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Meta-perceptions while working remotely:
Effect on Performance and mediation through addiction to
technology

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Abstract

The aim of this study was to evaluate how meta-perceptions while working from home affect performance. Furthermore, we aimed at understanding whether addiction to technology would mediate this relationship and also be associated with workers' health.

118 participants were part of the sample, which responded to three questionnaires in a period of three weeks. Results demonstrated that meta-perceptions associated with worse performance two weeks later and higher addiction to technology one week later. Addiction to technology played a mediator role in this relationship. Finally, addiction to technology was associated with increased psychosomatic symptoms (worse health) one week later. Implications for practice are discussed.

Keywords

Meta-perceptions, Self-presentation, Performance, Addiction to technology, Health

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Table of Contents

Abstract	1
<i>Keywords</i>	1
Introduction	3
Literature Review	5
Meta-perceptions at work.....	5
Pygmalion and Golem Effects.....	6
Compulsive behaviours: Addiction to technology	9
Method	12
Sample and Procedure.....	12
Measures	13
Statistical Analysis	14
Results	14
Test Mediation	15
Discussion	17
Limitations and Future studies	18
Implications to practice	20
Conclusion.....	21
Reference List	23

Introduction

At the beginning of 2020, the whole world started to be affected by the Covid-19 Pandemic. When countries decided to declare the state of emergency, companies had to adapt to remote work almost from day to night. According to the first findings of an e-survey conducted across Europe, almost 4 in every 10 workers (37%) started to work from home (European Commission 2020), while in 2019 only 5.4% of European workers would usually work from home (Eurostat 2020). This abrupt change definitely had an impact on the work/life balance of the workers, as 18% of the workers admitted to work during their free time, in order to meet work demands (Ahrendt & Mascherini 2020). Furthermore, the interaction between team members and managers also changed. These interactions are extremely important in the construction of meta-perceptions, which is defined by thinking about what others think of me. This process is known to influence individuals' behaviours and their relationships with others (Carlson & Barranti 2016).

According to previous research (Carlson & Barranti 2016), people tend to behave differently depending on how they perceive the social context they are in. This denotes that when at home they may behave in a certain way to cause certain impressions, and while at work they may therefore behave in a completely different way in an attempt to manage others' perceptions of him/herself. Despite the fact that most meta-perception studies have not been performed in the workplace environment, it is possible to create an analogy throughout the different social contexts.

Indeed, as in any other relationship, people at work build their meta-perceptions based on the interactions with others, including the verbal and non-verbal cues that their manager and colleagues signal to them in the workplace. This may be particularly relevant when it comes to hierarchical relationships as according to certain studies, subordinates tend to

be very attentive to their managers non-verbal cues (Henley 1977, cited in Hall, Carter & Horgan 2001), in order to evaluate what the higher power person thinks about them. When working remotely it becomes much more difficult for people to “read” others, as informational cues to construct the meta-perceptions are much scarcer.

Furthermore, technological development is modifying how people communicate with each other (Carlson & Barranti 2016), and with the physical separation caused by remote working, digital technologies became the main vehicle for interactions at work during the confinement. This signifies that it can increase problems in how people interpret the information cues from others in order to create more accurate meta-perceptions. This may be one of the justifications why remote workers may feel the need to be constantly answering their email or phone calls, in order to show their supervisors that they are constantly working and connected (Irby 2020). A study performed by Tarafdar, Pullins and Ragu-Nathan in 2015 described in Brooks, Longstreet and Calliff (2017) found that 46% of participants showed “addictive symptoms to the technology that “stresses them out” (pg. 102). Moreover, in general, smartphone owners will look at their phone in the “first five minutes after waking and the last five minutes before sleeping” (Montag, Kannen et. al., 2015, cited in Duke & Montag 2017, pg.93). Showing that there are increasing signs of smartphone addiction (which can be extended to other type of technology). Technological addiction, has very similar consequences to other types of behavioural addictions, such as “social, psychological and occupational impairment” (Nalwa & Anand 2003, pg.654).

