5-15-2019

A FIELD EXPERIMENT FOR UNDERSTANDING THE UNINTENDED IMPACT OF INTERNET MONITORING ON EMPLOYEES: POLICY SATISFACTION, ORGANIZATIONAL CITIZENSHIP BEHAVIOUR AND WORK MOTIVATION

Hemin Jiang
University of Science and Technology of China, hmjiang@ustc.edu.cn

Mikko Siponen
University of Jyväskylä, mikko.t.siponen@jyu.fi

Aggeliki Tsohou
Ionian University, atsohou@ionio.gr

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Jiang, Hemin[1], University of Science and Technology of China, International-
al Institute of Finance, School of Management, Hefei, China, hmjiang@ustc.edu.cn

Siponen, Mikko, University of Jyvaskyla, Faculty of Information Technology, Jyvaskyla, Finland, mikko.t.siponen@jyu.fi

Tsohou, Aggeliki, Ionian University, Corfu, Greece, atsohou@ionio.gr

Abstract

Internet monitoring is widely deployed in organizations as an attempt to regulate employees' cyberloafing behaviour, which is defined as employees' usage of Internet for non-work-related purposes during work. Although previous studies have examined the effectiveness of Internet monitoring in regulating employees' cyberloafing, the impact of Internet monitoring on employees' perceptions or behaviours other than cyberloafing has not been investigated. As the first step to address this research gap, we conduct a field experiment to study the impact of Internet monitoring on employees' policy satisfaction, organizational citizenship behaviour (OCB) and work motivation. We found that Internet monitoring decreased employees' policy satisfaction and OCB. We also found that Internet monitoring decreased employees' intrinsic work motivation, although it slightly increased employees' extrinsic work motivation. Our study contributes to the literature by examining the unintended impact of Internet monitoring on employees. It also has implications for organizations to make appropriate decisions regarding whether to implement Internet monitoring.

Keywords: Internet Monitoring, Cyberloafing, OCB, Work Motivation, Field Experiment.

1   Introduction

Organizational operations are increasingly reliant on information technology (IT) devices that are connected to the Internet, such as computers, tablets, and smartphones. These IT devices have greatly facilitated employees' performance of job tasks. At the same time, employees increasingly use these IT devices for non-work-related purposes, such as surfing news websites, visiting social networking sites, online shopping, gaming, chatting, etc. Previous studies use the term cyberloafing to describe employees' usage of IT devices for non-work-related purposes during working time (Lim 2002; Liberman et al. 2011).

Cyberloafing is now very common in many organizations. It is estimated that employees spend 1-2 hours per work day on cyberloafing (Rajah and Lim 2011), and with the wide usage of personal smartphones, cyberloafing is becoming even more prevalent in the workplace. Although cyberloafing may have potential positive impacts on employees and organizations, such as offering employees an opportunity to take mental breaks which may be beneficial to their job performance (Belanger and Slyke 2002; Oravec 2002; Kuem and Siponen 2014; Jiang and Tsohou 2014), many studies suggest that cyberloafing may reduce employees' effective working time and therefore their job performance (Blanchard and Henle 2008; Askew et al. 2014). In addition, some cyberloafing activities, such as downloading pirated software applications or looking at adult videos, may contribute to information security risks or legal disputes (Cheng et al. 2014). Consequently, different organizational policies to regulate employees' cyberloafing have been discussed in previous studies, including website blocking (e.g., Glass et al. 2015), Internet monitoring (e.g., Henle et al. 2009), and informal and formal sanctions (e.g., Wong et al. 2005; Bock et al. 2010). Among the regulating policies that previous studies have discussed, Internet monitoring is one of the policies widely deployed in organizations. For example, it was found that 63% of employers monitor employees' Internet connections in the US (Posey et al. 2011).

Previous studies have discussed the effectiveness of Internet monitoring in regulating employees' cyberloafing behaviour, and preliminarily concluded that Internet monitoring may deter employees' cyberloafing intention or behaviour (e.g., Ugrin and Pearson 2008; Henle et al. 2009), this is particularly the case when Internet monitoring is implemented with sanctions (e.g., Ugrin and Pearson 2013). Despite their merits, these studies only examined how Internet monitoring affects employees' cyberloafing behaviour; the impacts of Internet monitoring on employees' perceptions and behaviours other than cyberloafing have not yet been discussed (Jiang 2016).

This is a significant research gap, because employees' compliance with the Internet monitoring policy does not mean that they are satisfied with the policy (Workman 2009). If employees are not satisfied with the Internet monitoring policy, they may engage in various behaviours, which are not in line with organizational interests, as a reactance to the policy (Lawrence and Robinson 2007). For example, one of the behaviours that is related to such reactance is organizational citizenship behaviour (OCB), defined as employees' voluntary behaviours beyond their formal responsibility but are beneficial for organizations (Zhao et al. 2007). If employees are not satisfied with the Internet monitoring policy, they may decrease their OCB as a manifestation of the reactance to the policy. Further, previous studies also suggested that employees' work motivation may be affected by organizational efforts to control employees' behaviours at work (e.g., Alder and Tompkins 1997; Falk and Kosfeld 2006), and it is not known whether this is the case in the context of Internet monitoring.

