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Article

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IMPACT OF THE COVID-19 CRISIS ON HEAVY WORK INVESTMENT IN ROMANIA

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Abstract

This paper analyzes aspects specific to the influence of the COVID-19 pandemic on the working population in Romania, from the perspective of heavy work investment. Issues related to workload, overwork, work engagement, workaholism and performance in work were considered. A survey based research was conducted using several scales widely tested in studies on heavy work investment with the data being processed in SPSS. The results of the research reveal a negative impact on the components of heavy work investment (time and effort). For all measured aspects, there were decreases in work investment during the pandemic, with negative effects on respondents' attitudes towards personal work performance. Based on the research results, the main proposal for the business environment is to stimulate employees for achieving a higher level of work engagement which can lead to increased work performance. This can also be achieved by adopting policies to reduce overtime.

Keywords: Heavy Work Investment, work addiction (workaholism), work engagement, excessive working time, COVID-19, dashboard online, work performance.

JEL Classification: J22, I13, R11, C83, M31

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Introduction

The current period marked by the crisis caused by the coronavirus (COVID-19) represents a “major shock to the European and global economy” with implications for jobs and the standard of living of citizens due to falling incomes (CE, 2020). Worldwide, according to the International Labor Organization, about 1.6 billion people (50% of the global workforce) have been affected by the COVID-19 pandemic (Forbes, 2020). One effect of COVID-19 is changes in the working environment, changes which were generated by new responsibilities and challenges faced by companies to continue their work safely, to ensure the necessary physical distance (Omary, et al., 2020; Nemțeanu and Dabija, 2020) and to adapt quickly to the complex phenomena that has influenced their activity (Trifan, 2014). Working from home was a new experience for many employees, and their perceptions were very different, but most viewed this experience positively (Dubey and Tripathi, 2020). A study in the US shows that almost half of the working population worked from home during this period, and the young population was more willing to switch to remote work (Brynjolfsson, et al., 2020). The pandemic crisis has led to a decrease in working time and labor participation, and the impact has been stronger on the male population, young people and less skilled employees, thus leading to increased labor market imbalances (Béland, Brodeur and Wright, 2020). In contrast to the US, in the UK the crisis hit the female population mainly, as the sectors most affected were those involving frequent social interaction, sectors in which women have the highest share (Hupkau and Petrongolo, 2020). A study conducted in Canada found that working from home does not adversely affect family life, but failure to honor financial obligations and social isolation can have a negative impact on family life (Beland, et al., 2020).

In Romania, the COVID-19 crisis has led to increased competition in the labor market, increased unemployment, and a general halt in hiring by companies which instead resort to policies to reduce staff and expenses (Economica, 2020; Bordeianu and Radu, 2020) as result of imposed restrictions, which increase the vulnerability of certain population groups working in the most affected or lowest trained areas (Cornea, 2020). At the end of May 2020 almost 596,000 employees were technically unemployed and 430,000 people had their contracts suspended (Cornea, 2020). At the same time, it should be noted that social pressure has also increased for Romanians through loss of jobs of those who worked abroad and returned home (Cretan and Duncan, 2020).

Starting from the aspects previously discussed, the authors consider that the paradigm of heavy work investment can be significantly affected by the pandemic context, since in times of crisis employers and employees may modify their behaviors. Thus, the main purpose of the paper is to study the impact of the COVID-19 crisis on the heavy work investment in Romania. The research objectives were the following: identification of the impact COVID - 19 had on working time (O1); analysis of the influence COVID-19 had on the heavy work investment (O2); measurement of the influence COVID-19 had on attitudes towards personal work performance (O3); identification of factors influencing attitudes towards personal work performance (O4). In connection with these objectives, the hypothesis related to the research results are: COVID - 19 led to a decrease in working time (H1); COVID - 19 led to a reduction in work investment (H2); COVID - 19 had a negative impact on attitudes towards personal work performance (H3); the attitude towards personal work performance is influenced by heavy work investment (H4). The results of the research reveal the negative impact of COVID-19 on the two components of the massive investment

in work (time and effort). Based on the data obtained, additionally a multidimensional online analysis application was created, using OLAP technology, which allows other researchers in academic environment to use data for their own analyses.

To achieve the intended purpose, the work was structured into four sections. After reviewing the published scientific works on the topic of heavy work investment, the methodology of the conducted research was described. Next, the results of the empirical investigation, the related discussions, and the online dashboard are presented, with the paper concluding with conclusions and proposals.