The aim of this study was to understand the effect of deviant meta-perceptions when working at home in performance and well-being of workers. With the Covid-19 pandemic, it was a crucial moment to measure in three-time lagged longitudinal study

about how people thought managers perceive them (while working from home), and how their well-being and performance was affected by those meta-perceptions.

Literature Review

Meta-perceptions at work

The principle of metacognition, which is the process of thinking about thinking developed by Flavell in 1979, has been widely studied in Psychology. This is a conscious process, where people are able to monitor and control the process (Efklides 2008) and it is essential in social interaction, as individuals are aware of their own cognition as well as others cognitions about them. Through the influence of observing behaviours and their consequences individuals' cognition gets "enriched, updated and differentiated" (Fabricius & Schwanenflugel 1994, cited in Efklides 2008, pg.279). Despite this individual process of thinking, people at some point of their life will think about how others see them (Mosch & Borkenau 2016). This is where meta-perceptions come into play.

According to the studies performed about meta-perceptions, these tend to be positively biased, as many argue that these are created solely by self-knowledge (Jost, Kruglanski & Nelson 1998 and Carlson, Vazire & Furr 2011). Moreover, meta-accuracy, i.e., the assumption that what other people think of them is actually true, has been widely considered by scholars (Kenny & DePaulo 1993 and Carlson & Barranti, 2016). In fact, it was concluded that people tend to overestimate how similar their self-knowledge is to others opinions about them (Cameron & Vorauer 2008). Carlson et. al. (2011) evaluated the difference between meta-perceptions in relation to new acquaintances and with people the subjects already knew. Their results showed that even after a short conversation with new acquaintances, participants were able to make some accurate distinctions between

each other cognitions. It is important to note that, all the studies analysed were performed with face-to-face interactions, where all verbal and non-verbal cues were available to be evaluated. Moreover, the acquaintance levels normally studied, are either new acquaintances or housemates, friends, family and partners. Meta-perceptions in the workplace, especially regarding managers have not been studied. Furthermore, to study it in the context of the current pandemic is timely because of the before mentioned changes in how people work (i.e., more remote working, more technology-assisted work). Since there are several changes as to how people are able to relate and work together, understanding meta-perceptions in these conditions is extremely important.

Pygmalion and Golem Effects

In its essence the Pygmalion effect happens when subordinates' performance is enhanced when he/she perceives the manager to have high expectations of them (Eden 1992). It is a specific case of a self-fulfilling prophecy in which a person acts in accordance with the expectations of another. The worker may, on some level, internalize the higher expectations placed on him/her and then act in ways to fulfil those expectations. Rosenthal and Jacobson (1968) termed this phenomenon 'Pygmalion' based on the Greek myth in which Pygmalion created and fell in love with a sculpture named Galatea. Pygmalion's expectations were realized when Galatea came to life and became his lover. There is a variation of the Pygmalion, the Golem effect, which is, in essence, the Pygmalion effect in a negative direction. In organizational settings, the Golem effect occurs when subordinates realize leaders' low expectations and act accordingly (Eden 1990). Although there is scarcity of studies that have directly investigated interpersonal self-fulfilling prophecies among adults in work organizations (Kierein & Gold 2000), recent meta-analyses have indicated that Pygmalion effects can be fairly strong within some management contexts (Kierein & Gold 2000; McNatt 2000 and White & Lock

