

# Working-time autonomy as a management practice

## Giving workers control over their working hours increases their commitment and benefits firm performance

Keywords: working from home, self-managed working time, flextime, firm performance, work intensification, family-friendly workplace practices

### ELEVATOR PITCH

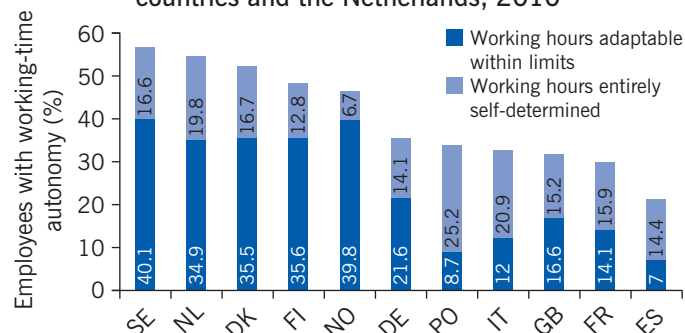
Allowing workers to control their work hours (working-time autonomy) is a controversial policy for worker empowerment, with concerns that range from increased shirking to excessive intensification of work. Empirical evidence, however, supports neither view. Recent studies find that working-time autonomy improves individual and firm performance without promoting overload or exhaustion from work. However, if working-time autonomy is incorporated into a system of family-friendly workplace practices, firms may benefit from the trade-off between (more) fringe benefits and (lower) wages but not from increased productivity.

### KEY FINDINGS

#### Pros

- ⊕ Working-time autonomy promotes worker and firm performance.
- ⊕ Performance is particularly improved if autonomy is reserved for intrinsically motivated workers or if workers self-select into working time arrangements.
- ⊕ By lowering employee turnover, working-time autonomy enables firms to improve their attractiveness as an employer.
- ⊕ If working-time autonomy is incorporated into a system of family-friendly workplace practices, firms might benefit from reduced turnover and wage costs.
- ⊕ Despite its effort-increasing effect, working-time autonomy is unlikely to promote overload or exhaustion from work.

Working-time autonomy is most prevalent in Scandinavian countries and the Netherlands, 2010



Source: Eurofound. *European Working Conditions Survey 2010*. Online at: <http://www.eurofound.europa.eu/surveys/data-visualisation/european-working-conditions-survey-2010>

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#### Cons

- ⊖ Some workers might abuse working-time autonomy by reducing their work effort, since an absence of direct monitoring reduces employees' shirking costs.
- ⊖ If it is part of a corporate strategy to reduce costs, working-time autonomy is detrimental to firm performance.
- ⊖ Working-time autonomy might not be suited to employees who execute routine tasks.
- ⊖ Working-time autonomy is inappropriate for certain occupational groups and hard to implement in teamwork environments.
- ⊖ Firm productivity might not increase if working-time autonomy is incorporated into a system of family-friendly workplace practices.

### AUTHOR'S MAIN MESSAGE

While managers often raise concerns that working-time autonomy might encourage workers to reduce effort, some worker representatives claim that it leads to harmful work strain. However, empirical evidence suggests that such policies do not induce harmful overwork but boost firm productivity, on average, unless incorporated into a system of family-friendly workplace practices. And even in that case, firms benefit from lower turnover and wage costs. In combining working-time autonomy with performance targets, managers should set realistic goals and avoid target ratcheting or stretch goals.

## MOTIVATION

In recent years, firms have been increasingly replacing the traditional nine-to-five, five-days-a-week fixed working time model with arrangements that provide workers with more discretion over individual working hours and place of work. The most common practices are flextime, self-managed working time, and working from home. Flextime allows employees to vary daily starting and finishing times, requiring compulsory attendance at work only within certain core times. Working more hours on some days can be balanced by working fewer hours on other days, and vice versa. Self-managed working time gives employees more time sovereignty by authorizing them to choose how to distribute their working hours over the workday and their workdays over the workweek. This can also include self-determination of vacation days and days off. Working from home is often similar to self-managed working time with a focus on enabling workers to accomplish their work tasks outside the workplace.