1. Literature review

Heavy Work Investment (HWI) is a concept treated from two perspectives: the time and the effort invested in work and it is determined both by situational predictors (e.g. financial needs or job requirements), and by dispositional predictors (e.g. workaholism and work engagement) (Snir and Harpaz, 2012). The researchers consider workaholism a component of a heavy work investment, as a workaholic invests a lot in work but not everyone who invests a lot in work is a workaholic (Snir and Harpaz, 2012). Another type of heavy work investment is the work engagement, seen as its positive side (Clark, Michel and Stevens, 2015; Schaufeli, et al., 2002; Harpaz and Snir, 2015). According to Snir and Harpaz (2012) heavy work investment can be seen as a mediator between its predictors (workaholism, work engagement, financial needs etc.) and the results obtained (professional satisfaction, health, family relationship, burnout etc.). The two types of heavy work investment (workaholism and work engagement) have different results according to the specialists. Workaholism is linked to a decrease in life satisfaction, and work engagement to an increase in life satisfaction and job performance (Shimazu, et al., 2015; Converso, et al., 2019). Each of the two components has a unique motivation model, as well as unique impacts on job satisfaction, performance and income (van Beek, et al., 2013). Workaholism (the negative side of heavy work investment) implies an obsession to work hard and has two components: excessive work and compulsive work (Schaufeli, Shimazu and Taris, 2009; Harpaz and Snir, 2015) and is linked to an excessive work climate (Schaufeli, 2016). Workaholism has a complex nature. It is related to personality traits, but is not correlated with other psychological (consciousness, self-esteem etc.) or demographic variables (gender, family status etc.) (Clark, et al., 2016). Work engagement (the positive side of heavy work investment) is defined as a positive, rewarding psychological state, characterized by dedication, devotion and physical and intellectual energy (Schaufeli, et al., 2002; Harpaz and Snir, 2015) and is linked to a healthy climate of prosperity for employees (Schaufeli, 2016).

The behaviour of those who invest heavily in work can also be explained by the dynamic balance between their cognitive and emotional components, achieved by processing of three types of fundamental knowledge: rational, emotional and spiritual knowledge. Understanding this balance helps managers to make better decisions in motivating employees (Bratianu and Bejinaru, 2019).

The two components of heavy work investment also have common features, and future researches need to establish more precisely the differences and similarities between them (Di Stefano and Gaudiino, 2019). They differ according to cultural, social and economic characteristics (Hu, et al., 2014). With regard to the time invested in work, those who

exceed 50 hours/week are considered work dependent (heavy work investors) and the time invested in work is increased for those who have advanced in their careers or received greater autonomy in work (Snir, 2018).

Predictors of heavy work investment

Even though there are studies in the literature on the predictors of the two types of heavy work investment, the specialists consider that they have not been enough studied (van Beek, et al., 2012). One predictor of the heavy work investment studied in literature is passion for work, and the results of research highlight both its positive consequences - professional satisfaction, decreased depression, increased labor productivity - and its negative consequences (depression, decreased productivity) (Houlfort, et al. 2014; Birkeland and Buch, 2015; Houlfort, et al. , 2018).

Negative consequences of workaholism have been studied in relation to individual well-being and family life (Shimazu, Kubota and Bakker, 2015). People who invest heavily in work, due to situational factors, perform poorly both on a personal level (stress, family problems, health problems etc.) and professionally, while those who invest heavily in work due to dispositional factors achieve good results (Harpaz and Snir, 2016). In order to understand the consequences of heavy work investment and workaholism, individual traits (personality), predispositions of individuals and also situational factors must be studied (Aziz and Burke, 2015). A work climate based on overwork will lead to work dependency especially for those who have motivation, perfectionism, conscientiousness and efficiency as personality characteristics (Mazzetti, Schaufeli and Guglielmi, 2014). Perfectionism is a personality trait that often leads to work addiction and physical and emotional burnout (Taris, Beek and Schaufeli, 2010; Stoerber and Damian, 2016).

Heavy work investment is related to the relationships between the working environment and the personal lives of employees. Thus, the mechanisms by which the working environment influences the personal life of employees must be identified (Babic, et al., 2019). In order to achieve a balanced relationship between work and life, a number of aspects relating to work and working time, working conditions and the pace of work must be taken into account given that, lately, there is an increasing flexibility of work (Fein, Skinner and Machin, 2017). It was concluded that for temporary employees the association between intrinsic and extrinsic motivations and heavy work investment is stronger than for permanent employees (Tziner, Shkoler and Bat Zur, 2019). The results of a study conducted in Romania in 2019 revealed that those with heavy work investment are people who as they mature desire to advance in their careers. But this is not always beneficial for their social life, for their relationship with family and friends and can affect their ability to adapt in society (Negrila, 2019).

