

Investigation the Change of The Quantitative Scope of Telecommuting and Influence on Job Satisfaction Under Corona Pandemic*

Katja ZOELLNER

Faculty of Management, Comenius University in Bratislava, Slovakia

Rozalia SULIKOVA

Faculty of Management, Comenius University in Bratislava, Slovakia

Correspondence should be addressed to: Katja ZOELLNER; zollner1@fm.uniba.sk

* Presented at the 36th IBIMA International Conference, 4-5 November 2020, Granada, Spain

Copyright © 2020. Katja ZOELLNER and Rozalia SULIKOVA

Abstract

The Corona Pandemic 2020 is changing life conditions, industry, commerce, job market and working conditions continually and permanently. It triggered a surge in digitalization and the proportion and frequency of home office in companies. Teleworking has had positive effects for companies and workers in the last years before the Corona Pandemic. By reducing the risk of infection from viral infections, teleworking currently gains also momentum to save jobs and companies. The research question focuses in the first step on the changing scope of teleworking and its influence on job satisfaction, which is subject of this article. Further it is aimed to analyze a possible scope of teleworking, which can reduce the job satisfaction of workers and could be implemented as a guideline for HR manager. The research fundamentally bases on an extensive literature review by using various databases, Web of Science, SpringerLink, SCOPUS, Research Gate, Google Scholar, Bitkom Research, Google Search, Wiley Online Library and others. 34 studies employing quantitative, qualitative and mixed-method designs have been included in the review. The method of qualitative content analysis as outlined by Mayring has been used to analyse the literature and interpret the findings. Elaboration of theoretical basics targeted on the topic is required for achieving the goal. The growth of teleworking frequency and influence on job satisfaction is represented. Telework indicates positive effects on job satisfaction, including some negative aspects targeted social and professional isolation, and perceived threats in professional advancement. This review may be a complementary support for academics and practioners.

Keywords: Corona Pandemic, Teleworking, Job Satisfaction, Company

Introduction

Office work turned from single office into community office in the USA in 1960. Nearby work-places give workers only little privacy. Developing cubicles improved this problem in 1964. Open-plan offices established in the USA in 1970 and disseminate to Europe. A countertrend to larger offices realized in the turn of the millennium in the course of digitization while home office became popular (Segelkern, 1994). Before the Corona Pandemic the scope of home-office use was

Cite this Article as: Katja ZOELLNER and Rozalia SULIKOVA, Vol. 2020 (1) "Investigation the Change of The Quantitative Scope of Telecommuting and Influence on Job Satisfaction Under Corona Pandemic," Communications of International Proceedings, Vol. 2020 (1), Article ID 3686620.

increasing steadily (Statista, 2019). Today the affinity to home office is rapidly raising because of the Corona Pandemic, which is worldwide a challenge for everyone's health and for companies' and workers' existence since the beginning of the 20th century under the Spanish Influenza Pandemic at the end of the first world war. Home-office under the Pandemic implies at least for many companies an emergency program to let companies survive. Actually, the Pandemic couldn't be foreseen and came unexpected. Companies had to react rapidly and bankruptcies could not be prevented. According Statista (2020a) a prognosis by Euler Hermes SA Paris for 2021 compared to 2019 the USA will present 57% more bankruptcies and Germany 12%. Companies ratio of teleworking continuously has raised the last years continuously and the last months rapidly. While state required regulations have been entailed in order to dam the virus, the digitization paired with teleworking has keeping workers on job and companies on market. Home office has become an immediate integral and essential part of the working world in contrast to the last years. Three components of teleworking can be distinguished. Teleworking, called as home office, the worker's workplace is his home. Alternating teleworking is characterized as a partial time home office mixed with coordinated working time at office at the company headquarters. Mobile teleworking consists of varying workplaces, mainly utilized by representatives and account managers (Sonntag, 1997). The Federal Ministry for Agriculture, Regions and Tourism (2018) carried out that teleworking produce more work quality like attractiveness of the employer and productivity of the employee proven by better concentration, less distraction, less driving times to the office and thus time savings for getting work done. Assessments of higher efficiency of the meeting results through better coordination and cooperation, enabling more personal responsibility and optimizing the work-life balance were also cleared out. Teleworkers save climate-damaging CO₂ by reducing car traffic and contributes to environmental and climate protection. For cashiers and mechanics on the assembly line working from home is not suitable, however conception, controlling, customer care, editorial staff, personnel planning, appraisal and programming tasks, accounting, documentation is suitable to arrange as a home office work. Requirements for home office user are self-reliance, reliability, tech-savvy, equipment at home, voluntariness, being teamwork. Considering the demographic change the last five years home office adapted to companies' and workers' needs representing a possible work structure for worker who do not find an accommodation in the cities. Home office could be an emphasizing possibility to revive the rural areas. According European Parliament Brussels (2019) significant demographic contrasts can be observed between the core and the periphery in the EU and EU Member States. Population growth has been determined in eastern Ireland, the southern part of the United Kingdom, Belgium, Netherlands, Austria. Parts of western Germany, northern Italy and Scandinavia have benefited from population growth. Trends show an increasing concentration of population in certain urban areas and a depopulation of some rural areas. About 3.1 million first residence permits were issued to non-EU citizens in the EU in 2017. One out of five first residence permits were issued in Poland mainly due to migration from Ukraine, followed by Germany with 17%, the United Kingdom 16%, France 8%, Spain 7%, Italy 6% and Sweden 4%. The fastest expanding populations in 2016 were often concentrated in eastern Ireland, western Germany and southern Sweden. Most of the teleworking studies focuses on employees in general and do not differentiate between managers, employers and employees. A survey of workers conducted by the German health insurance DAK from April to May 2020 resumed the impact of home office from worker's point of view (Bodanowitz, 2020). An actual survey of the University Heinrich Heine in Düsseldorf Germany collected data from test persons who were asked to provide assessments of the work situation before Corona and to answer questions about their current situation in the home office during the Corona Pandemic and differentiate between managers and employees. Kempf (2015), scientist of Bitkom Research, particularly interviewed 1500 managing directors and HR managers from companies with 3 or more employees from all industries in 2015. The survey is representative of the overall economy in Germany. The results show significant positive effects of teleworking and give recommendations for adjustments and improvements related to teleworking structure within companies. An expansion modul of teleworking and a counterforce against overpopulation in cities is represented by co-working. Established in the USA, Silicon Valley, in 2005, a worldwide movement related to work in rented offices was initialized by freelancers and micro-enterprises in order to escape partial from latent home office, which isolated them from colleagues and chiefs. While co-working workers join a community, established companies were interested in this new form of office work. Employees of different companies are able to work in these offices. There they work for their own project, can exchange ideas and knowledge with each other and can profit from each other. In 2015 half a million users and 2017 already more than one million users are counted in co-working spaces (Weibel and Sapagina, 2018). The existing research on teleworking is extensive and detailed towards applied questionnaires. It remains to be examined if there is a scope of teleworking within long term teleworkers existent, which signaled a threshold over which an amount of teleworking has a negative influence on the job satisfaction and respectively productivity.

