Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Management

Master's Thesis

Virtual teams and their application by CZU during COVID-19 lockdown in Czech Republic – Case study

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

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DIPLOMA THESIS ASSIGNMENT

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Economics and Management
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Thesis title

Virtual teams and their application by CZU during COVID-19 lockdown in Czech Republic – Case study

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Objectives of thesis

Aim of this thesis is to identify attitudes of Czech University of Life Sciences educational employees towards the unanticipated change in work and teaching practices caused by COVID-19 pandemic in the Czech Republic, evaluate changes in effectiveness of work and evaluate effectiveness of transition from personal communication to virtual communication. Another aim of this thesis is to identify challenges, advantages and disadvantages as seen by employees of Czech University of Life Sciences.

Methodology

The theoretical part of the thesis comprises a review of current literature, drawn from academic journals, appropriate web resources and materials from libraries on relevant topics including management, teams and team dynamics, and virtual teams. Literature review is using analysis and syntesis of reviewed documents by methods of induction, deduction, comparison, narative review, descriptive review and systematic review. It contains explanations of concepts such as team, team work and virtual teams. It also provides an overview of psychological aspects of work in teams, their types, team roles and team diversity. Lastly, literature overview explains specifics of virtual teams and presents technologies necessary for efficiency of virtual teams.

The practical part, own research, is largely based on a detailed text analysis of questionnaires provided to members of a virtual team and a semi-structured interview with a manager of this team.

The proposed extent of the thesis

Approx 60 – 80 pages

Keywords

Team, virtual team, management, COVID-19, online, lockdown, CULS, university, questi-onnaire, interview, transition

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Recommended information sources

Graves L.M., Karabayeva A., (2020), ”Managing Virtual Workers—Strategies for Success,” in IEEE Engineering Management Review, vol. 48, no. 2, pp. 166-172, doi: 10.1109/EMR.2020.2990386

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Declaration

I declare that I have worked on my master's thesis titled "Virtual teams and their application by CZU during COVID-19 lockdown in Czech Republic – Case study " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 2021 _____

Acknowledgement

I would like to thank Richard Selby, PhD for his advice, support and understanding during supervision of this thesis. I would also like to thank respondents of my research, who took their time to answer my questions.

Virtual teams and their application by CZU during COVID-19 lockdown in Czech Republic – Case study

Abstract

Aim of this thesis is to identify attitudes of Czech University of Life Sciences educational employees towards the unanticipated change in work and teaching practices caused by COVID-19 pandemic in the Czech Republic, evaluate changes in effectiveness of work and evaluate effectiveness of transition from personal communication to virtual communication. Another aim of this thesis is to define challenges, advantages and disadvantages as seen by educational employees of Czech University of Life Sciences. Theoretical part of the thesis, literature overview, consists of a review of available literature, drawn from academic and scientific journals, appropriate web sources and other documents, on relevant topics. Practical part of the thesis, own qualitative research, is based on questionnaires distributed to members of a virtual team and a semi-structured interview with a manager of this team. Deep and detailed analysis of questionnaires and interviews will result in answering of stated research questions. The conclusion will recommend how the university and its' employees could be better prepared for a similar situation in future.

Keywords: Team, virtual team, management, COVID-19, online, lockdown, CZU, university, questi-onnaire, interview, transition

Virtuální týmy a jejich použití na České Zemědělské Univerzitě během epidemie COVID-19 v České Republice – případová studie

Abstrakt

Cílem práce je identifikovat postoje pedagogických pracovníků České Zemědělské Univerzity vůči nečekané změně v pracovních a výukových postupech zaviněné epidemií COVID-19 v České Republice, zhodnotit dopad na efektivitu práce a efektivitu přechodu z osobní komunikace na virtuální komunikaci. Dalším cílem je definovat výzvy, výhody a nevýhody z pohledu pedagogických zaměstnanců České Zemědělské Univerzity. Teoretická část práce se skládá z přehledu dostupné literatury, akademických a vědeckých publikací, odpovídajících internetových zdrojů a dalších dokumentů na související témata. Vlastní výzkum je založen na dotazníku distribuovaném mezi členy kateder a semistrukturovaném rozhovoru s vedoucími kateder. Podrobná analýza dotazníků a rozhovorů vyústí v odpovědi na vytyčené otázky výzkumu. Závěr práce doporučí zlepšení v přípravě university a jejích zaměstnanců v případě podobné situace v budoucnu.

Klíčová slova: Tým, virtuální tým, management, COVID-19, online, lockdown, ČZU, univerzita, dotazník, rozhovor, přesun

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1 Introduction

The pandemic of COVID-19 virus, which spread from China at the end of year 2019 and continued its expansion around the world, caused unprecedent changes in almost all spheres of life including economy, culture, society, and most job positions. In the beginning of year 2020, when the pandemic reached Europe, most of the governments introduced wide scale of precautions, in most cases including restriction of gathering, closing of schools and universities, bans of public events and other restriction concerning limitations of interpersonal contacts. The pandemic reached Czech Republic on the 1st of March, first restrictions were introduced into action soon after.

Whether those restrictions were defined by number of people allowed to meet in one place, by obligatory space zone size per person or simply by closure of work facilities, the restrictions caused need for transfer of work process partially or completely to online space, if possible. Among others, this process completely changed conditions of work in teams, work groups and collectives. In some enterprises, partial transition of work to online or virtual environment began to took place already before the pandemic, in some cases even decades ago.

As mentioned above, the pandemic caused also closure of educational institutions, including universities, resulting in distant teaching, but also affecting research, administration, and other job duties of educational employees. The Czech University of Life Sciences was first closed for students on the 2nd of March. Even though a week later it was reopened again for several days, majority of the summer semester of academic year 2019/2020 was held online. As many studies shown, such significant change always affects interpersonal dynamics at the workplace as well as it represents challenge for maintaining productivity and performance from period before the change.

This thesis studies effect of shift towards remote work on educational employees at Czech University of Life Sciences in Prague. Thesis does not study effects of this shift on students. In literature review, it introduces concepts important for understanding of the problematics. It also contains description of the specific conditions caused by epidemiologic restrictions introduced by the government of Czech Republic.

Own research of thesis consists of primary data collection, realised through questionnaire distributed among employees of Faculty of Economics and Management at CZU in Prague.

Obtained data are used for answering research questions and for finding correlation between demographic groups of respondents and effect of changes on them. Conclusion summarises these findings and gives a suggestion of possible improvements, that could have been done.

2 Objectives and Methodology

2.1 Objectives

Main objective of this thesis is to find answers for research questions stated bellow. Literature review is conducted with the objective to obtain sufficient knowledge for composition of questionnaire used in the research part of thesis.
Thesis will introduce conditions caused by COVID-19 pandemic in Czech Republic during the so called "First wave", which occurred during spring season of year 2020 and for purposes of this thesis will be defined by period during which distant learning at the CZU took place.
Literature review will summarize current knowledge about teamwork, virtual teams, psychological aspects of teamwork and finally will present technologies and tools used for online cooperation.
Own research will firstly mention specifics of teamwork at the university compared to commercial companies and conditions caused by government restrictions specifically in the university environment.

2.2 Research questions

Author formulated four research questions representing the main objective of thesis own research:

1) What were the attitudes of selected university employees towards forced transition of work to virtual space?
2) What challenges, advantages and disadvantages did employees face during transition of work to virtual space?
3) What improvements could have been done to increase effectiveness of transition of work to virtual space?
4) How did the experience of working in virtual teams change the attitudes of employees to work?

Questions are answered using dataset of primary data collected through a questionnaire distributed among employees.

2.3 Methodology

The theoretical part of the thesis comprises a review of current literature, drawn from academic journals, appropriate web resources and materials from libraries on relevant topics including management, teams and team dynamics, and virtual teams. Literature review is using analysis and synthesis of reviewed documents by methods of induction, deduction, comparison, narrative review, descriptive review, and systematic review. It contains explanations of concepts such as team, teamwork, and virtual teams. It also provides an overview of psychological aspects of work in teams, their types, team roles and team diversity. Lastly, literature overview explains specifics of virtual teams and presents technologies necessary for efficiency of virtual teams.
The practical part, own research, is largely based on quantitative analysis of questionnaires provided to members of a virtual team. The questionnaire contains closed multiple choice questions with possibility of own open-ended answer. Part of the data analysis also searches for possible correlations between specific demographic groups (e.g.: single parents with children) and effects of forced remote work. Dataset also provides basic statistics concerned with sufficiency of equipment and support provided by the university. Such detailed analysis should provide sufficient knowledge needed for answering of stated research questions and drawing of valuable conclusions.

2.3.1 Comparison of data for groups defined by demographic factors

Obtained data will be grouped in accordance with demographic characteristics such as age, gender, type of employment, work experience length, household conditions, potential parenthood, and others. Data concerning research questions stated by author will then be compared between these groups to determine potential influence of demographic data and respondent's personal characteristics on their experience of work during first wave of COVID-19.

2.3.2 Correlation test

Correlation analysis is used to decide, whether two variables are dependent or independent on each other and to measure the strength of such dependency. The aim of correlation analysis is to find linear relationship between two variables in time series data. Result of

such analysis is correlation coefficient, traditionally noted by letter "r" or "ρ", while value of this coefficient lies in interval $\langle -1;1 \rangle$. The value of correlation coefficient indicates, by what amount variable x_1 changes, if x_2 changes by 1 unit. As absolute value of correlation coefficient is approaching 1, the dependence is getting stronger, while in case when correlation coefficient is approaching 0, the dependence is getting weaker. In case $-1 \leq r < 0$, we are talking about negative correlation, where positive change of x_1 causes negative change of x_2. In case $0 < r \leq 1$, we are talking about positive correlation, where positive change of x_1 causes positive change of x_2. In this case, correlation analysis is used to verify potential dependence of respondent's experience on their personal characteristics and demographic data.

3 Literature Review

In following chapter author reviews currently, available literature connected with thesis topic. It contains nowadays accepted concepts of teamwork, virtual teams and team roles. Also, there are reviews of studies concerned with effects of online work from both before and after beginning of COVID-19 pandemic. There are also sections describing conditions caused by governmental restrictions and brief timeline of important events. The difference between personal and online cooperation and technologies used for such online cooperation are described as well.

3.1 Brief overview of development of epidemic situation in Czech Republic

Here the author would like to state chosen critical dates connected with events and restrictions affecting the operations of CZU and its employees. Dates were chosen based on presumed practical impact on both professional and personal life of educational employees.

2nd of March 2020

CZU cancels teaching for the 2nd and 3rd of March 2020.

3rd of March 2020

CZU cancels teaching till the 8th of March 2020.

6th of March

CZU announces reopening of contact teaching from the 9th of March.

12th of March 2020

The government declares state of emergency

Presence of students on contact teaching at elementary schools, high schools and universities is forbidden, with certain exception of practical and clinical teaching.

13th of March 2020

Citizens returning from critical destinations are obliged to contact hygienic station.

15th of March 2020

Limitation of free movement of citizens with exceptions.

18th of March 2020

Mandatory usage of protection of upper respiratory tract, such as facemask, respirator, scarf or similar.

23rd of April 2020

Presence of students on contact teaching of any kind is forbidden, with exceptions of consultations or examination, realization of final assignments, clinical and practical teaching, with maximum of five persons present.

30th of April 2020

State of emergency is prolonged till the 17th of May 2020.

Contact teaching is possible for groups of no more than 15 people, with further mandatory hygienic precautions (with effect from the 11th of May).

3.2 Effects of COVID-19 restrictions on labour

Although COVID-19 related restrictions might have differed across different countries, almost everywhere it included restrictions affecting labour, like limitation of movement, limitation of gathering, social distancing, forced work from home or significant reduction of hour worked by employees. Experience of remote work changed the way we see work and probably will change even theory, methods, and implications of work and organizational psychology.

Pérez-Nebra et al. (2021) are discussing implications for following aspects: theorising in work psychology, methodology, role of unheard voices and teaching in work psychology. As for theory, the conclude that since pandemic was a complete change of work conditions, even theories have to be reviewed from this new perspective, because current concepts are no longer able to hold. With that inevitably comes need for change of methodology. Topic of unheard voices concerns mainly minorities, women and also part of population, which does not have the luxury of being able to work from home, not mentioning access to technology required for work from home. Lastly, teaching in work psychology needs to include discussions about pandemic experience and related new concepts.

Berg-Weger and Schroepfer (2020) concerns gerontological social workers and implications, which the pandemic creates for them. Similarly, to previous study, they conclude need for ensuring sufficient number of well-trained social workers, with skills

needed for work with older adults in the conditions of COVID-19 pandemic, as well as need to question used methodologies.

3.2.1 Gender inequality at work during COVID-19

It is one of major expected findings of this thesis, that COVID-19 lockdown and related remote work impacted women, especially mothers with young children, disproportionally to men. With educational institutions, leisure time activities and even outdoor movement being limited or closed, children had to be taken care of at home, by their parents. In addition to usual care, parents had to assist their children with online teaching, which usually took place in daytime overlapping with parent's work hours. In this chapter, author reviews several studies concerned with gender inequalities in terms of work hours decrease as well as other issues related to combination of parental and work life.

Yavorsky, Qian and Sargent (2021) are discussing a change in family and work patterns. They are pointing out, that COVID-19 pandemic exacerbated pre-existing gender inequalities at home and on labour market, as well as in recovery of jobs. On the other hand, study also reports, that in some parent couples COVID-19 had led to more egalitarian division of labour and childcare.

Collins, Landivar, Ruppanner and Scarborough (2020) researched sample of married heterosexual dual-earner parents in period from February to April 2020, focusing on gap in working hours between men and women in US. Data supported the hypothesis, that mothers reported less worked hours in researched period. For February, April and March, the gap between mothers and fathers was 4.3, 4.2 and 4.5 worked hours for parents of children aged 13-17. For children aged 6-12, the gaps were 4.7, 5.0 and 6.3 hours. Finally for children aged 1-5, gaps in worked hours were 4.9, 5.5 and 6.2. For all three child age intervals mothers also reported significantly higher decrease in worked hours. Study also mentions that gender gaps may be further exacerbated, if fathers do not increase their household contributions.

Clark et al. (2021) are adding another arguments of gender inequality disadvantaging women, especially mothers, during the pandemic. They accent, that besides being at higher risk of losing their job or being forced to reduce their working hours to be able to provide care for children, which is a strong impact on one's psychics already, mothers also share emotional and psychological concerns of their children, caused by COVID-19 lockdowns.

3.3 COVID-19 related stressors

The COVID-19 pandemic itself, as well as related restrictions and overall situation, introduced employees generally with need to deal with wide range of issues, which they did not have to face before, or at least not in such high intensity. Many of these challenges had a potential to cause increased amount of stress to employees.

