

Supervisor Monitoring and Human Capital Investment – A Field Experiment

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Preliminary Version

Abstract

We study a reduction in employee monitoring in a field experiment with 2425 employees of a large service organization. Employees are supposed to take part in regular skill assessments for key technical skills and have regular meetings with their supervisors to discuss their development needs. In both the treatment and control group employees are encouraged to make proposals for training measures before the meetings. Employees in the treatment group are told not to reveal the outcomes of the skill assessments and supervisors are explicitly told not to ask for the outcomes but focus on the suggested training measures. We find that this reduction in monitoring reduced assessment participation and assessment scores significantly. Moreover, post-experimental survey outcomes show a significant reduction in job satisfaction, supervisor feedback, and perceived supervisor support of learning. Our findings underscore the importance of supervisor monitoring in the employee development process.

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1. Introduction

The extent to which employee monitoring fosters or hinders performance has been subject of heated debate in different fields. Economists have traditionally argued that supervisor monitoring is important to assure that employees pursue activities in the interests of their employers, in particular when interests are not aligned through formal incentive contracts (see e.g. Lazear and Oyer (2013) for a survey). On the other hand, researcher in psychology (Deci et al. (1989), Deci and Gagné (2005)) have often stressed that monitoring of employees can negatively affect employee well-being and performance by reducing their autonomous motivation to perform a task. Relatedly, behavioral economists have also argued that the introduction of control system may sometimes backfire and reduce employee motivation (see e.g. Falk and Kosfeld (2006), Sliwka (2007), Ellingsen and Johannesson (2008)).

The key purpose of this paper is to study the impact of supervisor monitoring the outcomes of a skill assessment in a field experiment in a service organization. Employees in the organization take part in regular online knowledge tests on job specific skills and supervisors are supposed to hold quarterly meetings to talk about employee development and human capital investments. In our experiment supervisors (and their respective teams) are randomly allocated to a control or treatment group. Prior to the intervention and in the control group employees are encouraged to bring their test outcomes to the meetings with their supervisor (but there is no obligation to do so). In the treatment group employees are explicitly told *not* to show test outcomes to their supervisors and supervisors are told *not* to ask for test results.

Our main research question is whether and how monitoring affects (i) participation in the knowledge tests (ii) test outcomes and (iii) employee perceptions about supervision and learning. We hypothesize that a reduction in monitoring can have heterogenous effects on high- and low-performers driven by potential reputational

gains and losses from reporting the test results to their supervisors. While low performers may be encouraged to take part in the skill assessment to identify learning needs as they may no longer fear reputational losses from bad results, high performers' motivation may on the other hand be reduced.

We find that the reduction in supervisor monitoring has a negative effect on both the average participation rate as well as the average score of those who participate. Moreover, the reduction in the participation rate is driven by low performers, who – in contrast to our pre-registered hypothesis – reduced their participation significantly. Participation rates among performers remained unaffected. On the other and, the reduction in average test outcomes is driven by high performers who indeed reduce their effort leading to lower test results. A post-experimental survey reveals that this finding is well-explained by image concern considerations as high performers state to have significantly lower motivation to participate in the assessment to demonstrate their abilities to their supervisor.

With respect to the psychological consequences following a reduction in monitoring, we document a strong negative impact on perceptions regarding the employee development process. Employees in the treatment group report lower supervisor support in the learning process and ultimately lower overall job satisfaction. Hence, the reduction in control did not increase the motivation of low performers to assess their skills to detect learning needs but rather caused the opposite effect and led to a substantial reduction in the perceived quality of learning.

2. The Setting

We run the experiment in a large service organization. All considered employees are service technicians whose task it is to provide technical services to customers. While employees receive their daily work schedule from the regional dispatcher, the role of the supervisor is focused on managing the workload of the team and ensuring that employees have sufficient technical knowledge to complete their daily assignments in a given time frame. Given the range of services the company offers, all employees need

to take part in regular knowledge assessments on key skills they possess. These assessments are conducted through quizzes on an online platform. As a large part of the workforce is supposed to have sufficient skill levels in certain key knowledge domains, the majority of employees are subject to the same assessments. As the employees take part in the learning assessments multiple times a year, supervisors are instructed to conduct quarterly virtual meetings to assess the current skill level of an employee, to identify knowledge gaps and to sign up the employee for a workshop or a webinar to learn or improve their skill level.