2000). The rationale is that if people know what it is expected from them, they will work in order to achieve the goals that were set. However, with the pandemic crisis where people abruptly changed to working from home, there were natural thoughts about how successful they would be. Workers and managers had to adapt to a new “working environment”, to different routines, and new tools to perform remotely. Moreover, work demand increased drastically: 18% of workers admitted to work during their free time in order to meet work demands (Ahrendt & Mascherini 2020). Besides recent data from NordVPN¹ confirms that the coronavirus pandemic has exacerbated work demands and that, on a daily basis, people are working an average of two hours longer than usual. In this scenario of relationships at a distance, ambiguity and uncertainty are more pronounced, giving room for different meta-perceptions to be formed. Indeed, it is reasonable that employees may be concerned about what their manager think about them (Carlson & Barranti 2016), and it may cause them to behave differently to influence certain impressions. We claim that, given the physical distance and the ambiguity, this may be particularly relevant when employees hold “negative” meta-perceptions about what he/she thinks that the manager thinks about his/her performance, specifically concerning deviant behaviour. There are several types of employee deviant behaviours. One being production deviance (also known as counterproductive workplace behaviours), which occurs when employees willingly do not perform in accordance to the organisation norms or managers expectations in terms of the quality and quantity of the work developed (Hollinger & Clark 1982; Griffin & O’Leary-Kelly 2004; Robinson & Bennett, 1995; Krischer, Penney & Hunter 2010 and Litzky, Eddleston & Kidder 2006). These

¹ NordVPN is an online security solution, used by over 12 million internet users worldwide. https://nordvpn.com/?utm_expid=.wodVyID2TPCS2JqHiEhAGQ.0&utm_referrer=https%3A%2F%2Fnordvpn.com%2Fsocial-responsibility%2F

behaviours are voluntary minor violations of significant organizational norms (Robinson & Bennett 1995). Litzky et. al. (2006) mentioned that only 12% of the people performing deviant behaviours are reoffenders, meaning that even people who are normally honest, can engage in deviant behaviours. According to the same author in many cases, deviant behaviours are caused due to a specific occasion. For example, employees feel they have been treated unfairly, or if they believe their manager do not trust them and their work (Litzky et. al. 2006).

H1: Meta-perceptions about production deviance are negatively correlated with work performance.

Despite the fact that people are normally highly motivated to believe in their meta-perceptions, it does not mean that they are entirely accurate, that is if what people think others think of them is actually true (Kenny & DePaulo 1993 and Carlson & Barranti 2016). In that sense, and for the Pygmalion and Golem effects to work, communication must be clear so that workers must develop an accurate perception about what others expect from them (Eden 1992). One important way through which workers evaluate the accuracy of their meta-perceptions at work is through the information obtained through communication, both verbal and non-verbal. Several studies identify the importance of non-verbal language in the communication between people. Waxer (1977), showed that in fact non-verbal gestures translate “more veridical information than do facial cues” (pg.312). Since people better control their face expressions than other body gestures. This is related with the feedback theory of meta-perceptions previously mentioned by Albright, Forest and Reiserter (2001), that states that people will observe others’ behaviours and potential signals towards them, and then adapt their behaviour towards what they want the other to perceive (Langer & Wurf 1999). In the “normal” contexts, it is known that non-verbal cues despite highly important and valuable may not be totally clear (Kenny &

DePaulo 1993). However, the pandemic crisis created a “new normal” and, while working from home and having reduce contact to their managers’ non-verbal cues, it is even more difficult to decipher others’ impression.

Compulsive behaviours: Addiction to technology

In face of reduced capacity to validate meta-perceptions of production deviant behaviours, workers may try to enhance their self-presentation. Self-presentation is the way people show others who they are. By portraying a specific impression, people expect others to react a certain way (Kenny & DePaulo 1993), in order to ensure them they are acting the “correct” manner (“socially accepted manner”). Consequently, when people do not have this reassurance, they will readapt their behaviour in order to receive the desirable reaction (Kenny & DePaulo 1993). This happens because subordinates believe that their impressions on the manager will determine certain outcomes in relation to their work, consequently they will be motivated in order to “discern, monitor and control that impression” (Kenny & DePaulo 1993, pg.146).