Effects of heavy work investment

Building on the concept of heavy work investment, other models have been proposed that take into account burnout, as a result of it (Rabenu, et al., 2019). It was concluded that the relationship between heavy work investment and burnout becomes relevant when the types of heavy work investment (time and effort). The work engagement is directly related to heavy work investment and negatively related to burnout (Rabenu, et al., 2019). Burnout is

related to the number of hours worked, especially when exceeding 12 hours/day (Rabenu and Aharoni-Goldenberg 2017). Another result of heavy work investment studied is the "happiness" or subjective well-being of individuals (Shamai, 2015; Caesens, Stinglhamber and Luypaert, 2014). There were identified four types of workers, each having different personal and job-related characteristics: relaxed working "from 9 to 5", work engagement, workaholic, and those tense and burnout (Salanova, et al., 2014).

At the same time, the relationship between the two components of heavy work investment and family life has been studied. Work engagement has positive consequences on family life, while workaholism leads to family conflicts so it has negative effects on family life (Bakker, et al., 2014; Shimazu, Kubota and Bakker, 2015). Therefore, it is appropriate that employers distinguish between the two types and try to encourage the former and prevent the latter to have employees that are both productive and satisfied in their personal lives (Hakanen and Peeters, 2015). Detachment from work is seen as a recovery after job demands and is influenced by the personal characteristics of each employee and the particular characteristics of the workplace having positive influences on work performance (Wendsche and Lohmann-Haislah, 2017).

Regarding Romanian employees, a study conducted in 2019 using a Romanian version of the DUWAS scale (Dutch work Addiction Scale) concluded that private sector employees are more likely to develop workaholism than those in the public sector, as are low-income employees and those with dysfunctional families (Butucescu and Uscătescu, 2019). In Romania, almost 80% of the employed population works between 30 and 40 hours/week, with those over 40 hours/week having decreased, representing 18.4% in 2018. People above 40 hours/week are generally people with low levels of education (37% compared to only 7% of people with higher education) in urban areas (INS, 2019).

2. Research methodology

A survey based research was conducted among the Romanian population. Data collection was carried out between May 20 and June 20, 2020, during COVID-19 crisis, immediately after the first relaxation measures had been applied and generated by the transition from the state of emergency to the state of alert (May 15, 2020). By that point, the interview subjects had at least six weeks of work experience during the pandemic crisis.

The sample (1,896 subjects) was made up of people who met the research requirements, namely, during the COVID-19 debut they were part of the employed population of Romania (employees and non-employees: employers, self-employed workers, unpaid family workers, members of production cooperatives, etc.) and was formed through the "snowball" method. All respondents agreed in advance to answer the questions in the questionnaire. The structure of the sample consisted of 52,6% women and 47,4% men, all between the ages of 16 and 70 years. Also 71,5% were from the urban environment, and 28,5% from the rural environment. Data was collected through an online questionnaire, which was chosen as the main research tool due to its recognized effectiveness for building a large database that allows testing and validation of research hypotheses. The data was processed in SPSS (Statistical Package for Social Sciences) (Brance, 2018; Mihaila et al., 2018; Yeo, Carter and Chezulhaimee, 2018). The questionnaire was sent via e-mail, WhatsApp, social networks. All respondents were previously contacted and invited to participate in the research. Depending on the aspects pursued, the measuring instruments included scales frequently used by

researchers in the field of heavy work investments and also measuring instruments with a specific character for which compatible items were not identified in the literature. The instruments have been associated with items that have been determined by consulting with human resources specialists, tools that have been tested through interviews with potential research subjects, on several occasions, until all problematic elements have been reviewed and eliminated (Langerak, Hultink and Robben, 2004).

In order to draw up a picture of the heavy work investments made by respondents, questions were asked to capture the structural aspects of their work, such as working hours (from "under 6 hours/day, for 5 days a week" up to over 10 hours/day, more than 5 days a week) and how working time changed during Covid-19. The determination of the duration and the schedule of working hours are important issues because it reflects on quality of life, since each person has a finite amount of time to be allocated between work, family and social activities. Research points out that work during hours normally allocated to social activities creates obvious challenges for employees who have to manage more than one commitment (Fein, Skinner and Machin, 2017). Also, in order to present the changes in the way in which the employed population relates to the heavy work investment as a result of COVID-19, the questionnaire was divided into two parts. In the first part, the respondents were asked a series of questions regarding excessive working time (overwork), workload, work engagement, workaholism and work performance before the COVID-19 (T1) and then, the same questions at the time of completing the questionnaire, after 6 weeks, during the COVID-19 pandemic (T2).

The variables used were measured using a series of established models from which were selected those items that fit the culture and specifics of the Romanian work market. During the test phase of the questionnaire, the items on the scales were translated into the Romanian language and checked by specialists who were not involved in the research. At the same time, unlike other research in the field (Schaufeli, Shimazu and Taris, 2009), in the present study the working time was measured by reference to the number of working hours per day, an expression closer to the culture of the people surveyed.