In other words, even though Internet monitoring is effective to reduce employees' cyberloafing behaviour, it does not necessarily lead to positive effects on the organization, because it may negatively affect employees' OCB and work motivation, which are important for employee and organizational performance. If this is true, employers may need to think twice before implementing an Internet monitoring policy in order to regulate employees' cyberloafing behaviour. Therefore, it is imperative to investigate the impact of Internet monitoring on employees' perceptions or behaviours other than cyberloafing.

For these reasons, the objective of this study is to investigate whether Internet monitoring, which is implemented to regulate employees' cyberloafing, will affect employees' perceptions and behaviours

other than their cyberloafing behaviour. Specifically, the research question of this study is: *what is the impact of Internet monitoring on employees' satisfaction with the Internet usage policy (hereafter policy satisfaction), organizational citizenship behaviour (OCB) and work motivation*? As mentioned above, we focus on employees' policy satisfaction and OCB because if employees are dissatisfied with a policy, they may express the dissatisfaction by engaging in behaviours that are not in line with organizational interests; decreasing OCB could be an option for employees to express the dissatisfaction (Workman 2009; Zhao et al. 2007). We focus on employees' work motivation because it is an important determinant of employee job performance.

Our study has both theoretical and practical implications. In terms of theoretical implications, this study is the first one to examine how Internet monitoring affects employees' policy satisfaction, OCB and work motivation. Based on psychological reactance theory and self-determination theory, we proposed a theoretical relationship between Internet monitoring and employees' policy satisfaction, OCB and work motivation, we tested the proposed relationships through a field experiment. In terms of practical implications, our study may help organizations better understand the consequences of Internet monitoring, and thus help employers make appropriate decisions regarding whether to implement Internet monitoring in their organizations.

The rest of the paper is organized as follows. In the next section, we review previous studies on Internet monitoring and point out research gaps in the existing literature. We then propose our research hypotheses as an attempt to address the research gaps. This is followed by our research methodology and results. We conclude our paper by discussing the implications and limitations of our study as well as the future research directions.

2 Literature Review

Two types of monitoring have been discussed in the literature: performance monitoring and monitoring of employees' activities that are not directly related to job performance (such as the monitoring of employees' cyberloafing behaviour). The majority of existing literature about monitoring focuses on the first type, that is, performance monitoring; there are relatively few studies on the second type, examining the monitoring of employees' non-work-related activities, such as Internet monitoring of employees' cyberloafing behaviour. In our paper, the difference between performance monitoring and Internet monitoring is threefold. First, the focus of performance monitoring is on employees' work-related behaviours, whereas the focus of Internet monitoring is employees' non-work-related Internet usage. Second, the objective of performance monitoring is to increase employees' work-related behaviours, whereas the objective of Internet monitoring is to curb or prohibit employees' non-work-related (Internet usage) behaviours. Third, performance monitoring can be conducted either through electronic means such as using computers or software, it can also be conducted through traditional means such as formal or informal meetings or supervisor observations, whereas Internet monitoring cannot be conducted without Internet. In this section, we first review existing studies on Internet monitoring. We then briefly review the literature about performance monitoring in order to gain more insights regarding the impact of Internet monitoring on employees.

2.1 Previous Studies on Internet Monitoring

There are only a handful of studies that examined the impact of Internet monitoring on employees. For example, based on self-reported survey data of 116 employees from multiple companies, Henle et al. (2009) found that employees' cyberloafing behavioural frequency was negatively related to the periodic monitoring included in the organizational Internet use policy. However, Henle et al. (2009) did not provide a theoretical explanation for the negative association between cyberloafing frequency and periodic monitoring. Similarly, based on a survey of 87 participants, Ugrin and Pearson (2008) found that employees' awareness of monitoring system enforcement significantly deterred their intentions to engage in cyberloafing. The rationale behind this relationship is that, according to Ugrin and Pearson (2008), Internet monitoring may increase employees' perception of sanctions, which negatively affects employees' cyberloafing intention.

Further, by taking into account the different types of cyberloafing activities, Ugrin and Pearson (2013) found that monitoring was effective in reducing "serious" cyberloafing activities, such as viewing pornography and shopping online, but not effective in reducing "minor" cyberloafing activities, such as personal e-mailing or social networking. According to Ugrin and Pearson (2013), this is because some "minor" cyberloafing activities may be perceived by employees as both work-related and non-work-related. Strictly prohibiting these "minor" cyberloafing activities may not be in line with employees' personal ethical values, resulting in lower compliance with the Internet monitoring policy (Ugrin and Pearson 2013).

In short, previous studies suggest that Internet monitoring could be effective to regulate employees' cyberloafing behaviour, and this is particularly the case when Internet monitoring is implemented combined with sanctions. However, in spite of the important implications of the previous studies, they only investigated how Internet monitoring affected employees' cyberloafing behaviour (or intention). The impact of Internet monitoring on employees' perceptions and behaviours other than cyberloafing was rarely investigated by previous studies. One exception is Alder et al. (2006), which examined the impact of Internet monitoring on employees' job satisfaction, organizational commitment and turnover intention. However, the impact of Internet monitoring on employees' OCB and work motivation have not been studied.

