

Work-related Stress and Subsequent Productivity in a Teleworking Environment Induced by Pandemic-related Confinement. Evidence from the Public Organizations

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Abstract

The present study is focused on the public sector employees' perception on telecommuting during the COVID-19 pandemic, as well as the subsequent ways of measuring the personnel's productivity and related work performance indicators. We rely on the world's largest public organization's evidence associated with the mentioned topic and discuss the various challenges related to the new way of working, undergone by both the employers and employees in order to move forward during austere times. Findings suggest that while telecommuting has proven to be a reliable solution in the public sector for continuing to deliver on its mandate, the subsequent productivity deteriorated in relative terms as compared to the "in-office" efficiency of the public servants. The main reasons, mechanisms and paradigm changes are depicted and explained.

Key words: telecommuting, COVID-19 crisis, productivity, public sector

J.E.L. classification : J24, J28, D73, H83

1. Introduction

The current crisis induced by the COVID-19 pandemic threatens not only our health but the society at large, in all its various facets. Worlds' economy has already been negatively impacted by this unprecedented sanitary crisis, with a forecast of 0.4%-0.5% down on average on the estimated growth rate, amounting to 3.5 trillion U.S. dollars in unrealized economic output for 2020. Massive job losses hitting primarily the private sector have equally paralyzed the most and the less performant economies, heavily burdening the economy and urging the governments to find solutions in order to sustain their impacted citizens. Effects are expected to be substantial especially in the economies bearing a significant informal sector, where social protection systems are non-existent or limited.

The global nature of the current economic challenge, with simultaneous downfalls in both supply and demand, calls for a study of the way we work, how can we continue to deliver in times of unexpected types of restrictions, limitations, and social distancing. Such a study would give an insight into our sources of economic survival in times of future similar crisis and would restore confidence in our capacity as a society to react in constructive ways.

2. Literature review

Productivity is generally defined as a ratio of the output generated per unit of input. This is quite possible to quantify in a profit-based organization, as outputs are easy to define in quantitative terms. Since in the public sector, the national accounts close on a zero balance, the same indicator is less easy to measure. Even less in the absence of attendance as a primary factor for being productive by being present. Some authors circumscribe productivity within the concept of performance (Linna *et al*, 2010, Jackson, 1999; Stainer and Stainer, 2000; Madar and Neacsu, 2010), going beyond in discussing the effectiveness of the work being encompassed in the public good and services delivery, while others (Boyle, 2006) relay for measuring it on outcomes achieved

by the public sector. Putnam (1993) on the other hand rejects the idea of including outcomes as a dimension in the productivity concept. The debate is far from being over, and new metrics may arise from a quasi-generalized telecommuting solution.

Continuing to work despite the fact that people cannot go to work is not a new idea, since telecommuting as an alternate working solution has already been in place since the '70s, becoming a reality nowadays with a range of 10 to 12% of the employees telecommuting every day and 20% working remote on a regular basis according to a Reuters poll in 2012. This globally accepted flexibility constituted a solid basis to continue working during the COVID-19 crisis, where imposed social distancing seemed to be the most effective way to decrease the spread of the virus.

Many authors (Woody, 1995; Hartman *et al.*, 1991; Westfall, 2004; Neufeld and Fang, 2005; Bălăşescu and Bălăşescu, 2010; Dutcher, 2012; Anton, 2011) have studied the alternate ways of working and their outcome for both the employer and the employee even since such solutions began to be implemented throughout the world. The initial incentive for their upsurge was related to avoiding traffic congestions at the peak hours, to lessen the car-related pollution into the large conurbations and, last but not least, to re-balance the life/work proportion for the increasingly long-term employees (once the pensionable age kept on extending). Since nowadays' technology allows for humankind to be able to perform the same tasks as requested at work – from home or another chosen location – the only missing factor was the judicial and contractual framework to adjust to this new reality. The basis for this new contractual context is mutual trust

First of all, telecommuting cannot apply to all categories of remunerated activities. Fundamentally, the office-based and independent professions are subject to teleworking as an alternate solution, but the recent pandemic demonstrated otherwise: online schooling is one of the significant achievements and novelty solutions of continuity during this crisis.