Excessive working time (over-work) was measured by two sampling questions from the Netherlands and Japan (Schaufeli, Shimazu and Taris, 2009), both questions and scales adapted to meet the needs of the present study.

Workload, the amount of work perceived in terms of pace and volume, was evaluated using three measured questions from the five-step Likert scale (1 - Less than once a month or never up to 5- Several times a day) in the "Quantitative Workload Inventory " (QWI) (Spector and Jex, 1998).

Work engagement was assessed using a shortened form of the involvement scale - UWES (Utrecht Scale) (Schaufeli, Bakker and Salanova, 2006). From this scale, validated in several countries, six items were used.

Workaholism was measured with a simplified form of the Dutch scale of workaholism (DUWAS) developed by Schaufeli. The scale is composed of two subscales for each aspect of workaholism: "working excessively" and "working compulsively". In this study, four elements were used for each subscale, each element being measured with the 5 steps Likert scale (1 - total disagreement up to 5 - total agreement). (Schaufeli, Shimazu and Taris, 2009).

Work performance was assessed using an article from the World Health Organization questionnaire on work performance (HPQ) (Shimazu and Schaufeli, 2009). Respondents were asked to rate themselves on a scale from 0 to 10, where 0 is the lowest job performance and 10 is the performance of a top worker for the overall work performance in the last month before COVID 19 (Q1) and for overall work performance in the last month spent during the crisis (Q2).

The questionnaire scheme, as well as the most important variables used is presented in Annex 1. The data obtained were processed in SPSS (Statistical Package for Social Sciences), generating the following results: descriptive statistics for the variables analysed, test differences between the averages using the t-Student test for pair samples, and analysis of dependencies between variables based on the multiple regression model. For multi-item scales, the internal consistency was tested by calculating the Cronbach alpha coefficient.

Subsequently, the data was entered in a multidimensional data analysis application created based on OLAP technology, using the software Tableau Public 2020.02, where they can be used by other researchers in their own analyses. Online Analytical Processing (OLAP) is a technology used to organize large databases and support Business Intelligence. The OLAP databases are divided into one or more cubes and each cube is organized and designed by an administrator to fit the way data is retrieved and analysed so that different reports can be easily created and used.

3. Results and discussions

3.1. Result of the survey regarding the effects of COVID-19 heavy work investments

Working time

Regarding the objective of identifying the influence of COVID-19 on working time, the research results indicate that, before COVID-19, 42% of the sample members had a standard work schedule of 8 hours / day, 5 days a week. A work schedule between 6 and 8 hours/day was identified for 35.5% of respondents, while 12% worked less than 6 hours on average per day. Only 10.5% of the sample members worked more than 8 hours a day, which means a rather low involvement of respondents in work over the standard work schedule. This may represent a low level of heavy work investment in labour, at least in terms of work time.

Taking into account the change in working time during COVID-19, 57% of those who continued to work stated that the number of hours worked remained unchanged, 16.8% worked more than 2 additional hours per day, while 26.1% recorded a decrease in working time by more than 2 hours per day. It is noteworthy that 642 respondents (33.9%) of the 1896 sample members mentioned that they did not continue their work activity during COVID-19. Therefore, the hypothesis that COVID-19 had a strong negative impact on working time is confirmed, because even at the level of those who continued their activity, more than a quarter worked less than before the crisis, with working time reduced by more than two hours per day. At the same time, more than a third of the interviewees ceased working during the crisis. Therefore, at least temporarily, they have not conducted business activities, so time dedicated to work is substantially reduced compared to the pre-crisis period.

Effort invested in work

Another research objective was to identify the impact of the crisis triggered by COVID-19 on heavy work investment. For each of the scales used in the questionnaire, new variables were computed by calculating for each individual the average score for all the items of scale. The following variables resulted, which are components of heavy work investment: "overwork", "workload", work engagement (work_eng), and "workaholism". The above abbreviations of the analysed variables will be used in the following.

In Table no. 1 it can be seen that the means obtained at the sample level for the four independent variables are close to the neutral level of the scale (3 points). The highest average was obtained by the workaholism, while overwork obtained the lowest mean. In conclusion, there is a rather low involvement of the sample members in making heavy work investments. Pearson correlation coefficients indicate a low association between variables. The negative correlation between work dependence and work commitment is noteworthy, which confirms the results of previous studies (Schaufeli, et al., 2002; Clark, Michel and Stevens, 2015; Harpaz and Snir, 2015). Alpha coefficients (presented on diagonal), with one exception, have values above 0.8, which reveal high confidence levels for the scales used. For overwork, the value of the coefficient is lower due to the fact that the scale used has only two items.