2.2 Previous Studies on Performance Monitoring

Existing literature suggests that organizational controlling policies, including monitoring, may affect employees' work motivation and job satisfaction or satisfaction with policies. For instance, Chalykoff and Kochan (1989) found that computer-aided performance monitoring plays a significant role in explaining employees' job satisfaction and turnover intention in automated offices. Similarly, Alder and Ambrose (2005) found that performance monitoring may affect employees' satisfaction; this is particularly the case when performance feedback derived from performance monitoring is not constructive. Further, Kidwell and Bennett (1994a) argued that, when monitoring employees' performance, employees' attitudinal and behavioural reaction to the monitoring will be positive if the monitoring is considered fair. Kidwell and Bennett (1994b) found that procedural fairness explained a significant amount of variance in employees' satisfaction with the monitoring policy. That is, the impact of performance monitoring systems on employees' satisfaction is mediated by perceived procedural fairness of the monitoring.

Subsequent studies further explored the factors that influence employees perceived procedural fairness of the performance monitoring they are subject to. In this realm, McNall and Roch (2007) found that employees' perceived information privacy concerns could be a negative antecedent of their perception of procedural justice, if employees consider that some of the information collected by the monitoring is not directly related to work performance. Similarly, Samaranayake and Gamage (2012) found that employees' perceived privacy invasion caused by monitoring was significantly and negatively associated with employees' job satisfaction.

The role of privacy concerns may be particularly salient when the monitoring targets employees' behaviours that are not totally or directly related to their performance (such as monitoring employees' Internet usage or cyberloafing behaviour), as opposed to targeting employees' performance. This is because, in the context of performance monitoring, there are many other factors, in addition to information privacy concerns, that affect employees' perceived fairness and satisfaction with the monitoring, such as consistency and accuracy of monitoring information (Zweig and Scott 2007) or employees' involvement in monitoring design and implementation (Alder and Tompkins 1997). However, when monitoring employees' activities that are not directly related to job performance, information privacy concerns may become the primary determining factor for employees' perceived fairness and satisfaction with the monitoring.

To summarize, previous studies have investigated the impact of Internet monitoring on employees' cyberloafing behaviour, but it is largely unknown whether Internet monitoring has other impacts on employees' behaviour other than cyberloafing. Although previous studies on performance monitoring

have suggested that organizational performance monitoring may result in some unexpected consequences such as employee's dissatisfaction and other associated perceptions or behaviours, it is not known whether non-work-related monitoring, such as Internet monitoring, also has a similar impact. Accordingly, the objective of this study is to examine the impact of Internet monitoring on employees' policy satisfaction, OCB and work motivation. We develop our research model and hypothesis in the next section.

3 Theoretical Basis and Research Hypotheses

We investigate how Internet monitoring affects employees' policy satisfaction, OCB and work motivation by specifying (1) how employees may perceive and interpret Internet monitoring, and (2) how employees' perception and interpretation of Internet monitoring may affect their policy satisfaction, OCB and work motivation. We employ psychological reactance theory and self-determination theory to guide our model and hypothesis development.

3.1 The Impact of Internet Monitoring on Employees' Policy Satisfaction

Psychological reactance theory suggests that organizational policies aiming at controlling employees' behaviours may elicit employees' reactance. Reactance refers to employees' unpleasant motivational arousal that emerges when employees' experience a threat to or loss of their free behaviour (Seindl et al. 2015). Specifically, Lawrence and Robinson (2007) proposed that, organizational controlling policies, which are instances of organizational power, may create at least three forms of perceived disparity of employees, which may further induce employees' frustration and dissatisfaction.

First, enactments of control may thwart basic needs of employees such as the need for autonomy (Lawrence and Robinson 2007). Individuals' perceptions of constrained freedom to make decisions and choose actions can decrease their satisfaction (Wicklund 1974). In the context of our study, Internet monitoring may be perceived by employees as a threat or constraint to their Internet use autonomy or even work autonomy.

Second, enactments of control may threaten one's identity in the organization as an independent and equal individual. In the context of our study, Internet monitoring may be perceived by employees as not being trusted by employers (Mayer et al. 1995; Tabak and Smith 2005), which could be a threat to their personal identity that they are trustworthy. Internet monitoring may also dampen employees' trust in the organizations, which is a threat to employees' social identity that they are working for a company that is trustworthy. As Rousseau et al. (1998) proposed, control comes into play only when adequate trust is not present, and institutional controls can undermine trust.

Third, enactment of control may also create employees' perceptions of injustice, this is particularly the case when the controlling policy was designed without participation of employees. In the context of our study, Internet monitoring may elicit employees' information privacy concerns, which has been found as an antecedents of employees' perceived injustice in the workplace (McNall and Roch 2007)). Further, employees' decreased trust in their organization may also result in their perceived injustice (Bachmann et al. 2015).