In management science and practice, working-time autonomy as a means of worker empowerment is controversial. While some researchers and managers believe that working-time autonomy improves firm performance, for example by increasing worker motivation or by reducing fluctuation, others fear that workers might abuse their discretion by reducing effort. Whether the benefits of working-time autonomy outweigh the associated costs is thus an empirical question.

## DISCUSSION OF PROS AND CONS

### Performance effects of working-time autonomy

The literature emphasizes two motives for adopting some form of working-time autonomy [1]. First, similar to other decentralization policies, working-time autonomy could boost firm performance by improving worker motivation and by tapping into the superior knowledge of workers at lower levels of a firm's hierarchy. Subordinate workers usually have an informational advantage over their managers in how to effectively distribute working hours and leisure time over the workday. If given working-time autonomy, employees can arrange their working hours according to individual circadian rhythms or work-life balance issues, for example. Second, firms that allow workers more control over working time may be perceived as responding to the growing worker demand for family-friendly workplace policies. Firms might benefit from improving their attractiveness as an employer through reduced worker turnover, or by gaining wage concessions from workers, who consider working-time autonomy as a fringe benefit. Under these conditions, working-time autonomy can be expected to have a positive impact on firm performance.

However, a potential risk is the moral hazard problem associated with any policy of decentralization, as employees might abuse their discretion by following their own interests at the expense of the firm's interests. The main risk arising from the delegation of working-time autonomy is that workers might neglect their organizational duties in favor of personal life issues, because time sovereignty makes monitoring worker effort more difficult. For example, self-managed working time employees may be tempted to work less or put in less effort because of the relaxation of working time registration, while employees working from home might be tempted to shirk in the absence of direct supervision outside the workplace. In both cases, the lack of employee monitoring reduces employees'

shirking costs. As a result, both worker and firm performance are likely to be negatively affected.

Contrary to these theoretical pitfalls, empirical evidence on the performance effects of working-time autonomy is surprisingly clear-cut, thereby contradicting the shirking hypothesis. For example, using panel data for the pharmaceutical industry in the US and accounting for potential endogeneity biases, a study finds that flextime raises firm productivity by about 10% [2]. Using large-scale survey panel data at the individual level, a study for Germany finds that self-managed working time has a significantly positive impact on worker performance [3]. More precisely, after accounting for unobserved time-constant individual characteristics, the study finds that under self-managed working time, employees work nearly 90 minutes more a week, on average, than employees with a fixed working time. And those extra work hours reflect extra effort rather than simply more work hours but less efficiency.

Positive performance effects of working from home were found in a randomized field experiment conducted with call-center employees of a large Chinese travel agency [4]. Over the nine-month period of the experiment, employees working from home were about 13% more productive (without quality losses) than their counterparts working in the office, while the corresponding wage increase was only about 10%. The higher worker performance can be attributed to higher work intensity, as employees working from home worked longer per day (9.2%) by taking fewer breaks or sick days, and also made more phone calls per minute (3.3%), thanks to a quieter work environment at home. Thus, in line with the findings for flextime and self-managed working time, the findings for working at home offer no support for the common managerial concern that working from home encourages shirking.

Studies using large-scale, individual-level data also find positive wage effects for working-time autonomy. For example, for the period from 1980 to 2000, a US study identifies a declining wage penalty for employees working from home of about 30%. At the same time, working from home employment nearly doubled [5]. This result can be explained by a relative productivity increase for employees working from home compared with those working in an office.

There is also empirical evidence that the performance effects of working-time autonomy might be context-specific. For example, using representative longitudinal data for Canadian organizations and accounting for unobserved heterogeneity, a recent study shows that flextime increases profitability when it is part of an employee-centered corporate strategy in which workers are treated as an asset but decreases profitability when it is part of a corporate cost-reduction strategy. This result implies that the impact of flextime largely depends on whether or not the practice is aligned with the overall corporate strategy [6].