Table no. 1. Descriptive statistics and correlation between variables (n=1896)

Variable	Me an	SD	Overwork	Workload	Work_eng	Workaholism
Overwork	2.16	1.09	0.48			
Workload	2.63	1.05	0.35**	0.84		
Work_eng	3.07	1.01	0.24**	0.20**	0.92	
Workaholism	3.14	0.82	0.12**	0.12**	-0.30**	0.86

Notes: **. Correlation is significant at the 0.01 level (2-tailed). Cronbach's alpha on diagonal

In order to measure the influence of COVID-19 on heavy work investment, the difference between the means obtained for the analysed variables was tested considering the two time points: before starting COVID-19 (T1) and the crisis period (T2). The testing was done using the t-Student test for paired samples, including only respondents in the analysis who continued to work during the pandemic (n = 1254 people).

Table no. 2 shows the means of the variables for the two time points analysed, as well as the test results. It can be seen that for all four variables decreases of means were recorded during COVID-19, compared to the values related to pre-crisis activity. With the exception of overwork, all other differences are statistically significant (p < 0.01). These results reveal a negative impact of COVID-19 on heavy work investment. It confirms the second research hypothesis (H2), according to which investment in work decreased during the crisis. The analysis for each item of the analysed scales is presented in Annex 2. It reveals decreases of all means in T2 compared to T1, with two exceptions: "It is hard for me to relax when I am not working" (p < 0.01) and "work after regular schedule" but the difference is not statistically significant in this case (p > 0.05).

Table no. 2. Test of the mean differences (T2-T1)

Variable	Mean (Std. Dev.)		t	Sig.
	T1	T2		
Overwork	2.16 (1.09)	2.14 (1.05)	-0.78	0.44
Workload	2.63 (1.05)	2.53 (1.12)	-4.14	0.00
Work_eng	3.07 (1.01)	2.91 (1.01)	-7.35	0.00
Workaholism	3.14 (0.82)	3.09 (0.86)	-2.70	0.01

The attitude regarding personal work performance

Attitudes about personal work performance were assessed with a question in which respondents were asked to compare themselves to a top worker. To this end, a 10-steps scale (10 = performance of a top worker) was used, and the respondents were asked to make the assessment both before the crisis (T1) and during the crisis (T2).

The average attitude regarding personal work performance was 7.80 points at T1 and 7.54 points at T2. In this area as well, the average recorded during the crisis is also lower than in the pre-crisis period, which confirms the negative impact of COVID-19 on the attitude towards personal work performance (H3). The difference between means is statistically significant based on the results of the t-Student test ($t = 5.50$; $p < 0.01$).

In order to achieve the fourth objective regarding the identification of the factors that influence the attitudes towards personal work performance (O4), a multiple linear regression model was used. The dependent variable is "work performance" (Work_perf), and the independent variables are the main components of the heavy work investment analysed in this paper.

The results obtained by applying the Regression model are presented in Table no. 3. The independent variables explain a small percentage of the variation, but the model is statistically significant ($F = 28.66$, $Sig. = 0.00$). An explanation of this fact can be the large number of factors that influence the attitude towards work performance, not only those considered in the analysis. It is observed that overwork and workaholism have negative impacts on attitudes towards work performance, while workload and work engagement have positive effects on these attitudes. However, only overwork and work engagement have statistically significant effects on the dependent variable.

Table no. 3. The results of Linear Regression

Model	β	T	Sig	R ²
Constant	6.77	26.16	0.00	0.06
Overwork	-0.17	-3.80	0.00	
Workload	0.01	0.29	0.77	
Work_eng	0.44	9.28	0.00	
Workaholism	-0.06	-1.10	0.27	

Notes: β – unstandardized coefficients. Dependent variable: Work_perf

Given these results, the fourth research hypothesis (H4), that the attitude towards personal work performance is influenced by heavy work investment is only partially confirmed. Heavy work investment influences the attitudes about personal work performance, but especially through two of its components: work engagement, which has a positive effect on

attitudes about personal performance at work, and overwork, which has a negative effect. Therefore, work performance may be higher for people with a high level of commitment to work, who are dedicated to work, that put their energy and devotion in it. Thus, they achieve a high level of satisfaction, which contributes to increased performance in work, while overwork leads to a lower performance. The results are consistent with the conclusions of other researches published in literature (Taris, Beek and Schaufeli, 2010, Harpaz and Snir, 2016; Stoeber and Damian, 2016; Rabeanu, et al., 2019). On the other hand, for workload and work dependency, the results of the research do not indicate a statistically significant influence on work performance. Such a situation can be generated by the behavioural peculiarities of the workforce in Romania, where the percentage of those working more than 40 hours/week is decreasing (INS, 2019). However, additional factors must be considered to explain these attitudes towards work performance than those used in the above model.

