used in the form of semi-structured interviews based on open-ended questions. According to Kallio et al.

(2016), a semi-structured interview is a versatile and flexible method that ensures two-way communication between the interviewer and the participant and allows for improvisation by asking further questions based on the answers received. It is expected that the answers will be as comprehensive and open as possible, formulated and presented by the research participants and reflecting their views (Gaižauskaitė & Valavičienė, 2016).

Sample size. Achieving data saturation is the most commonly employed concept for estimating sample size in qualitative research (Guest et al., 2020). Different authors recommend different sample sizes, which can range from 5 to 60 (Guest et al., 2020; Hennink & Kaiser, 2022). According to Hennink & Kaiser (2022), data saturation can be achieved even with a small sample, such as 9–17 interviews. In this study, data saturation was determined after twelve interviews. Therefore, twelve respondents participated in the study, including eight women and four men, ages ranging from 28 to 60. Participants were selected using targeted sampling based on the most typical areas of telework, such as education, financial activities, trade, tourism, entertainment and leisure, catering, public administration, and health services. Based on a scientific literature analysis, the agenda for the interview guide was developed for the following areas: telework organisation, sustainable employee behaviour, and intentions after COVID-19.

Ethical principles were followed during the semi-structured interview: the researcher's opinion was not advised or insulted, the interview plan was followed, and the respondent was certain that the question was well understood and was given enough time to provide answers. The principle of voluntariness was followed: the decision to participate in the research was made by interviewees, and they were not influenced. Interviewees were provided with information about the research and the purpose of the study. The principle of confidentiality was also observed: if the respondent requested, the data and information obtained were private and anonymous and not disseminated. Codes I1, I2 ..... I12 were assigned to each research participant to ensure the preservation of privacy.

Participants were contacted to organise a convenient day and time for the interview; interviews were conducted live and remotely via the Zoom platform in January–March 2022 in the Republic of Lithuania. The average interview duration was 45 min. The interviews were recorded, translated and transcribed. The data obtained during the interview were processed by interpreting, systematising, analysing, and categorising the responses.

3. RESEARCH RESULTS

Evidence citations are used to support the view presented by participants by categories and subcategories. The first category — organisation of telework during COVID-19. This category covers three subcategories: 1) duration/frequency of telework, 2) workplace and its installation, and 3) expectations for the future/intentions after COVID-19. Supporting statements are presented in Table 3.

Summarising the answers, during the pandemic, most informants spent a large part of their time working remotely, especially in the education, financial and tourism sectors. Almost all informants indicated problems related to the installation of a remote workplace and its convenience for work. In terms of expectations for the future, informants stressed the desire to continue teleworking, even after the pandemic.

The second category — economic behaviour when teleworking in the context of COVID-19. This category covers three subcategories: 1) efficient use of resources and costs, 2) labour productivity, and 3) additional costs. Supporting statements are presented in Table 4. From the data in the table, it can be concluded that costs for transport, food, clothing, and beauty services decreased, but costs for heating, electricity, medical and disposable protective equipment increased. Opinions differed on labour productivity. Most of them mentioned the positive effects of teleworking, mainly due to time saved for travel and preparation for work. Others also saw a decline in productivity due to a lack of motivation and control.

The third category — environmental behaviour when teleworking during COVID-19. This category covers two subcategories: 1) use of natural resources and 2) waste management. Supporting statements are presented in Table 5.

In this category, informants highlighted the positive behavioural changes associated with the use of natural resources because of reduced commuting and shopping. In the field of waste management, positive changes have been observed in relation to nutrition, clothing and sorting. However, negative aspects were also noted: the increase in household waste due to both teleworking and protection against COVID-19.