In a word, Internet monitoring may result in employees perceived reduced autonomy, perceived lacking trust between employees and employers, and perceived injustice. These forms of discrepancy may ultimately result in employees' dissatisfaction with the situation (Wicklund 1974; Robinson 1996). Accordingly, we propose the following hypothesis:

H1: Internet monitoring decreases employees' satisfaction with the Internet usage policy in the workplace.

3.2 The Impact of Internet Monitoring on Employees' OCB

In the section above, we propose that Internet monitoring may result in employees' decreased policy satisfaction due to the employees' reactance. According to the psychological reactance theory,

employees' reactance may further lead to employees' behaviours as a retaliation to organizational controlling policies (i.e., Internet monitoring in our context). In other words, employees may express the dissatisfaction with Internet monitoring by engaging in behaviours that are not in line with organizational interests, such as increasing various deviant behaviours or decreasing their extra role behaviours that are beneficial to organizations. The actual form of resistant behaviours of employees to a certain policy may depend on constraints and costs of different resistant behaviours (Katz & Kahn 1978).

In our study, we focus on the change of OCB which is a main form of employees' extra role behaviour, rather than the change of employees' deviant behaviours, because decreasing OCB is relatively with less constraints and less risky to employees, compared with increasing deviant behaviours (Jiang 2016). We propose that employees may prefer decreasing their OCB to increasing deviant behaviours, as a reaction to Internet monitoring, because employees are more likely to engage in behaviours with less cost and risk to them (Belot and Schroder 2016).

OCB is an important behaviour for enhancing organizational effectiveness (Organ and Konovsky 1989), since OCB contributes to resource transformations, innovativeness, and the adaptability of organizations. Based on the behaviour target, OCB can be conceptualized as two dimensions (e.g., Smith et al. 1983): an organizational dimension (OCBO) and an interpersonal dimension (OCBI). OCBO benefits the organization in general; examples of OCBO include protecting organizational property or adhering to informal rules devised to maintain order. OCBI benefits specific individuals and indirectly contributes to organizations; examples of OCBI include helping orient new employees or helping others who have been absent.

Reactance theory suggests that employees tend to direct their acts of resistance at the perceived source of the frustration or dissatisfaction (Robinson and Bennett 1997). Since the Internet monitoring is implemented by organizations rather than by employees, employees' reactions to Internet monitoring should be towards organizations more than individuals. In this sense, employees are likely to decrease their OCBO as a result of Internet monitoring.

On the other hand, however, compared with OCBI, OCBO may be more detectable by organizations and therefore, implicitly or explicitly, counted as part of job performance (Dalal 2005). Consequently, as a reaction of Internet monitoring, employees may also reduce their OCBI in case that they feel decreasing OCBO is costly or risky. For example, employees are more likely to be given a warning for not providing advance notice before failing to come to office on time (i.e., an example of OCBO), than for not voluntarily helping orient a new employee (i.e., an example of OCBI). As Belot and Schröder (2016) suggested, when employees have multiple ways to reciprocate, they are likely to choose the cheapest means of reciprocating. Accordingly, we propose the following two competing hypotheses:

H2a: Internet Monitoring is negatively associated with employees' OCBO.

H2b: Internet monitoring is negatively associated with employees' OCBI.

3.3 The Impact of Internet Monitoring on Employees' Work Motivation

If employees are not satisfied with an organizational policy, the dissatisfaction may be manifested in changes in some perceptions and behaviours, one of which would be work motivation. This is because work motivation is a psychological process resulting from the interaction between the individual and the environment (Latham and Pinder 2005). Therefore, when employees' work environment changes as a result of a new organizational policy such as Internet monitoring, employees' work motivation may be affected as well.

Work motivation refers to "a set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behaviour and to determine its form, direction, intensity, and duration" (Pinder 1998, p. 11). According to self-determination theory, motivation can be categorized into different types, with the most basic distinction being between intrinsic and extrinsic motivation (Deci and Ryan 1985). Intrinsic work motivation refers to employees doing work tasks because they are inherently interesting or enjoyable, whereas extrinsic motivation refers to doing

something because it leads to a separable outcome, such as monetary payment or a sense of security (Ryan and Deci 2000).

We propose that Internet monitoring may affect both extrinsic and intrinsic work motivation of employees. In terms of extrinsic motivation, the implementation of Internet monitoring may send a signal to employees that organizations are devoting resources to prohibit employees from engaging in non-work-related activities and ultimately to maintain and improve employees' in-role job performance. Accordingly, employees may interpret this signal as having potential negative consequences in the case that they would disobey the purpose of the policy (D'Arcy et al. 2009). As a result, employees may devote more energy and time to work tasks as opposed to cyberloafing (Ugrin and Pearson 2013).

At the same time, however, since Internet monitoring may violate employees' perceptions of information privacy, employees may perceive their organizations are trying to maintain and improve employee job performance even at the expense of employee rights such as information privacy. These interpretations may strengthen employees' perceptions that the relationship between employees and their organizations is based on "economic exchange," namely that employees do work tasks for the organization in order to gain external outcomes from the organization, as an exchange of their effort, time, and even information privacy. The perceived "economic exchange relationship" may, in turn, strengthen employees' perceptions that they perform job tasks because of external outcomes. In this sense, Internet monitoring may increase employees' extrinsic work motivation.