3.2 Online data analysis using an OLAP cube

The element of originality proposed by the authors is the creation of an online dashboard using an OLAP cube, which allows any specialist to access and analyse the data collected from respondents. The advantage of the technology is that it generates analyses of very large volumes of data in a very short time. Basically, when the dashboard is accessed online, each researcher can get, almost instantly, their own analysis based on the dimensions provided in the application. After importing the data into the Public Table, they were classified into dimensions and measures. The dimensions chosen for the analysis can be selected according to their importance in the research. The following dimensions that can be filtered were defined: gender, age, marital status, income, level of education, area of residence, county of residence and continuation of work during COVID-19. The measures taken are related to work performance, excessive working time before and during the COVID-19 period. The developed dashboard is publicly available online, at the following link:

https://public.tableau.com/views/InfluentaCOVID19asupramuncii/July2020?:language=en&:display_count=y&publish=yes&:origin=viz_share_link

In figure no. 1, is an example for a comparative analysis on the heavy investments in work made before and during COVID-19, using the following measures: perceived work performance, excessive working time (work after normal and weekend schedule) and the following dimensions: continuation of distance work according to age, education, income and place of residence, for people who worked during the crisis, from all counties of Romania, both urban and rural, being represented all income ranges. Females are highlighted in red and men in blue. The comparative analysis reveals that females consider that they have a higher performance than men and it can also be seen that during the crisis, both genders decreased their performance level, the correlation of work performance indices before and during COVID-19 is 0.6466 suggesting a relationship with an average intensity.

Figure no. 2 presents the results of the analysis on excessive working time before and during COVID-19 from the perspective of dimensions: work after working hours and on weekends for all respondents who worked during the crisis. The graph shows the increase in workload after working hours. The correlation of the level of work after working hours before and during the crisis is 0.46 and that of the weekend is 0.60.