Relationship between teleworking and job satisfaction

Locke (1976) defined job satisfaction as “a pleasurable or positive emotional state” resulting from the appraisal of one's job or job experiences. Various and mixed researches with conclusions are performed. Telecommuting has as well positive as well negative effects on job satisfaction (Bailey and Kurland, 2002). Some researchers found curve linear effects (Guimaraes and Dallow, 1999) and some inverted U shape linearity effects of the relationship (Golden and Veiga, 2005). It implicates that up to a threshold of telework hours the job satisfaction decreases, which can be a guideline for managers and employees themselves. Figure 1 primarily indicates the coherences between the telecommuting intensity and individual outcomes. According to the researches of Gajendran and Harrison (2007), Charalampous et al. (2019) and Golden and Veiga (2005) an increase of telecommuting intensity in an adequate range could result in a growth of individual outcomes, like job satisfaction, performance and perceived carrier prospects. If the telecommuting intensity is not adequate, it tends to cause role stress or turnover intention. Secondly, the quality and quantity of psychological mediators for instance perceived autonomy, relationship quality and work family conflict, better explained like work family relationship, are able to trigger the individual outcomes in an attenuated or strengthened mode. Figure 1 demonstrates the relation between telecommuting intensity, psychological mediators and individual outcomes. The theoretical relationship of sections guides as framework of the meta-analysis of Gajendran and Harrison (2007). Therefore they applied conceptual support for role of perceived autonomy, work–family conflict and relationship quality, from models developed by Allen, Shore and Griffeth (2003) and Feldman and Gainey (1997). The individual outcomes of telecommuting also derived from previous treatments of the consequences of telecommuting (Shamir and Salomon, 1985). Circles with their intersections describes figuratively that each condition enters the other, like action and reaction. The circles, respectively their contents, can affect the other in an individual way, considering employees or telecommuters with an individual constitution and environment. For instance, negative effects related to individual outcomes or psychological mediators could require a decrease in telecommuting intensity, and vice versa.

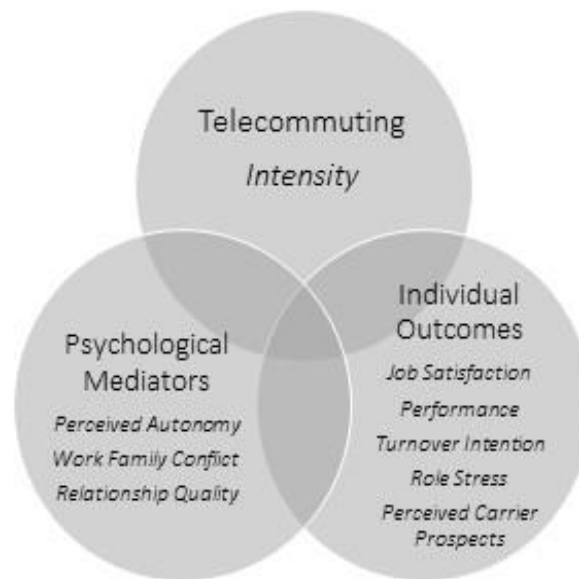


Figure 1: Telecommuting and its affection on workers' well-being

Source: own depiction of Gajendran and Harrison (2007)

Methods

This research intends to answer the following research question: Is there a change in the quantitative scope and quality of teleworking and influence on job satisfaction under Corona Pandemic? To answer the proposed research question an extensive literature review and a qualitative literature analysis was performed. For this purpose, the following databases/library catalogues were used for literature searches: Springer Link, SCOPUS, Research Gate, Google Scholar, Google Search, Wiley Online Library, Forbes, JSTOR, Harvard Business Review. The following search terms were used as part of a targeted literature search: ‘Telecommuting scope before Corona Pandemic’, ‘Telecommuting scope under Corona Pandemic’, ‘Telecommuting and its impact on job satisfaction before Corona Pandemic’, ‘Telecommuting and its impact on job satisfaction under Corona Pandemic’. Quantitative and qualitative data from scientific studies with cross-sectional, meta-analysis and longitudinal character were collected and analysed. The main profession of analysing field is Human Resource Management. Data included descriptive statistics and were deductively analysed. Thereby tables, graphics and charts with nominal, ordinal and metric data of interviews and surveys are collected and analysed. All analysed research papers included in sum 699529 employees and managers from age 20 to 65 as probands. Elaboration of theoretical basics targeted on selected problems required for achieving the goals. The literature research identified in total and worldwide 17000 researches before the Corona Pandemic and 703 within the Corona Pandemic. 70 elaborated potential sources and 34 relevant sources between 1991-2020 attached as references. Researches were also searched through reference lists of existing articles. Some of those works lacked data. They were often instructional advice on setting up remote work arrangements rather than empirical data outcomes. All sources that corresponded to the generally valid scientific requirement for the level of detail and quality of the elaboration were classified as relevant. Relevant data were collected, categorized, and analysed. In the process, the literature has been coded with the MAXQDA software (Kuckartz, 2020). For this purpose, one main code, reflecting the ‘‘Corona effect’’, leads to two ‘‘1. level subcodes’’, represented by the upper terms of bankruptcies and teleworking. Five ‘‘2. level-subcodes’’ are contributed by the topic field ‘‘telework’’, from which six ‘‘3. level-subcodes’’ were defined inductively and deductively. The present literature was encoded according to the method of structured content analysis. Thereby passages were encoded in 684 codings and subsequently analyzed in relation to the research questions. Synthesizing all data, lead to the following results and conclusion. Frequent individual research reflected similar results and could lead to an inductive relation leading to possible recommendations. Figure 2 shows the sequences of the process within the structured content analysis related to the research question. The text work consisted of text review, while the categories of the topic related to the analyzing field were formed. Relevant sources were analyzed and classified into these categories by elaborating relation to each other. For an overview of the Structured Content Analysis approach, see Figure 2.