Secondly, the effects of telework as a solution are not easily measurable when it comes to the public sector, for example. Not even in solely office-based times, productivity as a quantitative indicator of the employees' efficiency (Diewert, 2011, p.177) was not easily calculable, and specific metrics were lacking to be put in place (Drumea, 2016). Effectiveness thinking in the public sector (Linna *et al.*, 2010, p.300) is a concept that has been introduced in empirical studies and surveys to bring clarity and to deepen the understanding of the concept. Measurement should produce information on productivity in relation to the objectives and strategy of the organization and in order to support them (Linna *et al.*, 2010, p.306). Aggregated econometric indicators were constructed to link the total factor productivity rate of a sector (Hulten and Schwab, 2000) and the capital growth rate for the same (Holtz-Eakin, 1992).

While telecommuting, the expected productivity which can be measured in terms of sectoral range as seen above is less easy to depict due to the immateriality of (public) output - which is of course detectable irrespective of the work (*in persona* or remote) - but also due to the less collaborative work that is provided. The lack of team effort is anyhow the main reproach that is often heard when it comes to telecommuting. If less collaborative work affects the generated outputs, qualitative analyses of the telecommuting process disclose „a perception of greater productivity, higher morale, increased flexibility and longer work hours due to telework” (Hill *et al.*, 1998, p.667).

Westfall (2004) advises that the telecommuter's productivity is to be measured based on the following factors: “the amount of work; the intensity of work; the efficiency of work, and adjustments for additional costs associated with telecommuting” (IT and similar equipment, if provided by the employer).

3. Research methodology

The present study's methodology is a combination of theoretical benchmarking found in the relevant literature and empirical approach, with a focus on the largest public organization in the world, the United Nations system. Its reports, surveys, public statements, and other forms of public communication issued during the recent sanitary crisis describe an interesting working environment, with many challenges but also with a mention of encouragement suggesting that telecommuting may become a sound way of working going forward.

Several elements were considered in order to modulate the productivity matrix, with negative and positive factors (Fig. 1), as depicted below. Surveys that went on capturing staff's perceptions during this unprecedented confinement time, where the public organizations have not stopped working are a token of the fact that our society at large seems reassuringly prepared to face unexpected and untested difficulties and still being able to deliver in terms of public services, at least.

The largest public organization's experience within this new paradigm can serve as a future benchmark as well for the public sector in general, as well as for the private sector, where office-based personnel' inputs and productivity become increasingly challenging to measure due to the same difficulties as described in the case of the public sector. Moreover, telecommuting at 100%, for all personnel makes void the attendance metrics as the basis for any performance measurement. As obsolete as it may seem, the attendance is still quite utilized (formally and informally) as a metric for measuring performance in the public organizations.

4. Findings

In the two matrices we see that the main three areas of interest, both for negative as for the positive points are: the work/life balance, the communication and the induced anxiety of the personnel working from home. Of course, it is to be noted that not only telecommuting at 100% is responsible for the staff's perceptions in this new situation, but also the fact that confinement was wide-ranging, comprising other aspects of the day-to-day life (cities lockdown and travel-related restrictions, severe limitation of circulation rights, social barriers and limitation of the communication).

This brings our discussion to the personnel's differences in perception between teleworking by choice as opposed to teleworking by necessity or even forcibly. Indeed, this is not to be ignored, as even if telecommuting may have been a valid option prior to confinement, and quite popular amongst the surveyed employees, once it became the only way to work, the general perception was revised.

Figure no. 1. Core factors influencing telecommuters' productivity during COVID-19 pandemic

MATRIX ON DEFINING NEGATIVE FACTORS INFLUENCING ON THE STAFF'S PRODUCTIVITY UNDER COVID'19 CRISIS FOR THE PUBLIC SECTOR ORGANIZATIONS							
Factors influencing work productivity (-)	Disrupted work/life balance			Online communication challenges		Increased anxiety	
	More hours per day spent working	"Blurred" lines between work hours and time off	Changed working routine and associated frustration	*Related to IT, network, internet connection and general connectivity for all	* Resulting in less interaction with team and/or colleagues	Anxiety related to isolation, confinement, post-COVID'19 context	Anxiety related to possible new competencies to be developed for the staff teleworking
Mild							
Moderate							
Severe							
Critical							
MATRIX ON DEFINING POSITIVE FACTORS INFLUENCING ON THE STAFF'S PRODUCTIVITY UNDER COVID'19 CRISIS FOR THE PUBLIC SECTOR ORGANIZATIONS							
Factors influencing work productivity (+)	Improved work/life balance			Online communication advantages		Reduced anxiety	
	Hours per day spent working more effectively due to schedule flexibility	Gain of time due to non-commuting to the office	Changed working routine and associated confort	*Related to increased flexibility in dialoguing, less formalism	* Resulting from improved interaction with own teams and counterparts, based on "own terms" conditions	Reduced anxiety related to exposure to contamination in a COVID'19 context	New competencies to be developed for the staff teleworking. New opportunities
Mild							
Moderate							
Significant							
Essential							

Source: Author's conception

While elements like schedule flexibility and informal communication may be seen as beneficial by part of the homeworkers, the same aspects are perceived as negative points by others. The flexible working hours, for example, turned into adverse effects when blurred lines between working and non-working time became frequent due to 100% telecommuting time. Also, routine, as a concept, noticeably blamed in "normal" times, seems to be lacking in the new arrangement, with disturbing effects. Overall still, the negative perceptions were largely outranged by the positive ones. The only ingredient that is missing from this analysis, with quite annulling effects is the resulting output, meaning the measured productivity.

On another note, productivity levels while teleworking vs. physical presence in the office may vary significantly. Indeed, for one given level of outputs and deliverables (productivity) in the public sector, can we guarantee that perceptions on telecommuting remain favorable? One can be satisfied to telecommute while focusing on the recognized advantages related to it: increased flexibility, the gain of time customarily wasted on commuting, improved life/work balance, etc.), but do the employees actually work as much as in the office? Declined results in the economic flows overall, pandemic related, can mislead the analyst, enticing conclusions towards a positive impact of teleworking on the actual productivity. This could be the case if we only take into consideration the qualitative analysis, hence the perceived inputs from the point of view of the telecommuters. On a quantitative approach, the results are significantly different, as tangible outputs measured in staff-hours for the administration saw fading curves once the confinement commenced. To make circumstances comparable, we must, of course, take out as factoring the slowdown of the activity overall, and we must measure the marginal ratio of elasticity between the outputs and the inputs. The reality strikes down as perceptions raise, with a diminished output of deliverables and a subsequently decreasing productivity indicator that could only partly be explained by the slope in the activity. The rest of the down-pace is most likely due to the decreasing productivity, despite perceptions.

5. Conclusions

As per our analysis, there is a definite mismatch between perceptions vis-à-vis productivity of the telecommuters and the reality of the same indicator as a functional tool in the public sector's outputs. Although the public sector's productivity is difficult to measure, and many different solutions were over the time employed to meet such objective, each organization found a way to keep aware of this indicator's evolution. The recent sanitary crisis, which forced telecommuting at a 100% rate, offered the public organizations a perfect opportunity to test and conclude both on the opportunity to extend the telework at higher levels as well as to assess the productivity variation encompassed in the new paradigm. The results are expected to build-up as the "experiment" continues, but the first insights of the new context show fewer promising outcomes than projected.

6. References

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