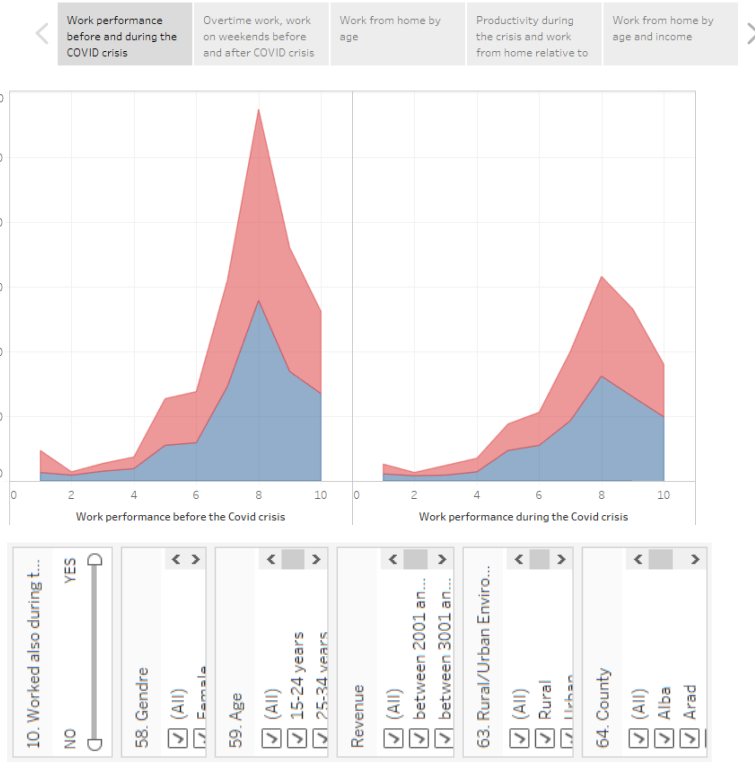


Figure no.1. Online data analysis dashboard

Overtime work, work on weekends before and after COVID crisis

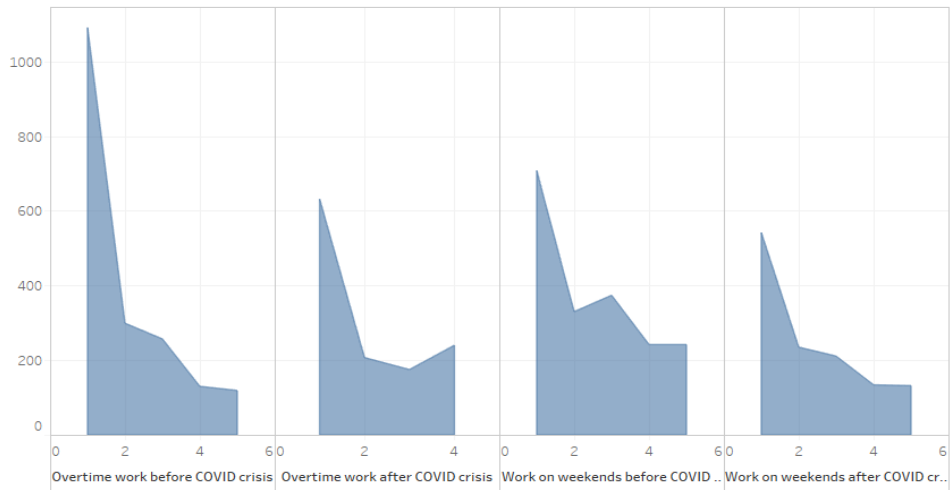


Figure no. 2. Excess working time before and during COVID-19

Conclusions and proposals

The information obtained by the authors confirm the results of other research published in the literature regarding the negative correlation between workaholism and work engagement and the influence on work performance (Schaufeli, et al., 2002; Clark, Michel and Stevens, 2015; Harpaz and Snir, 2015; Shimazu, et al., 2015; Converso, et al., 2019). In response to the theme proposed by the editors “Heavy work investment: a good or bad phenomenon?” the results of the research show that heavy work investment can be a good phenomenon for both the employee and the employer provided that it is directed towards increasing work engagement and towards balanced use of working time leading to increased work performance perceived by the employee. However, COVID-19 had a strong negative impact on working time, even at the level of those who continued their activity, registering a decrease in work investment.

Based on the research results, the main proposal for the business environment is the appropriate stimulation of employees to achieve a higher level of work engagement. This can be achieved by developing employee training programs to help boost trust in the organization, as well as generate a high level of employee satisfaction. Such a climate can lead to a high level of commitment to work for both employees and managers of the firm. Another proposal concerns the adoption of effective working time policies, for reducing overtime, given that it reduces work performance. Such actions become very important in the current pandemic context generated by COVID-19, where there is a risk of a significant increase in the number of hours worked due to staff shortages, restructuring of the business activity, carrying out tasks under new conditions, including telework, etc. All these policies can contribute to the development of knowledge within companies on all three levels revealed in the literature: rational, emotional and spiritual (Bratianu, 2019). The knowledge can be used for similar crisis situations that may occur in the future, but also for the current activity of companies. From the academic point of view, it is recommended to use the data with the help of the proposed online dashboard in order to perform new analyses. The results of the analyses can contribute to the development of the level of knowledge in the field of heavy work investment, but also to capture behavioural changes in crisis situations.

The research has as a main limit, the method of selecting the sample, which was not performed by a random method which could determine a low representation of the researched population. However, the authors consider that the large number of respondents and the balanced structure by gender and age diminish the reported drawbacks. Another limitation is the fact that the fourth hypothesis of the research (H4) is only partially confirmed. Heavy work investment influences attitudes about personal work performance, especially through its two components: work engagement, which has a positive effect on attitudes about personal work performance, and workaholism, which has a negative effect. However, several factors must be considered to explain these attitudes.

Future research should aim at a deeper understanding of the behaviour of the working population with regard to heavy work investment (e.g. telework, telework productivity in certain areas), including through the use of qualitative methods, to capture other reasons that have led to its decline. The authors also aim to determine how work-related feelings were positioned during COVID-19 compared to other important issues that affect quality of life.