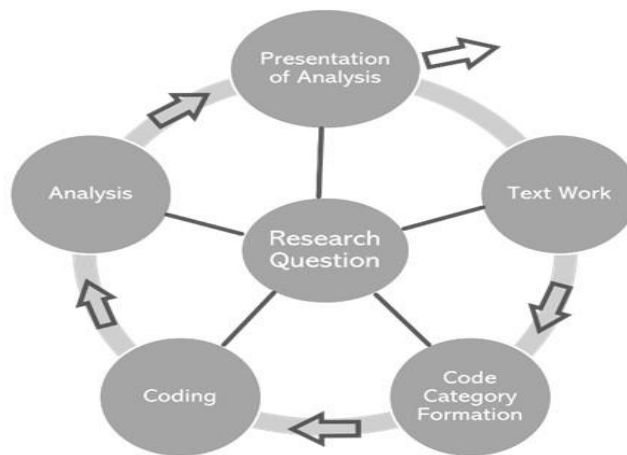


Figure 2: Procedure Structured Content Analysis

Source: own depiction of Kuckartz (2019)

For an overview of the created codes and subcodes, as well as their hierarchy, see Figure 3.

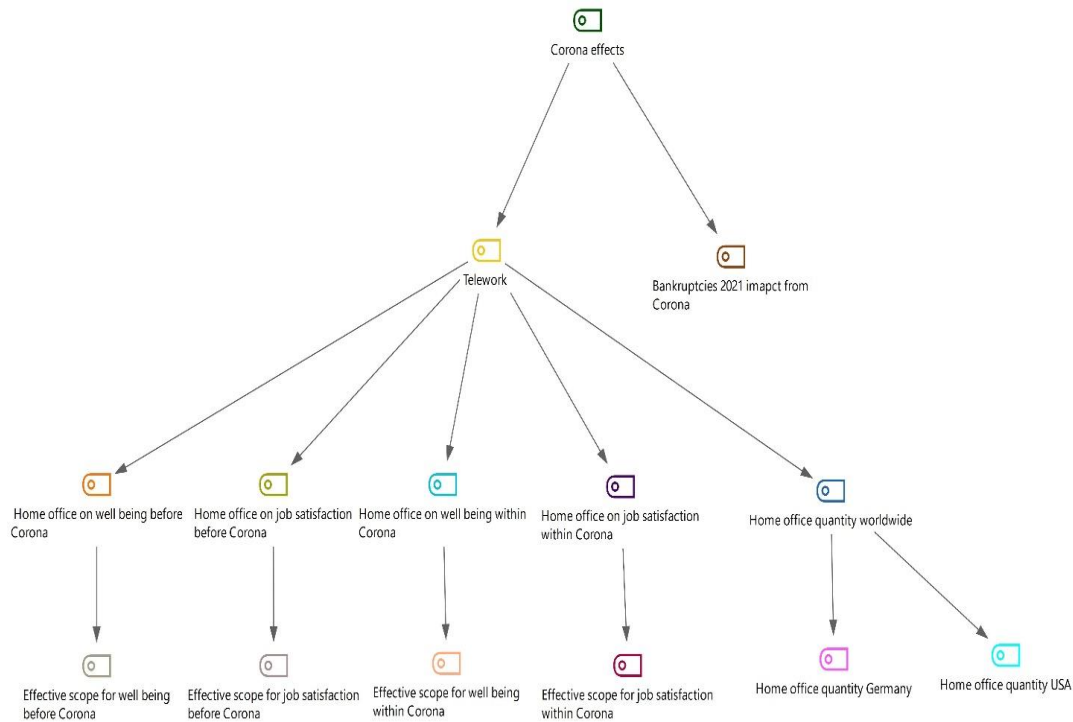


Figure 3: Hierarchical code-subcodes model

Source: own depiction of Kuckartz (2020) MAXQDA

Results

The results originated by a structured synthesis of all included studies. The final sample is made up of 34 studies involving 699529 probands from single studies and included two meta-analyses. Three of total researches analyzes teleworking and its influence only on one dimension, i.e. job satisfaction. All other investigations used more than one dimension affecting working individuals' wellbeing i.e. categorized in affective, cognitive, social, professional, and psychosomatic modi. There was an international representation of countries, like the USA, Austria, Germany, Swiss and Belgium, where studies were conducted. Considering table 1, as a cutout of tabular overview specifying researcher, topic, research field with their analytical parameters, proband-sample-size and publish date, it becomes clear that the authors use various data-pools and have analyzed various dimensions with different variables and conditions in relation to teleworking within different times, respectively years. It became clear that until the COVID-19 crisis the share of remote workers shows inconsistent results. According Statista (2020b), based on survey with 800 interviewed German HR managers conducted by the Ifo-Institute, in the second quarter of 2020, it was stated that around 40 % of the workforce in companies managed from home in their permanent home office before the Corona crisis. As a result of the Pandemic, this distribution has increased by around 20 percentage points to around 60 %. Contrasting to Ifo-Institute, results of the Fraunhofer IAO survey (Hofmann, Piele and Piele, 2020) from May 4, 2020 to May 24, 2020, with almost 500 companies from various industries and sizes includes 78 % belonged to the private sector and 22 % to the public sector. Companies with more than 1000 employees had with 50 % by far the largest share probands of total. 54 % of the respondents resumed that there were only few employees who could use the home office before the Corona crisis. 17% of them totally uses teleworking. The possible degree of use was largely 1 day per week home office or less. Before the Coronavirus Crisis, around 20 % of the workers had the opportunity

