

What Type of Research and Development Employees Use Flextime?

Marko Virkebau,¹ Tallinn University of Technology, Estonia
Aaro Hazak, Tallinn University of Technology, Estonia

Abstract: Numerous employers provide flexible working schedules in order to attract a more diverse range of potential employees. However, not all employees use the flextime option provided by their employer. This study seeks to understand what types of employees in creative research and development (R&D) jobs utilize the flexible working time option. We present probit estimates based on data from our original repeated survey of Estonian creative R&D employees on a sample of seventy-two individuals from eleven entities. We find age, residential status, and the number of young children in the family to be associated with the use of flexible working schedules. Those who have families opt for flextime use with a significantly higher probability than those who are living alone. The more under-school-age children the employee has, the less likely it is that he or she uses flexible schedules. Older employees appear to be more likely to use flexible schedules than their younger colleagues. Although the sample for our study is small, these pilot results may provide some background information for employers in the R&D business for making decisions about the arrangement of work in light of employee diversity in flextime use preferences.

Keywords: Working Time, Flexibility, R&D Jobs, Estonia, Flextime

Introduction

Providing flexible work schedules has become a popular measure to make jobs more attractive to a diverse range of existing and prospective employees. While the effects of flexible work on work outcomes and social aspects have been widely studied, surprisingly little attention has been given to understanding how the availability of flexible work schedules is being received by different types of employees. Moreover, providing flextime possibilities does not necessarily mean that all of the employees will start using these options. Creative research and development (R&D) employees are a distinct group of personnel, as their work is primarily based on intellectual contribution, and it is generally more difficult to switch oneself off from work in creative jobs in comparison to physical jobs or jobs involving more routine knowledge. The aim of this article is to understand what types of R&D employees utilize the flexible work options that have been made available by their employer. The results of this study can be used to improve the work arrangements of specific groups of creative R&D employees.

The following section provides a brief overview of the relevant literature. The section after that outlines the data and methodology used for our study, followed by the results of our research and its discussion. The last section concludes the article.

Literature

A wide range of existing studies investigate the impact of flextime on employees' work outcomes and social aspects. While most studies have uncovered a positive relationship, the overall results remain inconclusive (De Menezes and Kelliher 2011). More recently, Hoeven and Zoonen (2015) have explored the ambiguous evidence on the results of flextime. They claim that there are both positive and negative implications of flextime and that which effect eventually dominates can depend on both individual and organizational conditions. In another study,

¹ Corresponding Author: Marko Virkebau, Akadeemia tee 3, Department of Economics and Finance, Tallinn University of Technology, Tallinn, 12611, Estonia. email: marko.virkebau@ttu.ee

Martínez Sánchez et al. (2014) examine the automotive industry in Spain, finding that the employers offer flextime in order to reduce labor costs or mitigate labor demand fluctuations. Overall, however, they find that flextime seems to support innovative activities. Additionally, Allen et al. (2013) review a number of previous studies seeking to understand the complex relationship between flexibility of work and family life. They find that there is little evidence as yet on the role of flexible working arrangements in reducing the work-life conflict, pointing once again to the complexity of these relationships.

Interestingly, the relationship between the utilization of flexible working time options and individual characteristics has been far less studied, and the results have remained rather mixed and inconclusive. For example, Almer, Cohen, and Single (2003) find that the decision to use flextime depends on gender, family matters, and the attitudes of colleagues toward time flexibility. However, their study is based on a sample from the “Big 4” audit firms and not on creative employees in particular. Giannikis and Mikhail (2011) likewise find that gender affects the decision to use flexible working options. Their study reveals that female employees acknowledge more of the positive effects of flexible working time than males, and women also use flextime more often than men. In another study, Albion (2004) finds that the use of flextime tends to be associated primarily with family-related commitments and obligations. Kossek, Barber, and Winters (1999) look into flextime use on the managerial level and find that women are more likely to utilize flextime, particularly to address the work-family conflict, which is commonly more persistent among female employees. The latter paper finds that younger employees are more likely to use flexible working schedules. Similarly, Sharpe, Hermsen, and Billings (2002) conclude that younger employees, as well as better-educated employees and those with small children, are more likely to use flextime. A positive association between educational level and flextime use has been identified by other studies, such as Sarbu (2014), Golden (2009), and Konrad and Mangel (2000). Building on previous studies, we seek to identify the link between personal sociodemographic characteristics and flextime use in our small sample of Estonian creative R&D employees, while we complement previous studies by examining the potential effects of sleep regimen and sleeping hours on the decision to adopt flexible work schedules.