When they continually work on self-presentation, workers may engage in more compulsive behaviours in order to attempt to demonstrate employers they are constantly working and connected (to counter back the possible expectations of deviant behaviours that they think their manager holds about them). There are several studies which have linked negative metacognitions with compulsive disorders. This normally happens, when people feel they were not able to perform an action to the best of their capabilities, where in their opinion perfection was not obtained (Coles, Frost, Heimberg & Rhéaume 2003). Pitman (1987), developed the cybernetic model approach, which shows that when there is a lack of accuracy between the perceptions and the expected signals, the consequence are obsessive-compulsive actions (Coles et. al. 2003). The obsession comes along with the constant negative cognitions (Bartz & Hollander 2006), which are visible through the

repetitive acts (compulsions), when trying to reduce anxiety which is caused by the mismatching of the signals previously mentioned (Coles et. al. 2003). It is important to note that according to the Diagnostic and Statistical Manual of Mental Disorders (DSM), obsessive compulsive disorders are actually considered an anxiety disorder (Bartz & Hollander 2006). In line with Pitman (1987), the compulsive behaviours will continue as long as the individual believes that there is a mismatch between the meta-perceptions and the expectations.

H2: Meta-perceptions about production deviance are positively associated with addiction to technology.

Like gambling, technological or internet addictions are considered behavioural addictions (Chou, Cordon & Belland 2005), and both have similar consequences in the day-to-day life of the individuals (Duke & Montag 2017). An addiction to technology can be described as a compulsive behaviour an individual has, and is unable to control, which can eventually cause some type of harm to the person itself or others (Hawi & Samaha 2017).

Several studies show that people can develop a “checking habit” (Duke & Montag 2017), which consists of constantly checking their phone, even when the phone does not ring. It is considered an “automatic and unconscious” (Duke & Montag 2017, pg.93) behaviour, making it an addiction symptom. According to a study performed by Markwetz (2015) mentioned in Duke and Montag (2017), individuals check their phone every 18 minutes. Another study conducted by Oulasvirta, Rettenbury, Ma and Raita (2012, cited in Lee, Chang, Lin & Cheng 2014) show that people would check their phone thirty-four times a day, without having a specific purpose. However, in 2017 (Deloitte 2017) this number increased to 47 times, while the age groups between 18 and 24 had an average of 86 times.

These can be considered interruptions, which breaks the work flow of employees, for example, and consequently affecting negatively productivity.

Tarafdar, Tu, Ragu-Nathan and Ragu-Nathan (2007) and Block (2008), affirm that some of the factors which may cause stress when using technology compulsively is losing the perception of time, which inhibits the perception of work productivity and performance (Mark, Iqbal, Czerwinski & Johns 2015). In fact, in a study performed by Brenner (1997), 74% of the participants admitted that since starting using the internet their performance was negatively affected.

Chou et. al. (2005), states that other consequences of poor time management, are “disrupted sleep patterns and fatigue” (pg.369). In Europe between 11% and 30% of workers suffer from work-related fatigue (Akerstedt, Fredlund, Gillberg & Jansson 2002, cited in Questret & Cropley 2012). Sleep disturbances can be related to cardiovascular diseases, such as cholesterol (Mattiasson, Lindgarden, Nilsson & Theorell 1990, cited in Scgabracq, Winnubst & Cooper 2003). Shirom (2003, cited in Scgabracq et. al. 2003), showed that studies have also identified an increased risk of having anxiety and depression, when having difficulty with sleep. Mental health problems can also be associated with the continuous use of technological devices (Lanaj, Johnson & Barnes 2014).

H3: The addiction to technology is negatively related to work performance and health.

H4: Addiction to technology mediates the relationship between meta-perceptions about deviant behaviour and work performance.

Method

Sample and Procedure

The sampling method used in this research was the snowball sampling method. This consisted of the author using their personal contacts in order to acquire the first set of participants, and then would ask these participants to distribute the questionnaire among other contacts (Emerson 2015). More specifically it can be said that a “non-discriminatory snowball sampling” (Etikan, Alkassim & Abubakar 2015) was used, as every participant could pass on the first questionnaire. Data was collected from the beginning of June until the beginning of September 2020, which matched the post forced-lockdown period in Portugal. Important to note is that all respondents worked from home during the lockdown period. Data was collected in three moments separated by a week each. In order to complete the subsequent surveys as well as to allow for the organisation of questionnaires per participant across time, participants were asked to include their email. A cover letter was incorporated in the questionnaire with the main goals of the research, and participants gave their informed consent. Anonymity and confidentiality were ensured, and participants were informed that later they would receive a report with the main results of the study. In the first moment of data collection, 164 individuals answered the survey (Time 1), of which 138 also answered in the second moment (Time 2), and 118 in Time 3. Dropout analyses revealed no significant differences at T1 among any of the study variables between those who dropped out and those who did not.