to work from home for more than 10 days per month. In time of Corona Pandemic 70 % of the respondents stated that their office workers almost completely or mostly work in the home office, 21 % follows the model of a 50:50. The Mannheim Corona Study led by Blom et al. (2020) revealed more differentiated, that before the Coronavirus Crisis almost 20% of employees in Germany occasionally or often worked from home. A further 35.4% of employees wanted to use home office, but could not do so, 13.5% did not want to work from home and 31.7% said that working from home is fundamentally not possible in their job. Respondents who worked at home in January 2020 had the largest proportion of home office during the Corona Pandemic, as expected. In March 2020, almost 70% of them worked from home. But in contrast, the majority of respondents who expressed a desire to work from home in January 2020 work exclusively at workplace. 57% of them work at workplace in March 2020, 61% exclusively at workplace and 17% partly at workplace and partly in the home office in June 2020. The respondents who do not want to work from home are also the group that most frequently continue to work exclusively at workplace. In July 2020, more than 70% of this group was again working exclusively at workplace and almost 10% partly at workplace and partly in the home office. The data could suggest that even during the contact restrictions due to the Corona Pandemic, it is easier to realize a preference for working at workplace than the desire to work from home. The group who fundamentally excluded home office for their work in January 2020, only around 7% still work from home during the Corona contact restrictions. This proportion decreases very significantly below 1%. At the end of March 25% of employees worked completely or predominantly in the home office, in May only 7% are now exclusively in the home office, 22% work partly at home and partly at workplace. There is strong social inequality when using home office by considering in the first few weeks at the time of the lockdown, 60% of those with high school diplomas were working from home, but only 15% of those with middle school diploma. Over 50% of the employees in Germany work at workplace at their previous place of work. 25% of employees work in the home office, including significantly more people with high educational qualifications and good earnings. Short time working and job loss particularly affect people with low incomes and jobs in the hospitality industry and in the arts and culture. The risks of the Corona Pandemic are unevenly distributed. Lower income groups are likely to be at greater risk of infection with the Coronavirus due to their work at workplace, while at the same time they are affected earlier by the negative economic effects of the Corona Pandemic. The proportion of the population who was employed in January 2020, at the end of April 1,5% are unemployed, 2,5% released without wages, 3,8% released with wages and 13,1% in short time work. Work at workplace in the previous scope measured with 58,9%, exclusively in the home office in the previous scope 5.0%, works partly at workplace and partly in the home office measured by 23.1% in June. A survey of workers conducted by the health insurance DAK compared a sample over 7000 probands from December 2019 and of this sample 6000 took part in the second survey in April 2020. 59 % of employees who regular work from home for the first time said that they work more productively than in their normal workplace. 75% of the respondents are critical because of the diminished direct contact with colleagues. 48 % miss contact to their boss and 41% miss access to files. A survey by the Federal Ministry for Agriculture, Regions and Tourism (2020) on the topic 'Work-life balance through home office carried out among employees in Austria' in July 2020, a total of 43% of respondents were of the opinion that the ability to work from home makes it easier to combine family and work. It can be stated that the Coronavirus Crisis triggered a quantitative increase of telework in the range of 20% to 50% dependent on the survey structure, like selection in numerous and type of probands and branch. Qualitative aspects were also detected and measured quantitatively. Worth mentioned are the findings of strong social inequality when using home office (Blom et al., 2020).

Home office work and job satisfaction before Corona Pandemic

Findings of Schall (2019) to the relationship between remote work and job satisfaction cleared out an existing positive correlation before the Corona Pandemic. An inverted u-shaped curvilinear relationship between the extent of telecommuting intensity and job satisfaction was not found and instead support for a positive, linear relationship. This current research signalizes that a teleworking intensity with no more than 13,7 hours per week indicates a positive relation between teleworking and job satisfaction, but not curve linear. This small sample of 185 surveyed participants did not really use teleworking more than 18 hours per week and to this conditions the author defined a positive relation of teleworking and job satisfaction. The quadratic form of teleworking intensity was entered in order to establish whether an inverted u-shaped curvilinear relationship existed between telecommuting intensity and job satisfaction. There was not found a clear threshold up to that job satisfaction decreases. The confirmation was stated by theoretical statistics and not by collecting real participant data. The major implication of the findings is that increasing remote work in the workplace may be an efficient way to increase employees' job satisfaction levels. According to Schall (2019) remote work influences

employees to have higher perceived autonomy, less work-family conflict and more telecommuting intensity, which in turn influences their job satisfaction. Compared to previous measurements especially according the Gallup Study Report (Clifton, 2017), the overall trend, engagement increases between the intervals of those who do not work remotely and those who work remotely less than 40% of the time. Golden and Veiga (2005) cleared out that 15,1 hours per week let decrease job satisfaction. Instead lower intensities increase job satisfaction.

Home office work and job satisfaction within Corona Pandemic

According researches of Beart et al. (2020) teleworking under Corona Pandemic produces many positive characteristics, like increased efficiency and better work-life balance. 65.7% of 14005 probands indicate that their overall satisfaction with their job increases with telework. 64.6% think that telework improves their work-life balance. According 48.4% of the employees' telework helps to decrease work-related stress and 47.6% of the probands assert that teleworking reduces the chance of burnout. Performance was also positively influenced. 56,3% of the participants affirm that telework improves their efficiency in performing tasks and 50,7% of participants confirmed that telework increases their work concentration. These positive effects of teleworking on job satisfaction, work-life balance, role stress, burnout and performance are in line with the findings of previous studies (Charalampous et al., 2019; Golden and Veiga, 2005). Based on the findings of the OECD report (OECD, 2020) telework can improve firm performance by raising worker satisfaction and thus worker efficiency. Better work-life balance, less commuting or fewer distractions leading to more focused work or less absenteeism. In contrast to the positive effects, worker satisfaction decreases with telework, only, due to solitude, hidden overtime and a fusing of private and work life, or an inappropriate working environment at home. In sum telework can improve or hamper firm performance, with its effects depending on two polluter principles. Companies should notice that direct affection of firm performance could cause by changing the efficiency, motivation and knowledge creation of the workforce and indirectly by facilitating cost reductions that free up resources for productivity enhancing innovation and reorganization. Table 1 gives an overview about more comprehensive researches with experimental character by using a high contingent of probands, e.g. employees. Researches related to telecommuting and its influence on job satisfaction before and after Corona Pandemic are analyzed and collected.