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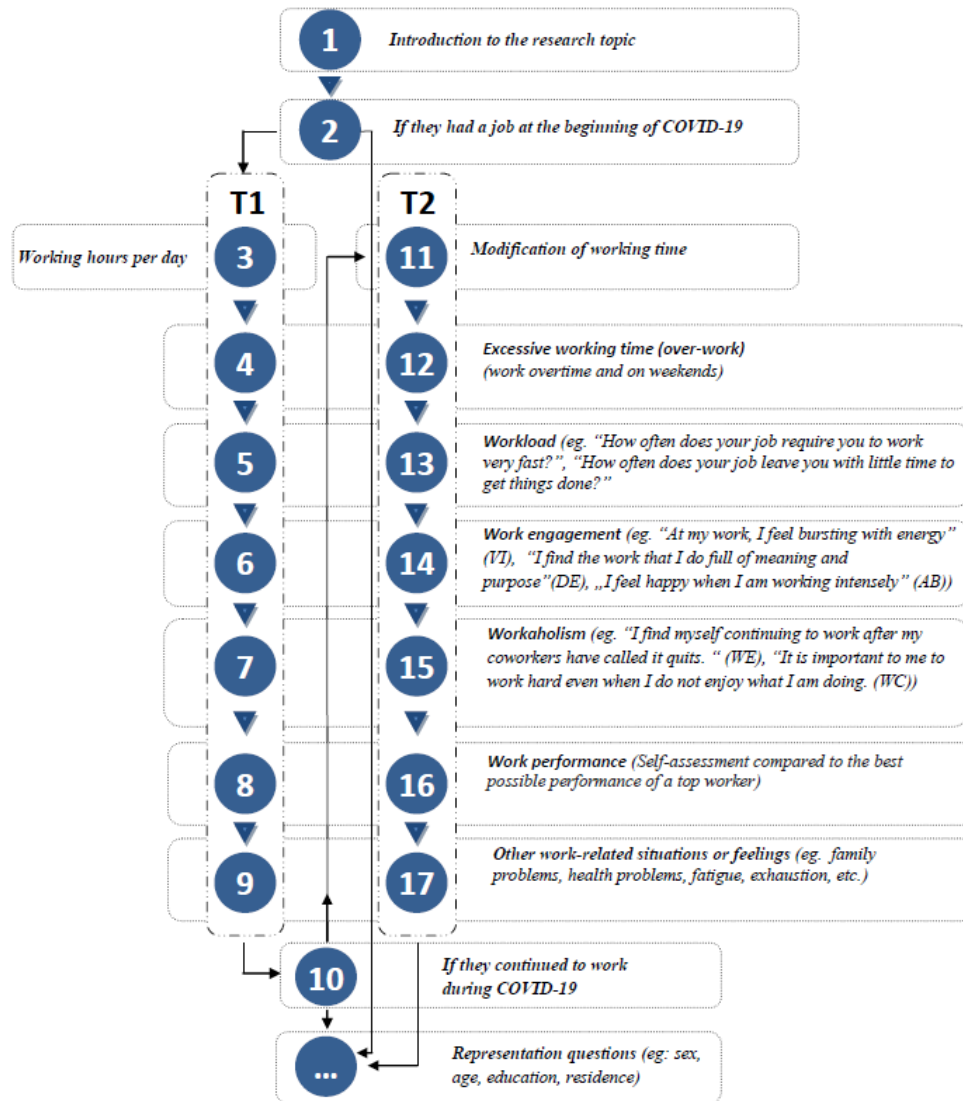
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Annex 1. Questionnaire Scheme



Annex 2. Test of the mean differences for variables and items (T2-T1)

Variable	Media (Ab. Std.)		t	Sig.
	T1	T2		
Excess working time (overwork)	2.16 (1.09)	2.14 (1.05)	-0.78	0.44
How often do you take work at home?	1.95 (1.27)	2.02 (1.19)	1.94	0.06
How often do you work at week-ends?	2.38 (1.36)	2.27 (1.38)	-3.33	0.00
Work volume (Workload)	2.63 (1.05)	2.53 (1.12)	-4.14	0.00
How often does your job require you to work very fast	2.73 (1.20)	2.60 (1.26)	-4.24	0.00
How often does your job require you to work very hard?	2.73 (1.17)	2.61 (1.20)	-4.11	0.00
How often does your job leave you with little time to get things done?	2.44 (1.19)	2.37 (1.21)	-2.02	0.04
Work engagement	3.07 (1.01)	2.91 (1.01)	-7.35	0.00
At my work, I feel bursting with energy.	3.19 (1.16)	2.89 (1.17)	-10.02	0.00
When I get up in the morning, I feel like going to work.	2.79 (1.19)	2.75 (1.18)	-1.54	0.12
I find the work that I do full of meaning and purpose.	3.21 (1.17)	3.08 (1.17)	-4.84	0.00
I am enthusiastic about my job.	3.27 (1.20)	3.10 (1.18)	-6.25	0.00
I feel happy when I am working intensely	2.96 (1.19)	2.84 (1.17)	-4.04	0.00
When I am working, I forget everything else around me.	2.98 (1.22)	2.83 (1.21)	-5.11	0.00
Workaholism	3.14 (0.82)	3.09 (0.86)	-2.70	0.01
I seem to be in a hurry and racing against the clock.	3.04 (1.12)	2.89 (1.12)	-5.17	0.00
I find myself continuing to work after my coworkers have called it quits.	2.95 (1.18)	2.89 (1.18)	-2.04	0.04
I spend more time working than on socializing with friends, on hobbies or on leisure activities	3.28 (1.19)	3.17 (1.19)	-3.34	0.00
I find myself doing two or three things at one time such as eating lunch and writing a memo while talking on the telephone.	3.27 (1.21)	3.22 (1.23)	-1.72	0.09
It is important to me to work hard even when I do not enjoy what I am doing.	3.27 (1.11)	3.21 (1.10)	-1.78	0.08
I feel that there is something inside me that drives me to work hard.	3.38 (1.08)	3.31 (1.09)	-2.13	0.03
I feel obliged to work hard, even when it is not enjoyable.	3.19 (1.13)	3.16 (1.15)	-0.85	0.40
It is hard for me to relax when I am not working	2.77(1.22)	2.88 (1.25)	3.23	0.00