Previous studies on European (including Estonian) data have identified that there are important differences in R&D intensity between various countries, industries, and individual companies (e.g., Männasoo and Meriküll 2014). However, the institutional aspects, such as the use of flexible working time, remain relatively little explored. Efficiency of work arrangement in creative R&D jobs therefore remains an interesting and yet relatively little studied research area.

Data and Methodology

The analysis presented in this article builds on a repeated survey among Estonian creative R&D employees. An online questionnaire was used for the data collection, comprising ninety questions concerning topics such as the organization of work, job satisfaction, work results, sleepiness, sleep patterns, tiredness, health, happiness, and other sociodemographic aspects. The sample of our study was compiled based on Statistics Estonia data on R&D. An employee is considered an R&D employee if at least 10 percent of his or her working time relates to innovative R&D tasks. The subject of interest for our study is creative R&D employees, and therefore “technicians” and “supporting staff” have been excluded, focusing the investigation solely on pure “researchers.” There were, on average, 4,400 full-time-equivalent creative R&D employees in Estonia in the period of 2010–2014.

The 2,400 creative R&D employees working in higher education and health care were excluded because teaching schedules and medical procedures can be expected to have a major impact on the availability and potential use of flexible working time. In addition, the 1,000 (in full-time-equivalent) employees who were working at micro-entities with less than fifteen creative R&D employees were excluded from our study, as their work arrangements are

substantially different and inherently less formal than in larger entities. After the above exclusions, the population of interest for our study totals 1,000 creative R&D employees.

The population comprises twenty-three employers, all of whom were invited to take part in the study. Eleven entities accepted our invitation, including eight in the first wave in the spring and summer of 2015, followed by an additional three employers for the second wave in winter 2016. Based on Mann-Whitney U tests (Mann and Whitney 1947) on the flexible working time usage variable, no statistically significant differences in the responses given during the two waves were identified. The data from the two waves have therefore been pooled by randomly selecting the replies of the recurring respondents so that each respondent is included only once.

Table 1: Entities and Employees in the Sample

<i>No.</i>	<i>Sector</i>	<i>Industry</i>	<i>Number of Employees in the Final Sample</i>
1	Private	Technology	13
2	Private	Banking	11
3	Private	IT	9
4	Private	R&D	8
5	Public	R&D	6
6	Private	Banking	6
7	Public	R&D	6
8	Public	R&D	5
9	Private	R&D	4
10	Private	Banking	3
11	Private	R&D	1
Total			72

Next, the final sample was cut further to exclude those employees who appeared irrelevant for the purposes of the study (including those with a less than 10 percent share of creative work in their total working time, those who did not consider their work to be creative R&D work, and those who worked more than twenty hours a week for another employer) as well as those who had given inconsistent responses to some of our control questions measuring a similar underlying construct. Finally, employees who had no flexible working time option were also excluded. The final sample remaining after these eliminations consists of seventy-two employees and represents approximately 7 percent of the total population of 1,000. Table 1 outlines the final pooled sample by participating entities.

It is essential to note that the final sample is small. Out of the seventy-two individuals included, only nine employees are not using the flexible working time option that has been made available. Regarding methodological constraints that may have an impact on the results, it should be noted that the population of employees could be approached not directly but only on a company level, which means that the employees could be included in our final sample only if their employer agreed to participate. Likewise, the voluntary nature of participation in the survey, as well as completion vs. noncompletion of the questionnaire, may incur selection biases. To ameliorate these biases, the sample has been weighted in order to align it with the characteristics of the population in terms of the respondent's gender and the employer's field of activity. Moreover, the standard errors have been clustered by employers in the regression models in order to address the common features of the clusters of employees by their employers (i.e., 11 groups; see Table 1).

The dependent variable for our analysis is the binary variable *flexuser*, reflecting whether the employee is (value 1) or is not (value 0) using the flexible working time option provided by the employer. Selection of independent variables, which represent various individual characteristics, is based on our research hypotheses and control variables, building on previous literature (see the Background section above). Age, gender, residential status, the number of small children in the

family, and educational level are the control variables of sociodemographic characteristics of the employee. The health factor represents the general health condition of the individual. The score of the Reduced Morningness-Eveningness Questionnaire (rMEQ, by Adan and Almirall 1991) reflects the circadian rhythmicity type of the employee. Average daily sleeping hours capture another aspect of the sleep regimen. The dependent and explanatory variables have been outlined in Table 2.