3. Experimental Setup

We randomly assigned 125 teams ($N = 2425$ employees) to either a treatment or the control group. In both groups supervisors meet regularly with employees to discuss the results of their learning assessment and their personal development needs. Prior to the intervention and in the control group, employees are encouraged to bring their test outcomes to the meetings with their supervisor (but there is no obligation to do so). Moreover, in both groups employees are encouraged to develop ideas for learning activities and communicate these ideas to their supervisors. In the treatment group employees are explicitly told *not* to show test outcomes to their supervisors but rather focus on their learning needs in the meetings with their supervisors. Respectively, supervisors are told *not* to ask for test results and rather also concentrate on discussing the learning ideas proposed by the employees.

Treatment assignment is stratified on the level of a region in the company[†] and participation and outcomes in prior knowledge tests. The experiment started in July 2022 and ran until the end of March 2023. In this time frame, most employees took part in at least two learning assessments. For now, we report participation rates, test outcomes, as well as evidence from a post-experimental survey. We use previous participation and test results as a benchmark.

[†] There are 37 regions. Stratified randomization is performed with the Stata package RANDTREAT (<https://acaril.github.io/posts/randtreat>).

4. Main Results

Our results are presented in three parts. First, we document main treatment effects of reducing supervisor monitoring on participation and performance in the learning assessment. Then, we focus on the psychological consequences elicited from the post-experimental survey such as job satisfaction, supervisor feedback and support for development. Finally we present evidence on heterogeneous treatment effects and the underpinning mechanisms.

4.1 Test participation and test outcomes

Table 1 shows the results from a regression of the teams' participation rates and average test scores on a treatment dummy, controlling for their prior average test scores and team size. As the table shows, the treatment reduced the participation rate substantially. Moreover, it also led to reduction in the average test score of the employee's participating in the test, controlling for previous performance.

Table 1: Treatment Effects on Test Participation and Test Results

	Dependent variable:			
	Participation		Results	
	(1)	(2)	(3)	(4)
Treatment (No Result)	-8.014*** (2.927)	-4.624* (2.501)	-2.667 (1.636)	-3.231** (1.372)
Prior Participation		2.409*** (0.359)		
Prior Performance				0.735*** (0.107)
Team Size		-0.519 (0.587)		0.958*** (0.278)
Constant	84.754*** (2.061)	57.889*** (10.054)	53.404*** (1.153)	-4.410 (8.388)
Num. of Teams	125	125	125	125
Num. of Employees	(2,425)	(2,425)	(2,207)	(1,946)
R ²	0.057	0.354	0.021	0.325
Adjusted R ²	0.050	0.338	0.013	0.309

Note: Robust SE in brackets. Outcomes are aggregated on the team level. Prior participation and results are taken from last learning assessment prior to the intervention. *, **, *** indicates significance on the 10%, 5%, and 1% level respectively.

4.2 Employee Perceptions

Based on a large strand of psychological research, we hypothesized that removing monitoring from the learning process and focusing on an employee's personal development needs has positive effects on psychological outcomes such as employee job satisfaction and participation in the learning process. In contrast to this literature, we find that the psychological effects of removing control are universally negative. Table 2 shows negative effects on overall job satisfaction and perceived supervisor support. The reduction in both positive and negative feedback suggests that test result plays an important role in the employee development process that goes beyond traditional performance management.