The fourth category — social behaviour when teleworking during COVID-19. This category covers

Tab. 3. Organisation of telework during COVID-19

SUBCATEGORY	STATEMENTS
Duration/ frequency	"At the beginning of the pandemic (more than a year), I worked only remotely, then, up to now, 70 % of the time I work from home and 30 % in the workplace" [I1]
	"At the beginning (about 1.5 years), I worked only remotely, then, up to now, 70 % of the time I work remotely and 30 % of the time at the workplace" [I2]
	"At the beginning of the pandemic (about one year), I worked only remotely, then 50/50, now 30/70" [I3]
	"At the beginning of the pandemic (about 1.5 years), I worked only remotely, then, until now, 80/20 [I5]
	"Most of the time, I worked remotely" [I4] [I6]
	"Part of the time, we did not work at all, later, it was mixed, but mostly we worked at the workplace" [I7]
	"It was allowed to choose; some people worked only from home, I worked from the office workplace two days a week" [I8]
	"I worked in a mixed way: both at the workplace and remotely" [I9], [I12]
	"The work schedule has not changed fundamentally" [I1]
	"The work schedule has extended" [I2]
	"It was necessary to make changes in the work schedule to combine the work at the workplace and remote work" [I3]
Workplace, its installation	"The employer did not provide the equipment necessary for telework" [I1]
	"Lack of software" [I2]
	"Insufficient internet speed" [I3], [I10],
	"Slow internet made me crazy" [I6]
	"My home computer does not support some programs" [I1], [I12]
	"I didn't have a quiet place working from home" [I8], [I11]
	"My home furniture was not comfortable to work" [I9]
	"I faced data security issues" [I7], [I12]
Expectations / intentions after COVID-19	"After COVID-19, I expect to telework as much as possible" [I1], [I10]
	"After COVID-19, I expect to telework similarly as during the pandemic" [I2]
	"I expect to work from home after COVID-19 also" [I3], [I12]
	"I would like to work from home at least two days a week" [I5]
	"I miss the "live" work and contacts with co-workers, so I'd like to work in a mixed way" [I6]

Tab. 4. Economic behaviour when teleworking in the context of COVID-19

SUBCATEGORY	STATEMENTS
Efficient use of resources, costs	"Since I go to work much less often, much less time is spent on trips, and therefore less money is spent" [I1]
	"No more traffic problems during peak hours" [I2], [I11]
	"Since I didn't have to drive, I saved money on fuel" [I3], [I9]
	"Nutrition costs have decreased somewhat due to less buying and cooking at home" [I1]
	"Significantly reduced the need to replenish the wardrobe" [I2]
	"Reducing the need for beauty services by working from home saved me money" [I3]
	"At the beginning of the pandemic, beauty services were sorely lacking; some things I learned to do myself" [I4]
	"When working at home, I use all resources (water, electricity) more sparingly" [I5], [I8]
	"My purchases are thought out in advance, I don't buy what I don't need/have not planned" [I6]
	"I saved money due to less shopping" [I10]
Labour productivity	"The time saved for commuting allowed to increase productivity" [I1]
	"Work from home is more productive for me" [I4]
	"I could work according to my agenda, so I was more productive" [I8]
	"I was able to start working practically as soon as I got out of bed, saving a lot of time to get ready for work" [I2]
	"What I did in an hour in the workplace, I do in three hours remotely" [I3]
	"The number of various meetings, sometimes completely unnecessary, has increased" [I5]
	"Due to reduced motivation, I was not so productive" [I7]
	" When there's no control, I don't always work as hard as I can" [I9]
Additional costs	"I use more electricity and heating because I work from home" [I1], [I2]
	"The ordering food from cafes has increased, the costs increased as well" [I10]
	"Online purchases of work-related goods have increased" [I11]
	"The need for and cost of medicines has increased" [I3]
	"There were additional costs for masks" [I6], [I9]
	"I spent quite a lot on protective equipment (disinfectant, masks)" [I4]