In addition to extrinsic work motivation, we propose two paths through which Internet monitoring may affect employees' intrinsic work motivation. On the one hand, previous studies found that an increase in extrinsic motivation may undermine intrinsic motivation. For example, Deci (1972) has found that external reward and control may decrease individuals' intrinsic motivation to perform, because the external reinforcement (i.e., reward or control) may change individuals' perceived locus of causality for performing a certain behaviour, and this is particularly the case when the rewards or control are implemented without their participation (Alder and Tompkins 1997). The undermining effects of reward and control on intrinsic motivation or performance have been confirmed by subsequent studies (e.g., Falk and Kosfeld 2006).

On the other hand, the negative affective experience (e.g., policy dissatisfaction) resulting from Internet monitoring may also decrease employees' perceived joyfulness of doing job tasks in the organization, which decreases employees' intrinsic work motivation. Previous studies have suggested that employees' affective experiences are important factors that influence motivation (Seo and Burtunek 2004; Latham and Pinder 2005). Specifically, in the context of Internet monitoring, perceived injustice and dissatisfaction with Internet monitoring due to perceived information privacy concerns, which are negative affective experiences for employees, may decrease employees' perceived joyfulness in completing work tasks and therefore decrease employees' intrinsic work motivation. In line with the discussions above, we propose the following hypotheses:

H3a: Internet monitoring increases employees' extrinsic work motivation.

H3b: Internet monitoring decreases employees' intrinsic work motivation.

4 Methodology and Results

4.1 Experiment Procedure

We conducted a field experiment to test our hypotheses. The experiment was conducted in a software development company in Portugal. There were 75 employees who participated our study, including programmers (n=25), sales agents (n=17), managers (n=4), system administrators (n=5), web analysts (n=9), and administrative staffs (n=15). 57% of the participants are male, and more than 79% of the participants have a bachelor or higher degree.

The participants were divided into two groups based on which floor of the company building that they generally worked on, in order to minimize communication between participants of the two groups. We

randomly chose one group as the control group and the other as the treatment group. Prior to the experiment, each of the participants was assigned a randomly generated code by the secretary of the company to represent employee identity. The corresponding relationship between the code and the employee's identity was only known by the secretary, who was not among the experimental participants.

The field experiment was conducted in three steps. The first step (pre-test) occurred one month before the implementation of Internet monitoring, in which we surveyed all participants of both groups. Six constructs were included in the survey instrument: Internet usage policy awareness (PA), policy satisfaction (PS), organizational citizenship behaviour (OCB, including OCBO and OCBI), extrinsic work motivation (EWM), and intrinsic work motivation (IWM). In the second step, the company announced the Internet monitoring policy to the participants of the experiment group but not to the participants of the control group. The content of the Internet monitoring policy, which was sent by the CEO of the company via email to all participants of the experiment group, was as follows:

"Recent reports in business magazines and academic research suggest that non-work-related computing activities are at times seen in organizations, such as checking friend updates on Facebook, reading news on Yahoo!, watching videos on YouTube, buying things on Amazon, and so on. To make sure our employees use the Internet in an effective way, <u>the management team has decided to start using the monitoring and tracking functions of the proxy server in our company, to record all the websites visited daily by our employees from now on.</u>"

The third step (post-test) occurred one month after the Internet monitoring announcement, and consisted of again surveying all participants using the same survey instrument, including the six constructs mentioned above, namely PA, OCBO, OCBI, PS, EWM, and IWM. The survey questionnaire which was used in the first and third steps also gathered participants' demographic information, although no identifying information was collected, so that participants' anonymity was guaranteed.

4.2   Validity and Reliability of Constructs

The six constructs included in our survey were measured by multi-item scales drawn from previously validated measures and were adapted specifically to the context of cyberloafing and Internet monitoring. Specifically, the measurement of PA was adapted from D'Arcy et al. (2009); the measurement of PS was adapted from Bhattacherjee (2001); the measurement of OCBO and OCBI was adapted from Williams and Anderson (1991); the measurement of EWM and IWM was adapted from Tremblay et al. (2009). All items were assessed via a 7-point Likert scale, from "strongly disagree" to "strongly agree." The entire survey questionnaire was translated from English to Portuguese via a professional translation agent (i.e., translation) and then translated back from Portuguese to English by a bilingual individual (i.e., back translation) to ensure equivalency of meaning.