In addition, the results of a real-task laboratory experiment indicate that task complexity plays an important role in determining whether productivity effects of working from home are positive or negative. The study distinguishes between “dull” and “creative” tasks. The dull task was typing random sets of letters and numbers, mimicking a data-entry job. The creative task was “coming up with unusual uses for common objects” ([7], p. 360), mimicking a job with non-routine tasks. The test subjects engaged in their tasks inside the laboratory and outside the laboratory (representing working from home). The main result of the study is that working from home increased individual productivity by 11–20% when subjects engaged in creative tasks but decreased it by 6–10% when subjects engaged in dull tasks. The decline was driven largely by low-performing workers and individuals who

were not interested in job autonomy. Consequently, working-time autonomy appears to be crucial to being productive in creative tasks, while peer effects seem to be important to being productive in low-level tasks—effects that are usually missing in working-from-home environments [7].

### The importance of selection effects

Each of the empirical studies discussed above applies estimation strategies that explicitly account for the endogeneity of working-time autonomy. Most important, the studies try to eliminate the potential selectivity biases resulting from the fact that employees are usually not randomly assigned to certain policies of working-time autonomy. For example, the field experiment on the effect of working from home on the productivity of Chinese call-center employees randomly assigned workers to the working-from-home or working-in-the-office group [4]. A question that naturally follows is how the productivity effect changes when workers are allowed to select themselves into one of the two regimes. Are lazy workers especially likely to choose the working-from-home option to avoid direct supervision and to shirk undetected while working from home, thus lowering the initial positive productivity effect of working from home? Or do workers voluntarily sort themselves into working-from-home and working-in-the-office regimes based on personality traits, individual efficiency considerations, or prior experiences, enabling productivity to increase?

Experimental evidence suggests that the second explanation is true [4]. After Chinese call-center employees were allowed to choose whether to work from home or in the office, productivity increased by about 22% for employees working from home compared with their counterparts working in the office. Thus, relative to the initial productivity effect, self-selection boosts individual productivity by an additional nine percentage points (from 13% to 22%). This result highlights the relevance of selection effects and employee learning about individual suitability for working from home. Workers who experienced social isolation or performance losses at home compared with when they work in the office tended to return to the office, whereas those who performed well at home (for example, owing to the relative quietness of the work environment) continued to work from home.

Moreover, self-managed working time and intrinsic worker motivation are found to be complements in inducing effort, meaning that self-managed working time amplifies the positive effort effect of an employee's intrinsic motivation [3]. More precisely, self-motivated workers under self-managed working time exert extra effort of somewhat less than two hours a week, which exceeds by about 75 minutes the amount of extra work provided by self-motivated employees without self-managed working time. This finding has at least two implications. First, self-managed working time apparently increases intrinsic worker motivation. Second, self-motivated workers are more likely than less motivated workers to select themselves (or to be selected) into self-managed working-time arrangements.

Selection effects can also be expressed through a firm's attractiveness to incumbent and potential employees. A firm's turnover rate, indicating the percentage of voluntary quits, can be used as a measure of firm attractiveness. For example, by the end of the working-from-home experiment among Chinese call-center employees, the total turnover rate in the office-working group (35%) was more than twice the turnover rate in the working-from-home group (17%). This difference could be attributed primarily to poorly performing office workers, who were much more likely to quit their job than underperforming employees who were working from home. The reason for the difference in quitting behaviors is that similar

call-center jobs were easy to find for office workers, whereas employees working from home had virtually no outside options because other firms did not offer comparable jobs with a working-from-home option. Thus, the actual productivity gap between employees working from home and those working at the office would be even larger than reported if the difference in turnover rates were taken into account [4].

Similarly, another study examines the effects of self-managed working time (called work-time control) on turnover and finds that employees who participated in the self-managed working time program were less likely to quit and had lower turnover intentions than their non-participating counterparts [8]. The study used a natural experiment among employees at the corporate headquarters of a large high-performance firm in the US.

All in all, the results discussed so far suggest that firms benefit twice from selection effects of working-time autonomy: through increased worker effort and productivity and through reduced turnover costs.

### **Working-time autonomy and family-friendly workplace practices**

Thus far, the analysis has focused on studies of the performance effects of single practices of working-time autonomy, with an implicit underlying assumption that firms introduce each practice in isolation. Often, however, practices of working-time autonomy are an integral part of systems of family-friendly workplace practices or of work-life balance programs whose intention is to enable workers to better coordinate their workplace and family responsibilities. Hence, it would be interesting to learn about the performance effects of flexible work or family-friendly workplace systems.