Tab. 5. Environmental behaviour when teleworking during COVID-19

SUBCATEGORY	STATEMENTS
Use of Natural Resources	"Since I didn't have to drive, I saved money on fuel while not polluting the environment" [I2]
	"Items suitable for use (clothes, shoes, books, furniture...) I give up for secondary use" [I5]
	"I always use a reusable bag for shopping" [I8]
	"When working at home, I use water and electricity more sparingly" [I4]
	"I go shopping less often, I use disposable bags less" [I1]
	"Less excess food" [I6]
Waste management	"I used up my accumulated food supplies" [I3]
	"I don't throw away food" [I1]
	"There was a chance to get creative and update my old clothes" [I7]
	"I had to give out a lot of clothes to charity because I gained weight" [I3]
	"I've noticed that a lot of people carry clothes in textiles, there is not even space in containers" [I5]
	"I don't shy away from shopping in second-hand clothing stores" [I1]
	"I spend more time/attention on waste sorting" [I8]
	"I always composted and sorted" [I1]
	"I return beverage containers for recycling" [I1], [I8]
	"During quarantine, I cleaned the closet and gave away unnecessary clothes" [I4]
	"I noticed an increase in home wastes disposed of" [I2]
	"There has been an increase in waste at home, especially paper and plastic packaging from food" [I10]
	"Additional waste was generated due to the use of disposable protective equipment" [I4]
	"I was having a problem getting rid of used masks" [I6]

Tab. 6. Social behaviour when teleworking during COVID-19

SUBCATEGORY	STATEMENTS
Work–life balance	"I have no small children; my husband worked in the workplace; therefore, I had no problems" [I1]
	"With children who study at home, it is impossible to work remotely normally" [I2]
	"It is difficult to share the available space and equipment with family members" [I4]
	"No boundaries between work and rest time" [I6]
	"It was difficult to balance work and rest" [I3]
	"Work and rest unbalanced" [I8]
	"I pay more attention to my hobbies and gardening" [I1]
	'Due to the closure of various activities, leisure has become limited" [I10]
	"I missed sports events" [I12]
Positive health effects	"Since masks are required in public transport, I try to go to work on foot when possible" [I1]
	"During the pandemic, I cook more at home and eat healthier food" [I4]
	"I spend much more time walking outside and so on" [I2]
	"Morning exercise habit formed" [I3]
	"I engage in sports remotely" [I9], [I10]
Negative health effects	"I avoided going to beauty salons for fear of contracting COVID-19" [I7]
	"As a result of self-activity, I faced unpleasant consequences (condition of hair, nails, skin)" [I8]
	"Mental health deteriorated" [I10]
	"Health problems from long sitting appeared" [I7]
	"Emotional state deteriorated" [I12]
	"Remote work makes me move less" [I1]
	"There was a lack of medical services at the beginning of the pandemic" [I6]
	"After a long sitting in an awkward workplace, my back started to hurt" [I11]
	"The use of disinfectant has caused skin problems" [I1]
	"Breathing problems have been caused by disinfectant and constant wearing of masks" [I5]
Qualification	"My employer organised various remote training and sometimes free of charge" [I1]
	"Employer-provided opportunities to raise qualification remotely for free" [I6]
	"I attend various training events and seminars remotely" [I1], [I2]
	"More opportunities for advanced training" [I4]
	"At the beginning of the pandemic, there was a severe lack of access to training" [I7]
	"I attended conferences remotely" [I1], [I3]
	"While attending remote seminars, I was able to re-listen to the recordings" [I8]
	"I have participated in international events remotely" [I9]

three subcategories: 1) work–life balance, 2) health effects and 3) qualification. Supporting statements are presented in Table 6.

In the area of social behaviour, informants were ambiguous about work–life balance. For many, this has caused problems, especially for those raising young and school-age children; others felt rather comfortable. Some informants have missed a wider range of leisure activities due to very limited entertainment options during the pandemic. In the field of health, various opinions were expressed regarding movement, diet, and physical and emotional state, but in general, it can be said that the health effects were negative. Speaking about qualifications, the informants noted more positive changes in the field of professional development, mentioning the opportunities to participate more often and at a lower cost or even free of charge.

Summarising the whole study, teleworking in the context of COVID-19 has brought positive changes in sustainable behaviour: in terms of economic behaviour, it brought cost savings; environmental — sustainable use of natural resources; and social — increased opportunities for professional development. However, the increase in teleworking due to COVID-19 has also led to the following negative aspects: increased costs for electricity, heating, medicine and security (economic behaviour); increased household waste (environmental behaviour); problems of work–life balance, deterioration of physical and emotional health (social behaviour).