Table 1: Overview of more comprehensive researches, Part 1/4

Researcher	Country	Topic	Publish Date	Type of Research/ Parameter	Proband Number and Job Position
Guimaraes and Dallow	USA	Empirically testing the benefits, problems, and success factors for telecommuting programmes	03/1999	cross-sectional/ telecommuting dependent benefits, problems, and success factors	316 employees from 18 companies various position

Table 1: Overview of more comprehensive researches, Part 2/4

Researcher	Country	Topic	Publish Date	Type of Research/ Parameter	Proband Number and Job Position
Bailey and Kurland	USA	A review of telework research: findings, new directions, and lessons for the study of modern work	06/2002	meta-analysis/ who participates in telework, why they do, and what happens when they do? motivation, willingness, outcomes job satisfaction productivity	6745 employees various position
Mann and Holdsworth	UK	The psychological impact of teleworking: stress, emotions and health	10/2003	cross-sectional/ psychological impact of teleworking compared to office-based work	72 employees various position
Golden and Veiga	USA	The Impact of Extent of Telecommuting on Job Satisfaction: Resolving Inconsistent Findings	04/2005	cross-sectional/ impact of teleworking on job satisfaction	321 employees various position
Gajendran and Harrison	USA	The Good, the Bad, and the Unknown About Telecommuting: Meta-Analysis of Psychological Mediators and Individual Consequences	12/2007	meta-analysis/ positive and negative consequences of telecommuting on psychological mediators and individual outcomes	45740 employees various position
Kempf Bitkom	Germany	Digitization offers opportunities for flexible working	02/2015	cross-sectional/ forecast of home office increase	1500 managing directors and HR managers
Beckmann and Rupietta	Swiss	Working from Home – What is the Effect on Employees' Effort?	07/2016	meta-analysis, descriptive statistic/ employees' work effort	22000 employees various position

Table 1: Overview of more comprehensive researches, Part 3/4

Researcher	Country	Topic	Publish Date	Type of Research/ Parameter	Proband Number and Job Position
Clifton Gallup Press	USA	State of the American workplace	2017	meta-analysis/ qualitative and quantitative conditions at workplace	195600 employees various position from Gallup Panel and Gallup daily tracking in 2015/16
Charalampous et al.	UK	Systematically reviewing remote e-workers' wellbeing at work: a multidimensional approach	01/2018	metaanalysis, quantitative, qualitative and mixed-method designs/ dimensions of workers wellbeing at work: affective, cognitive, social, professional, and psychosomatic	37553 workers from 63 studies various position
Schall	USA	The relationship between remote work and job satisfaction: the mediating roles of perceived autonomy, work-family conflict, and telecommuting intensity	05/2019	cross-sectional/ relationship between remote work and job satisfaction	185 employees various position
Bodanowitz DAK	Germany	Digitization and home office relieve employees in the Coronavirus Crisis	04/2020	longitudinal study/ scope of home office, job satisfaction, work life balance, stress level, scope of digitalization	employees before Corona Pandemic 7000, after Corona Pandemic 6000, various position
Alipour, Falk and Schüller	Germany	Germany's Capacities to Work from Home	04/2020	cross-sectional quantitative research / home office potential	7160 employees various position 2018 of BIBB/ BAuA Employment Survey included own calculation

Table 1: Overview of more comprehensive researches, Part 4/4

Researcher	Country	Topic	Publish Date	Type of Research/ Parameter	Proband Number and Job Position
Süß Heinrich-Heine- University Düsseldorf	Germany	Study on teleworking and childcare during Corona Pandemic: home office influences productivity and conflicts	05/2020	cross-sectional/ assessments of the work situation before Corona Pandemic and current situation in the home office during the Corona Pandemic	1027 employees and manager, various position
Beart et al.	Belgium	The COVID-19 Crisis and Telework: A Research Survey on Experiences, Expectations and Hopes	05/2020	cross-sectional/ employee perceptions of telework on various life and career aspects, distinguishing between typical and extended telework during the COVID-19 crisis including job satisfaction	14005 employees various position
Hofmann, Piele and Piele Fraunhofer Institute	Germany	Working in the Corona Pandemic – on the way to the new normal	07/2020	cross-sectional/ worker's well being, workplace, managerial, organisational	more than 350000 various position
Blom et al. University Mannheim	Germany	The Mannheim Corona study: focus report on the use and acceptance of home offices in Germany during Corona lockdown	07/2020	cross-sectional/ home office potential, quantitative and qualitative working and private conditions	3600 of the German Internet Panels, various position
Federal Ministry for Agriculture, Regions and Tourism	Austria	Work-Life-Balance by home office in Austria 2020	08/2020	cross-sectional/ ability of combining family and work	705 Employees various position
					SUM 699529 probands