Using cross-sectional data from manufacturing firms in France, Germany, the UK, and the US, a recent study identified a positive association between family-friendly workplace systems (including working from home) and firm productivity [9]. However, this association vanishes when a measure of the quality of management practices is added to the model.

Using field- and laboratory-based analyses for the US, another study shows that family-friendly workplace systems (including flextime and working from home) are associated with career premiums when managers interpret the employees' choice of family-friendly workplace systems as a signal of high organizational commitment [10]. In that case, managers attribute the interest in family-friendly workplace systems to an employee's desire to increase productivity. However, the study also concludes that family-friendly workplace systems can involve career penalties for employees when managers interpret an employee's choice of family-friendly workplace systems as a signal of low organizational commitment or a desire for personal life accommodation at the expense of job performance.

Finally, using British linked employer-employee data and applying methods to account for endogeneity, a study investigates the assumed trade-off between family-friendly workplace systems (including flextime and working from home), considered as a fringe benefit, and wages [11]. The results confirm the expected negative impact: workers are willing to accept wage concessions in return for being able to spend more time on family matters. However, after disentangling the overall system effect, flextime continues to have a negative wage effect, while working from home turns out to be positively related to wages, leading to the conclusion that some but not all practices of family-friendly workplace systems "pay for themselves in increased productivity" ([11], p. 291).

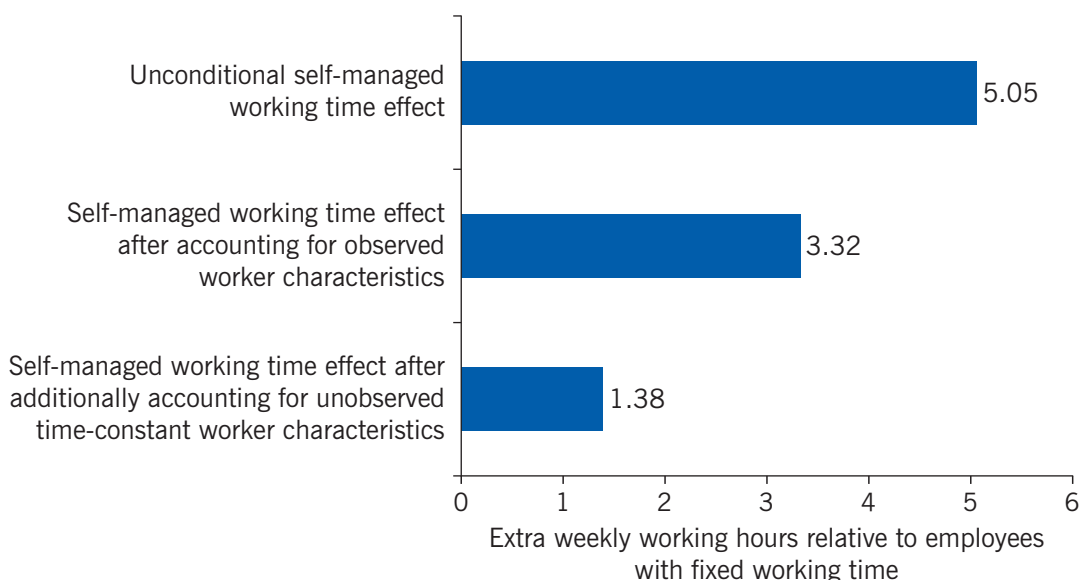
The conclusion from these mixed results is that the positive productivity effect of working-time autonomy might fail to materialize if working-time autonomy practices are incorporated into a family-friendly workplace system. For example, employees working from home might fail to become more productive if they also take advantage of additional family-friendly workplace practices such as job sharing, job switching (from full-time to part-time work), parental leave, and childcare support. However, since these practices focus on accommodating workers' family concerns rather than on delegating authority for task completion, family-friendly workplace systems are likely to contribute to the firm's objectives through retaining core workers, recruiting new staff, or saving wage costs rather than improving productivity.