The final sample included 118 employees. Out of these 118, 8.4% had been employed in that company for less than one year, less than a quarter (21.2%) from 1 to 3 years, 15.3% from 3 to 5 years, again less than a quarter 21.2% from 5 to 10 years, and around a third of the participants (33.9%) had been employed in that company for more than 10 years.

In terms of demographics, 64 were female (54.2%) and the average age was 39.6 years (S.D. = 11.05).

Measures

Meta-perceptions of production deviance was measured with 4 items developed by Robinson and Bennett (1995). Items were adapted to measure meta-perceptions about managers' evaluation of production deviance. Participants were asked: "Now think about your manager and his/her expectations about your performance taking into account the way performance has been impacted by the current pandemic crisis. Indicate whether you agree or disagree with the following phrases: "My manager thinks that, in the past months, I took additional or longer breaks than is acceptable at our workplace" and "My manager thinks that, in the past months, I intentionally worked slower than I could have worked" (sample items). Participants responded in a five-point Likert scale, ranging from 1 (completely disagree) to 5 (completely agree). Responses yielded acceptable internal consistency at T1 (Cronbach's alpha = .83).

Addiction to technology included 9 items developed by Turel, Serenko and Bontis (2011). Sample items are: "Using mobile email has sometimes interfered with other activities" and "I often fail to get enough rest because I interact with my mobile email". Participants responded in a five-point Likert scale, ranging from 1 (completely disagree) to 7 (completely agree). Responses yielded good internal consistency at T2 (Cronbach's alpha = .91).

Performance was evaluated with 5 items from the Williams and Anderson (1991) scale. Responses were scored on a 5-point scale ranging from 1 (completely disagree) to 5 (completely agree). Sample item is "In the past months, I have adequately performed my

assigned duties”. Responses yielded good internal consistency at T3 (Cronbach’s alpha = .83).

Health was measured with six items adapted from Nomura, Nakao, Sato, Ishikawa, and Yano (2007). Participants were asked to think over the last 6 months, how often they felt psychosomatic symptoms such as “Headaches” and “Fatigue/lack of energy” (sample items). Responses were scored in a 5-point likert scale ranging from 1 (never) to 5 (always). Responses yielded good internal consistency at T3 (Cronbach’s alpha = .82).

Control Variables. In this study we used age, gender, and tenure in the company to control for potential confounding effects. Gender, age, and tenure have been found to be correlated with individuals’ capacity to adapt to stress and develop strategies to deal with it (Lazarus & Folkman, 1984). Accordingly, gender was coded with 0 coded for female and 1 for male, age was recorded in years, and tenure was coded as an ordinal variable where 1 means “less than 1 year”, 2 “between 1 and 3 years”, 3 “between 3 and 5 years”, 4 “between 5 and 10 years”, and 5 “more than 10 years”.

Statistical Analysis

To test our hypotheses, we conducted bootstrapping analysis with 10,000 bootstrap samples using the PROCESS macro developed by Preacher, Rucker and Hayes (2007).

In this study, we used Model 4 and included control variables.

Results

Table 1 presents the means, standard deviations and the intercorrelations of the researched variables.