Convergent and discriminant validities of the constructs were assessed with Amos confirmatory factor analysis (CFA). We conducted CFA separately using data collected in the pre-test and data collected in the post-test. The CFA results suggested that the standardized loadings of all measurement items to the corresponding constructs are above 0.7. The values of χ^2 were 95.94 in pre-test and 95.937 in post-test; the values of degree of freedom (df) were 80 in pre-test and 79 in post-test. Therefore, the value of χ^2/df was less than 2 in both pre-test and post-test. The correlations between the constructs are less than 0.468 (pre-test) and 0.678 (post-test). Model fit indices suggested the constructs fit the measurement items well, with CFI of 0.967 (pre-test) and 0.979 (post-test), TLI of 0.969 (pre-test) and 0.972 (post-test), and RMSEA of 0.053 (pre-test) and 0.052 (post-test). The CFA indices above indicate that the convergent and discriminant validities of the constructs are reasonable.

We also assessed the constructs' reliability using Cronbach's α as calculated by SPSS, with results presented in Table 1 below. Table 1 shows that the values of Cronbach's α of all constructs in both pre-test and post-test are greater than 0.7, indicating that the reliability of the constructs is reasonable

(Moody et al. 2018). Descriptive statistics of the six constructs involved in our study are shown in Table 2 below. The results will be further discussed in the later sections.

Table 1 Construct Reliability

Constructs	Cronbach's α	
	Pre-test	Post-test
PA	0.879	0.918
PS	0.913	0.917
OCBO	0.702	0.715
OCBI	0.868	0.792
EWM	0.833	0.743
IWM	0.839	0.747

Table 2 Descriptive Statistics of the Constructs

	All Participants		Control Group		Treatment Group	
	Mean	*SD*	Mean	*SD*	Mean	*SD*
PA-pre	3.33	1.29	3.42	1.38	3.24	1.21
PA-post	3.31	1.32	3.04	1.36	3.67	1.19
PS-pre	4.83	1.12	4.95	1.05	4.73	1.17
PS-post	4.79	1.14	5.19	.96	4.40	1.18
OCBO-pre	6.11	.64	6.11	.73	6.11	.58
OCBO-post	5.91	.69	6.19	.68	5.72	.64
OCBI-pre	5.95	.62	5.96	.50	5.99	.41
OCBI-post	5.65	.69	5.74	.50	5.50	1.00
EWM-pre	4.79	1.46	4.76	1.53	4.82	1.42
EWM-post	5.74	0.96	4.59	1.09	5.04	1.22
IWM-pre	5.86	0.93	5.66	1.02	6.07	0.80
IWM-post	5.74	0.96	5.96	0.65	5.37	1.06

4.3 Pre-Similarity Test and Manipulation

Before testing our hypotheses, we checked the similarity between the control group and the treatment group in order to make sure that there was no significant pre-existing systematic difference between the two groups, regarding the five key constructs of interest. Specifically, we conducted a Mann-Whitney U test to compare the difference between the two groups with regard to PA, PS, OCBO, OCBI, EWM, and IWM. The results depicted in Tables 3 and 4 below suggested no significant difference in pre-test (at the level of $p=0.05$) regarding the key constructs that we are studying, which indicates that the dividing of the two groups was reasonable.

We also conducted a manipulation check in order to make sure that participants in the treatment group indeed received the Internet monitoring policy and that the participants in the control group did not. The manipulation check was conducted at both the individual and group levels. At the individual level, a manipulation check question was included for all participants at the end of the post-test survey, following the description of the Internet monitoring policy presented above—namely, "Did you receive an email from the company regarding the Internet monitoring policy described above?" For participants in the treatment group, two options were provided to answer the manipulation check question: "yes" or "no." Only those who chose the "yes" option were included as valid participants in the experiment group; two participants who answered "no" were excluded.

For participants in the control group, three options were provided to answer the manipulation question: (1) Yes, I received the email; (2) No, I did not receive the email, and I did not hear about the policy from anybody else; and (3) No, I did not receive the email, but I heard about the policy from my col-

leagues. Only those who chose option 2 were included as valid participants in the control group; three participants who chose option 3 were excluded. As a result, 70 participants met the aforementioned criteria in terms of the manipulation check, with 34 participants in the control group and 36 participants in the experiment group[2].

Table 3 Ranks of Mann-Whitney U Test of similarity check

	Group	Mean Rank	Sum of
PA-pre	0	36.21	1195.00
	1	33.89	1220.00
PS-pre	0	36.80	1214.50
	1	33.35	1200.50
OCBO-pre	0	36.60	1134.50
	1	34.63	1350.50
OCBI-pre	0	36.53	1132.50
	1	34.68	1352.50
EWM-pre	0	29.95	845.00
	1	28.02	808.00
IWM-pre	0	25.45	738.00
	1	32.68	915.00

Note: Group 0 refers to the control group; group 1 refers to the treatment group.