Source: own creation

Discussion

Telework and its influence on workers' job satisfaction and in general well-being has been extensively analyzed and discussed. Job satisfaction has received the most empirical attention. Some conditions related to teleworking could trigger an increase or decrease of job satisfaction. The comprehensive meta-analysis of Charalampous et al. (2019) gives a detailed insight to this working field and the dependent variables. Teleworking are responsible for workers' positive emotions, to increase their job satisfaction and organizational commitment levels and to ameliorate feelings of emotional exhaustion. As result of this working category teleworkers feel more autonomous. Exclusively social isolation could be the reason for a drawback of teleworking. According Golden and Veiga (2005) the relationship between the extent of telecommuting and job satisfaction is curvilinear and satisfaction and amount of telecommuting are positively related at lower levels of telecommuting and satisfaction plateaus resulted from higher levels of telecommuting with around 15.1 hours per week. This curvilinear relationship is moderated by several variables and the curve flattens with jobs higher in discretion and interdependence and for individuals higher in performance-outcome orientation. In terms of personality, teleworkers with a greater tendency to order and a higher need for autonomy report greater job satisfaction than do teleworkers with lower needs for order and autonomy. Considering the development of scope applying teleworking in companies, it is conspicuous that teleworking in German companies raised from 22% to 39% from 2014 to 2018 (Statista, 2019). Employees statistically have experience with telework, both in general and in its extensive form due to the COVID-19 crisis. The Ifo Institute reported 20%-increasing of teleworking scope under COVID-19. Beart et al. (2020) resumed that 65.9% of Flemish workers are completely satisfied with the increase of extended teleworking within the Corona Pandemic. 85% foresee the COVID-19 crisis as making teleworking and 81% of them foresee digital conferencing much more common in the future. Golden and Veiga (2005) revealed a special termination of teleworking to receive beneficial job satisfaction. This could use as guideline for companies and workers with view of preventing productivity of workers in times without a pandemic. Life conditions abruptly changed in 2020 and teleworking became a need preventing serious infection. The worldwide population is obliged to train and always comply to keep distance from others, called 'social distancing' as long as the virus is not contained. Office jobs have to be new structured and teleworking is the easier way to be arranged by companies and employees. We can assume that workers' and companies' attitude towards teleworking modifies to an obligatory workplace also for the next time. The situation cannot be assessed for the future. The researches within Corona Pandemic, worth mentioned the work of Beart et al. (2020), analyzed the number of employees which are satisfied with extended teleworking within the crisis. An evaluation towards a precisely extend of telework in relation to the effects on job satisfaction and productivity in this research lacks in contrast to Golden and Veiga (2005). In case of persistent pandemic it is relevant to analyze workers' attitude towards teleworking in precise manner in order to cope with the crisis. According to Blom et al. (2020) of Mannheim University there is strong social inequality when using home office. Lower income groups are likely to be at greater risk of infection with the Coronavirus due to their work at workplace, while at the same time they are affected earlier by the negative economic effects of the Corona Pandemic. This is a disruptive factor which generally have negative influence on workers' job satisfaction and distorted the real well-being factors of employees. Companies were interested in finding new ways to create new solutions and combinations of telecommuting arrangement e.g. co-working and teleworking for the last five years. Interesting results gained from a one-year co-working experiment with 5 companies in cooperation with the Village Office Cooperative (Josef et al., 2019). It deals with the question of which specific value propositions and benefit scenarios co-working offers established companies. Further research of the subject teleworking and previous co-working to a new model by elimination the negative affecting mediators of job satisfaction within teleworking could be progressive for companies' work structure. For established companies, the question is how co-working fits into existing forms of work (corporate office, home office, mobile work) and what influence this new scenario has on the existing culture of collaboration (Weibel and Sapegina, 2018). Instead, companies actually have to accomplish and implement hygiene rules at workplace and their future focus have to arrange a new working structure. The researches of 2020 with focus of workplace in times of COVID19 and secondarily in relation to job satisfaction cannot give precise results because the new problem and companies' challenge has only existed for 7 months. The OECD report (OECD, 2020) summarized following coherences, which could help to give a guideline for companies and provide researchers with new ideas for studies:

- widespread telework may remain a permanent feature of the future working environment, catalyzed by the experiences made with teleworking during the COVID-19 crisis

- the use of telework before the crisis varied substantially across countries, sectors, occupations and firms, which suggests a large scope for policies to contribute to the spread of teleworking
- while more widespread telework in the longer-run has the potential to improve productivity and a range of other economic and social indicators (worker well-being, gender equality, regional inequalities, housing, emissions), its overall impact is ambiguous and carries risks especially for innovation and worker
- to minimize the risks of more widespread teleworking harming long-term innovation and decreasing worker well-being, policy makers should assure that teleworking remains a choice and is not 'overdone'; co-operation among social partners may be key to address concerns e.g. of 'hidden overtime'.
- to improve the gains from more widespread teleworking for productivity and innovation, policy makers can promote the diffusion of managerial best practices, self-management and ICT skills, investments in home offices, and fast and reliable broadband across the country.

These correlations, summarized by the OECD (Organisation for Economic Cooperation and Development), are worth mentioned and leads to a new research ground. Connecting previous research results with analyzed new conditions generated by the crisis of Corona Pandemic will open new niches for researchers and companies. The crisis requires new advanced methods to reach more robust and adapted conclusions. For instance, more cross sectional and longitudinal data is something that obstructs our ability to define causation and the actual direction for most of the relationships discussed in previous researches and above to the new situation. The need is to reveal mechanisms, crisis dependent dimensions and limitations. Additionally, it would be useful to conduct more diary studies which will allow us to capture a person change on levels of well-being, as opposed to a cumulative group change. An advantage of this method is that it decreases retrospective bias, which often threatens the validity of cross-sectional surveys.

Conclusions

The present study aims to give an overview of the previous literature related to the relationship of teleworking and its influence on job satisfaction with regard to the current literature with the hardship and challenge of the sudden Pandemic. In particular, it can help to understand the new experience of working from home for the first time and to know the satisfaction of this work type. Furthermore, it is given in insight to the changing conditions of experienced teleworkers within the Pandemic. A clarification of the changing extent of teleworking and job satisfaction should be given. According to previous findings of teleworking, respondents working from home will be willing to work like that, because of the condition to be protected from virus and their attraction to telework increase, if they are having good and supportive environment to work from home. Understanding the needs of employees provides employers with an opportunity to help their employees constructing a supportive and controlled work environment, which may result higher number of workers showing increased affinity to work from home. Controlling the problems e.g. of social inequality dimensions revealed of the current comprehensive study results of the Mannheim University and processes the coherence findings of the OECD (2020), researchers and practioners are able to elaborate and implement new COVID19 adequate structures into the managerial departments and workplace. This increase the probability for employees having higher job satisfaction and efficiency. The attention of a good protection from virus must not be neglected. Protection is the assurance against absenteeism maybe for a long time in fact of COVID-19, possible infections and its possible long-term consequences. The results of the present study provide a cutout of potential ways maybe for future research. It includes the differences in opinion of employees towards work from home across the states. The impact of the Pandemic affects some people more strongly, related to their age, income, academic status, personality and gender. COVID-19 makes clear how vulnerable we all are, also employees and employers. Businesses around the world have be restructured in order to have a future or disappear due to the Pandemic. Workers have to be retrained or lose their job. New ways are needed to minimize health costs and also economic costs due to these actions.