Table 1. Descriptive Statistics

	Mean	S.D.	1.	2.	3.	4.	5.	6.	7.
1. Gender (a)									
2. Age (b)			.28***						
3. Tenure (c)			.07	.57***					
4. Nationality			.02	-.19*	-.01				
5. MetPerfDeviance T1	2.07	.78	-.14	-.08	.03	.20*			
6. Addiction Techn T2	3.55	1.20	-.09	-.28***	-.09	.29***	.33***		
7. Performance T3	4.36	.54	.00	.09	.01	-.28**	-.39***	-.40***	
8. Health T3	2.39	.65	-.30***	-.21**	-.18	0.10	.11	.49***	-.13

Note . MetPerfDeviance= Meta-perception of production deviance

(a) Gender was coded with 0 for female and 1 for male; (b) age in years; (c) tenure was coded as an ordinal variable where 1 means “less than 1 year”, 2 “between 1 to 3 years”, 3 “between 3 to 5 years”, 5 “Between 5 to 10 years”, and 5 “more than 10 years”.

*** $p < .001$;

** $p < .01$;

* $p < .05$

Test Mediation

Hypotheses proposed that meta-perceptions of production deviance in T1 were associated with worse performance in T3 (H1) and more addiction to technology in T2 (H2). Table 2 shows that meta-perceptions of production deviance in T1 were negatively associated to performance in T3 ($B = -.22$, $t = -3.37$, $p < .01$), thereby supporting H1. In addition, we found that meta-perceptions of production deviance in T1 were positively associated with addiction to technology in T2 ($B = .39$, $t = 2.72$, $p < .01$), supporting H2.

Furthermore, addiction to technology in T2 showed significant direct paths to performance in T3 ($B = -.13$, $t = -3.07$, $p < .01$) and Health in T3 ($B = .28$, $t = 5.96$, $p < .001$), supporting H3. Finally, mediation analysis indicated a significant indirect effect of meta-perceptions of production deviance in T1 on performance in T3 through addiction to technology (Table 2: indirect effect = $-.05$; 95% CI from $-.10$ to $-.01$), supporting H4.

Table 2. Regression results for mediation (Conditional Indirect Effects)

DV:	Addiction to Technology T2: R2 = .25				Performance T3: R2 = .27 p<.001				Health T3: R2 = .34 p<.001																																						
	B	SE	t	p	B	SE	t	p	B	SE	t	p																																			
Constant	3.70	.51	7.27	<.001	5.45	.27	19.88	<.001	1.68	.31	5.38	<.001																																			
Meta-perceptions of performance deviance T1	.39	.14	2.72	<.01	-.22	.07	-3.37	<.01	-.06	.08	-.81	.42																																			
Addiction to Technology T2					-.13	.04	-3.07	<.01	.28	.05	5.96	<.001																																			
	Partial effects of control variables				Partial effects of control variables				Partial effects of control variables																																						
Gender	.09	.21	.43	.67	-.09	.09	-.93	.36	-.37	.11	-3.45	<.01																																			
Age	-.04	.01	-3.21	<.05	-.01	.01	-.67	.51	.01	.01	1.34	.18																																			
Tenure	.11	.09	1.14	.26	.02	.04	.51	.61	-.09	.05	-1.96	<.05																																			
Nationality	.11	.04	2.66	<.01	-.03	.02	-1.59	.12	-.02	.02	-.83	.41																																			
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Effects (1)</th> <th>SE</th> <th>t</th> <th>p</th> <th>LLCI</th> <th>ULCI</th> </tr> </thead> <tbody> <tr> <td>Direct Effect of Meta-perceptions of deviance T1 on Performance T3</td> <td>-.22</td> <td>.07</td> <td>-3.37</td> <td><.01</td> <td>-.35</td> <td>-.09</td> </tr> <tr> <td></td> <td colspan="4">Performance T3</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Effects (1)</td> <td>Boot SE</td> <td>Boot LLCI</td> <td>BootULCI</td> <td></td> <td></td> </tr> <tr> <td>Indirect Effect through addiction to Technology T2</td> <td>-.05</td> <td>.02</td> <td>-.10</td> <td>-.01</td> <td></td> <td></td> </tr> </tbody> </table>													Effects (1)	SE	t	p	LLCI	ULCI	Direct Effect of Meta-perceptions of deviance T1 on Performance T3	-.22	.07	-3.37	<.01	-.35	-.09		Performance T3							Effects (1)	Boot SE	Boot LLCI	BootULCI			Indirect Effect through addiction to Technology T2	-.05	.02	-.10	-.01		
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Note. N=118. (1)- Unstandardized Effect. Bootstrap sample size = 10.000. LL = Lower limit; CI = confidence interval; UL = upper limit.

Discussion

This research was developed with the objective of studying how meta-perceptions influence workers productivity while working from home. The timing of the data collection was especially relevant, during the Covid-19 pandemic, since it changed the way people work and increased technology-assisted and remote work. During this time people faced more challenges in validating their meta-perceptions, in order to act accordingly.

We were able to demonstrate the Golem effect, showing that in fact meta-perceptions of deviant behaviours are associated with worse performance results at Time 3. When individuals believe that their superiors think they are not working as per the expected, intentionally slowing down work or taking excessive breaks, it will negatively affect their performance (Eden 1990). Moreover, results showed that meta-perceptions of deviance were associated with more addiction to technology. This seems to cause employees to have a constant concern to show their managers they are continuously working (Irby 2020) by being always connected, which in the end becomes counterproductive. Since employees feel that there is a gap between what they want others to perceive and what they think the others are actually thinking (Barsness, Diekmann & Seidel 2005), there is an increase in motivation to work on their self-presentation, in order to change this. Consequently, this leads employees to engage in potential compulsive behaviours. Indeed, the meta-perceptions beliefs may be triggering employees' ruminative thoughts about the subject. Rumination is characterised by continuous thinking about a certain matter, which in psychology is one of the symptoms of anxiety or depression (Cropley & Purvis 2003 cited in Geisler, Buratti & Allwood 2019).

It was also verified that there is a relationship between addiction to technology and worse performance as well as psychosomatic symptoms (worse health). As previously shown by Duke and Montag (2017) an addiction will affect the daily life and routines of people. Compulsive behaviours, such as constantly checking their phone or computer for messages or the incoming emails, even when it does not ring is becoming more regular, independently of age range (Deloitte 2017). These actions, will break the flow of work and the concentration of the workers, consequently affecting their productivity throughout the day. Losing track of time is a common symptom of addiction to technology (Tarafdar et. al. 2007 and Block 2008), compromising their time management, which could lead to sleep disturbances. An individuals' recovery process is extremely important in order to keep people concentrated during work-hours as well as alleviating the effects of stress on health (Berset, Elfering, Lüthy, Lüthi & Semmer 2011). This process should start, right after the worker "leaves the job", by distracting themselves, performing non-work-related activities. Furthermore, Berset et. al. (2011), acknowledges that a good sleep is "central for recovering successfully" (pg.72). Our results further confirmed an indirect effect of meta-perceptions of performance deviance on performance through addiction to technology. This indicates that addiction to technology is in part the mechanism explaining why meta-perceptions of deviant behaviours are associated with worse work performance.

Limitations and Future studies

Nevertheless, there are several limitations to the study, which should be taken into consideration when interpreting the results, as well as taking it as learning opportunities for future studies.

Firstly, this research was conducted in a very specific time period, where pandemic restrictions were in place; compulsory for people to work from home whenever possible,

and all physical contact with other individuals were reduced. This also highlights that there are other factors which could have influence the meta-perceptions of people and exacerbate the addiction to technology showed in the study. It would be important to conduct this study at a period when lockdown restrictions are not implemented in the different countries in order to understand whether the results repeat.

Moreover, from the information acquired in the questionnaires, we were not able to determine whether people lived alone or not. In addition, whether they were able to adapt their home environment to a work one. All of these factors could also influence the productivity of people along with the possibility of increased stress levels.

Due to the commonality of remote working that seems to be trending at the moment, it would be interesting to understand how people can actually develop their meta-perceptions in the absence of the physical interactions with others.