Table 2: Explanatory Variables and Description of the Subjects
(Mean and Standard Deviation Shown for Continuous and Ordered Variables;
Percentage of Respondents Shown for Binary and Categorical Variables)

<i>Variable</i>	<i>Description</i>	<i>All Mean/% (Std. Dev.)</i>	<i>flexuser=1 Mean/% (Std. Dev.)</i>	<i>flexuser=0 Mean/% (Std. Dev.)</i>
N		72	63 (88%)	9 (12%)
creative	Employee desired share of creative work in total working time of the employee (%)	75.69 (20.33)	76.08 (20.52)	73.00 (19.86)
age	Age in years	37.17 (11.49)	37.62 (12.02)	34.00 (6.24)
gender	Male (= 1) vs. female (= 0)	60%	59%	67%
alone	Employee living alone (= 1) or not (= 0)	26%	24%	44%
children	Number of under-school-age children living with the employee	0.39 (0.66)	0.38 (0.66)	0.44 (0.73)
education (years)	Years of education starting from primary education	16.79 (2.86)	17.00 (2.78)	15.33 (3.16)
health factor	Health condition factor (with overall Kaiser-Meyer-Olkin measure of sampling adequacy of the factor 0.6), consisting of:	-0.06 (0.77)	-0.02 (0.81)	-0.27 (0.40)
	(1) “Do you have high blood pressure or have you ever used medicine for high blood pressure?” (Yes = 1)	14%	13%	22%
	(2) “Do you suffer or have you suffered from diseases that significantly affect your mental fatigue?” (5-level Likert-type scale, “Never” = 1, “Often” = 5)	1.65 (0.89)	1.68 (0.91)	1.44 (0.73)
	(3) “Does your disease or injury interrupt you while doing your daily job?” (5-level Likert-type scale, “No obstacles” = 1, “Not able to work” = 5)	1.57 (0.73)	1.62 (0.75)	1.22 (0.44)
	(4) “How many workdays have you been absent from work due to disease or medical examination in the past 12 months?”(5-level scale, “None” = 1, “100–365 days” = 5)	1.79 (0.71)	1.81 (0.72)	1.67 (0.71)
	(5) Body-Mass Index (continuous)	24.50 (3.75)	24.46 (3.87)	24.72 (2.86)
meq	rMEQ score, 1...25 scale ranging from “Definitely an evening type” to “Definitely a morning type”	14.31 (3.42)	14.30 (3.36)	14.33 (4.00)
sleephours	Employee reported average sleeping hours per day on the scale:			
	“Less than 6 hours” (base)	4%	3%	11%
	“6–7 hours” (= 2)	50%	49%	56%
	“7–8 hours” (= 3)	39%	40%	33%
	“8–9 hours” (= 4)	7%	8%	0%
	“more than 9 hours” (= 5)	0%	0%	0%

Our regression models present probit estimates of the binary dependent variable (*flexuser*) with three alternative specifications (see Models 1, 2, and 3 in the Results section) to test the robustness of the results.

Results and Discussion

The probit estimates of *flexuser* have been presented in Table 3 below, showing the estimates for three alternative sets of explanatory variables that we expect to be related to the employees' decision whether to use the flexible working time option that their employer has made available.

Age appears to be positively associated with the use of flexible working time. The older the employee, the more likely it is that he or she will use flexible schedules. This contrasts with the findings of Kossek, Barber, and Winters (1999) and Sharpe, Hermsen, and Billings (2002). Our results may be related to older employees' need for more time flexibility due to family matters, health issues, and any other commitments. Moreover, the older the employee, the better chances he or she may have to actually use the flexible work schedules. Younger employees at more junior positions may be less flexible in making these decisions due to teamwork requirements and potentially less negotiating power. The latter interpretation would be in line with the findings of Golden (2009) that access to flextime is easier for employees on a managerial level.

Based on marginal effects of our probit estimates, employees who live alone appear to be 33–35 percent less likely to use the flexible working time option than those with families. This result can be explained by the higher need for time flexibility that employees with families may need due to the different work, school, and other schedules of family members as well as other family-related commitments. Somewhat surprisingly, and contrary to the findings of Sharpe, Hermsen, and Billings (2002), having under-school-age children in the family appears to reduce the likelihood that the employee will use the flexible working time option. From the marginal effects, it appears that this is rather the case in families with two under-school-age children; the first child does not seem to have a statistically significant association with the use of flexible working time. This result might be related to the creative R&D employee preferring to work for a certain number of fixed hours (at the workplace) and to switch to family matters at other times, as opposed to implementing a mix of creative work and family affairs. These aspects should be considered by the employers when designing work arrangements for R&D employees.