References

- Alipour, JV., Fadinger, H. and Schymik, J., (2020), 'My home is my castle: The benefits of working from home during a pandemic crisis. Evidence from Germany,' *CRC TR 224 Project B 06 University Bonn Germany*. [Online], [Retrieved September 3, 2020]. <https://www.crctr224.de/en/research-output/discussion-papers/archive/2020/DP178/view>
- Alipour, JV., Falk, O., and Schüller, S., (2020), 'Germany's Capacities to Work from Home,' *Institute of Labor Economics Bonn Germany*. [Online], [Retrieved September 5, 2020], <http://ftp.iza.org/dp13152.pdf>
- Allen, DG., Shore, LM. and Griffeth, RW. (2003), 'The Role of Perceived Organizational Support and Supportive Human Resource Practices in the Turnover Process,' *Journal of Management*, 29(1), 99-118
- Apgar, M., (1998), 'The Alternative Workplace: Changing Where and How People Work,' *Havard Business Review*. [Retrieved September 3, 2020], [Online], <https://hbr.org/1998/05/the-alternative-workplace-changing-where-and-how-people-work>
- Bailey, DE. and Kurland, NB. (2002), 'A Review of Telework Research: Findings, New Directions, and Lessons for the Study of Modern Work,' *Journal of Organizational Behavior*, 23(4), 383–400.
- Beart, S. et al., (2020), 'The COVID-19 Crisis and Telework: A Research Survey on Experiences, Expectations and Hopes,' *Institute of Labor Economics Bonn Germany*. [Online], [Retrieved September 5, 2020], <http://ftp.iza.org/dp13229.pdf>
- Beckmann, M. and Rupietta, K., (2016), 'Working from home: What is the effect on employees' effort?,' *Center of Business and Economics (WWZ) University Basel*. [Online], [Retrieved September 3, 2020], <https://core.ac.uk/download/pdf/154352834.pdf>
- Bellmann, L. and Hübler, O., (2020), 'Job Satisfaction and Work-Life Balance: Differences Between Homework and Work at the Workplace of the Company,' *Institute of Labor Economics Bonn Germany*. [Online], [Retrieved September 8, 2020], <https://www.econstor.eu/bitstream/10419/223946/1/dp13504.pdf>
- Blom, AG. et al., (2020), 'The Mannheim Corona Study: Focus report on the use and perception of home office in Germany during the Corona Lockdown,' *Mannheim Germany: University Mannheim*. [Online], [Retrieved September 1, 2020], <https://madoc.bib.uni-mannheim.de/55628/?rs=true&>
- Bodanowitz, J., (2020), 'Digitization und home office relieves employees in the Corona virus crisis,' *DAK Heath Strategic Management Department Bonn Germany*. [Online], [Retrieved September 3, 2020], <https://www.dak.de/dak/bundesthemen/sonderanalyse-2295276.html#/>
- Braikovskaia, J. and Margraf, J. (2020), 'Predicting adaptive and maladaptive responses to the Coronavirus (COVID-19) outbreak: A prospective longitudinal study,' *International Journal of Clinical and Health Psychology*, 20(3), 183-191.
- Charalampous, M. et. al. (2018), 'Systematically reviewing remote e-workers' well-being at work: a multidimensional approach,' *European Journal of Work and Organizational Psychology*, 28(1), 51–73.
- Clifton, J., (2017), 'State of the Global Workplace,' *GALLUP PRESS New York USA*. [Online], [Retrieved 1, September 2020], <https://www.gallup.com/workplace/257552/state-global-workplace-2017.aspx>
- Dubrin, AJ. (1991), 'Comparison of the Job Satisfaction and Productivity of Telecommuters versus in-House Employees: A Research Note on Work in Progress,' *Psychological Reports*, 68(3), 1223-1234.
- European Parliament Brussels, (2019), 'Demographic trends in EU region 2019,' *EPRS European Parliamentary Research Service Brussels Belgium*. [Online], [Retrieved September 7, 2020], <https://ec.europa.eu/futurium/en/system/files/ged/eprs-briefing-633160-demographic-trends-eu-regions-final.pdf>
- Federal Ministry for Agriculture, Regions and Tourism, (2018), 'Telework – what is it and which advantages does it have?,' *Federal Ministry for Agriculture, Regions and Tourism Wien Austria*. [Online], [Retrieved August 30, 2020], <https://www.bmlrt.gv.at/ministerium/da fuer-stehen-wir/teleworking/vorteiletelearb.html>
- Feldmann, DC. and Gainey, TW. (1997), 'Patterns of telecommuting and their consequences: Framing the research agenda,' *Human Resource Management Resource*, 7(4), 369-388.
- Gajendran, RS. and Harrison, DA. (2007), 'The Good, the Bad, and the Unknown About Telecommuting: Meta-analysis of Psychological Mediators and Individual Consequences,' *Journal of Applied Psychology*, 92(6), 1524-1541.