3.3.1 Danger of job loss

The initial anti-COVID-19 restrictions did significantly slow down many sectors of economy, putting employees from affected fields into risk of lower income or even loss of job. Typically, such cases appeared in services generally, such as gastronomy, culture, tourism, wellness, or sport. There were governmental programmes designed to help such people financially, but the system was by many described as confusing, slow and was being changed often. Generally, at the studied period of first wave the future of many affected fields was highly uncertain, which situation could have caused significant stress to employees in these fields.

3.3.2 Fear of being infected

As in case of any other pandemic with not yet known cure, fear of employees of being infected, or fear of close relatives, mainly those from older age groups, being infected, was a legitimate concern.

3.3.3 Distractions during working hours

A massive transfer of employees to online work and home-office meant, that employees had to work in home environment, which was usually less suitable for their duties. In addition, they often had to share this space with other members of family (partner, children), who were in the same situation. Lack of space, privacy or suitable conditions could be a major stressor for employee.

3.3.4 Family members requiring assistance

Since school age children were obliged to study online from home as well, parents of mainly elementary school children were often in situation, when their work life conflicted with need of their children for assistance, e.g.: help with online learning, food preparation etc. Also, at the beginning of the first wave, people were recommended to provide help to their family members of higher age (grandparents) in form of shopping for them to protect them from potential infection at public places. All these additional daily requirements were a potential source of stress.

3.3.5 Technological requirements

Forced online regime was heavily dependent on technology availability, quality and also employee's skills. Especially in families with more children, the requirement of all family members being online present, each on their own device, this raised problems of the very ability of some families to do so. And even when they did, there was also always concern of internet connection, which is not always reliable. Also, some people were for the first time in their lives forced to function entirely online, not always having adequate skills to do so.

Sengupta (2022) states major challenges caused by transition to online teaching in the environment of undergraduate and postgraduate education system of India. Major challenge discovered by the study is insufficient accessibility of devices and internet connection, especially for less privileged students. At the end author suggests general framework design of software solution enabling students to participate, even with limited connection possibilities.

Problem of accessibility of internet connection and devices such as laptops, tablets or mobile phones to students inevitably affects teachers as well, since it limits his or her communication and teaching possibilities with students. This issue was being dealt with in Czech Republic as well. Mertova (2020) describes medially highly reflected initiative started by Česká Spořitelna and organized and promoted by journalist Nora Fridrichova. The aim of the initiative was to collect new or used computers from donors, private and corporate, and deliver them to single parent children and students.

3.3.6 Lack of social interactions

At the time of the strictest restrictions, people were basically prevented from meeting with anyone outside their household in person. Such limitation can cause a variety of negative consequences, including feelings of loneliness, sadness, separation, and event affecting mental health.

Related to topic of this thesis, transition to online had significant impacts on educational employees as well. Cutri (2020) uses study group research to study online teaching readiness and experience of university professors. Study results in several qualitative findings. Participating professors were willing to use transition to online teaching to revise and adapt their teaching to new circumstances and conditions. Another finding is increased sense of vulnerability of teachers due to having less technical skills than their students, resulting in empathy and higher equality in a professor-student relationship. At the same time online teaching resulted in decreased possibility of personal out-of-class conversation with students concerning the class content. Some participants of focus group felt that they might have perceived by their students differently, than they would have been during physical presence teaching. Also, for some, concept of readiness for teaching changed, since the pandemic conditions were continuously changing, leaving professors uncertain of the teaching form and its time period. Other concerns were related to almost impossible control of potential cheating during assessments and dilemma, whether to demand students to switch cameras on or not.

3.4 Teams and teamwork

Teams or organized groups of people with common goals are essential part of human life. Cooperation is concept, which is implemented in human society from its very beginning and which people are taught to from child age. Teamwork is natural concept in possibly all fields of human doing, from learning, sport, business, manufacture, art to scientific research. Teams enables people with different skills, knowledge, and characteristics to work together to achieve their common goal. It allows team members to specialize in their individual professions much higher, then a single person could, if he or she would work alone.

Also, there can occur cooperation of multiple teams, for example in corporate companies, where there are whole teams specifically specialized for wide variety of firm's operations, e.g.: design team, research and development team, accounting team, public relations team, sales team etc.

3.4.1 Team roles

In every team there are different roles for particular team members, which leads to different work assignments assigned to those members. Understanding and correct allocation of team roles is very important for individual performance of team members as well as for collective performance of the team.

3.4.2 Belbin´s team roles theory

Dr. Meredith Belbin's team roles theory is one of the fundamental theories concerning management and teamwork. During his research of work teams, Belbin and his team placed different teams into simulated work environment and studied individual contribution of team members, their personal characteristics and impact of team composition on collective performance. Against initial expectations, Belbin's team found out, that success of a team is not based on team's intellect, but on compatibility of team members with their roles and balance of these roles. As a result of findings, they developed theory consisting of 9 basic team roles, also referred to as "The nine Belbin team roles". Each role is defined by different contributions and behaviour patterns.

3.4.2.1 Resource investigator

Resource investigators are enthusiastic people, who are coming with ideas from outside of the team, looking for possibilities, creating contacts. According to the theory, they can lose interest after initial enthusiasm and are more likely to deflect from pointed direction of interest.

3.4.2.2 Team worker

Team workers are members, whose biggest contribution is to keep the team working together. They are communicative, diplomatic, cooperative, willing to do any work needed

for team success and avoid disputes between other team members. They can have a problem to make unpopular decision and they avoid confrontation.

3.4.2.3 Coordinator

Coordinators are confident individuals, able to identify talents of other team members as well as to specify work goals. That enables them to delegate work effectively, sometimes leading to over delegating and leaving themselves with less work to do. Coordinators can be sometimes seen as manipulating others.

3.4.2.4 Plant

Plant is a person highly creative in solving problems, coming with ideas and unconventional solutions. His or her essential skills are creativity, thinking outside of box and imagination. They possibly can have communication problems; act distracted and forget.

3.4.2.5 Monitor evaluator

Monitor evaluators are able to make judgements while leaving emotions aside, they are logically thinking, they can review options and possibilities from objective point of view. They can be seen as too critical, lacking creativity and inspiration, and taking their time to make a decision.

3.4.2.6 Specialist

Specialists are experts in their field, with deep knowledge, developed skills, they are dedicated and single-minded. Usually though, they tend to have very narrow area of contribution to the team.

3.4.2.7 Shaper

Shapers help the team to stick to the direction and boundaries of assignment, keep moving and overcome obstacles. They can challenge others, are very efficient while working under stress and can maintain dynamics. Sometimes they can tend to offend other team members or become aggressive in their desire to reach their goal.

3.4.2.8 Implementer

Implementers are taking ideas and solutions best suitable for team's assignment, which they then implement in a way that makes those solutions work efficiently. They can be slightly inflexible and slower responding to changes.

3.4.2.9 Completer finisher

These team members are crucial for the final phase of a project. They work on the final details, find errors, and prepare final product of team work to meet the highest standard possible. They can be seen as extreme perfectionists, worrying too much and unable to delegate work.

3.4.2.10 Importance of team roles differentiation

From above-described Belbin's nine team roles we can clearly see that job delegated to one team member is not very likely to be appropriate for other members with different role characteristics. We cannot assign specialist with a job suitable for coordinator or team worker. At the same time correct balance of representatives of all mentioned team roles in work group is very important for the effectivity and functionality of a team.
In the characteristics of individual team roles, we can see personal behavioural characteristics of their representatives. Since personal behaviours are usually very difficult to change, it is often one of very often topics to be discussed during the very process of employees hiring and assigning to their teams.

3.4.2.11 Dependency of Belbin's roles

Sommerville and Dalziel (1998) conducted questionnaire research of 92 students at Glasgow Caledonian University, finding that person's team role can be, apart from other aspects, influenced by his or her study course and also by sex (gender). Result of this study says that majority of male students were more likely to be implementers or coordinators, while female students were team workers. The paper also states that this dependency of sex can be resulting from different social influences and expectations regarding men and women. In fact, social influence on men's and women's role in the work groups have been

and still is frequently discussed issue in past decades. Therefore, there is possibility, that these results of study from year 1998 are not exactly valid nowadays.

3.4.3 Limitations of Belbin's team roles theory

Max Isaac (2020), nowadays the Chief Executive Officer of Belbin North America, admits several limits of the Belbin theory, comprised in four categories. First is the theory´s orientation on teams. The theory of team roles concerns individuals' interaction with others, and it does not say much about person as an individual. Second, the theory studies only performance within work settings. It does not study external influences, even though those influence performance as well. Isaac also reminds us, that Belbin´s theory is studying person´s behaviour, not personality. Therefore, it cannot offer complex analysis of individuals on its own and should be combined with another tools. Lastly, there is a concern about Belbin´s research bias, as the original study was conducted mainly on the upper management in Britain in the 70s of 20th century. Since then, cultural conditions and demographics of management level employees changed.

Aritzeta, Swailes and Senior (2007) summarised 43 empirical studies of Belbin team roles theory. Even though the evidence is mixed, they conclude, that the model is of adequate convergent validity. On the other hand, the summary discusses Belbin's model's limits. First there is highlighted, that different team roles are needed in different stages of the project development process. This brings up a question, how to maintain maximum effectivity and productivity of all team members. There occurs to be two possible outcomes. Either team is kept in its structure and composition, or members who are not currently needed for particular stage of the project are reassigned to different project, so their productivity is utilised.

Another concern is, that assessment of the roles is, thanks to several methods, far from uniformity. There is evidence, that some roles are strongly associated, so one person is possibly eligible for more than one role. On the other hand, there is inconsistency in differentiation of the roles, so that some pairs of roles are clearly differentiated, while some pairs are not. So it brings a question, if the nine roles in Belbin's model are well-differentiated. Lastly, there are cases of studies confirming gender bias in balance of roles in teams, where there is majority of one gender.

Another limitation of Belbin's theory is in the number of attributes, that must be considered when putting the team together. Water, Water and Bukman (2007) are taking very technological approach on commenting the problem of balancing individual team roles representation in a team according to Belbin´s theory. Their main concern is complexity of the balancing problem because there are simply too many attributes to be considered by hand, when putting team together. The study attempts to create a mathematical model capable of eliminating issues of roles under representation or over representation, ambivalence (one person representing more roles) and potential conflicts resulting from certain hierarchical relationships between different roles. Model uses scoring of potential team members for each team role. Resulting mathematical model is able to simplify composition of balanced teams by offering only combinations, which are preventing issues, by application of constraints set by team composer.
Henry and Todd Stevens (1999) are studying the use of Belbin's leadership role for improving team's effectiveness in matter of performance and viability. Viability is defined as work satisfaction, participation and willingness to maintain collaboration in the future. They conducted a short-time experiment, using sample consisting of students of software engineering, focused on formation of teams and difference in performance and viability of teams with one leader in comparison to teams with either no or more leaders. Results approved hypothesis, according to which teams with only one leader are outperforming teams with no or more than one leader. In matter of team's viability, they also accent importance of personally diverse team members. On the other hand, they claim, that results hypothesis was tested only in short-term experiment, leaving the hypothesis unresolved for long-time period cooperation in teams.

3.4.4 Five stages of team's development

Sommerville and Dalziel (1998) are also mentioning concept of five team development stages. Forming stands for the very beginning of teamwork when team is being composed and members are recruited. Then comes the phase of storming, when the conflicts occur, there is a tension among team members, resistance comes to place and disagreements are being handled. Norming is phase of consensus finding, accepting of leader, adopting work standards, making cooperation work, and creating of interdependence. The phase of highest team's maturity is called performing and as the term says, in this stage the team is

productive, roles are determined, cooperation is on high level and team is capable of flexibility. After performing eventually comes mourning, meaning either completion of project or break up of team. The five stages of team development are, together with Belbin's team roles one of the foundations of modern teamwork theory.

3.5 Virtual teams

In the last decades, concept of virtual teams evolved into being implemented as one of the key attributes of many professions. Ability to create teams by linking together people independently on their geographical location is by its nature enabling companies to employ more talented and skilful people, as well as possibly cut costs of commuting and buildings costs. Epidemy of COVID-19 changed virtual teams' concept from opportunity to absolute necessity, due to government restrictions of gathering in many countries.

3.5.1 Specifics of virtual teams

From the very term "Virtual teams" we can understand that such teams are different from the conventional understanding of work teams. For purposes of this thesis, lets state several key characteristics of what defines the team as virtual.

3.5.1.1 Location of team members

In conventional teams, the part of work which requires cooperation of team members is taking place in physical space (office, laboratory, atelier etc), which is usually, but not necessarily, neutral, specifically appointed, equipped, and possibly even designed to serve as a workplace. Here team members gather in person to cooperate on given tasks.
Virtual teams, on the other hand, are using virtual environments for such cooperation. Mentioned environment usually consists of several hardware and software tools used for communication and cooperation. Such model enables team members to be geographically separated, independent on commuting, in many cases even to be in different parts of the world.

3.5.1.2 Communication

Communication is crucial part of any cooperation. There are basically two types of communication. Personal, which means mix of verbal and nonverbal communication between participating persons. Second type we could call mediated. For this type we need to use a technological medium such as phone calls, text messages and internet communication.
Major difference between communication in conventional and virtual teams is, that in virtual teams the communication is fully dependent on the medium and team member's accessibility to this medium, his or her ability to use it and capacity of the medium to content all needed information. For example, text message (email, SMS, chat) in comparison with personal spoken communication cannot content voice tone, melody of the sentence, which is often important for meaning of the sentence, face expression or nonverbal communication such as body language.

3.5.1.3 Mediums used for virtual teams' cooperation

Mediums, tools, and services can be divided into several categories based on multiple characteristics. The simplest and obvious way to divide mediums is based on how these mediums allow users to communicate.
Either there are services enabling users to communicate by transfer of text and documents like chatting services (WhatsApp, Google chats, iMessage, Telegram), emails, virtual storages (OneDrive, Google Drive, iCloud, Moodle), SMS. One of the specifics of such services is limitation to very few possibilities and delay in reaction, which makes it different from real time conversation.
Other services are based on replacement of conversation in person by conversation using voice calls, video-calls, videoconferences, or combination of all mentioned. In this category we can include ZOOM, MS Teams, FaceTime or Google Meets.
In last years, majority of virtual teams' applications are combining all mentioned ways of communication in one application or software including mails, cloud storage, calendar, voice and video-calls, chat, and further options. Example of such applications are MS Teams or email platform Google combining all above mentioned functions in Gmail package.

3.5.2 Knowledge sharing in virtual teams

Sharing of knowledge is a key part of teamwork. In fact, team leaders are composing teams of members with different skills, knowledge, and experience so they can share these for the common goal of team. On one hand knowledge sharing enables team to implement complex innovative solutions, on the other hand it allows individual team members to evolve and grow in their own skills and knowledge.