Table 2: Treatment Effects on Psychological Outcomes

	Dependent variable:			
	Job Satisfaction (1)	Positive Feedback (2)	Negative Feedback (3)	Supervisor Support (4)
Treatment (No Result)	-0.373*** (0.134)	-0.312** (0.139)	-0.287** (0.122)	-0.261** (0.109)
Constant	4.873*** (0.092)	4.147*** (0.095)	3.368*** (0.083)	5.436*** (0.074)
Observations	730	793	793	794
R ²	0.010	0.006	0.007	0.007
Adjusted R ²	0.009	0.005	0.006	0.006

Note: Robust SE in brackets. Table shows estimates from the matched sample of employees who participated in one of the three largest knowledge tests as well as the post-experimental survey. High performers are classified using a median split of prior performance. *, **, *** indicates significance on the 10%, 5%, and 1% level respectively.

4.3 Mechanisms

To explore the underlying behavioral mechanisms in more detail, we investigate heterogenous treatment effects with respect to employees' prior abilities. We have preregistered the hypotheses that (i) the treatment reduces test participation rates and test performance of high ability employees but on the other hand (ii) increases test participation and the number of learning measures actually booked for lower ability employees.

Contrary to our pre-registered hypothesis, the treatment did not encourage low-performers to participate in the learning assessment. Instead, the reduction in participation is exclusively driven by employees with below-average prior results, as we can see from column 2. On the other hand, we document significantly lower test results among high-performing employees.

Table 3: Heterogeneous Treatment Effects on Individual Test Results and Individual Test Participation

	Dependent variable:			
	Test Participation		Test Results	
	(1)	(2)	(3)	(4)
Treatment (No Result)	-0.045** (0.021)	-0.105*** (0.031)	-0.754 (1.297)	2.303 (1.796)
High Performer (=1)		0.015 (0.028)		18.053*** (1.548)
Treatment × High Performer		0.101** (0.042)		-4.607* (2.362)
Constant	0.915*** (0.014)	0.908*** (0.021)	55.527*** (0.855)	45.333*** (1.171)
Observations	891	863	797	772
R ²	0.005	0.022	0.0004	0.201
Adjusted R ²	0.004	0.019	-0.001	0.198

Note: Robust SE in brackets. Table shows estimates from the matched sample of employees who participated in one of the three largest knowledge tests as well as the post-experimental survey. High performers are classified using a median split of prior performance. *, **, *** indicates significance on the 10%, 5%, and 1% level respectively.

To explore the mechanism underlying the lower test results among high-performers, we turn again to the post-experimental survey. Asking employees for their motivation to participate in the learning assignment reveals that high-performing employees in the treatment are less motivated by the opportunity to demonstrate their skills to their supervisor. This underlines the central role of reputational incentives in the learning process. As these opportunities are systematically reduced if test results are no longer a part of the conversion, it follows that high-performing employees reduce their efforts in the learning test.

Table 4: Heterogeneous Treatment Effects on Ability Signaling

	Dependent variable:	
	„ I participate to demonstrate my ability to my supervisor“	
	(1)	(2)
Treatment (No Result)	-0.464*** (0.144)	0.071 (0.220)
High Performer (=1)		0.524** (0.197)
Treatment × High Performer		-0.906*** (0.292)
Constant	4.877*** (0.097)	4.587*** (0.149)
Observations	808	785
R ²	0.013	0.024
Adjusted R ²	0.011	0.021

Note: Robust SE in brackets. Table shows estimates from the matched sample of employees who participated in one of the three largest knowledge tests as well as the post-experimental survey. High performers are classified using a median split of prior performance. *, **, *** indicates significance on the 10%, 5%, and 1% level respectively.

5. Conclusion

We studied the effects of supervisor monitoring of the outcomes of a skills assessment on the employee development process. We found that a reduction in monitoring where supervisors were explicitly told not to ask for test results but rather focus on training proposals made by the employees reduced assessment participation rates, test scores and several indicators for the quality of learning and supervisor support. Our results thus highlight potential positive effects of monitoring to commit employees to foster their own learning.

In the following weeks we will collect further data on the employees' own proposals for their development, number of training measures booked as well as actual job performance outcomes to investigate the consequences of the intervention in further detail.

References

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