4. Discussion and conclusions

Due to COVID-19, pandemic organisations sent their employees home, creating conditions for the most extensive mass teleworking experiment in history. Compared to occasional teleworking under normal circumstances, teleworking during the COVID-19 pandemic was far more challenging because, in many cases, it was mandatory and full-time. COVID-19 has had a clear impact on the spread of teleworking in the entire world, and this has affected human behaviour in the context of sustainability. Although the topics of teleworking and sustainable behaviour have had great interest from the world scientific community during the past decade, there is a gap in research works that examine the sustainable behaviour of teleworkers in the context of the COVID-19 pandemic. The primary objective of this study was to fulfil this gap by identifying how tele-

working during the pandemic affected the sustainable behaviour of employees.

From a theoretical perspective, this research contributed by the main factors influencing the prevalence of telework and its effectiveness, the main advantages and disadvantages of teleworking through sustainability dimensions and the theoretical conceptual model illustrating links between teleworking during the COVID-19 pandemic and sustainable behaviour of employees. Sustainable employee behaviour that can be assessed through economic, environmental and social dimensions is influenced by telework and the COVID-19 pandemic. In turn, sustainable employee behaviour impacts employees, their organisation and society as a whole.

From an economic perspective, the authors of this research agree with the findings by Brzustewicz and Singh (2021), stating the positive changes related to a decrease in costs for transport, food, clothing, and beauty services. On the contrary, costs for home heating, electricity, medical and disposable protective equipment increased. An increase in home energy use confirmed research results by Moos (2006) and Loia and Adinolfi (2021). Research disclosed different opinions on labour productivity. While most interviewees mentioned the positive effects of teleworking, mainly due to time saved for travel and preparation for work, others stated a decline in productivity due to a lack of motivation and control. Such ambiguous opinions partly confirmed the findings provided by Loia and Adinolfi (2021). From an environmental perspective, positive behavioural changes have been identified with decreased use of natural resources because of reduced commuting and shopping. These results are in line with the findings by Loia and Adinolfi (2021) and Music et al. (2022) that teleworking can improve environmental sustainability.

In the field of waste management, positive changes have been observed in relation to nutrition, clothing and sorting. Similar to findings by Zambrano-Monserratea (2020), negative aspects were disclosed as an increase in household waste due to both teleworking and protection against COVID-19.

The study results from a social perspective were ambiguous about work–life balance. Results revealed that for many parents with young and school-age children, this had caused difficulties in working from home, but others felt comfortable. In the case of Loia and Adinolfi (2021) and Nguyen (2021), the family situation effects and the presence of young children on work and life balance were also confirmed. In the

field of health, various opinions were expressed regarding movement, diet and physical and emotional state. In some cases, similarly to Schmidt et al. (2021), an increase in coverage of distances by foot was identified. Research confirmed the findings by Music et al. (2022) that teleworking and the pandemic contributed positively to social sustainability, promoting better access to healthy and nutritious food. In general, the health effects were more negative than positive. This matches the results by Loia and Adinolfi (2021), indicating that teleworking has negative consequences for physical and emotional health. The main reasons for this were poor ergonomics of home furniture, prolonged sedentary behaviour, a disturbed balance between work and free time, lack of medical services at the beginning of the pandemic, and the use of protective measures against COVID-19. Speaking about professional development, positive changes were identified due to better opportunities for personal and professional development at a lower cost or even at no charge.

In terms of expectations, the empirical study disclosed the desire of research participants to continue teleworking even after the pandemic. This is in line with the findings by Irawanto et al. (2021), Music et al. (2022), and Olde Kalter et al. (2021) that even after the pandemic, this current global job norm would continue. The desire to continue teleworking and ensure work productivity is inseparable from a quiet workplace equipped with the necessary hardware and software, stable internet connection, and data protection measures to minimise job-related stress and insecurities.

The research opens a space for discussion and future scientific contributions in the areas of teleworking and sustainable behaviour. The findings of this study can be useful for international readers, scientists, and business leaders. It can suggest guidelines for further research in different countries with the purpose of examining the role of teleworking towards sustainable behaviour of employees across different countries.

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