Research team Davidavičiene et al. (2020) studied factors affecting such sharing of knowledge in the case of virtual teams. The study aside from other specifics considered geographical dispersion and cultural diversity to be key characteristics of virtual teams. This paper states hypothesises about how knowledge sharing in virtual teams is affected by selected factors: Culture, Motivation, Leadership, ICT, Conflict, Trust, Language. Hypothesises were subject to empirical research and testing. Data sample consisted of respondents from United Arab Emirates, all employed in companies in ICT sector. Results of research are showing following findings. Culture diversity, against expectation, negatively affects knowledge sharing, same as conflict, which was expected to do so. Extrinsic and intrinsic motivation, represented as economic and social benefits, affects knowledge sharing positively as well as usage of ICT, development of relationships based on trust among team members and leadership. Language factor was found to have no significant correlation with knowledge sharing, positive or negative, but conclusion specifically mentions that this fact is different from similar studies in United States and Europe, where significant correlation was discovered.

Monica D. T. et al. (2020) describes experience of transition of work to virtual space on example of college library staff collective. Among stated important team management factors are correctly chosen communication channels and work tools, one-on-one online meetings of manager with employees rather than group meetings, regular updates of assigned tasks status and discussions not related to work, for example about employee's personal life experiences, movies or coping with COVID-19 restrictions.

Hambley et al. (2007) studied the influence of leadership style and communication medium type on team interaction and performance. Research divided medium types similarly to this thesis in three types: face-to-face, videoconference and text-based chat. Two leadership styles were used, transformational and transactional, where transactional

leadership is described as reward/punishment attitude of leader towards follower, while transformational is based on motivation and inspiration. By hypothesis testing the research team formulated following conclusions. There does not seem to be significant interaction between leadership style and medium, which would influence team interaction, so for example for transactional leader it does not matter if communication with team members is face-to-face or chat-based, the team interaction is not affected. Results of similar hypothesises considering medium/leadership style combination affects discovered, that there is no significant influence of this combination on team performance nor team cohesion. From such result we could derive, that if leaders do maintain their leadership style, it is not so important which communication medium they use. On the other hand, hypothesises about effects of richer mediums (face-to-face over videoconferencing over chat) on team cohesion and constructive interaction were partially supported. Finally, even though richer mediums may have positive influence on team cohesion and interaction, they seem not to influence team performance.

3.5.3 Virtual teams, remote working, and affordances

There is a concept of so-called affordances, which are supposed to dramatically affect employee's work, team functioning, even personal life of its members. Waizenegger et al. (2020) is working with term affordance as with possibility given by conditions, in which person is working. For example, technological affordance means, that employees are equipped with technology and skill sufficient for their jobs. Social affordance can be described by attitudes of co-workers to one another. As COVID-19 was followed by series of governmental restrictions, some affordances were significantly limited, while others stayed either unaffected or were even increased. The study found significant shift in affordances during COVID-19 remote working period. Workplace affordances were withdrawn, technological affordances were increased to enable firms to keep the business running, social affordances were equal thanks to the fact, that physical proximity of workplace team members were no longer a possible advantage. Also, the heavy dependency on technological affordances caused need for rearrangement of communication style, because for some employees, who would normally cope with several face-to-face meetings a day, the same number of online meetings might not be comfortable. Another part of the study concerns forced merge of work and home

environment while working from home, with possible distraction from family members or other habitants in shared household. There are three suggested managerial implication of the study. First, business goals must be achieved. To make it possible, manager should consider home situation of employees before task assigning process. Second, management should objectively evaluate benefits of new arrangement of remote working and design patterns to keep such benefits. Lastly, business should try to maximize benefits of combination between workplace and remote working.

3.5.4 Challenges and barriers in virtual teams

Teamwork in the conditions caused by COVID-19 pandemic inevitably brings several challenges. Some are obvious, such as demand of equipment capable of providing the opportunity to work from home or stable internet connection. In this chapter author reviews several cases of challenges and barriers of work in virtual teams.

Challenges of work in virtual teams are a subject to wide range of studies. Morrison-Smith and Ruiz (2020) are summarizing them into several sections. First, there are distance factors: geographical distance, temporal distance, and perceived distance. Distance factors are closely related to reduced motivation of team members because of lack of colleague's presence perception, lack of awareness and difficulties developing trust between individuals. Limited face-to-face communication then leads to increased need of explicit management and leadership. Lack of informal communication and increased infra-team conflict were recorded as well.

Hu (2020) uses crisis opportunity perspective and discusses the option of smart work and collaborative space being a future standard. He argues, that forced use of smart work might lead to critical reflection of earlier opinions on smart work. He also presents results of survey research focused on benefits and barriers of smart work. Most frequent benefits of smart work according to this survey are work-life balance, increased productivity, personal time saving, attractive work environment, chance of self-time-management and accessibility to work. On the other hand, most frequent barriers are poor ICT infrastructure, resistance to change, loose distinction between work and home, fragmentation of teamwork, inequal access to smart work, cost shift from employer to employees and security risk.

3.5.4.1 Affordance perspective of remote team collaboration

Since almost complete shift to work at home is new and unprecedent change, it comes with many challenges, as all changes does. Graves and Karabayeva (2020) identified five main challenges of remote working: technology, workload, employee-manager relationship, social connections, work-home boundary. Study is working with job demands and resources principle, where job demands stands for what achievements employee is demanded to attain, while resources represent all sorts of help an employee is receiving to be able to attain those achievements. Since COVID-19 restrictions caused major deprivation of several job resources, especially social connections and work-home boundary, a stress caused to employees by these deprecations should be compensated by introduction of extra resources in areas of concerns, in which deprivation was caused.

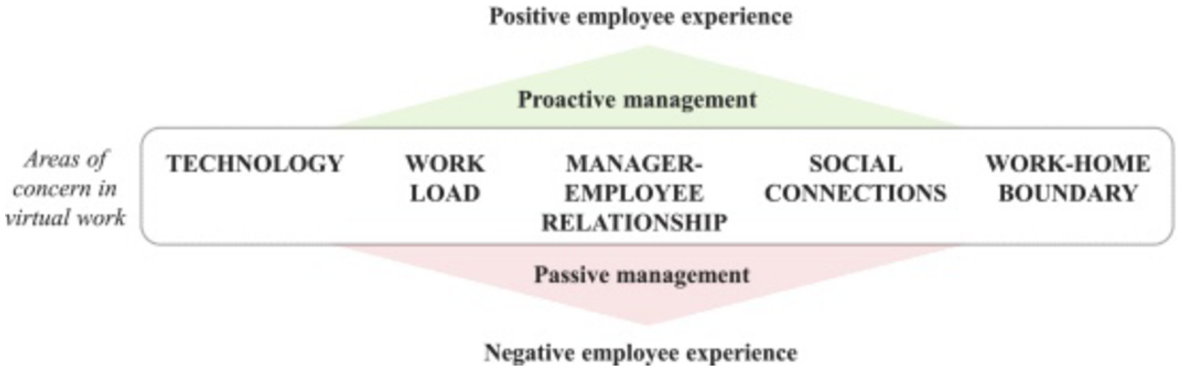

Figure 1: Proactive versus passive management in virtual work (Source: GRAVES, Laura M. and Asya KARABAYEVA. Managing Virtual Workers—Strategies for Success. IEEE Engineering Management Review. 2020, p. 169)

As we can see in Figure 1, based on the managerial attitude individual challenges of virtual work can and are influencing employee's work experience. All of them are applicable on subject of this thesis, application of virtual teams by CZU during COVID-19 lockdown. And it will be the main part of research part to find out which related challenges educational employees faced, how were they supported and what possible improvements could have been done. Expected technology challenges are the need to get used to holding online lectures, seminars, and exams, because all these activities were conducted mostly on face-to-face basis ever since and many employees had to learn new skills in online environment. And even though online teaching was being implemented even before, the pandemic forced employees to realise their job online in an unprecedented volume. Higher workload, if should occur, is expected to be caused by learning new skills and adapting

new procedures connected with setting up the work process in online space. Manager-employee relationship, in this case between educational employee and head of department, is expected not to be affected as strongly as in other teams, because of the differences between university as institution focused on education and research, and business institutions focused on profit. Social connections, more precisely lack of social connections, is expected to have negative effect on respondents and their mental wellbeing and to be very difficult to compensate. Work-home boundary diminishment is expected to be the strongest negative experience for several reasons, including mentioned availability expectation, failure to recover and mainly collisions of personal and work life. Also, employees, who are parents to children requiring daily care, are expected to be distracted more, especially if taking care of these children alone. The work-home boundary area is also one, which is caused not only by requirements of the university, but strongly by restrictions concerning other aspects of employee's life such as limitations of free movement or other restrictions of their daily lives.

PROBLEM AREA	CHALLENGES	SOLUTIONS
Technology	• Inadequate infrastructure, training, and technical support • Employees must stay up-to-date on technology • Employees struggle to use technology effectively in a virtual setting	• Provide appropriate hardware, software, training, and technical support • Provide training to strengthen employees' ability to use various media effectively in a virtual setting
Workload	• Unrealistic performance expectations • Information overload • Time pressure • Long work hours due to time zone differences and 24/7 availability expectations	• Take into account the demands created by transition to virtual work • Set realistic goals and deadlines • Help employees prioritize projects and keep them informed of shifting priorities • Reconsider need for constant connectivity
Manager-Employee Relationship	• Working virtually impairs the manager-employee bond • Risk of manager being inattentive or over-controlling	• Clear, regular and frequent communication • Clarify roles, priorities, goals • Address obstacles to progress • Provide autonomy
Social Connections	• Sense of isolation • Difficulty establishing trust with colleagues • Lack of access to informal information • Lack of social cues increases the potential for personal conflict	• Create explicit opportunities for connection • Include informal conversations • Keep updated on the organizational events and news • Use richer media (e.g. video chat)
Work-Home Boundary	• Work intrudes on family and personal time • Long work hours • Failure to recover from work	• Set reasonable norms regarding availability • Model healthy work-life balance • Provide workshops on work-life balance and recovery from work

Figure 2: Virtual Work: Challenges and Solutions (Source: GRAVES, Laura M. a Asya KARABAYEVA. Managing Virtual Workers—Strategies for Success. IEEE Engineering Management Review. 2020, p. 170)

In Figure 2 we can see summary of challenges connected to all five concerns of virtual work and its possible solutions. The possibilities of solutions are expected to be very limited, especially regarding areas of workload and social connections. Workload and its stated solutions is not fully appliable in case of university organisation, since significant part of the job requirements is bound by some sort of contracts with third parties, such as contracts concerning funding of research. Area of social connections is expected to be

limited simply by the fact, that according to government restrictions almost all interactions had to be organized in non-personal way, which means online. This fact collides with solution of work-home boundary diminishment by norms of expected availability.

3.5.4.2 Language skills impact in global virtual teams

One of stated advantages of virtual teams is the opportunity to set up cooperation among professionals based on their qualification, without geographical limitations. This may result in formation of multicultural and multilingual teams, where a common language must be used. This common language, often but not exclusively English, is often a foreign language for certain proportion of team members. Presbitero (2020) studies influence of foreign language on individual task performance in global virtual teams in multinational offshoring company. He brings up three foreign language related influencers of individual task performance: foreign language skill, foreign language anxiety and cultural intelligence. Foreign language skill is positively associated with individual task performance, while being negatively associated with foreign language anxiety. Foreign language anxiety, on the other hand, is negatively associated with individual task performance. Cultural intelligence is positively associated with individual task performance. Cultural intelligence also seems to be able to reduce negative effect of foreign language anxiety on individual task performance.

3.5.4.3 Digital stressors

As every significant change, shift to remote work resulting in increased usage and exposure to electronic communication tools potentially increases stress perceived during work. Oksanen et al. (2021) conducted a research among representative sample of Finnish working population focused on potential stress effects of social media communication. Study included research of technostress, work exhaustion, formal and informal social media communication and cyberbullying. Results shown that overall technostress had slightly increased, substantial increase was recorded in service and education sector. On the other hand, work exhaustion had decreased due to elimination of commuting and possibility of own time management. This decrease obviously did not apply for health and welfare sector. As for social media communication, the number of non-users had

decreased, and social media communication had increased in all fields. For cyberbullying there was no record of increase, yet it remains a major stressor.

3.5.4.4 Teaching specifics in virtual environment

Wan et. al (2020) states in the conclusions, that professors must adjust their teaching methods, course structure and knowledge sequence to online teaching to make sure the content is understandable for students in such a limited information transfer. As an example, there is mentioned importance of correct combination of synchronous and asynchronous communication. Also, communication between the students should be encouraged since it was found to be linked with their performance. Since feedback on teaching from students is very limited, study suggests using analysis of student's activities on learning and teaching platforms to obtain data and feedback.

3.5.4.5 Use of global student virtual teams

Davison, Panteli, Hardin and Fuller (2017) studied global student virtual teams (GVSTs) with incentive to determine main issues influencing effectivity of those teams, which could be used by university instructors to eliminate such issues, when establishing effective GVST projects. Studied sample consisted of teams, where members were in different time zones, namely in USA, China, UK, Hong Kong and Singapore. Each team was given a complex task and one of two restricted sets of communication tools: online blackboard tool, online blackboard tool + email. Participants provided group report of the process as well as individual reports and the process was also observed by instructors. Participants had no prior experience of working together. The most often observed issues of such teams, especially in the beginning of the case, were asynchronous communication caused by time difference, cultural differences in communication, different perception of team spirit between members located in the same location and their distant team colleagues, different work ethics in different cultures, difficulties to establish trust and team cohesiveness via online communication only. Also, there was observed an issue of English being either participant's native or second language. Native speakers sometimes had intentions to suppress non-native speakers in their teams, while non-native speakers occasionally switched to their native language, if they had a team partner speaking the

same first language, making their communication secret to English speakers. The conclusion summarizes findings into 10 recommendations of university instructors about issues, which they should be able to address when establishing GSVTs. Instructors should be able to provide team members with functional cooperation enabling environment as well as with time to prepare for such cooperation, be skilled themselves in use of provided technologies and have access to technical support for case of technology failures. Instructors should be able to appropriately motivate members to participate and set the deadlines and milestones progressively, promote development of trust and sense of team culture in the teams. Lastly, they should be able to support awareness of different time possibilities of members from different locations and handle carefully resulting tensions in teams, so they can provide enough guidance without overcontrolling, which would lead to inability of members to cooperate effectively.

3.6 Specifics of virtual teams in university case study

Since this thesis focuses on effects of establishing online work and virtual teams' environment, there are some specifics of university environment that should be mentioned. University as institution fulfils two main objectives.

On one hand university is a scientific institution focused on scientific research in different fields of study. And since this institutional objective is almost exclusively fulfilled by employees of this institution (e.g.: professors, Ph.D. students etc.), conclusions of this thesis' research concerning this university objective can be seen as objective.