- Glass, J.L. and Noonan, M.C. (2016), 'Telecommuting and Earnings Trajectories Among American Women and Men,' *Social Forces*, 95(1), 217-250.
- Golden, T.D. and Veiga, J.F. (2005), 'The Impact of Extent of Telecommuting on Job Satisfaction: Resolving Inconsistent Findings,' *Journal of Management*, 31(2), 301-318.
- Guimaraes, T. and Dallow, P. (1999), 'Empirically testing the benefits, problems, and success factors for telecommuting programmes,' *European Journal of Information Systems*, 8(1), 40-54.
- Hofmann, J., Piele, A. and Piele, C., (2020), 'Working while Corona Pandemic-on the way to normal,' *Fraunhofer IAO Stuttgart Germany*. [Online], [Retrieved September 1, 2020], <http://publica.fraunhofer.de/starweb/servlet.starweb?path=urn.web&search=urn:nbn:de:0011-n-593445>
- Hook, A. et al., (2020), 'A systematic review of the energy and climate impacts of teleworking,' *Environmental Research Letters*. [Online], [Retrieved September 1, 2020], <https://doi.org/10.1088/1748-9326/ab8a8>
- Josef, B. et al., (2019), 'Cowork from a business perspective– Out of Office, into the Flow?,' *University St. Gallen Swiss*. [Online], [Retrieved September 6, 2020], https://www.alexandria.unisg.ch/256520/1/Coworkingstudie_2019.pdf
- Kempf, D., (2015), 'Digitization offers opportunities for flexible working,' *Bitkom Research Berlin Germany*. [Online], [Retrieved September 5, 2020], <https://www.bitkom.org/Presse/Presseinformation/Digitalisierungsbietet-Chancen-fuer-flexibles-Arbeiten.html>
- Kniffin, K.M. et al., (2020), 'COVID-19 and the Workplace: Implications, Issues, and Insights for Future Research and Action,' *American Psychologist*. [Online], [Retrieved September 5, 2020], <https://doi.org/10.1037/amp0000716>
- Kossek, E.E., Lautsch, B.A. and Eaton, S.C. (2009), "Good Teleworking": Under What Conditions Does Teleworking Enhance Employees' Well-being?, *Technology and Psychological Well-Being*, Amichai- Hamburger, Y. (ed), Cambridge University Press, Cambridge England.
- Kuckartz, U., (2019), 'Qualitative Content Analysis: From Kracauer's Beginnings to Today's Challenges.' *Forum: Qualitative Social Research*. [Online], [Retrieved September 15, 2020], <http://dx.doi.org/10.17169/fqs-20.3.3370>
- Kuckartz, U., (2020), 'The best choice for your Qualitative & Mixed Methods Analysis,' *VERBI GmbH Invalidenstraße 74, 10557 Berlin, Germany*. [Online], [Retrieved 15, September 2020], <https://www.maxqda.de/about>
- Locke, E.A. (1976), *The Nature and Causes of Job Satisfaction*, Handbook of Industrial and Organizational Psychology, Dunnette, M.D. (ed), Rand Mc Nally, Chicago USA.
- Mann, S. and Holdsworth, L. (2003), 'The psychological impact of teleworking: stress, emotions and health,' *New Technology, Work and Employment*, 18(3), 196-211.
- OECD, (2020), 'Productivity gains from teleworking in the post COVID-19 era: How can public policies make it happen?,' *Secretary-General of the OECD Brussels Belgium*. [Online], [Retrieved September 7, 2020], <http://www.oecd.org/coronavirus/policy-responses/productivity-gains-from-teleworking-in-the-post-covid-19-era-a5d52e99/#p-d1e698>
- O'Neill, T.A. et al. (2009), 'Predicting teleworker success: An exploration of personality, motivational, situational, and job characteristics,' *New Technology, Work & Employment*, 24(2), 144-162.
- Schall, M.A., (2019), 'The Relationship Between Remote Work and Job Satisfaction: The Mediating Roles of Perceived Autonomy, Work-Family Conflict, and Telecommuting Intensity,' *San Jose State University California USA*. [Online], [Retrieved September 29, 2020], <https://scholarworks.sjsu.edu/contact.html>
- Segelkern, S. (1994), *Office work, Administrative Buildings*, Gottschalk O. (ed), Vieweg+Teubner Verlag, Wiesbaden Germany
- Shamir, B. and Salomon, I. (1985), 'Work-at-home and the quality of work life,' *Academy of Management Review*, 10(3), 455-464.
- Shan, C. and Tang, Y.C., (2020), 'The Value of Employee Satisfaction in Disastrous Times: Evidence from COVID-19,' *SSRN Electric Journal*. [Online], [Retrieved September 1, 2020], <http://dx.doi.org/10.2139/ssrn.3560919>

- Sonntag, MV., (1997), 'Teleworking,' *Johannes Kepler University Linz Austria*. [Online], [Retrieved September 7, 2020], <http://www.fim.uni-linz.ac.at/research/telework/sonntag/index.htm>
- Statista, (2019), 'Do individual employees work entirely or partially from their home office?,' *Statista Hamburg Germany January 2019*. [Online], [Retrieved September 10, 2020], <https://de.statista.com/statistik/daten/studie/964479/umfrage/umfrage-zur-nutzung-von-homeoffice-in-deutschen-unternehmen/>
- Statista, (2020), 'Bankruptcies: The Calm Before the Storm,' *Statista Hamburg Germany June 2020*. [Online], [Retrieved September 1, 2020], <https://de.statista.com/infografik/22700/prognose-zur-entwicklung-der-unternehmensinsolvenzen/>
- Statista, (2020), 'Corona crisis: Share of the workforce who worked in the home office, currently works or could theoretically work in Germany in the 2. Quartile 2020,' *Statista Hamburg Germany August 2020*. [Online], [Retrieved August 29, 2020], <https://de.statista.com/statistik/daten/studie/1140049/umfrage/corona-krise-homeoffice-nutzung-und-potenzial/>
- Süß, S., (2020), 'Telework and childcare within Corona: Homeoffice influences productivity and conflicts,' *Heinrich Heine University Düsseldorf Germany*. [Online], [Retrieved September 1, 2020], <https://www.orgaperso.hhu.de/de/unsere-forschung/studie-zum-thema-arbeiten-im-homeoffice-waehrend-der-corona-pandemie.html>
- Weibel, A. and Sapegina, A., (2018), 'Coworking: Special work with potential,' *HSG Focus University St. Gallen*. [Online], [Retrieved August 29, 2020], <https://magazin.hsgfocus.ch/hsg-focus-1-2018-arbeit/artikel/coworking-eine-arbeitsform-mit-potenzial-12184>