Table 4 Mann-Whitney U test Result of Similarity Check

	PA-pre	PS-pre	OCBO-pre	OCBI-pre	EWM-pre	IWM-pre
Mann-Whitney U	554.0	534.5	570.50	572.50	402.0	303.0
Wilcoxon W	1220.0	1200.5	1350.50	1352.50	808.0	738.0
Z	-0.491	-0.733	-.406	-.379	-0.065	-1.691
Asymp. Sig. (2-tailed)	0.624	0.464	0.685	.704	0.948	0.091

At the group level, we also compared awareness of organizational policy regarding cyberloafing (i.e., PA in Tables 3 and 4) in the control group and treatment group before and after the Internet monitoring announcement. Specifically, based on the result of the Mann-Whitney U test (U = 554, p = 0.624, 2-tailed), we found no significant difference in the pre-test between the control group and treatment group regarding employees' awareness of organizational Internet use policy, as shown in Tables 3 and 4. However, in the post-test, we found that participant awareness of organizational Internet use policy was significantly higher in the treatment group than in the control group (U = 303, p = 0.035, 2-tailed). This difference suggests that, at an aggregate level, the participants of the treatment group had been successfully manipulated by the Internet monitoring policy.

4.4   Results of Hypothesis Testing

As discussed above, there were no significant differences in the pre-test between the two groups regarding the constructs of interest. The manipulation was also shown as valid through the check described above. Therefore, we tested our hypotheses by comparing the differences between the two groups in the post-test, regarding the constructs of focus in this study, particularly PS, OCBO, OCBI,

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[2] Due to the relatively small sample size, we employed non-parametric data analysis such as Mann-Whitney U test to analyse our data, although we also used t-test to re-analyse our data, and the results from the two data analysis techniques are consistent.

EWM, and IWM. Similar to the pre-test, we also conducted a Mann-Whitney U test in the post-test, with results shown in Tables 5 and 6 below.

Results in Tables 5 and 6 below suggest that there were significant differences between the two groups in the post-test regarding the constructs of interests. Specifically, first, the results suggest that the PS of the treatment group became significantly lower than the PS of the control group in the post-test (U=375.00, p=0.005), which indicates that Internet monitoring significantly decreased employees' policy satisfaction. Therefore, the study's hypothesis 1 was supported.

Table 5 Ranks of Mann-Whitney U Test of Post-Test

	Group	Mean Rank	Sum of
PS-post	0	42.47	1444.00
	1	28.92	1041.00
OCBO-post	0	40.97	1270.00
	1	31.15	1215.00
OCBI-post	0	42.45	1316.00
	1	29.97	1169.00
EWM-post	0	25.36	735.50
	1	32.77	917.50
IWM-post	0	32.68	915.00
	1	26.36	738.00

Note: Group 0 refers to the control group; group 1 refers to the treatment group.

Table 6 Mann-Whitney U test Result of Post-Test

	PS-Post	OCBO-post	OCBI-post	EWM-Post	IWM-Post
Mann-Whitney U	375.00	435.00	389.00	300.50	266.50
Wilcoxon W	1041.00	1215.00	1169.00	735.50	701.50
Z	-2.829	-2.037	-2.562	-1.717	-2.102
Asymp. Sig. (2-tailed)	.005	.042	.010	0.086	0.036

Second, the OCBO of treatment group was significantly lower than that of control group (U=435.00, p=0.042), indicating that Internet monitoring significantly reduced employees' OCBO. Therefore, hypothesis 2a was supported. Further, OCBI of treatment group was also found to be significantly lower than that of control group (U=389.00, p=0.010), suggesting that Internet monitoring also significantly reduced employees' OCBI. Therefore, the hypothesis 2b was also supported.

Third, in terms of work motivation, the results suggested that the EWM of the treatment group was higher than the control group in the post-test, although the significance level was marginal (U=300.50, p=0.086). In this sense, we conclude that hypothesis 3a was marginally supported. In contrast, we found the IWM of employees in the treatment group became significantly lower than that of control group (U=266.50, p=0.036), indicating that employees' intrinsic work motivation decreased after the implementation of Internet monitoring. Therefore, hypothesis 3b was supported by the data.

5 Discussion

5.1 Theoretical and Practical Implications

We conducted a field experiment to investigate the impact of Internet monitoring on employees' policy satisfaction, OCB and work motivation. The findings of our study suggest that Internet monitoring may result in employees' dissatisfaction. As an expression and manifestation, employees

may decrease their OCB. Employees' intrinsic work motivation was also decreased as a result of the Internet monitoring, although employees' extrinsic work motivation may be slightly increased. One possible reason for the relatively weak effect of Internet monitoring on EWM is that, there are many other factors that may affect EWM such as payment, promotion opportunities and so on, these factors may be more salient than Internet monitoring in determining employees' EWM.

To the best of our knowledge, this is the first study to investigate the impact of cyberloafing-related Internet monitoring in the workplace on employees' perceptions and behaviours other than their cyberloafing behaviour. In this sense, our study makes important theoretical contributions to the literature of cyberloafing, Internet monitoring, OCB and work motivation. Our study may also offer implications for the literature of organizational policy compliance. For example, information security policy (ISP) compliance researchers have widely discussed the factors that determine employees' compliance with a security policy (e.g., Sommestad et al. 2014; Tsohou et al. 2015). However, there is relatively little research about the potential unintended impact of ISP on employees, beyond their information security behaviours in organizations. Our findings that revealed the existence of unintended impacts of Internet monitoring suggest that it is necessary for researchers to comprehensively investigate the possible outcomes of specific organizational policies (e.g., ISP), in terms of both targeted behaviours of the policy as well as non-targeted behaviours and perceptions of employees.