Second objective of university is to provide education for its students. Both COVID-19 pandemic and transformation of teaching to online form had, inevitably, effects on the educational practice and the education itself. But, for objective and complex evaluation of these effects, the problem would have to be studied from the view of students as well. Since author of this thesis has been active student in the researched time period, the problem was researched exclusively from view of the university employees to eliminate biases. This limitation should be considered by a reader.

4 Practical Part

After review of literature concerned with teamwork, team roles, virtual teams and remote work during the COVID-19 pandemic, there comes the own research part of this thesis. The main aim of the thesis is to evaluate forced shift of work into virtual online space from the point of view of educational employees of Faculty of Economics and Management at CZU in Prague. In alignment with knowledge gained during the literature review, four main research questions were formulated.

1) What were the attitudes of selected university employees towards forced transition of work to virtual space?
2) What challenges, advantages and disadvantages did employees face during transition of work to virtual space?
3) What improvements could have been done to increase effectiveness of transition of work to virtual space?
4) How did the experience of working in virtual teams change the attitudes of employees to work?

Author aims to find answers to these research questions by conducting research in targeted group, educational employees of Faculty of Economics and Management at CZU Prague, by using a questionnaire distributed to employees of the faculty.

4.1 Questionnaire design

Questionnaire was designed as set of 18 questions, mainly of multiple option type. Offered answer options were selected using knowledge gained in literature review and assumed possible outcomes of COVID-19 conditions relevant to each question.
Questionnaire could be divided into two parts. First part is collecting personal characteristics of respondents, which will be used for basic sample statistics, grouping of data and most importantly for correlation analysis of COVID-19 pandemic conditions affects, attitudes and opinions reported by respondents in the second part of the questionnaire. Second part consist of questions focused on practical and psychological effects of forced online work and COVID-19 pandemic on work experience of respondents.

4.1.1 Collected respondent's personal characteristics

Personal characteristics in case of used questionnaire consists of combination of basic demographic data and data representing specific characteristics of employees of Faculty of Economics and Management at CZU Prague. Questions are listed in following order:

1. Which department are you participating in?
   Question was close ended multiple-choice question with one possible answer.
   Offered options:
   Department of Economic Theories
   Department of Economics
   Department of Humanities
   Department of Information Engineering
   Department of Information Technologies
   Department of Languages
   Department of Trade and Finance
   Department of Law
   Department of Psychology
   Department of Management
   Department of Statistics
   Department of Systems Engineering.
2. What is your highest degree?
   Question was in a "please fill in" form.
3. In which age group are you?
   Question was close ended multiple-choice question with one possible answer.
   Options were offered as age intervals beginning with "under 30", continuing with 5 years intervals up until last interval "Over 65".
4. Are you: (question considering gender)?
   Question was close ended multiple-choice question with one possible answer.
   Options offered were:
   Man
   Woman
   Options are not suitable for me

5. How long have you been employee of PEF CZU in Prague?
   Question was close ended multiple-choice question with one possible answer. Options were offered as age intervals beginning with “Less than one year”, continuing with 2 years intervals up until “More than 7 years”.
6. Did you work at PEF ČZU in the period of so called "first wave", from the 2nd of March till the 30 of June of 2020?
   A “Yes or No” question with one possible answer.
7. Which of following options are your job duties at PEF CZU?
   Question was multiple choice question with one or more possible answers. Options offered were:
   Research
   I am student of PhD
   Teaching
   Examination
   Administration
   Membership in final state examination commissions
   Supervision of theses
   Membership in department management
   Last option was opened “Other” fill-in option, where respondent could state any duty not mentioned in previous answers.
8. Do you have children or other persons, who are living with you in household and who required your daily assistance during lockdown?
   Closed ended multiple choice question with one possible answer and offered options:
   Yes, I am single parent
   Yes, I am parent with my partner
   Yes, I live with other person who needs my assistance
   No, I don’t live with a person requiring my daily assistance
9. Is your job at PEF CZU your only work commitment?
   Closed ended multiple choice question with one possible answer and offered options:
   Yes, I am a full-time employee of PEF CZU

Yes, I am a part-time employee of PEF CZU

No, I have other work commitments outside of PEF CZU

10. During the period of so called "first wave" (spring semester 2019/2020) you worked:
Closed ended multiple choice question with one possible answer and offered options:

Entirely from home

Mainly from home with possibility of limited use of university workspace (office, empty lecture room etc.)

Alternately from home and at university with unlimited use of university workspace

11. Does your job require equipment or conditions, that cannot be provided for work from home? (e.g.: laboratory, special hardware, advanced technology etc.)
A "Yes or No" close ended question.

12. Which of following aspects gave you confidence and helped you during shift of your work to online space? (one or more answers)
Question was multiple choice question with one or more possible answers and last opened answer possibility. Options offered were:

Your skills and knowledge

Communication of university with employees

Help from the side of university

Sufficient hardware and software equipment

Positive attitude and response of students

Last option was opened "Other" fill-in option, where respondent could state any aspect not mentioned in previous answers.

13. Have you felt that your household conditions are suitable for your work? (one answer)
Closed ended multiple choice question with one possible answer and offered options:

Yes, my conditions allowed me to perform 100% of my duties.

Yes, but I could not perform 100% of my duties.

No, I doubted I could meet performance expected from me.

14. Please select which of following challenges did you experienced during work from home:
    Closed ended multiple choice question with one possible answer and offered options:

    Lack of my IT skill

    Insufficient hardware equipment

    Insufficient software equipment

    Increased performance expectations

    Expectation of online availability above standard working hours

    Over-controlling from the side of superior

    Less frequent communication with superior

    Sense of isolation from my colleagues and/or students

    Lack of informal social interactions with colleagues and/or students

    Higher misunderstanding during communication

    Collision of personal and work life causing negative effects on either/both

    Lower ability to recover from work

    Absence of clear separation of work and personal time during a day

    Internet connection problems

    Concerns about yourself or your relatives getting infected by COVID-19

    Last option was opened "Other" fill-in option, where respondent could state any challenge not mentioned in previous answers.

15. Which of the following resources were you sufficiently provided with?
    Closed ended multiple choice question with one possible answer and offered options:

    Sufficient hardware equipment

    Sufficient software equipment

    Technical support from university

    Performance expectations adjusted to your possibilities (if asked for)

    Clear framing of daytime, when availability was expected

    Regular and reasonable frequency of communication with superior

    Organization of informal connections with colleagues (even online)

    Offers of help opportunities concerning personal issues

Last option was opened “Other” fill-in option, where respondent could state any resource not mentioned in previous answers.

16. How could have university help you more, to make transition to remote work easier?
    Closed ended multiple choice question with one possible answer and offered options:
    Provide better hardware equipment availability.
    Provide better software equipment availability.
    Provide extra trainings.
    Provide better technical support.
    Adjusted performance expectations.
    Clear framing of daytime, when availability was expected
    Last option was opened “Other” fill-in option, where respondent could state any possibility of help not mentioned in previous answers.

17. Which of following positive effects did forced remote work have on your work life?
    Closed ended multiple choice question with one possible answer and offered options:
    I learned new skills
    I adopted changes of work schedule increasing my performance
    I became less dependent on physical presence of my colleagues
    I was able to eliminate the need of commuting
    I established new professional contacts
    Last option was opened “Other” fill-in option, where respondent could state any positive effect not mentioned in previous answers.

18. Which of following negative effects did forced remote work have on your work life?
    Closed ended multiple choice question with one possible answer and offered options:
    My work life negatively influenced my personal life
    My personal life negatively influenced my work life

I had to increase my effort in order to perform on standard level

I experienced higher stress

I emotionally suffered from lack of social connections in workplace

My professional relationships were negatively affected

Last option was opened "Other" fill-in option, where respondent could state any negative effect not mentioned in previous answers.

4.1.2 Distribution of questionnaire

Questionnaire was created in electronic form using service Google Forms, in both Czech and English language, since there are numerous foreign professors at FEM CZU Prague. To target maximum possible number of respondents, an email with request for completion together with links for both language versions of the questionnaire was sent to all educational employees listed in university information system, grouped by their respective departments. Email contained message in both languages providing receiver with information about the questionnaire purpose, declaration of anonymity of answers and links to questionnaire in both language variants. Supervisor of this thesis was omitted from data collection process to avoid conflict of interests and unequal position of respondent. Questionnaire was completely anonymous, which respondents were informed about. Questionnaire was set not to collect contact information (email addresses) of respondents to secure anonymity. Email request was sent twice with significant time interval between first and second request. Second email request did explicitly mention previous request to avoid duplicity of answers.

4.2 Data

Following chapter means to summarize collected data and describe, how this data was further used. Special sections are dedicated to demographic composition of collected sample, basic summaries of data and to coding of data for the purpose of further analysis.

4.2.1 Research data and sampling

Altogether, two requests for filling of questionnaire in either Czech or English language resulted in 112 respondents. English version was chosen by 11, Czech by 101. Then, the

original dataset was coded as described in next chapter. From original dataset 13 records were removed for not meeting conditions for sample. 12 records were removed, because these respondents were not employees of PEF CZU during selected period. 1 respondent was removed, because their stated job (doorman) did not contain any characteristics of educational employee. Finally, 99 records were eligible for further analysis.

4.2.2 Data coding

Original dataset contained data in form of a text, therefore it was necessary to code data meant for quantitative analysis into a numerical format. Coding resulted in variables taking format of either number from dedicated integer scale or a dummy variable, where value 1 was assigned, if respondent's record contained this variable, and value 0 if not. All answers typed manually into open option "other", were noted separately and will be mentioned in results as additional answers. Detailed description of data coding for each question in the questionnaire follows.

Which department are you participating in?

- Variable was kept in original text form since this variable was used only for overview of department's representation.

What is your highest degree?

- Variable was coded into three integer values according to structure of academic degrees as follow: 1 for bachelor's degree, 2 for master's degree or equal (Ing., Mgr., etc.), 3 for PhD.

In which age group are you?

- Variable was coded into nine integer values corresponding with offered age groups from lowest to highest. Thus "Under 30" ~ 1, "31-35" ~ 2 and so on until "Over 65" ~ 9.

Are you (man/woman/other)?

- Variables were coded into integer values, value 1 for men, value 2 for women, value 0 for persons, who selected option "Options are not suitable for me".

How long have you been employee of PEF CZU in Prague?

- Variable was coded into five integer values corresponding with offered time intervals from lowest to highest. Thus “Less than one year” ~ 1, “1-3 years” ~ 2 and so on until “More than 7 years” ~ 3.

Did you work at PEF ČZU in the period of so called "first wave", from the 2nd of March till the 30 of June of 2020?

- Variable was coded into dummy variable format, where “Yes” ~ 1, “No” ~ 0.

Which of following options are your job duties at PEF CZU?

- All multiple-choice options: “Research”, “I am student of PhD”, “Teaching”, “Examination”, “Administration”, “Membership in FSE commissions”, “Supervision of theses”, “Membership in department management” were coded into a form of dummy variable, where value 1 was assigned for each option selected by respondent, and value 0 for each non-selected option. Lastly, variable summarizing number of options selected by respondent was added.

Do you have children or other persons, who are living with you in household and who required your daily assistance during lockdown?

- Variable was coded into form of integer as follows: “No, I don’t live with a person requiring my daily assistance” ~ 1, “Yes, I am parent with my partner” ~ 2, “Yes, I am single parent” ~ 3, “Yes, I live with other person who needs my assistance” ~ 3.

Is your job at PEF CZU your only work commitment?

- Variable was coded into form of integer as follows: “Yes, I am a part-time employee of PEF CZU” ~ 1, “Yes, I am a full-time employee of PEF CZU” ~ 2, “No, I have other work commitments outside of PEF CZU” ~ 3.

From what environment did you work during so called “First wave”?

- Variable was coded into form of integer as follows: “Alternately from home and at university with unlimited use of university workspace” ~ 1, “Mainly from home with possibility of limited use of university workspace” ~ 2, “Entirely from home” ~ 3.

Does your job require equipment or conditions, that cannot be provided for work from home?

- Variable was coded into dummy variable format, where “Yes” ~ 1, “No” ~ 0.

Which of following aspects gave you confidence and helped you during shift of your work to online space?

- All multiple-choice options: “Your skills and knowledge”, “Communication of university with employees”, “Help from the side of university”, “Sufficient hardware and software equipment”, “Positive attitude and response of student” were coded into a form of dummy variable, where value 1 was assigned for each option selected by respondent, and value 0 for each non-selected option. Lastly, variable summarizing number of options selected by respondent was added.

Have you felt that your household conditions are suitable for your work?

- Variable was coded into form of integer as follows: “Yes, my conditions allowed me to perform 100% of my duties.” ~ 1, “Yes, but I could not perform 100% of my duties.” ~ 2, “No, I doubted I could meet performance expected from me.” ~ 3.

Please select which of following challenges did you experienced during work from home:

- All multiple-choice options: “Lack of my IT skill”, “Insufficient hardware equipment”, “Insufficient software equipment”, “Increased performance expectations”, “Expectation of online availability above standard working hours”, “Over-controlling from the side of superior”, “Less frequent communication with superior”, “Sense of isolation from my colleagues and/or students”, “Lack of informal social interactions with colleagues and/or students”, “Higher misunderstanding during communication”, “Collision of personal and work life causing negative effects on either/both”, “Lower ability to recover from work”, “Absence of clear separation of work and personal time during a day”, “Internet connection problems”, “Concerns about yourself or your relatives getting infected by COVID-19” were coded into a form of dummy variable, where value 1 was assigned for each option selected by respondent, and value 0 for each non-selected option. Lastly, variable summarizing number of options selected by respondent was added.

Which of following resources were you sufficiently provided with?

- All multiple-choice options: “Sufficient hardware equipment”, “Sufficient software equipment”, “Technical support from university”, “Performance expectations adjusted to your possibilities (if asked for)”, “Clear framing of daytime, when availability was expected”, “Regular and reasonable frequency of communication with superior”, “Organization of informal connections with colleagues (even online)”, “Offers of help opportunities concerning personal issues” were coded into

a form of dummy variable, where value 1 was assigned for each option selected by respondent, and value 0 for each non-selected option. Lastly, variable summarizing number of options selected by respondent was added.

How could have university help you more, to make transition to remote work easier?

- All multiple-choice options: "Provide better hardware equipment availability.", "Provide better software equipment availability.", "Provide extra trainings.", "Provide better technical support.", "Adjusted performance expectations.", "Clear framing of daytime, when availability was expected" were coded into a form of dummy variable, where value 1 was assigned for each option selected by respondent, and value 0 for each non-selected option. Lastly, variable summarizing number of options selected by respondent was added.

Which of following positive effects did forced remote work have on your work life?

- All multiple-choice options: "I learned new skills", "I adopted changes of work schedule increasing my performance", "I became less dependent on physical presence of my colleagues", "I was able to eliminate the need of commuting", "I established new professional contacts" were coded into a form of dummy variable, where value 1 was assigned for each option selected by respondent, and value 0 for each non-selected option. Lastly, variable summarizing number of options selected by respondent was added.