The meta-accuracy of meta-perceptions, is also something which is not explored in this particular study. Understanding to what extent employees' meta-perceptions are in line with what their managers truly believe would give the organisation important information on how to tackle either managers' assumptions about employees' deviant behaviours (assuming meta-perceptions are accurate) or, in the case of inaccurate meta-perceptions, how to improve communication with workers and further capacitate workers to deal with the anxiety and ambiguity cause by the inability to validate their meta-perceptions. The relationship that subordinates have with their managers is relevant, as according to Barsness et. al (2005) it impacts to what extent people use self-presentation.

Finally, it was tested that due to meta-perceptions of deviant behaviours, employees would become addicted to technology. We inferred self-presentation and rumination mechanisms to explain this relationship. These mechanisms should be tested in future

studies. Addiction to technology, as in this study can be identified through a questionnaire. Once identifying individuals who are addicted to technology, a semi-structured interview could be conducted in order to study these relationships. As well as gathering further information in terms of other meta-perceptions people may have, what are the events which may determine these meta-perceptions to be constructed.

Implications to practice

Flexible working conditions has been part of the incentive package of several organisations, before the pandemic. Now some organisations are thinking about making it a permanent situation for their operations, one example being Shopify (Kelly 2020). If organisations actually change to a permanent remote working situation, or a hybrid solution that combines remote and present work, it is necessary to guarantee a good relationship and communication in order to not compromise the employee performance and health. Inspired by a study of Baranik, Wang, Gong and Shi (2017), managers should be trained and incentivised to promote the sharing of experiences and feelings with work colleagues as a way to mitigate ruminative thoughts can be disruptive.

Acknowledging the importance of good communication between all the members of the organisation is also something that organisations should look into, especially if remote working continues to be a reality for them. As seen throughout the study, people will use both the verbal and non-verbal cues in order to create opinions of what others think about them, and consequently adapt their behaviours. When giving feedback, it is indispensable to be clear, honest and direct. Deciding what model to use when giving feedback depends on the situation, nonetheless it should always be reciprocal (Hardavella, Aamli-Gaagnat, Saad, Rousalova & Sreter 2017). In addition, showing subordinates what is expected of them, by having specific job roles and tasks, especially in times of change and uncertainty, can help decrease anxiety levels among workers, consequently increasing productivity

levels and health. Furthermore, demonstrating to managers the importance of trust in relationships and potential methods in dealing with distance relationships. The absence of direct control should help minimize potential fear of “not controlling” employees’ daily routines.

Meta-perceptions are not usually a subject for discussion in organisation. However, with the change in dynamics, which companies claim to introduce after this pandemic crisis, it is definitely important to educate organisations and managers about the impact of meta-perceptions in people as well as the Pygmalion and Golem effects. Understanding how adaptive emotion-regulation strategies could be used instead of rumination and control strategies would benefit both employees and managers to deal with meta-perceptions of deviant behaviours

Being “ahead of the game” is the objective of most companies in terms of innovation and technology developments in order to become effective and differentiate themselves to the customers eyes. However, it is important to understand the impact these developments have in the employees and their relationships at work. There is in fact a certain stigma that when a new technological development is introduced in order to “help” someone to do their job, they are required to work faster, become more productive as well as that they can now handle more tasks and responsibilities. However, without a trustful relationship, a structured training program and an adaptation phase people can feel more stressed, overwhelmed and anxious with the work (Tarafdar et. al. 2007).

Conclusion

Meta-perceptions of deviant behaviours come into play when people are not able to validate their beliefs about what others think about them. In an organisational context, this can affect negatively their performance. In order to diminish the gap between what

they think their managers think and what they want them to think, people tend to work excessively on their self-presentation. Since, at this point in time people remote working is privileged, certain compulsive behaviours shown are constantly checking their phone for new work notifications. This way presenting signs of addiction to technology, which once again affect their productivity. As well as increasing symptoms of worse health, such as headaches, backaches and sleeping problems.

This research demonstrates the importance for organisations to understand the effects of meta-perceptions of deviant behaviours and addiction to technology may have in their workforce and the quality of the work developed. Being able to mitigate these, especially now that working remotely seems to be more and more used is crucial.

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