Interestingly, employees who sleep more hours appear somewhat more likely to use flexible work options. This may be related to their higher sensitivity to time use issues, given that they have fewer waking hours (i.e., productive hours) at their disposal.

No statistically significant association between flexible working time use and gender, general health condition, sleep regimen, educational level, and desired creative intensity of work was identified. However, the sample of our study is small, and the low share of employees (12%, or nine individuals) who have flexible working time options available but do not use them increases potential sample-related biases in the results and limits the applicability of the outcomes of this article. Similar studies on larger samples, and in different institutional contexts (e.g., other countries), may lead to different results. There are other research approaches investigating this topic that are acknowledged but have not been considered in this study, such as the person-job-fit literature (Caldwell and O'Reilly 1990) and psychological contract theory (Scandura and Lankau 1997).

Table 3: Probit Estimates of *flexuser*

<i>Explanatory Variable</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
creative	0.022 (0.02)	0.024 [‡] (0.02)	0.022 (0.02)
age	0.024* (0.01)	0.027* (0.01)	0.030** (0.01)
gender (Male=1)	-0.637 (0.62)	-0.729 (0.52)	-0.642 (0.55)
alone (Yes=1)	-1.921** (0.83)	-2.021*** (0.77)	-1.897** (0.78)
children	-0.444* (0.23)	-0.478** (0.22)	-0.424** (0.21)
education (years)	0.038 (0.09)		
health factor	0.272 (0.27)	0.293 (0.24)	
meq	-0.030 (0.09)	-0.029 (0.09)	-0.031 (0.08)
sleephours	0.762 [‡] (0.48)	0.824* (0.48)	0.780 [‡] (0.49)
constant	-1.807 (1.36)	-1.456 (1.38)	-1.474 (1.34)
Pseudo R ²	0.390***	0.386***	0.377***
Number of Jobs	72	72	72

Notes: * p < 0.10, ** p < 0.05, *** p < 0.01; [‡] all within a 85% confidence interval (0.10 < p < 0.15); significance of pseudo R² is based on the Wald's chi²

This article is a small component of a larger project investigating the linkages between work arrangements, work outcomes, job satisfaction, sleep, and health (see Hazak et al. 2016; Hazak, Männasoo, and Virkebau 2017 for some of the initial results) as well as companies' sustainability and competitiveness in the European post-transition economic context at large (e.g., Männasoo, Maripuu, and Hazak 2017; Maripuu and Männasoo 2014; Avarmaa, Hazak, and Männasoo 2011, 2013; Hazak and Männasoo 2010; Männasoo 2008; Hazak 2008, 2009; Männasoo and Maripuu 2015; Laidroo and Männasoo 2014). In that broader context, the results of this article help to better understand the existence and role of differences in working-time-related preferences and choices among different types of employees as well as the different effects that regulation can have in the context of different companies. The study of the issues addressed in this article can be expanded on in following larger studies. The implication of this study is that an employer's decision on whether to provide flextime in a particular job might attract a specific range of employees for the position and affect the allocation of different types of creative R&D employees among competing entities.

Conclusion

The article aims to understand what types of employees in creative R&D jobs actually use the flexible working time option provided by their employer. Our probit estimates are based on data from our original repeated survey of Estonian creative R&D employees on a sample of seventy-two individuals from eleven entities. Our study reveals that R&D employees who have families are 33–35 percent more likely to opt for flextime use than those who are living alone. The more

under-school-age children the employee has, however, the lower the likelihood of using flexible schedules. Older employees appear to be more likely than their younger colleagues to use flexible schedules. When interpreting the results, the small sample for our study and potential consequent sample selection biases must be noted. However, these pilot results may provide interesting background information for employers in the R&D business that can be utilized when designing work arrangements for R&D employees.

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ABOUT THE AUTHORS

Marko Virkebau: PhD Student, Department of Economics and Finance, Tallinn University of Technology, Tallinn, Estonia

Aaro Hazak: Professor, Department of Economics and Finance, Tallinn University of Technology, Tallinn, Estonia