Which of following negative effects did forced remote work have on your work life?

- All multiple-choice options: "My work life negatively influenced my personal life", "My personal life negatively influenced my work life", "I had to increase my effort in order to perform on standard level", "I experienced higher stress", "I emotionally suffered from lack of social connections in workplace", "My professional relationships were negatively affected" were coded into a form of dummy variable, where value 1 was assigned for each option selected by respondent, and value 0 for each non-selected option. Lastly, variable summarizing number of options selected by respondent was added.

4.2.3 Data unsuitable for coding and analysis

In most of the multiple-choice questions, respondents were offered an option to manually type whatever answer-related information, which they did not consider as being included

in neither offered answers. These answers were collected and are stated bellow for illustrative purposes only, because they represent respondent´s subjective and proactive response, while the rest of the data coming from predefined answers represent respondent´s selection of most suitable option. This data could not be used for analysis of the whole sample´s dataset, since such usage would cause inconsistency of data and would result in distortion. Answers are listed according to respective question.

- Which of following aspects gave you confidence and helped you during shift of your work to online space?

Above offered answers, several respondents typed answers "*cooperation with colleagues*", "*sharing of experience with colleagues*" and "*communication with colleagues - they faced the same problems*", all referring to encouragement through communication with colleagues in similar situation. Other answers were referring to positive thinking and using the change as a motivator to feel interested and seek for new solutions. Last answer, not answering in a sense of this question, but relevant to researched topic, said "*during my teaching I used mainly e-mail and LMS Moodle, I lacked knowledge about platforms such as MS Teams etc., which came to use in following academic year*."

- Which of following options are your job duties at PEF CZU?

Above the offered duties, respondents stated: cooperation with practice, work at helpdesk department, work in the Erasmus+ projects, being an opponent, organizing conferences, being technical editor of a journal and being a technician.

- Please select which of following challenges did you experienced during work from home?

Above offered answers, respondents stated challenges to be all day care of a school aged child, late response of the university, technical infrastructure not being available for certain period of time, insufficient access to literature and information and lack of feedback from students.

- Which of following resources were you sufficiently provided with?

Above offered answers, respondents stated numerous very specific answers. One person wrote "*I think that an option of testing and following possibility to enter the department building could be included*" referring to a COVID-19 test place, which was set up by the university in the campus. Another person stated, "*technical support, but from a colleague on a non-formal basis*". Also, one respondent wrote, that he was used to online, distance

teaching. The rest of the answers were more of a complains. One respondent stated, that "*everything was provided with a delay – there was a big pressure on keeping courses running without providing sufficient and on-time support*". Another one wrote "*At first I lacked a room with classic large blackboard, suitable for proper course recording, eventually I found proper classroom, software and hardware*." Last answer said "*During the first phase there was no support considering online teaching, we did not know how to do it, we were just waiting for it to be over. Online teaching became limited to uploading PowerPoint presentations to Moodle, email communication with students and self-help figuring out, how to examine online*."

- How could have university help you more, to make transition to remote work easier?

Respondents provided numerous answers with wide range of suggestions, such as "*better informing*", "*more operative training of distance teaching programmes – MS Teams, Google Meets etc.*", "*not to force me into online teaching, work with students online is not good*", "*change the teaching schedule of distance students, merge the seminars*", "*provide better boards and cameras in more classrooms*", "*better communication considering restriction changes*", "*everything was provided, but late – workshops of how to teach and examine online were after the semester at the end of examination period*", "*for part of FEM study programmes online teaching is sufficient*", "*more precise and faster communication about future situation development (how exams will be organized etc.)*", "*informal meetings, communication with colleagues*", "*provide internet connection*" and "*adjust the mobile data tariff to unlimited*".

- Which of following positive effects did forced remote work have on your work life?

Respondents provided several answers, including "*consultations on distance (course content, bachelor/diploma theses), I will keep it after the lockdown is over*", "*activity boost from some points of view*", "*for me it was freeing, to be able to organise schedule my way, eliminating commuting, which saved me 3 hours' worth of travel, overall distance work suits me much better*", "*important is that necessity thought us new skills*" and "*I established new, better relationship with my students, whom I will miss*".

- Which of following negative effects did forced remote work have on your work life?

Respondents provided numerous answers including "*contact teaching is irreplaceable*", "*life is changing and there was a need to adjust to conditions, negative effects were as I stated above, fusion of personal and professional life, lower ability to perceive time*", "*cooperation with practice – many companies limited connections and surprisingly even corporate employees under the age of 40 were not really willing to work online*", "*distance teaching is in my opinion fully sufficient, biggest issue is change of thinking*", "*I am used to work alone and on distance*", "*stronger effort, because there was need to transform study materials for online teaching*", "*negative emotions as result of lack of social contacts in the workplace, higher stress considering work combined with taking care of children*", "*higher stress, the strongest stressor was not distance working, but the fact, that my students were losing not only their grandparents, but even their significantly younger parents, due to COVID-19* ", "*lack of physical activity*" and "*more workload because of creating completely new approach to teaching in online space, lack of information, that limited chance to plan and prepare for next semester*".

4.2.4 Collected dataset

This chapter includes overview of collected data and provides general results of each question asked in questionnaire. Dataset overview is split into two parts. First is demographic data describing objective and clearly definable characteristics of the sample. Second part describes data used for analysis of respondent´s subjective perceptions and feelings.

4.2.4.1 Sample demographics and characteristics data

Sample demographics and characteristics represents variables, which do not rely on subjective perception, can be clearly defined, and have potential to have effect on the variables representing respondent´s subjective perception, attitudes, and feelings. As mentioned above, for purpose of analysis sample of 99 respondents was selected. Out of those, 33 were women and 66 were men.

You can see how respondents from different departments were represented in the sample in Figure 3.

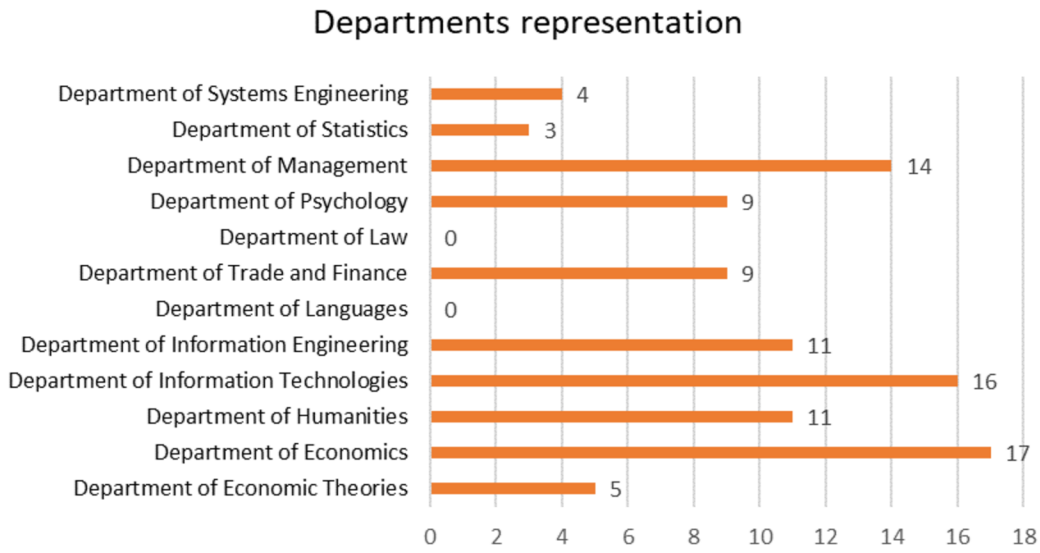

Figure 3: Department's representation in sample (Source: own input, Data source: own research)

Concerning respondent's degree, 1 respondent reported bachelor's degree, 27 reported a master's degree and 71 reported a PhD degree.

You can see the age groups representation in Figure 4. We can see that more than a half of the sample lies between 36 and 50 years of age

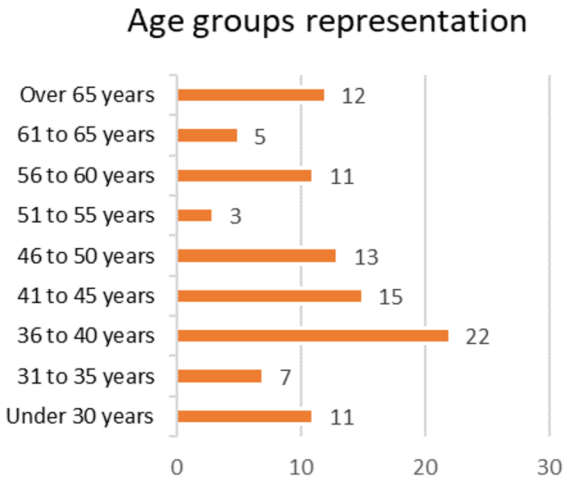

Figure 4: Age groups representation in a sample (Source: own input, Data source: own research)

Length of respondent's career at PEF CZU was in 18 cases in interval from 1 to 3 years, in 5 cases in interval 3 to 5 years, in 14 cases in interval 5 to 7 years and the rest of 62 cases in interval 7 and more years.

8 respondents stated their part-time commitment being their only job, 59 respondents stated their full-time commitment being their only job and the rest of 32 respondents claimed to have another work commitment outside PEF CZU.

Another important collected information concerns respondent's family or household situation, meaning if they lived with a person demanding daily assistance, typically a child, disabled person or any other person demanding assistance in form of food preparation, help with school duties, medical appointments etc. 53 respondents stated no assistance demanding persons, 30 stated being a parent to a child together with partner and 16 stated being a single parent or living with other assistance demanding person.

To a question where they worked from during the first wave, 11 respondents answered alternately from home with unlimited opportunity to use university space. 35 worked alternately from home with limited opportunities to use university space and 53 worked entirely from home.

Total count of job duties of respondents is summarized in Figure 5. We can see that over 75% of respondents reports at least one of three job duties with regular contact with students: teaching, examination, or theses supervision.

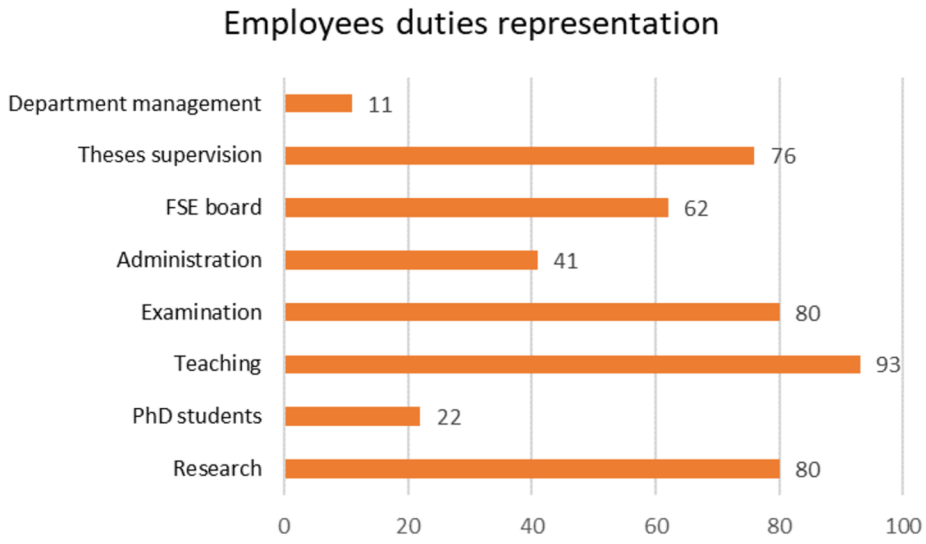

Figure 5: Employees duties representation (Source: own input, Data source: own research)

Lastly, respondents were asked, if their job requires any special equipment, which could not be provided for work from home, such as special hardware, laboratory equipment etc. 13 respondents answered “Yes”, 86 answered “No”.

4.2.4.2 Data representing respondent´s subjective perceptions

Question from previous section about work environment, in which respondents worked during the first wave period, is closely connected with respondent’s judgement of their household suitability for work. 56 of them considered their home environment allowing them reaching 100% performance, 33 allowing less than 100% performance and 10 respondents felt doubt if they could meet expected performance.

Data resulting from questions about confidence, faced challenges, sufficiently provided resources, possibilities of better help from the side of university, positive and negative effects of the online work experience are shown in Table 1.

We can see that major sources of confidence are IT skills, sufficient equipment and relatively high is mentioning of positive attitude and response of students. On the other hand, help and communication from the side of university were not mentioned that often.

Among challenges faced during studied period, two options stated by more than 60% respondents were sense of isolation and lack of informal interactions. Above 40% of respondents experienced increased performance expectations and insufficient separation of work time and free time.

Considering resources provided in sufficient measures were most often mentioned software and hardware equipment, corresponding with those, who selected the sufficient equipment option in confidence related question. Over 50% of respondents also felt technical support to be sufficient.

On the other hand, more than 25% of respondents suggested technical support to be possibly better, as well as adjusted performance expectations and more trainings would help them.

In positive effects of online work experience, over 70% of respondents learned new skill and eliminated need of commuting.

Negative effects were mainly the need to increase effort, higher perception of stress and emotional suffering from lack of social life. Very low was percentage of respondents reporting negative effects on professional relationships.

Sources of confidence	Count	Percentage
Skills and knowledge	90	90,9%
Communication of university with employees	43	43,4%
Help from the side of university	39	39,4%
Sufficient hardware and software equipment	67	67,7%
Positive attitude and response of students	47	47,5%
None selected	1	1,0%
Faced challenges	**Count**	**Percentage**
Lack of IT skill	21	21,2%
Insufficient hardware	12	12,1%
Insufficient software	8	8,1%
Increased performance expectation	40	40,4%
Online availability expectations above standard	35	35,4%
Over-control from superior	1	1,0%
Less frequent communication with superior	12	12,1%
Sense of isolation	62	62,6%
Lack of informal interactions	65	65,7%
Higher miscommunication	21	21,2%
Collision of professional and personal life	29	29,3%
Lower ability to recover	19	19,2%
Insufficient separation of work/free time	42	42,4%
Internet connection problems	24	24,2%
Concerns about COVID-19 infection	20	20,2%
None selected	5	5,1%
Resources	**Count**	**Percentage**
Sufficient hardware	46	46,5%
Sufficient software	53	53,5%
Technical support from university	52	52,5%
Adjusted performance expectations (if asked for)	20	20,2%
Framing of expected online availability	12	12,1%
Reasonable frequency of communication	41	41,4%
Organization of informal connections	30	30,3%
Offer of help with personal issues	8	8,1%
None selected	7	7,1%
Better help possibilities	**Count**	**Percentage**
Provide better hardware	24	24,2%
Provide better software	14	14,1%
Provide more trainings	33	33,3%
Provide better technical support	30	30,3%
Adjust performance expectations	28	28,3%
Framing of work/free time	21	21,2%
None selected	23	23,2%
Positive effects of online experience	**Count**	**Percentage**
Learned new skill	70	70,7%
Adopted schedule improvements	29	29,3%
Lower dependency on colleague's physical presence	45	45,5%
Elimination of commuting	71	71,7%
Established new professional contacts	8	8,1%
None selected	5	5,1%
Negative effects of online experience	**Count**	**Percentage**
Work life affected personal life	16	16,2%
Personal life affected work life	14	14,1%
Needed to increase effort	47	47,5%
Higher stress	41	41,4%
Emotionally suffered from lack of social life	38	38,4%
Professional relationships were affected	7	7,1%
None selected	19	19,2%

Table 1: Subjective perceptions of respondents (Source: own input, Data source: own research)

4.3 Data analysis

In this chapter collected and coded data are analysed to provide new knowledge about the studied case and to help answer questions stated in the beginning of this research. Also, several phenomena based on literature review findings were selected and are analysed in collected sample's dataset.