### Does working-time autonomy induce work intensification?

The discussion so far shows that, on average, working-time autonomy increases worker effort and thus contributes positively to firm performance. However, if workers are continuously incentivized by certain human resource management practices to increase their effort level, work will become more and more intense, so that, in the long term, workers might suffer physical or mental health problems. Of course, this outcome cannot be in the interest of the firm, because firm performance is likely to be negatively affected, for example, by increased absenteeism and declining commitment. Therefore, the decisive question is: Does working-time autonomy demand too much work effort from employees? Figure 1 provides some evidence to answer this question.

The estimates displayed in Figure 1 demonstrate that, on average, self-managed working time employees work about five hours a week more than their counterparts with fixed

Figure 1. The extra work effort attributable to self-managed working time is about 1.38 hours a week (less than 90 minutes)



Source: Based on estimates from Beckmann, M., T. Cornelissen, and M. Kräkel. *Self-managed Working Time and Employee Effort: Theory and Evidence*. SOEP Paper on Multidisciplinary Panel Data Research No. 768, 2015; Table 3 [3].

working time. At first glance, this difference appears remarkably large. However, it is just a raw difference, indicating an unconditional correlation between self-managed working time and extra working time. About 1 hour and 45 minutes (1.73 hours) of the initial five additional hours a week can be attributed to other observable factors ( $5.05 - 3.32 = 1.73$  hours). Roughly another two hours are due to unobserved fixed effects ( $3.32 - 1.38 = 1.94$  hours). Thus, the effect that can be ascribed to the self-managed working time policy itself is less than 90 extra minutes a week (1.38 hours) [3]. Although this extra effort effect is statistically significant, it is quite modest, raising doubts about the concern that self-managed working time promotes substantial intensification of work effort.

There is also ample evidence from occupational health studies and the health economics literature supporting this assessment [12], [13]. None of these studies finds that working-time autonomy itself significantly raises work strain or impairs workers' (mental) health. What does harm workers' health is being faced with an imbalance between job demands and job autonomy. Thus, it is the combination of high job demands and low job control (for example, low working-time autonomy) that is hazardous to workers' mental health, as evidenced by episodes of insomnia, anxiety, stress, and depression. Working-time autonomy, in contrast, is usually found to mitigate the undesirable health consequences for workers of a job demand-job control imbalance. Of course, this does not mean that employees with working-time autonomy do not suffer from an increasing workload. However, it implies that working-time autonomy itself is unlikely to be the cause of overwork.

This conclusion is further supported by the finding that employees working from home report more positive attitudes toward work as well as less exhaustion from work and take fewer sick-leave days than employees working in the office [4]. In sum, it is hard to make the case that working-time autonomy is responsible for a significant increase in unhealthy work intensification that then needs to be combatted by a self-interested employer.

## LIMITATIONS AND GAPS

While working-time autonomy can improve both individual and firm performance, there are certain work contexts that are not amenable to working-time autonomy [4]. First, self-managed working time and working from home are obviously inappropriate for jobs that require personal attendance at the workplace. For example, production workers or nursing staff naturally have to appear in person at the plant or at the hospital. Similarly, workers with routine jobs in the retail industry, wholesale, the building sector, the hotel and catering industries, and secretarial staff are not good candidates for working-time autonomy. In contrast, working-time autonomy is appropriate for sales representatives and other employees working in the field, specialists and executive staff, and employees with creative tasks such as researchers and artists.

Second, it might be difficult to implement self-managed working time or working from home in teamwork environments that require face-to-face cooperation. Under these conditions, interpersonal coordination of the division of work is sometimes too ambitious. Since teamwork is common in firms today, this obstacle applies to a substantial fraction of the working population. Third, self-managed working time and working from home often make effort monitoring (input control) more difficult, although in some cases input control can be replaced by output control, such as monitoring worker productivity.