In terms of practical applications of our results, our study suggests that when employers plan to implement Internet monitoring as an attempt to address employees' cyberloafing behaviour, they should consider not only whether Internet monitoring is effective to reduce cyberloafing, but also what the unexpected effects or side-effects of the Internet monitoring policy may be, so that they can better weigh the benefits and costs of Internet monitoring and make an appropriate decision.

5.2   Limitations and Future Directions

In spite of its theoretical and practical implications, our study has several limitations, which suggest that the results should be interpreted and generated with caution. First, the findings of this study were based on data from a single software development company, using a relatively small sample size. The conclusions may be different for other organizations with different types of business or different organizational cultures. Therefore, future research should be conducted to replicate the findings of this study in different contexts. Second, the post-test of our study was conducted one month after the announcement of Internet monitoring; how long the impact of Internet monitoring on employees' policy satisfaction, OCB and work motivation will last is not known. In this sense, future research may involve longitudinal studies to further investigate long-term impacts of Internet monitoring on employees.

Nevertheless, the findings of this study open avenues for future research to explore a number of research questions. First, our study found that Internet monitoring has significant negative impact on employees' policy satisfaction, OCB and intrinsic work motivation. Although we have provided the theoretical explanation regarding why Internet monitoring affects employees' policy satisfaction, OCB and work motivation, it is imperative for future studies to empirically validate the mechanisms that we proposed, and explore other possible mechanisms through which Internet monitoring affects employee policy satisfaction and work motivation. For example, we proposed that Internet monitoring constrains employees' Internet use autonomy, dampens mutual trust between employees and employers, and elicits perceived injustice, which further leads to employees' policy dissatisfaction. Future studies should use a relatively large sample size should test the mediation effects autonomy, trust and injustice on the negative relationship between Internet monitoring and policy satisfaction. Similarly, future studies should also explore and validate the mediators between Internet monitoring and employee work motivation.

Second, given that our study found that Internet monitoring influences employee work motivation, it will be interesting for future studies to further explore whether Internet monitoring will affect employees' job performance or work productivity. Previous studies found that Internet monitoring

may reduce employees' cyberloafing behaviour, thereby leaving more time available for work tasks. Our study found that Internet monitoring may also increase employees' extrinsic motivation (although only with marginal significance). Both increased time available for work tasks and the increased extrinsic work motivation may increase employees' job performance. In this sense, Internet monitoring may increase employees' work performance. However, our findings also suggested that Internet monitoring may decrease employees' intrinsic work motivation, which may decrease employees' job performance. This is because, on the one hand, previous studies demonstrate that autonomous motivation (e.g., intrinsic motivation) is important for job tasks that are relatively complex, involving flexibility, creativity, and heuristic problem solving (Gagne and Deci 2005). Therefore, decreasing employee intrinsic work motivation may negatively influence employee job performance. On the other hand, previous studies also found that intrinsic motivation may moderate the relationship between extrinsic motivation and job performance such that higher intrinsic motivation may strengthen the positive relationship between extrinsic work motivation and job performance (e.g., Ke and Zhang 2010). Therefore, decreased intrinsic work motivation resulting from the Internet monitoring policy may also have indirect, negative effects on employees' job performance. Accordingly, future research should further explore whether Internet monitoring actually increases or decreases employee job performance, or the conditions under which Internet monitoring may increase or decrease employee job performance.

In addition to job performance, future studies should also explore whether Internet monitoring will influence employees' other perceptions and behaviours that are related to policy satisfaction and work motivation. For example, one outcome that is related to intrinsic motivation could be employee job creativity. Since previous studies (e.g., Shin and Zhou 2003) found that intrinsic work motivation may have a positive impact on employees' creative performance, Internet monitoring that decreases employees' intrinsic work motivation may have a negative impact on employees' creativity. We encourage future studies to explore the broad impacts of Internet monitoring, as a policy to regulate employees' cyberloafing behaviour, on employees' various perceptions and behaviours.

6   Conclusion

Employee cyberloafing behaviour is common in organizations. In this study, we examined the impact of Internet monitoring, as an organizational initiative to regulate employees' cyberloafing, on employees' policy satisfaction, OCB and work motivation. We conducted a field experiment in a software development company to test our hypotheses. Previous studies have suggested that Internet monitoring may reduce employees' cyberloafing behaviour, thereby encouraging organizations to enact such policies. However, the results of our study suggest that Internet monitoring may have side effects, such as decreased employees' policy satisfaction and OCB. Our study also suggested that Internet monitoring significantly reduces employees' intrinsic work motivation, although it may slightly increase employees' extrinsic work motivation. To the best of our knowledge, this is the first study that examines the impact of Internet monitoring in the workplace on employees' policy satisfaction, OCB and work motivation. Our empirical research suggested that organizations should consider both the positive and negative impacts of Internet monitoring on employees and organizations. Future studies should seek to replicate our findings in different organizations as well as explore the impact of Internet monitoring on other aspects of employee perception and experience beyond what we have discussed in this study.

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