4.3.1 Comparison of data for selected groups

During this analysis, respondents from collected sample were grouped according to studied phenomena. For example, for phenomena of different experience of parents and single parents, respondents were grouped into three groups according to answer options and their data were compared to average of the sample. Value was expressed as percentage difference to average.

4.3.1.1 Comparison of effect of work environment

Respondents had three options how to describe their work environment during the first wave. Either as working entirely from home, alternately from home with limited possibility to use university space and alternately from home with unlimited possibility to use university space. Comparison is described mainly for the two extremes.
In the confidence question, respondents who worked alternately from home with limited possibility to use university space were selecting all the sources of confidence much more often, than the overall average of the whole sample. For some sources the difference was reaching up to 30%. On the other hand, respondents working entirely from home reported less frequently on most of the confidence sources compared to average, with negative difference values order of single figures.
For challenges, the comparison is not so clear. Respondents working entirely from home reported frequencies lower than average for most of the challenges with exception of lack of skill, collision of professional and personal life, internet connection problems and concerns about COVID-19 infection and all those differences were in order of lower single figures. On the other side of spectrum, respondents with unlimited possibility to use university space reported lower frequencies of lack of skill, collision of professional and

personal life, lower ability to recover and insufficient separation of work and free time. All those negative differences were on a scale from 10 to 20 percent.
In provided resources section, respondents with unlimited possibility to use university space reported significantly higher frequencies of most of all resources being provided with exception of adjusted performance expectations. Positive differences to average were on a scale from 15 to 33 percent. Correspondingly, respondents working from home reported lower frequencies of all provided resources, where differences were in single figure order. Only exception was positive difference for adjusted performance expectations, but with value of only 0,6%.
For suggestion of how university could have helped better, respondents with unlimited possibility to use university space were more frequently calling for better hardware and software, while respondents working from home called more frequently for trainings and technical support.
Respondents with unlimited possibility to use university space reported less frequently on the positive effects of the experience, while for the respondents working from home the differences to average had positive values, with exception of learning new skill, where they reported 0,9% less.
Finally for negative effects, respondents with unlimited possibility to use university space reported less frequently on need to increase effort, professional relationships affects and 11% lower rate of emotional suffer, than average, with other differences being slightly above zero. Those working from home reported less frequently on stress experience and effort, with the rest of the differences taking positive values up to 3%.

4.3.1.2 Comparison according to family situation

Respondents were asked if they live with a person requiring their daily assistance. Respondents had four options to choose from. Being a single parent, parent with a partner, living with other person requiring daily assistance or not living with any person requiring daily assistance. For purpose of comparison, three groups created were: single parents/other person, parents with partners, respondents not living with person requiring assistance.
Respondents living without assistance requiring person reported lower frequencies of all confidence sources, in challenges they reported lower frequencies of online availability

expectations, collision of personal/professional life, lower ability to recover, insufficient separation of work and free time. Also, they reported slightly lower frequencies of sufficient provision of hardware, support and reasonable communication frequency, but all resources differences, negative and positive, were taking absolute values up to 7%.
In better help suggestion part, the called more frequently for hardware, software, trainings and support. Positive effects were less frequent with exception of lower dependency and new professional contacts. Negative effects were less frequent as well, with exception of need to increase effort.
There was a significant difference between parents with partner and single parents. Surprisingly, single parents reported lower frequencies for most of the challenges, with one significant exception of internet connection problems. Parents with partners reported more frequently on challenges such as online availability expectation, collision of personal and professional life, lower ability to recover and work/free time separation. Quite surprisingly, both parent groups reported higher frequencies for most of the resources, with exception of single parents reporting lower on software and adjusted performance expectations and parents with partners reporting lower on informal interactions and offer of help with personal issues.
Trend from previous part continues for both parenting groups in better help suggestions. Both groups were reporting lower frequencies, with exception of single parents calling for more trainings and parents with partners calling for adjusted performance expectations and daytime framing.
Both groups reported more frequently on positive effects of learning new skills and adopting schedule changes. Single parents also on becoming less dependent on presence of colleagues. Parents with partners reported higher frequency of commuting elimination.
For negatives, parents with partners reported more frequently on their personal life negatively affecting their work life and vice versa and of emotional suffering. Single parents reported more frequently on stress and personal life affecting work life.

4.3.1.3 Comparison according to career length

In a question of how long they have been employees of the faculty, respondents had five options to choose from: less than, 1 to 3 years, 3 to 5 years, 5 to 7 years, and more than 7 years. Later, respondents reporting being employees for less than a year were filtered from

the dataset because they did not meet requirement of being employed at the faculty during the first wave. Therefore, only four groups for each of the remaining four intervals could be compared. In general, groups of respondents working for 3 to 5 and 5 to 7 years reported higher frequencies of confidence sources, mainly hardware and software equipment, second mentioned group also positive attitude of students and communication from the side of university. Group of 1 to 3 years reported significantly lower frequencies of hardware and software equipment being a confidence source, as well as students' attitude. Group of respondents with 7 and more years of experience reported lower frequencies for skills and communication and higher frequencies for the remaining sources, but all differences reached absolute values of no more than 4,1%.

Most experienced group reported higher frequencies of challenges with exceptions of miscommunication, collision of personal and professional life and COVID-19 infection concerns. But all higher challenges frequencies were just up to 3% higher, than average, with exceptions of performance expectations and online availability expectations reaching up to 8% and 10% respectively. The least experienced group of respondents significantly lower frequencies for performance expectations, online availability expectations, lack of informal interactions, low ability to recover and insufficient separation. Higher frequencies were reported for COVID-19 concerns, hardware, and software. Group of "3 to 5 years" reported significantly higher frequencies of performance expectations, sense of isolation, lack of informal interactions, inability to recover and insufficient separation of work and free time. Lower frequencies were reported for lack of skill, low communication frequency, insufficient software, and collision of lifes. Group of "5 to 7 years" reported less on insufficient hardware and software, online availability expectations and sense of isolation. Higher frequencies were reported for lack of informal interactions and collision of lifes.

For sufficiently provided resources in general, the longer the career of respondent, the higher frequencies of resources were reported. First two groups, 1 to 3 and 3 to 5, reported significantly lower frequencies for almost all resources, with exception of clear daytime framing for 1 to 3, for 3 to 5 higher frequencies were reported for technical support and offer of help with personal issues. More experienced groups reported generally higher frequencies. 5 to 7 group especially reported higher frequencies for software, hardware, and support, lower on the other hand for daytime framing, informal interactions and offer

of help. Group with 7 and more years of experience reported slightly higher frequencies with exception of daytime framing.
When suggesting better help possibilities, first group called for software and support with other frequencies taking absolute values close to zero. Second group generally reported significantly lower frequencies with exception of adjusted performance expectations. Third group called more for software, trainings, adjusted performance expectations and daytime framing. Last group reported mostly lower frequencies with exception of hardware, but absolute values of differences were up to 4,5%.
When asked about positive effects of the experience, first group reported more often on adopting schedule changes, lower dependence on colleague's presence and new established contacts. Second group more appreciated adopting schedule changes, lower dependency, and elimination of commuting, with lower frequency of learning new skill. Third group showed higher frequencies for schedule changes, commuting elimination, and establishing new contacts, with lower appreciation of becoming less dependent. Last group generally reported lower frequencies of positive effects, but again absolute values of differences were up to 5%, with exception of almost 7% lower appreciation of schedule changes.
In negative effects, first group reported slightly higher frequencies on most options with exception of need to increase effort. Second group complained more often about increasing effort and emotional suffer, with lower frequencies for personal life affecting work life, experiencing stress and negative effects on professional relationships. Third group mentioned less often work life affecting personal life and vice versa. Stress and emotional suffer were mentioned more often. Last group reported very low absolute difference values of all negatives.

4.3.1.4 Comparison according to type of job commitment

In this question respondent had three options to choose from to describe type of their job commitment at the faculty. They could choose being a part-time employee with no other job commitments, full-time employee with no other job commitments and lastly having another job commitments outside the faculty.
Part-time respondents were more often given confidence by communication and help from university, while skills and hardware/software equipment being less often reported. Most significant difference for full-time respondents was 4,5% lower frequency of

communication of university, with the other confidence sources being mostly higher, but with absolute difference values up to 1,8%. Respondents with other job commitments more frequently reported skills giving them confidence and less frequently university help.
Part-time respondents generally reported lower frequencies of faced challenges, with exceptions of lower ability to recover and problems with internet connection. Full-time respondents were more often lacking skill, experiencing miscommunication and insufficient separation of work and free time. Respondents with other job commitments reported higher frequencies of insufficient hardware, software, low frequency of communication and COVID-19 infection concerns. On the other hand, they less often mentioned lack of skill, online availability expectation and insufficient separation of work and free time.
In sufficiently provided resources for part-time employees, lower frequencies were shown for hardware, software, adjusted performance expectation and informal interactions. Frequencies were higher for technical support and daytime framing. Full-time reported higher frequencies of sufficient hardware, software, and reasonable communication. Those with other job commitments reported lower frequencies of sufficient hardware, software, support, reasonably often communication and offer of personal help. On the other hand, they had better values for clear framing of daytime.
In section of better help suggestions, part-time employees called less for better hardware, support, and daytime framing, but over 50% more for more trainings. Full-time employees called slightly more for adjusted performance expectations and daytime framing; in other options they were below average. Employees with other job commitments called more frequently for better hardware and software equipment and support, less frequently for adjusted performance expectations.
Part-time employees more frequently appreciated positive effects such as lower dependency and elimination of commuting, but their learned skills, adopted schedule changes and new contacts were below average. Full-time employees' frequency of learned skill was above average, but the rest of the positive effects was slightly lower. On the other hand, employees with other job commitments reported significantly higher frequencies of all positive effects except for learned skill.
Negative effects for part-time employees were generally significantly lower than average, except for emotional suffer. For full-time employees emotional suffer was only

significantly lower value compared to average, rest of the negative's differences were close to zero. Also, for employees with other commitments, emotional suffer was significantly above average, together with slightly above average values of other negatives and 0,8% lower values for stress and effect on professional relationships.

4.3.2 Correlation analysis

Correlation test was executed for all subjective perception variables to determine their possible relationships with others, mainly those representing demographic characteristics of the sample. Secondly, the test was also executed for pairs of subjective perception variables. For at least weak relationship between two variables, minimal absolute value of correlation coefficient was set to 0,25, in which case the relationship was considered as weak. For moderate relationship the absolute value had to reach 0,5. For strong relationship absolute value of 0,75 had to be reached.

4.3.2.1 Demographically caused correlations

During this analysis, always one of demographical characteristics such as age, household conditions or job duties, was tested for potential relationship with variables representing subjective views of respondents like faced challenges, positives, or negatives. Used demographical variables were age, career length, amount of job duties, assistance requiring persons situation, type of work commitment, work environment and respondent's expression of his household suitability for work. Results and found correlations are stated in following sections according to demographic characteristics.

4.3.2.1.1 Age

According to respondent's belonginess to one of nine possible age groups, each respondent was given an integer value from 1 to 9 ascendingly, thus the youngest group was coded as number 1 and the oldest group as number 9. In section of what gave respondents confidence during shift to online, only coefficient exceeding minimal absolute value was for respondent's skill and knowledge, taking value of -0,27, determining negative relationship. Thus, the older respondents were, the less likely they felt skilled enough to be confident. That corresponded with coefficient for insufficient skill seen as faced challenge, which reached 0,28. Negative relationship was found for collision of work and personal

life with -0,29 and surprisingly COVID-19 infection concerns, with -0,25. Close to the minimal level of negative relationship was lower ability to recover and overall sum of reported challenges. In section of sufficiently provided resources the was no significant correlation, the closest to positive relationship was software equipment with coefficient value 0,22. In suggestions of better help from university, there was negative relationship of respondent's age and frequency of asking for adjusted performance expectations, valued for -0,27. No relationship for positive effects was found, with negative correlation of age and lower dependency on colleague's physical presence being closest to the line with -0,24. For negative effects, no coefficient's absolute value did not exceed value of 0,18.

4.3.2.1.2 Career length

Respondents were choosing from five intervals of how long they worked at Faculty of Economics and Management. Each of the intervals was given a code value from 1 to 5 ascendingly, later the selection of eligible data filtered all respondents reporting the first interval, because they were not employees of the faculty in studied period. In confidence question, only significant relationship of respondent's career length was sufficient hardware and software equipment, taking positive value of 0,26. For faced challenges, positive relationships were found for increased performance expectations with value 0,26 and outside work hour online availability expectations also reaching 0,26. That corresponds with negative relationship for clear framing of daytime, when availability was expected seen as sufficiently provided resource, valued for -0,31. Just below the minimal value was sufficient hardware equipment with 0,23. Relationship was not found for no suggestion of better help, nor for positive or negative effects of the shift to online work experience.

4.3.2.1.3 Living with persons requiring assistance

Respondents had four options to choose from, which were later coded with values from 1 to 3 ascendingly according to considered difficulty. "I don't live with person requiring my assistance" was coded as 1, "Yes, I am parent with partner" as 2 and options "Yes, I am single parent" and "I live with other person requiring assistance" as 3. Surprisingly, parental situation did not seem to have significant impact on the experience of online work. Only significant coefficient was for negative relationship with requesting better technical

support, valued for -0,32. Only other coefficient approaching minimal value was positive effect of adopting schedule changes to increase effectiveness, with value 0,20.

4.3.2.1.4 Amount of job duties

Respondents were given a range of job duties to state they are assigned to fulfil. These given options were research, PhD study, teaching, examination, administration, membership in FSE committees, theses supervision and membership in department management. Later a variable was added, which summarized the number of reported duties for each respondent. Since there were 8 job duties to choose, maximum value of the summarizing variable is 8. Considering confidence sources, no significant correlation was found. In challenges section, positive relationship with strength of 0,30 was found for online availability expectations above standard working hours. Also summarized number of challenges was close to the limit with 0,23. Sufficiently provided resources were in all cases far from reaching significant values. For better university help suggestions closest to the limit was adjusted performance expectations with 0,21. Lastly, number of duties did not seem to have relationship with positive effects, for negative effects the highest value was 0,2 for work life influencing personal life.