This paper focusses on the impact of working-time autonomy on worker and firm performance, where the term performance is quite narrowly restricted to employee effort (including work intensification), firm productivity, wage costs, and employee turnover. Other interesting consequences of working-time autonomy have not been discussed, such as a wide array of outcomes at the firm level (including absenteeism, product and process innovation, and monitoring costs) and at the individual level (including job satisfaction and overall well-being). However, the literature on these outcomes suggests that working-time autonomy is likely to be beneficial for both employers and employees in all these dimensions.

Finally, a common feature of the empirical studies discussed in this paper is the noticeable effort devoted to identifying causal effects, whether through randomized field or laboratory experiments [4], [7], [8], [10], or through analyses of representative, large-scale survey data [2], [3], [6], [11]. Experimental studies are beneficial, because randomization excludes potential selection biases. However, the external validity of these studies is limited since the results are not usually generalizable. For example, the environment of the call center of the large Chinese travel agency examined in one study is quite specific to the firm, as worker performance could be closely monitored by recording login times to the firm's information management system [4]. Furthermore, the working-from-home regime in that study involved clear scope for productivity enhancements because employees working in large and noisy offices were easily distracted and the firm had a first-mover advantage by being one of the earliest to adopt working from home. In contrast, the results of studies based on large-scale survey data are often more representative and thus generalizable, but the identification of causal effects is usually more demanding than in controlled experiments.

## SUMMARY AND POLICY ADVICE

Working-time autonomy improves both employee and firm productivity. Furthermore, the positive productivity effect can be increased if employees are allowed to participate in the selection decision on assignment to a particular working-time arrangement. Working-time autonomy is also likely to increase an employer's attractiveness to employees, as indicated by sharply declining turnover rates. And, it might do less to improve productivity if it is part of a system of family-friendly workplace practices, some of which emphasize coordinating private and work life rather than providing discretion on how to accomplish work tasks effectively. In such cases, however, family-friendly personnel policy could still contribute to firm performance through reduced turnover and wage costs. Finally, the evidence does not support the claim that working-time autonomy is responsible for (unhealthy) work intensification. Indeed, the reverse appears to be true: low control over working hours increases the risk of work strain and subsequent health problems, while greater autonomy may even create a buffer against health problems [12].

Several management implications can be derived from the empirical findings presented here. First, if managers pay attention to the restrictions mentioned above when implementing working-time autonomy policies, these policies are promising tools at their disposal. Especially where workers handle non-routine tasks, managers should not pass up the chance to adopt practices such as self-managed working time or working from home. Second, managers should realize that implementation of working-time autonomy might



be even more beneficial when workers are allowed to self-select into these arrangements. However, if managers decide to assign workers to arrangements of working-time autonomy without worker input in the decision, it is important that managers find a way to select intrinsically motivated workers. This holds especially for working-time autonomy practices with a high degree of time sovereignty.

A final recommendation concerns whether other changes in management practices should be implemented at the same time as working-time autonomy. Empirical evidence raises some doubts about the effectiveness of family-friendly workplace systems in increasing firm productivity, even if these systems include practices of working-time autonomy. This indicates that not all policies included in a family-friendly workplace system are complementary.

In addition, there is a risk of dysfunctional effects from combining some other management practices with working-time autonomy measures. For example, firms may decide to link working-time autonomy with performance targets. This combination of practices, sometimes referred to as a “results only work environment” [8], implies that workers are free to decide when and where to execute their work tasks as long as they meet their targets. Problems can arise, however, if the firm continuously raises targets over time or sets stretch goals rather than realistic goals. In that case, while working-time autonomy itself is unlikely to increase work strain or impair worker health, the combination of working-time autonomy with performance targets may lead to excessive work intensification and subsequent health-related problems. These problems are more likely to stem from target ratcheting or the use of stretch goals than from implementation of working-time autonomy. Emerging evidence shows that setting performance goals that are difficult to achieve or being exposed to target ratcheting is associated with increased levels of work overload and health problems, which may subsequently also harm firm performance.

The policy advice for managers in this context is twofold. First, when combining working-time autonomy with performance monitoring, target ratcheting or setting stretch goals needs to be avoided; instead, realistic performance goals should be used. Second, employees should participate in the goal-setting process to improve the likelihood of setting realistic goals.

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### **Competing interests**

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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### Further reading

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