4.3.2.1.5 Work environment

There were three options to describe work environment to choose from. Either working alternately from home with unlimited possibility to use university space, coded as 1. Secondly. Working alternately from home with limited possibility to use university space, coded as 2. And lastly working completely from home, coded as 3. Coding was meant to express the level of difficulty, which was supposed to be lower, if respondent could use university space without limitations and opposingly higher, when respondents worked completely from home. There was close to limit negative relationship with confidence sources communication of university with employees, valued -0,245, and help form university reaching -0,23. Also overall sum of confidence sources was showing negative relationship with value -0,27. Relationships with all challenging factors were very weak. In sufficiently provided resources section the strongest relationship was with overall resources sum, reaching negative value of -0,29. Negative relationship with reasonable communication with superior with value of -0,22 was only other resource close to the limit.

For suggestions of better help from university, all absolute values of coefficients were below 0,18. Among positive effects there was significant relationship with elimination of commuting reaching value of 0,32 and with overall sum of positive effects valued at 0,28. No significant relationships with negative effects were found.

4.3.2.1.6 Job commitment

Respondents were choosing from three options of job commitment description. Job at faculty being their only and part-time job, coded as 1. Being a full-time faculty employee with no other commitments, coded as 2. And being a full-time employee, with other commitments outside the faculty, coded as 3. Again, higher code numbers represented theoretically more complicated options. Type of commitment did not cause any significant relationships with sources of confidence. Among challenges, there was found a relationship with less frequent communication with superior, with coefficient equal to 0,27. In sufficiently provided resources test failed to find significant relationships, as well as in suggestions for better help from university, where coefficient closest to limit was better hardware request with value of 0,21. No relationships with positive or negative effects were found.

4.3.2.1.7 Suitability of work environment

This question offered respondents three options to subjectively describe suitability of their work environment. As allowing them to perform 100% of their duties, coded as 1. Allowing them to perform less than 100% of their duties, coded as 2. Or causing doubts if they can meet requested performance coded as 3. Again, there was no relationship found for sources of confidence. Considering challenges, there were significant relationships with sense of isolation, with coefficient 0,31, higher rate of miscommunication, valued 0,29, and with collision of work and personal life, reaching value of 0,31. Among sufficiently provided resource, there was negative relationship with sufficient software equipment, valued at -0,25. No significant relationships for better help from university or positive effects. In negative effects, there was relationship with coefficient value of 0,26 for work life negatively affecting personal life, and overall sum of negative effects with coefficient 0,29.

4.3.2.2 Other found correlations

During the analysis of demographically caused correlations, some other relationships were found as well in individual sections of data. In confidence sources help from the side of university had moderately strong relationship with communication of university with employees, reaching coefficient value 0,54.

In challenges section there were numerous significant relationships. Insufficient hardware showed 0,46 coefficient for insufficient software. Online availability expectancy above working hours correlated with increased performance expectations with strength 0,55. Performance expectations also had relationship with lower ability to recover, valued at 0,38. Online availability expectation correlated with lower ability to recover valued at 0,39 and insufficient separation of work and free time at 0,43. Sense of isolation and lack of informal interaction correlated with coefficient 0,41. Collision of professional and personal life correlated with lower ability to recover with coefficient 0,36 and with insufficient separation of work and free time 0,39. Insufficient separation of time also showed relationship with lower ability to recover with coefficient 0,46.

Considering sufficiently provided resources, sufficient hardware equipment showed moderate relationship with sufficient software equipment. Also, reasonable frequency of communication with superior correlated with offers of help with personal problems. Among better help suggestions, better hardware suggestion correlated with better software at 0,38 and with better technical support at 0,34. More trainings also correlated with better support with coefficient 0,37. Clear daytime framing correlated with adjusted performance expectations.

In positive effects, adopting schedule changes to increase effectivity corelated with becoming less dependent on physical presence of colleagues with value 0,26, and with establishing new contacts reaching 0,29.

Concerning negatives, there were three correlations for work life negatively affecting personal life. Firstly, personal life affecting work life, with coefficient 0,37. Then experiencing higher stress, reaching 0,36. And with negative affect on professional relationships with coefficient 0,31.

5 Evaluation of results and findings

In following sections, the results and findings of data analysis are evaluated and summarized with respect to aims of the research and stated research questions.

5.1 Evaluation of data comparisons

Comparative analysis was conducted to search for potential significant differences of different phenomena occurrences for different groups of selected respondents. Found differences are simply identifying difference in each group's response, they do not state the cause of such difference and not all of them were later approved by correlation analysis.

5.1.1 Work environment

The importance of work environment type seemed to play its role for some aspects of the online work experience of respondents, when compared to average values. Those with possibility to use university space were reporting more confidence sources and were less challenged by lack of skill, collisions of work and personal life, low ability to recover and lack of separation of work and free time. Those working from home complained more about lack of skill, internet connection problems and collision of work and personal life. Significant was comparison of sufficiently provided resources, in which respondents with possibility to use university space reported more resources being provided and those working entirely from home reported less resources. Employees with possibility to use university space suggested better hardware and software could be provided, at home working employees called for more trainings and better technical support. In general, those working alternately from home and at university admitted fewer positive effects and those working entirely from home reported the other way around. Finally, alternately working respondents reported lower frequency of emotional suffer, need to increase effort and negative effects on professional relationships, home workers reported less on stress.

5.1.2 Family/household situation

The potential presence of assistance requiring person seemed to have some effects, in some cases in opposite way than expected. Employees living without such persons reported less

confidence sources and lower frequencies for some challenges, mainly collision of professional and personal life, inability to recover and insufficient separation of work and free time. Those respondents also more often suggested some of the possibilities of better help, on the other side both positive and negative effects were reported less often. Single parents complained generally less about-faced challenges, parents with partners complained more often about online availability expectations, inability to recover, life collisions and low work and free time separation. Generally, both parents' groups reported more often on most of the provided resources and correspondingly were suggesting most of better help possibilities less often. Both groups showed higher frequencies for some positive effects, as well as both had their specific negative effects, on which they reported more often

5.1.3 Career length

Considering career length, the more experienced groups (over 3 years) seemed to report more confidence sources, while the less experienced group reported less frequent on sufficient hardware and software as confidence source, while for the most experienced such case was skill and communication of university. Respondents with over 7 years of experience seemed to face most of the challenges slightly more often. All groups had their specific challenges, which they faced more or less often, but with no clearly visible pattern. Generally, more experienced groups reported higher satisfaction about provided resources. The least experienced group called more for better software and support, those with over 5 years of experience called more for clear daytime framing and adjusted performance expectations. Groups reported higher frequencies on different positive effects. Generally, less experienced groups complained more often about negative effects, more experienced groups reported generally less of negative effects.

5.1.4 Job commitment

For part-time employees, there was higher rate of reporting communication and help of university as giving them confidence, with lower rates of hardware and software. For full-time employees it was quite the opposite, but with lower absolute values of differences compared to average. Respondents with other job commitments were more often confident about their skill and less about university help. Part-timers reported lower frequencies of

faced challenges, while full-timers more often lacked skills, experienced miscommunication, and felt insufficient separation of work and free time. Those with other job commitments complained more often about insufficient hardware and software, low frequency of communication with superior and COVID-19 infection concerns. Part-timers and those with other commitments were less often sufficiently provided with hardware, software and communication, full-timers were provided with these resources more often. These facts were correspondingly shown in suggestions of better help possibilities. For positive effects, there were generally higher frequencies reported by employees with other commitments, lower for full-timers with exception of learning new skill. Positive effects frequencies were lower for part-timers as well, except for higher rates of lower dependency and elimination of commuting. Values for negative effects were more or less following the average, except for part-timers and employees with other commitments suffering more, while full-timers suffered less.

5.2 Evaluation of correlation analysis

Detailed correlation analysis was conducted to find at least weak relationships between individual phenomenas. To be considered as weak relationship, pair of variables had to reach correlation coefficient absolute value of 0,25. Again, correlation analysis was conducted mainly according to demographic characteristics, but as a side product of this approach, some correlations unrelated to demographic characteristics have been found as well.

Ascending age have been found to have weak negative effect on skill related confidence, collision of work and personal life, COVID-19 infection concerns and requests of adjusted performance expectations. Positive influence has been found for insufficient skill as a challenge.

Longer career length seemed to positively affect confidence of sufficient hardware and software, challenging performance expectations and online availability expectations challenge. Negative relationship has been discovered for insufficient framing of daytime when availability was expected.

Living with assistance requiring person surprisingly did not seem to have any significant effect, except for causing weak negative relationship with requests for better technical support.
The amount of job duties did have only one weak relationship as well, positively influencing challenging online availability expectations above work hours.
Type of work environment have been found to have weak negative effect on overall number of confidence sources and sufficiently provided resources. Positive relationship was present with elimination of commuting and overall number of positive effects.
Job commitment seemed to only have weak positive relationship with lack of communication with superior.
More relationships were present for respondents' description of household suitability for work. Growing unsuitability showed positive relationship with sense of isolation, miscommunication, collision of personal and professional life, work life effect on personal life and number of negative effects being reported. Negative relationship was present for sufficient software equipment.
Other relationships fluctuating from weak to moderate strong were found inside sections of confidence sources, challenges, provided resources, help suggestions, positive and negative effects.

5.3 Answering research questions

At the beginning of this thesis author stated four research questions and it was the main aim of research to answer them. To achieve this aim, a questionnaire was designed with usage of current knowledge, adjusted for environment of educational institution and specific circumstances of studied period. Questionnaire was distributed among educational employees, obtained data were coded and records that were not meeting requirements for eligibility for analysis purposes were filtered out. Methods of basic statistics, comparison and correlation were used to provide better understanding of data and potentially to discover facts, that would help to answer those research questions.

5.3.1 What were the attitudes of selected university employees towards forced transition of work to virtual space?

Generally, the collected sample of respondents had relatively good preconditions to handle forced transition of work into online space. Majority of them had quite long career experience, household conditions suitable for work and only a minority of them required conditions, which could not have been provided for remote work. Even though, most of them were given confidence just by their skill, knowledge, and equipment, while other sources of confidence were significantly less represented. The attitudes of employees were partially influenced by some of demographic characteristics like career length, family situation, age or work environment type, which fact was found by both analysing tools.

5.3.2 What challenges, advantages and disadvantages did employees face during transition of work to virtual space?

Since the studied period of the so called "first wave" was relatively short, compared to what was to follow, author expected the most significant challenges to be of procedural and material nature. But after the analysis was found, that the biggest challenges were of rather psychological matter. Respondents complained mostly about experiencing sense of isolation, lacking informal social interactions, feeling insufficient separation of their work and free time during a day, feeling increased expectations of performance and expectation of online availability above standard working hours. Challenges differed significantly for different groups of respondents based on age, experience, work environment and other reported conditions. Thus, for eventual future repetition of such work practice, university should work on complex framework, which would address these issues and possibly even on some form of continual employees´ wellbeing monitoring.

5.3.3 What improvements could have been done to increase effectiveness of transition of work to virtual space?

Respondents were quite often satisfied by being sufficiently provided with software, hardware, and technical support. On the other hand, provision of respondents with adjusted performance expectations, clear framing of day hours, when availability was required and offers of help with personal issues was rather low. Respondents also suggested that it

would help if the university offered more trainings, even better technical support, and adjusted performance expectations. Suggestions of possible improvements were influenced by respondents' background as well, usually either causing primarily procedural or psychological challenges. As we can see, most of suggestions are somehow concerned with online work being a new concept in university practice, for which majority of respondents simply was not ready for. This could be of course decreased by continuing trainings and further development of profesional framework of work planning.

5.3.4 How did the experience of working in virtual teams change the attitudes of employees to work?

There were many effects of the online work experience on respondents' work. The most obvious were, that people benefited from the situation by learning new skills and eliminating the need of commuting to university campus. Also, almost half of the respondents became less dependent on physical presence of their colleagues. On the other hand, there was significant proportion of people, who had to increase their effort to fulfil their duties, experienced higher stress and emotionally suffered from lack of social life. The effects of online work were often influenced especially by family situation or home environment suitability for work level. From this part, we could say that university might keep the positives from both online and face-to-face practice, while at the same time decrease psychological presure by the right combination of face-to-face and online work set-up.

5.4 Context of findings and recommendation

Reasearch of this thesis is concerned with limited period of pandemic´s early stage, which was and up to date of defence still is being followed by continuous dynamic development of the pandemic situation. Therefore, conclusions and recommendations of this research are relevant for this early stage only. As proved by collected data, the forced transfer of work into online space, which happened almost over night, did have serious consequences on university employees. According to respondent´s answers, solutions from the side of university were often seen as ad-hoc or improvised, especially in the first stages. It was

first such experience for most of included parties and did probably partially served as an experiment, resulting in different approach in following semesters.

5.5 Limits of the research and its findings

The research and its findings are of course limited by the simple nature of research being conducted as a case study of very specific phenomena on very specific sample of respondents. Research was conducted for one faculty only and collected sample is thus rather illustrative in the scope of a whole university or educational institutions generally. Another limit is relatively short time period, representing incomplete summer semester of 2019/2020 academic year. Incomplete, because the first weeks of the semester were held in contact form as usual and the forced transition to online teaching begun on the 2nd of March 2020, when contact teaching was cancelled for the first time.
Secondary limitation connected with studied period of "first wave" is, that conclusions are valid for only for this period. As we know now, after the "first wave" there came several more pandemic waves, which were significantly stronger in terms of infection consequences, even though restrictions varied in intensity. Thus future research of the COVID-19 pandemic consequences through its whole duration may come to different conclusions.
Lastly, this thesis contains just a few analysis tools and collected limited amount of information, to respect recommended scope. Surely this topic was, is and will be studied by number of professional and specialized researchers, who will be able to provide more detailed findings and recommendations.

6 Conclusion

Author of this thesis stated the aim to answer four raised research questions by concluding research based on analysis of primary data. To collect such data, author designed, and distributed questionnaire composed based on study of current knowledge related to the topic of virtual teams, teamwork, online work effects on work experience and its challenges.

In literature review, author is collecting current, up to date knowledge relevant to the thesis topic. There is a brief overview of how COVID-19 situation developed in Czech Republic during the studied period. There are mentioned several research cases studying effects of COVID-19 crisis on labour, employees and educational institutions, with some of the COVID-19 related stressors mentioned. Another part is dedicated to theory of teams, teamwork, team roles, team's development, specifics of virtual teams and its challenges and limitations. Last section is focused on specifics of teaching in virtual environment.
Practical part of this thesis contains detailed description of the research procedures including questionnaire design and distribution, obtained data, sample's characteristics and conditions, overview of collected data and its coding and finally analysis.
Questionnaire distribution resulted in collection of 112 of unique records. After review of dataset and elimination of records unsuitable for analysis, final dataset consisted of 99 records.
Analysis was conducted by using two main methods. Firstly, data were grouped according to mostly demographic characteristics representing different phenomes mentioned in literature review. Then data collected for the purpose of answering research questions were compared for different demographic groups.
Second method consisted of correlation analysis of possible relationships between demographic characteristics and variables representing respondents' experience of online work.
Both analysis tools succeeded in finding certain patterns and relationships among variables representing demographic characteristics and personal experience and perceptions. Those findings were used to summarize knowledge sufficient for answering of research questions and to compose general recommendations concerning respective research questions.

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8 Appendix

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Appendix A: 1st email request

Vážený pane, vážená paní,

Rád bych vás požádal o vyplnění dotazníku k mé diplomové práci. Jsem studentem magisterského oboru Economics and Management na PEF ČZU. Můj výzkum zkoumá dopady prvního lockdownu na jaře roku 2020 na pedagogické pracovníky PEF ČZU. Dotazník se skládá z osmnácti otázek a výstupy budou použity pouze pro mou diplomovou práci. Dotazník můžete vyplnit v češtině či angličtině, odkazy na obě verze jsou k dispozici na konci tohoto emailu. Děkuji mnohokrát za váš příspěvek k mému výzkumu.

Dear Sir or Madame,

I would like to kindly ask you to complete a questionnaire for my diploma thesis. I am a student of master program Economics and Management at FEM ČZU. My research is studying the effects of remote work on educational employees of FEM ČZU during the first lockdown in spring of 2020. The questionnaire consists of eighteen questions and its outcomes will be used only for purposes of my diploma thesis. You can choose to complete it in Czech or English, links for both versions are listed under this paragraph. Thank you very much for your contribution to my research.

Link for questionnaire in english: …
Odkaz na dotazník v češtině: …

S přáním pěkného dne
With kind regards

David Eremiáš

Appendix B: 2nd email request

Vážený pane, vážená paní,

Rád bych vás znovu požádal o vyplnění dotazníku k mé diplomové práci. Pokud jste již dotazník vyplnil/a, mnohokrát vám děkuji. Jsem studentem magisterského oboru Economics and Management na PEF ČZU. Můj výzkum zkoumá dopady prvního lockdownu na jaře roku 2020 na pedagogické pracovníky PEF ČZU. Dotazník se skládá z osmnácti otázek a výstupy budou použity pouze pro mou diplomovou práci. Dotazník můžete vyplnit v češtině či angličtině, odkazy na obě verze jsou k dispozici na konci tohoto emailu. Děkuji mnohokrát za váš příspěvek k mému výzkumu.

Dear Sir or Madame,

I would like to kindly ask you one more time to complete a questionnaire for my diploma thesis. If you already completed my questionnaire the first time, I would like to thank you. I am a student of master program Economics and Management at FEM ČZU. My research is studying the effects of remote work on educational employees of FEM ČZU during the first lockdown in spring of 2020. The questionnaire consists of eighteen questions and its outcomes will be used only for purposes of my diploma thesis. You can choose to complete it in Czech or English, links for both versions are listed under this paragraph. Thank you very much for your contribution to my research.

Link for questionnaire in english: …
Odkaz na dotazník v češtině: …

S přáním pěkného dne
With kind regards

David Eremiáš

Appendix C: Questionnaire – Czech version

Vliv opatření proti viru COVID-19 na pedagogické zaměstnance PEF ČZU.

Tento dotazník je součástí výzkumu pro diplomovou práci "Virtuální týmy a jejich použití na České Zemědělské Univerzitě během epidemie COVID-19 v České Republice". Zabývá se pracovní zkušeností pedagogických zaměstnanců Provozně ekonomické fakulty ČZU v Praze během prvního lockdownu, ke kterému došlo během takzvané "první vlny" pandemie COVID-19. Pro účely tohoto výzkumu je časovým rámcem zkoumaného fenoménu období mezi 2. březnem a 30. červnem roku 2020. Počátečním datem je den, kdy byla na ČZU poprvé zrušena kontaktní výuka. Konečným datem je oficiální konec letního semestru v akademickém roce 2019/2020.

Pod kterou katedru PEF ČZU spadáte?
Katedra ekonomických teorií
Katedra ekonomiky
Katedra humanitních věd
Katedra informačního inženýrství
Katedra informačních technologií
Katedra jazyků
Katedra obchodu a financí
Katedra práva
Katedra psychologie
Katedra řízení
Katedra statistiky
Katedra systémového inženýrství

Jaký je váš nejvyšší dosažený titul? (Prosím doplňte)

Do jaké věkové skupiny patříte?
Pod 30 let

31-35 let
36-40 let
41-45 let
46-50 let
51-55 let
56-60 let
61-65 let
Přes 65 let

Jakého jste pohlaví?
Žena
Muž
Neidentifikuji se s možnostmi A a B

Jak dlouho jste zaměstnancem PEF ČZU v Praze?
Méně než rok
1-3 roky
3-5 let
5-7 let
Více než 7 let

Pracoval/a jste na PEF ČZU v období tzv. "první vlny", tedy od 2. března do 30. června 2020?
Ano
Ne

Jaké jsou vaše pracovní povinnosti na PEF ČZU v Praze? (vyberte jednu či více opdovědí)
Výzkum
Studium PhD oboru
Výuka
Zkoušení
Administrativa

Členství v komisích státních závěrečných zkoušek
Vedení závěrečných prací (BP/DP)
Účast ve vedení katedry
Jiné:

Žijete v domácnosti s dětmi, či s osobami, které během lockdownu vyžadovali vaši každodenní asistenci? (asistencí se myslí pomoc s výukou, přípravu jídla, doprovod k lékaři atd.)
Ano, jsem sám žijící rodič
Ano, jsem rodič žijící s partnerem
Ano, žiji s jinou osobou vyžadující mou asistenci
Ne, nežiji s osobou, která by potřebovala mou každodenní asistenci

Je vaše práce na PEF ČZU v Praze vaším jediným pracovním úvazkem?
Ano, pracuji na PEF na plný úvazek
Ano, pracuji na PEF na částečný úvazek
Ne, mám i jiné pracovní úvazky mimo PEF ČZU

Během takzvané „první vlny“ (2.3.-30.6. 2020) jste pracoval/a:
Kompletně z domova
Převážně z domova, s možností omezeného využívání univerzitních pracovišť (kanceláře, posluchárny atd.)
Střídavě z domova a na univerzitě s neomezenou možností využívání univerzitních pracovišť

Vyžaduje vaše práce vybavení či podmínky, které není možné poskytnout pro práci z domova? (laboratoř a její vybavení, speciální hardware, pokročilé technologie atd.)
Ano
Ne

Jaké faktory vám pomáhaly a dávaly sebedůvěru během přechodu k práci v online prostředí? (vyberte jednu či více opdovědí)
Mé dovednosti a znalosti

Komunikace univerzity se zaměstnanci
Pomoc a podpora ze strany univerzity
Dostatečné hardwarové a softwarové vybavení
Pozitivní přístup a odezva studentů
Jiné:

Vnímal/a jste prostředí vaší domácnosti jako způsobilé k výkonu vaší práce? (vyberte jednu odpověď)
Ano, měl/a jsem podmínky k výkonu 100 % svých povinností.
Ano, ale nemohl/a jsem vykonávat 100 % svých povinností.
Ne, měl/a jsem pochybnosti, že dokážu splnit požadované povinnosti.

Jaké výzvy či komplikace jste vnímal/a během práce z domova? (vyberte jednu či více opdovědí)
Nedostatek IT dovedností
Nedostatečné hardware vybavení
Nedostatečné software vybavení
Zvýšené pracovní požadavky
Očekávání online dostupnosti nad rámec běžné pracovní doby
Přílišnou kontrolu ze strany nadřízeného
Méně častou komunikaci s nadřízeným
Pocit izolace či odtržení od kolegů a/nebo studentů
Nedostatek neformálních kontaktů s kolegy a/nebo studenty
Častější nedorozumění během komunikace
Kolizi osobního a pracovního života, mající negativní vliv na osobní, pracovní či oba životy
Sníženou schopnost zregenerovat po práci
Absence jasného oddělení pracovního života od osobního života během dne
Problémy s internetovým připojením
Obavy o sebe či blízké spojené s možnou nákazou COVID-19
Jiné:

Které z následujících prostředků vám byly poskytnuty v dostatečné míře? (vyberte jednu či více opdovědí)
Hardware
Software
Technická podpora od univerzity
Pracovní nároky přizpůsobené mým možnostem (pokud jsem o ně požádal/a)
Jasně definovaná denní doba, kdy byla očekávána má dostupnost
Pravidelná a smysluplně častá komunikace s nadřízeným
Možnost neformálního setkávání s kolegy (i online)
Nabídka pomoci s řešením osobních záležitostí
Jiné:

Jak vám mohla univerzita více pomoci s přechodem na práci na dálku? (vyberte jednu či více opdovědí)
Poskytnout lepší hardwarové vybavení
Poskytnout lepší softwarové vybavení
Poskytnout více školení
Zajistit lepší technickou podporu
Upravit pracovní požadavky
Jasně stanovit část dne, kdy byla očekávána online dostupnost
Jiné:

Jaké z následujících pozitivních vlivů měla práce na dálku na váš pracovní život? (vyberte jednu či více opdovědí)
Získal/a jsem nové dovednosti
Přijal/a jsem změny v rozvržení práce, které zvýšily mou efektivitu
Stal/a jsem se méně závislým/závislou na osobní (fyzické) dostupnosti mých kolegů
Eliminace/snížení nutnosti dojíždět do práce
Navázání nových profesních kontaktů
Jiné:

Jaké z následujících negativních vlivů měla práce na dálku na váš pracovní život? (vyberte jednu či více opdovědí)

Můj profesní život negativně ovlivnil můj osobní život
Můj osobní život negativně ovlivnil můj profesní život
Musel/a jsem zvýšit své úsilí k dosažení své standardní pracovní výkonosti
Vyšší pocit stresu
Negativní emoce v důsledku nedostatku osobního kontaktu na pracovišti
Mé profesní vztahy byly negativně ovlivněny
Jiné:

Appendix D: Questionnaire – English version

Influence of COVID-19 related restrictions on educational employees of PEF ČZU.

This questionnaire is part of a research for diploma thesis "Virtual teams and their application by CZU during COVID-19 lockdown in Czech Republic". It is concerned with work experience of educational employees of Faculty of Economics and Management at ČZU during the first lockdown, which occurred during the so called "first wave" of COVID-19 pandemic. For purpose of this research, time period of studied phenomena is from the 2nd of March till the 30th of June 2020. First date stands for the day, when CZU was closed for teaching in presence. Second date stands for official end of summer semester in academic year 2019/2020.

Which department are you participating in?
Department of Economic Theories
Department of Economics
Department of Humanities
Department of Information Engineering
Department of Information Technologies
Department of Languages
Department of Trade and Finance
Department of Law
Department of Psychology
Department of Management
Department of Statistics
Department of Systems Engineering

What is your highest degree? (Please fill-in)

In which age group are you?

Under 30

31-35

36-40

41-45

46-50

51-55

56-60

61-65

Over 65

Are you:

Man

Woman

Options are not suitable for me

How long have you been employee of PEF CZU in Prague?

Less than one year

1-3 years

3-5 years

5-7 years

More than 7 years

Did you work at PEF ČZU in the period of so called "first wave", from the 2nd of March till the 30 of June of 2020?

Yes

No

Which of following options are your job duties at PEF CZU? (one or more answers)

Research

I am student of PhD

Teaching
Examination
Administration
Membership in final state examination commissions
Supervision of theses
Membership in department management
Other:

Do you have children or other persons, who are living with you in household and who required your daily assistance during lockdown? (assistance in form of help with their learning, meals preparation, medical appointments etc.)
Yes, I am single parent
Yes, I am parent with my partner
Yes, I live with other person who needs my assistance
No, I don't live with a person requiring my daily assistance

Is your job at PEF CZU your only work commitment?
Yes, I am a full-time employee of PEF CZU
Yes, I am a part-time employee of PEF CZU
No, I have other work commitments outside of PEF CZU

During the period of so called "first wave" (spring semester 2019/2020) you worked:
Entirely from home
Mainly from home with possibility of limited use of university workspace (office, empty lecture room etc.)
Alternately from home and at university with unlimited use of university workspace

Does your job require equipment or conditions, that cannot be provided for work from home? (e.g.: laboratory, special hardware, advanced technology etc.)
Yes
No

Which of following aspects gave you confidence and helped you during shift of your work to online space? (one and more answers)
Your skills and knowledge
Communication of university with employees
Help from the side of university
Sufficient hardware and software equipment
Positive attitude and response of students
Other:

Have you felt that your household conditions are suitable for your work?
Yes, my conditions allowed me to perform 100% of my duties.
Yes, but I could not perform 100% of my duties.
No, I doubted I could meet performance expected from me.

Please select which of following challenges did you experienced during work from home (one or more answers):
Lack of my IT skill
Insufficient hardware equipment
Insufficient software equipment
Increased performance expectations
Expectation of online availability above standard working hours
Over-controlling from the side of superior
Less frequent communication with superior
Sense of isolation from my colleagues and/or students
Lack of informal social interactions with colleagues and/or students
Higher misunderstanding during communication
Collision of personal and work life causing negative effects on either/both
Lower ability to recover from work
Absence of clear separation of work and personal time during a day
Internet connection problems
Concerns about yourself or your relatives getting infected by COVID-19
Other:

Which of following resources were you sufficiently provided with? (one or more answers)
Sufficient hardware equipment
Sufficient software equipment
Technical support from university
Performance expectations adjusted to your possibilities (if asked for)
Clear framing of daytime, when availability was expected
Regular and reasonable frequency of communication with superior
Organization of informal connections with colleagues (even online)
Offers of help opportunities concerning personal issues
Other:

How could have university help you more, to make transition to remote work easier? (one or more answers)
Provide better hardware equipment availability.
Provide better software equipment availability.
Provide extra trainings.
Provide better technical support.
Adjusted performance expectations.
Clear framing of daytime, when availability was expected
Other:

Which of following positive effects did forced remote work have on your work life? (one or more answers)
I learned new skills
I adopted changes of work schedule increasing my performance
I became less dependent on physical presence of my colleagues
I was able to eliminate the need of commuting
I established new professional contacts
Other:

Which of following negative effects did forced remote work have on your work life? (one or more answers)
My work life negatively influenced my personal life

My personal life negatively influenced my work life

I had to increase my effort in order to perform on standard level

I experienced higher stress

I emotionally suffered from lack of social connections in workplace

My professional relationships were negatively affected

Other: