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Keskusteluaiheita – Discussion papers

No. 1029

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WHAT MAKES AN ENTREPRENEUR INDEPENDENT? EVIDENCE FROM TIME USE SURVEY

We thank conference/seminar participants at the XXIII Summer Meeting of the Finnish Economists (Jyväskylä), The Government Institute for Economic Research (VATT) and IATUR conference at Halifax (2005, Canada) for their helpful comments. Addresses for correspondence: Ari Hyytinen, Bank of Finland, PO Box 160, FI-00101 Helsinki, E-mail: ari.hyytinen@bof.fi. and Olli-Pekka Ruuskanen, The Research Institute of the Finnish Economy (ETLA), Lönnrotinkatu 4 B FIN-00120 Helsinki, Fax: +358-9-601753, E-mail: olli-pekka.ruuskanen@etla.fi. This paper is related to a research project on entrepreneurship at Etla/Etlatieto, funded by the National Technology Agency of Finland, Tekes (project 579/31/03 and 10582/25/04). The views expressed are those of the authors and do not necessarily reflect the views of the Bank of Finland or the Research Institute of the Finnish Economy (ETLA).

ISSN 0781-6847 22.06.2006

HYYTINEN, Ari – **RUUSKANEN,** Olli-Pekka, **WHAT MAKES AN ENTREPRENEUR INDEPENDENT? EVIDENCE FROM TIME USE SURVEY.** Helsinki: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, 2006, 23 p. (Keskusteluaiheita, Discussion Papers, ISSN 0781-6847; No. 1029).

ABSTRACT: It is a well-documented empirical regularity that it is more satisfying to be self-employed than to work as an employee for an organization. A large part of this difference in job satisfaction is in the literature attributed to the strong perception of independence by the self-employed. In this paper we study people's time use as a source of entrepreneurial independence. By making use of disaggregated sequential microdata on people's time use, we are able to document that the perceived independence hardly derives from more flexible time use: The self-employed work longer effective hours as well as more in the evenings and weekends than the organizationally employed. Albeit being able to time one's work may be a signal of flexibility in time use, the self-employed have less pure leisure and are less frequently absent from work in general and because of sickness on weekdays in particular. Moreover, we document that the self-employed who have small children are more likely to work after 5 p.m., when the communal day-care centers close. On the basis of these findings it is not surpirising that the self-employed perceive that they are more often than the organizationally employed under time pressure and in hurry.

KEYWORDS: Entrepreneurship, allocation of time, job satisfaction.
JEL: M13, J22, J28.

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TIIVISTELMÄ: Yrittäjien on usein havaittu olevan tyytyväisempiä työhönsä kuin palkansaajien. Tämän eron on arveltu johtuvan siitä, että yrittäjät ovat työssään riippumattomampia ja vapaampia kuin palkansaajat. Tässä tutkimuksessa selvitetään, voisiko tämä riippumattomuuden tunne liittyä joustavuuteen ajankäytössä. Tutkimuksessamme hyödynnettävä yksityiskohtainen ajankäyttöaineisto osoittaa, että niin ei varsin todennäköisesti ole: Yrittäjät työskentelevät pidempään illalla arkipäivisin ja useammin viikonloppuisin kuin palkansaajat. Vaikka kyky ajoittaa työntekoa normaalin työviikon ulkopuolelle voi olla merkki joustavuudesta ajankäytössä, havaitsemme, että yrittäjillä on vähemmän puhdasta vapaa-aikaa ja että he ovat palkansaajia harvemmin arkipäivinä pois töistä esimerkiksi sairauden vuoksi. Havaitsemme myös, että ne yrittäjät, joilla on pieniä lapsia, ovat useammin töissä kello 17.00 jälkeen, jolloin päiväkodit sulkeutuvat, kuin palkansaajat, joilla on pieniä lapsia. Näiden havaintojen valossa ei ole yllättävää, että yrittäjät tuntevat olevansa useammin kiireisiä kuin palkansaajat.

AVAINSANAT: Yrittäjyys, ajankäyttö, työtyytyväisyys.
JEL: M13, J22, J28.

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1 Introduction

The want of independence predicts entry into self-employment (e.g. Taylor 1996) and it appears to be more satisfying to be self-employed than to work as an employee for an organization (e.g. Blanchflower and Oswald 1998, Blanchflower 2000, Parker 2004, pp. 80-81).[1] A large part of this difference in job satisfaction derives from the independence of the self-employed from organizational routines and bureaucracy (Hundley 2001, Frey and Benz 2003). However, very little is known about the sources of this perceived entrepreneurial autonomy and how it comes about. For example, how does the independence of the self-employed manifest itself in the daily routines of entrepreneurs? What does 'being one's own boss mean on a typical working day? In particular, are the self-employed more autonomous, because they have, say, a more flexible work schedule? The aim of this paper is to address these previously overlooked questions: To the best of our knowledge, earlier research has not considered people's time use as a source of entrepreneurial autonomy nor has it examined the differences in the daily (i.e. within a day) work patterns between the self-employed and employed.[2]

Our primary source of the data is the Finnish Time Use Survey from 1999/2000, which collects information on how people living in Finland spend

[1] Consistent with this non-pecuniary reward from entrepreneurship, it has been found that the self-employed earn on average less than employees (Hamilton 2000) and that the risk/return trade-off of the entrepreneurial investments in privately-held small businesses is worse than that of the investments made on public stock markets (Moskowitz and Vissing-Joergensen 2002). Further, a number of studies have found that the self-employed bear a greater risk and face more variable income stream than the regular employees do (see, e.g., Carrington, McCue, and Pierce, 1996).

[2] For example, both Hundley (2001) and Frey and Benz (2003) build their insightful empirical analyses on the origins of the greater job satisfaction of the self-employed on survey responses. These responses are based on the subjective self-evaluations of the surveyed individuals about, e.g., how autonomous they are or how flexible their working assignments and schedules are. Moreover, most of the previous studies that look at the difference in working hours between the organizationally and self-employed only have information on the total hours worked, but not on the distribution of hours within a typical working day (see Parker 2004, pp. 197-198 for a short review of this literature and further references).

their time. The Finnish data record the primary and secondary activity of a person on a typical working and on a weekend day. It therefore allows us to compute accurately the total effective hours worked (that is free from a recall-bias) as well as the distribution of hours across various activities and tasks within a typical working day. Moreover, the data are unique, as we have at our disposal *disaggregated sequential microdata*, which allow us to trace the exact *timing* of the activities and tasks within a typical working day at 10-minute intervals. Most of the available public use data files on time use are aggregated (such as e.g. the American Time Use Survey, ATUS) and are thus unsuitable for this type of analysis. With our data it is possible, for example, to study the differences in tempo and spells of the working day between the self-employed and employees. Using these data, we can for the first time describe how the organizationally and self-employed spend their days and how flexible their working assignments and schedules are. Yet another feature of our data is that the activities and tasks that are recorded at 10-minute intervals are accompanied with location data.

Our main finding is that time use does not seem to make the self-employed independent: The self-employed work longer effective hours than the organizationally employed do. A non-negligible part of these extra hours are done in the evenings and weekends: In particular, we document that nearly 20% of the gap derives from weekend work. Albeit being able to work in the evenings and weekends may be a signal of flexibility in time use, we document a number of results that indicate the contrary: The self-employed

- have less *pure* leisure, which is a measure of leisure that explicitly excludes time spent on e.g. housework and sleeping.
- are less frequently absent from work in general and because of sickness on weekdays in particular.

- are more often under time-pressure and in hurry than the regular employees are.
- with small children are more likely to work after 5 p.m., when the communal day-care centers close.

We find, however, two signals of greater autonomy at work: The self-employed interrupt their spells of work more frequently and they spend a smaller fraction of their effective working time on workplace than the organizationally employed do. We leave it for future research to examine whether these few pieces of greater flexibility in time use are sufficient to make an entrepreneur perceive a great degree of independence, autonomy and ultimately, work statisfaction. If they are, a receipt for greater employee statisfaction in organizations is not hard to come by.

The remaining of this paper is divided into three sections: Section 2 describes the Finnish time use survey. We present our unconditional (univariate) empirical results in section 3. In section 4 we report results from a number of regression analyses, which allow us to control for a number of observable differences between the employed and self-employed, such as demographics and the line / industry of business in which they are working. Finally, section 5 summarizes the analysis.

2 Data

2.1 Survey description

The dataset used in this study is the Finnish Time Use Survey (FTUS) 1999/2000 of Statistics Finland. The data were collected according to the Eurostat guidelines

for harmonized European Time Use Surveys during years 1999-2000.[3] Household members were for this survey first interviewed for background information and then asked to keep time use diaries for two days, totaling to 2×24 hours. Each individual was asked to keep a diary one weekday and one weekend-day, which were selected randomly. Within a household, the same days were assigned to each member.

Each respondent recorded his/her primary and secondary activity every ten minute (i.e., for ten minute intervals) for the two diary dates. These activities were coded into 185 different time use categories. The resulting basic micro datafile includes 144 adjecent 10 minute spells of activities for each person from 4:00 am to 3:50 am for the two recording days.[4] An illustration of a time-use diary is given in appendix 1.

The basic sample available to us consists of 5224 individuals who had both responded to the interview and kept a diary for two days. For this study, a subsample of the households in which the adult(s) is (are) between 18 to 65 years of age is selected. We focus on people who belong to labor force and in particular on persons who are either organizationally employed (i.e., working for someone else) or self-employed. Farmers are however excluded. These restrictions result in a sample of 2347 persons, for which we have 4694 observations (two daily diaries for each).

[3] This effort resulted in time use data for 10561 days. The sampling design was a two-phase, single-cluster sampling, where households were clusters and individuals were the elementary units. In the first phase a sample of over 15-year old Finns was collected by Bernoulli sampling. Then every person over 10 years of age living in the same household was taken into the sample.

[4] For a more extensive description of the data, see Ruuskanen (2004).

2.2 Variables

Our main interest is in the (effective) time spent working and its distribution within a day. In the time use data working time comprises of a number of different activities: working in a primary job, working in a secondary job, traveling as a part of either primary or secondary work, and other (possibly unspecified) activities related to work. We include all these activities to the hours of work. We exclude lunch breaks, coffee breaks and travel to and from work from an individual's hours of work. Note that from the sequential data files it is possible to calculate both the total effective working time as well as interruptions to work. We also have data on leisure, sleeping, the location of activity, reasons for not working on the diary date as well as feelings of rush and time pressure.

We devide the respondets into two categories: the self-employed and those in paid employed. This categorization is based on self-reported socioeconomic status. Out of the persons in our sample, 2133 (90.9%) are in paid-employment and 214 are self-employed (9.1%).

As for personal and family characteristics, we observe among other things gender, age, marital status, education, place and type of residential area, number of persons in the family who work, number of children (if any), and the industry or sector for which the respondent is working. We also observe taxable income for each respondent.

3 Unconditional time use

3.1 Effective hours of work

Various labor market surveys suggest that the self-employed work longer days than the organizationally employed do. For example, the Finnish Labour Survey

from 2002 indicates that entrepreneurs work on average 47.1 hours per week, wheras the employed work 38.5 hours. The difference is a whopping 8 hours 40 minutes a week.[5]

A problem with the labor survey estimates of the hours of work is that they are prone to recall errors and clustering around focal point hours (e.g. Klevmarken 1999). The fuzziness of the border between work and leisure in self-employment is a potential source of the large difference in working time that is typically documented in these surveys. Entrepreneurs may for example include to (or exclude from) their hours of work a part of the time they spend socializing with, say, their circle of acquaintances and friends, who also are their potential suppliers or customers. Some of the planning and business problem solving done during the free time (i.e., while actually doing some primary non-work activity) is yet another source of recording and recall error.

The FTUS allows us to recheck the available estimates of the hours of work. The use of diaries removes recall bias and allows us to measure *effective* working time. We can for example exclude lunch and coffee breaks. We can also record work done at home or in a secondary employment. Based on these detailed recordings in the FTUS we compute variable *Weekday work*: In our data, the self-employed work on average 439 minutes on a typical week day, which equals to 7 hours 19 minutes. For employees, the comparable figure is 376 minutes, i.e., 6 hours 16 minutes. The *t*-statistic testing the difference in the hours of work between the two groups is −3.76, which is statistically significant at better than the 1% level. For weekends, we compute variable *Weekend work*. During weekends,

[5] Similar results have been reported also in Uusitalo (2001): Based on the Finnish Labour Force Survey from 1997, Uusitalo (2001) reports for example that the self-employed work on average 5.3 hours (= 45.1−39.8) more per week. Kauhanen (2004) concentrates on academic entrepreneurship, i.e. on entrepreneurs with a degree in business administration or engineering from a univer-

the self-employed work on average 152 minutes (2 hours 32 minutes), whereas the employees work on average 68 minutes (1 hour 8 minutes). This difference is large and statistically significant at better than the 5% significance level.

These numbers mean that on a typical *workweek*[6], the self-employed work on average 41 hours 41 minutes (2500 minutes) and employees 33 hours 36 minutes (2016 minutes). We call this variable *Total weekly work*. The difference in the hours worked per week between the self-employed and employed is hence 8 hours and 5 minutes per week (i.e., 485 minutes per week). The difference is significantly different from zero at the 5% significance level. These results confirm the previous findings from the labor market surveys: the self employed work more. Our calculations indicate that nearly 20% of the gap derives from weekend work and the remaining 80% from the longer working days during the workweek.

3.2 Typical working day

3.2.1 Distribution of the hours of work within a working day

Disaggregated time use data make it possible to study the distribution of working time during a typical working day. As it is not entirely clear what kind of statistic would capture the distribution of working hours in a sufficiently rich fashion, we rely on graphical presentation. Figure 1 presents the distribution of working hours on weekdays, which we have estimated using univariate kernel density methods. The graph shows that the self-employed start to work approximately at the same

sity or a polytechnic. He documents that the academic self-employed work in Finland five hours more per week than similarly educated employees with regular jobs do.

[6] The total weekly working time is computed by multiplying the (effective) hours of work on the (only) weekday observation by five and the (effective) hours of work of the weekend observation by two. We should emphasise that there are a number of problems in this procedure, as detailed in e.g. Klevmarken (1999), Klevmarken (2005) and Ruuskanen (2004).

time as, or slightly later than, the regular employees do. The main differences are that their lunch-break is not as tightly concentrated on the hour just prior to the noon and, in particular, that the self-employed work later in the evenings.

A simple way to evaluate whether the self-employed work later on a typical weekday is to focus on the spells of the 10-minute activities that are recorded, say, between 5:30 and 9:00 pm. Of these spells, the self-employed spend, as a group, 21% in work. The corresponding percentage for the employed is 11%. The *t*-statistic testing the difference between the two is highly significant.[7]

[Insert Figure 1 here]

To sum up, the self-employed work more weekly, because they work later in the evenings and more in the weekends.

3.2.2 Absence from work

How many of those who reported in the FTUS that they are employed or self-employed were *actually* at work on the weekday they were asked to keep the time use diary? Based on a variable we call *Working status*, we can calculate that 76% of the employed are working during the weekday on which they were requested to keep the diary. The corresponding percentage is 83% for the self-employed. The difference is significant at the 1% level. During weekends, the corresponding percentages are 15% (employed) and 40% (self-employed). The difference is also statistically significant.

[7] The distribution of working hours during weekends reveals much less variation between the self-employed and the employed. A difference is that the fraction of the self-employed who work during weekends is larger that the fraction of the employed. This is, of course, consistent with the difference in the average hours of work during weekends that we already documented.

Being able to be absent from work due to sickness is an obvious signal of flexibility in time use. A priori, it is not clear whether the self-employed can more flexibly adjust their working time than the employed. On the one hand, the self-employed may find it difficult to find a substitute, were he/she needed. On the other hand, they have no obligation to report a legitimate reason for their sick absence, which is in contrast to the case of regular employees.

Our data include information about what happened on the weekday on which the respondents were requested to keep the diary. Using this piece of information we can construct variable *Sickness*, which tracks persons who were sick on the reporting day. Using these self-reported data, we can compute that only 0.9% of the self-employed were absent from work because of sickness. For the employed, this share is 2.7%. This difference is large and significant at the 5% level (*t*-statistic = 2.33). However, the difference is not significant during weekends: On the weekend diary day the percentage of people saying they were sick is higher and nearly the same for the self-employed and employed (1.9% vs. 2.1%). This discrepancy (in the difference) between weekdays and weekends may reflect that fact that the self-employed have less flexibility in time use during weekdays than during weekends: Maybe it simply is easier to find a substitute during the weekends.

Another way of studying the possibility to be absent from work is to look at the percentage of people who are on a holiday during the diary date. There are two questions in the background information file which allow us to examine the ability to have a day off from work during a working week. One asks about employment during the interview week and the other the causes for absence during the diary day. We name these variables *HolidayWeek* and *HolidayDay*.

There again is a statistically significant difference between the self-employed and employed: Only 1% of the self-employed say they have a holiday week when 9% of those in paid employment report so. Almost 20% of the employed report they have a day off because of holiday, but only 9% of the self-employed report the same.

3.2.3 Interruptions to work and calling it a day

How flexiblely can the self-employed adjust their spells of work within a typical working day? Can they for example work shorter spells or pursue non-work related activities, such as taking care of personal things, during work days? Or how is it is for the self-employed to call it a day? Can they for example leave work earlier to take care of personal matters?

To examine interruptions, we count the number of interruptions to work spells during a typical working day, and scale it by the total number of hours worked. We call the variable *Interruptions*. In our data, the most typical classes of interruptions that get reported are lunches and coffee-breaks. Yet another type of interruption that is reported is quick shopping during a work day or some type of socializing.[8]

Using the scaled measure, we find that on weekdays, the self-employed interrupt their working day on average 0.59 times per (effective) working hour. For the employed, this ratio is 0.47. The difference is statistically significant at the 5% level, but not at the 1% level. On weekends, there are clearly more interruptions

[8] The diary method used in time use surveys is not entirely satisfactory in recording interruptions. People may, for example, be reluctant to report the extent to which they take care of their personal things during a work day (e.g., Antila 2005). Moreover, an interruption must last at least 10 minutes in order to get recorded in the time diary file.

per an hour worked (self-employed = 0.94; employed = 0.88), but the difference between the two groups is not statistically significant.

It is not obvious how one could examine how easy it is for a self-employed person to call it a day at will when compared to the organizationally employed. However, with the Finnish time use data, we have a unique possibility to take advantage of an institutional feature to look at this matter. In Finland (almost) all working parents with small children are offered (by the law) the possibility to make use of communal day-care centers. Most of these centers close at 5 p.m., meaning that it is mandatory to pick your children up by that time. It is therefore very common for parents, who have small children, to leave the work by 5 p.m.

We make use of this rather special insititutional feature to take a look at the flexibility of time use on a typical working day: Are those parents who are self-employed more or less likely to be at work around 5.00-5.10 p.m.? We call the variable *WorkingAfterFive*. There are 414 employed and 40 self-employed in our data that have children who are less than six years old. Out of these employed only 14% are still working around 5 o'clock, whereas the corresponding percentage for the self-employed is 33%. This difference is statistically significant at better than the 5% significance level.

3.3 Hurry and time-pressure

Are the self-employed less frequently than the employed under time pressure or in hurry? Addressing this question empirically is challenging, because it is difficult to measure hurry or more generally, time-induced stress. Moreover, time use studies do not have direct questions about them. A set of questions in the FTUS however asks the respondents about those aspects of time use that can result in an experience of time related stress. The first question, which we use to construct *Generally rushed* -variable, is about how often the respondent feels rushed. Condi-

tional on the respondent answering that he feels rushed constantly or at least sometimes, the second question asks him whether the respondent suffers from time pressure generally. We denote this variable *Time pressure*. Both these questions relate to the total time use and refer thus not a specific diary day. The third question, in contrast, concerns a particular diary day: After completing the diary the respondent is asked whether he/she felt rushed during the recording day.[9] We code variable *Today rushed* from these data.

We find that more than nine out of ten of the self-employed (93%) report that they are always or at least sometimes on hurry. However, only 88% of the employed feels the same. The *t*-statistic for the difference is -2.31, indicating that the difference is significantly different from zero at the 5% level. Out of these people in hurry, no less than 71% of the self-employed report feeling time pressure. Of the employed, 65% feels the same. This percentage contrasts favorably when compared to the self-employed, but the difference is statistically significant only at the 10% level. On the recording weekday, 53% (41%) of the self-employed (employed) felt rushed. This difference is statistically significant at the 1% level. It hence seems that the self-employed are, if anything, more frequently under time pressure and in hurry than the employed.

3.4 Pure leisure and sleeping

Can the self-employed devote a larger fraction of their free time (i.e., of the time not included to their effective hours of work) to leisure activities? To address this question, we focus on the hours of *pure* leisure, which explicitly exclude time spent on housework and sleeping. Pure leisure includes social life, sports, outdoor

[9] Whether these questions are able to indicate the presence of stress is, naturally, open to criticism.

activities, reading, watching TV and volunteer work. We scale the hours of pure leisure by the hours not included to the effective hours of work to obtain *Pure leisure* -variable.

On average, the self-employed are not able to devote a larger fraction of their free time to pure leisure, as for them, pure leisure accounts on weekdays for 22% of their free time. This contrasts unfavorably to the employed, because their pure leisure accounts for 24% of their free time. The *t*-statistic testing the difference is 2.22 and hence statistically different from zero at better than the 5% level. On weekends, these fractions are for the self-employed and organizationally employed 29% and 31%, respectively. The difference is significant at the 10% significance level.

One explanation for the lack of pure leisure could be hours of sleep: Biddle and Hamermesh (1990) have shown that there is a considerable amount of heterogeneity in the hours of sleep and that a number of economic variables correlate with the amount of sleep. To study whether it varies between the employed and self-employed, we count all periods of sleep and resting to *Sleep.* During the working week those in the self-employment sleep approximately 25 minutes longer. This difference is statistically significant at 5% level. However, during the weekend there is no statistically significant difference between the two groups. An interpretation of these findings is that the self-employed are fatigued by their longer working days and that the fatigue translates into a demand for longer rest during the working week.

3.5 Location of work

One of the often stated reasons for becoming self-employed is the ability to be one's 'own boss'. There are probably many dimensions to this ability, of which

time and space are probably the most obvious ones. As we have already taken a careful look at time (use), we examine in this subsection the ability to choose the place of work as a manifestation of entrepreneurial autonomy.

The FTUS makes it possible to study the location of work. Each ten minute activity is recorded together with information where the activity takes place, i.e., whether the person is in the place of work or in some other place. To study the location of work we divide all possible locations into two categories: Working in workplace and working elsewere, which records work done outside regular workplace. We use these data to code variable *Not in workplace*, which records working in a place other than one's regular workplace.

The data show a marked difference in the location of work between the self-employed and the organizationally employed. On a typical weekday, the self-employed work 27% of their hours of work in a place other than their workplace. This means that the self-employed are 2 hours and 21 minutes out of their office. For the employed, the percentage is 11%, which corresponds to working out of the office 42 minutes a day. The *t*-statistic for the difference in the percentages is 6.57, which is statistically significant at the 1% level.[10]

An obvious explanation for the difference is that the self-employed need no supervision or monitoring. Holding all else constant, they are therefore not as constrained to work in a specific, dedicated place of work as regular employees are.

[10] The difference is clearly smaller during weekends. Focusing on those self-employed who work during weekends, we find that they work 42% of their weekend hours of work in a place other than their workplace. The corresponding percentage for the employed is 41%.

4 Conditional time use

Self-employment is concentrated on certain industries.[11] They also differ from the employed in terms of demographic characteristics. It is therefore of interest to examine to what extent the differences in time use between the self-employed and organizationally employed can be explained by the observable differences between the two groups.

Table 1 reports a number of regression results. The contents of the table are as follows:

- **Panel A**: In column 1-3 of the panel the dependent variables are *Weekday work*, *Weekend work* and *Total weekly work*, all measured in minutes. In the remaining three columns, these variables are in logs. All the models of panel A are estimated using OLS.
- **Panel B**: The dependent variables are *Working status, Sickness* and *Interruptions*, each estimated separately for weekdays and weekends. As to the methods of estimation in the six columns, for *Working status* and *Sickness,* which are indicator variables, the method of estimation is Probit. When *Interruptions* is the dependent variable, the method of estimation is OLS.
- **Panel C**: The dependent variables are *Generally rushed, Time pressure, Today rushed* (weekday and weekend*),* and *Sleeping* (measured here as a fraction of total time use and run separately for both weekdays and weekends).[12] In the first four columns, the model is Probit and in the last two, it is the fractional logit model of Papke and Wooldridge (1996). The model

[11] Out of 14 different lines of business, 61 percent of self-employed in this sample work in four: manufacturing, retail, business services and healthcare.

[12] The results are similar if we use the total amount of sleeping in minutes as the dependent variable.

explicitly takes into account that the range of the dependent variable is [0, 1].

- **Panel D**: The dependent variables in the first four columns are *Pure leisure* and *Not in workplace*. The models in these columns are estimated separately for weekdays and for weekends using the fractional logit model. In the last two columns, the dependent variables are *HolidayWeek* and *HolidayDay.* The method of estimation in them is Probit.

In each panel, the explanatory variables are Gender (=1 if male), Age (in years) and Age squared, Marital status (6 categories), Education (3 categories), region of residential area (6 categories), type of residential area (3 categories), number of persons in the family who work, number of children (if any), the industry or sector for which the respondent is working (14 categories) and the season of the year when diary was kept (4 categories). For brevity, we only report the coefficient of the *Self-employed* –indicator (that is, we do not report in the table the coefficients of the control variables). The reported standard errors are robust and allow for clustering at the level of households.

[Insert Table 1 here]

The table shows that all our unconditional results are robust to holding a number of personal and family characteristics constant. That is, we find very little evidence that the perceived independence of the self-employed derives from their more flexible time use. The estimations confirm, for example, that the self-employed work longer effective hours on weekdays and more in the weekends than the organizationally employed do. The self-employed are less frequently absent from work in general and because of sickness on weekdays in particular. The

regression results also confirm that the self-employed are more often under time pressure and in hurry than the regular employees. They also have less pure leisure both on weekdays and weekends.[13]

The regression results reported in Table 1 are robust to including the taxable income of each respondent as an explanatory variable. We have not included it in the basic models, because it is potentially endogenous. However, none of our results are affected by its inclusion.

Finally, we confirm that the self-employed who have small children are more likely to work at the time when the communal day-care centers close. To this end, we use an interaction term (i.e., Self-Employed * Small children) instead of the Self-Employed -indicator in a Probit model in which *WorkingAtFive* is the dependent variable. The interaction term obtains a positive coefficient that is statistically significant at the 5% level.

5 Conclusions

It is a well-documented empirical regularity that it is more satisfying to be self-employed than to work as an employee for an organization. In the literature, a large part of this difference in job satisfaction is attributed to the strong perception of independence by the self-employed.

In this paper we study what makes an entrepreneur independent by using a new type of data, data on people's time use. Our primary source of the data is the Finnish Time Use Survey from 1999/2000, which collects information on how people living in Finland spend their time. The Finnish data are unique in that it

[13] Moreover, the *Self-employed* -indicator obtains a negative coefficient when *HolidayWeek* and *HolidayDay* are used as the dependent variable.

allows us to trace the exact timing and location of the activities and tasks within a typical working or weekend day. This means that the time use data available to us are in a sequential order, making it possible to study e.g. the differences in tempo and spells of the working day between the self-employed and employees.

We find very little evidence that the perceived independence of the self-employed derives from their more flexible time use, either unconditionally or conditionally: The self-employed work not only longer effective hours, but also more in the evenings and weekends than the organizationally employed. The self-employed have less pure leisure and are less frequently absent from work in general and because of sickness on weekdays in particular. The self-employed who have small children are more likely to work at the time when the communal day-care centers close. Our findings also indicate that they are more often under stress and in hurry than regular employees.

An indication of flexibility that we do find is that the self-employed interrupt their spells of work more frequently and that they spend a smaller fraction of their effective working time on workplace than the organizationally employed do. We conjecture, however, that the few pieces of greater flexibility in time use that we document in this paper are hardly sufficient to make an entrepreneur independent.

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Appendix 1: An illustration of the use of a time diary

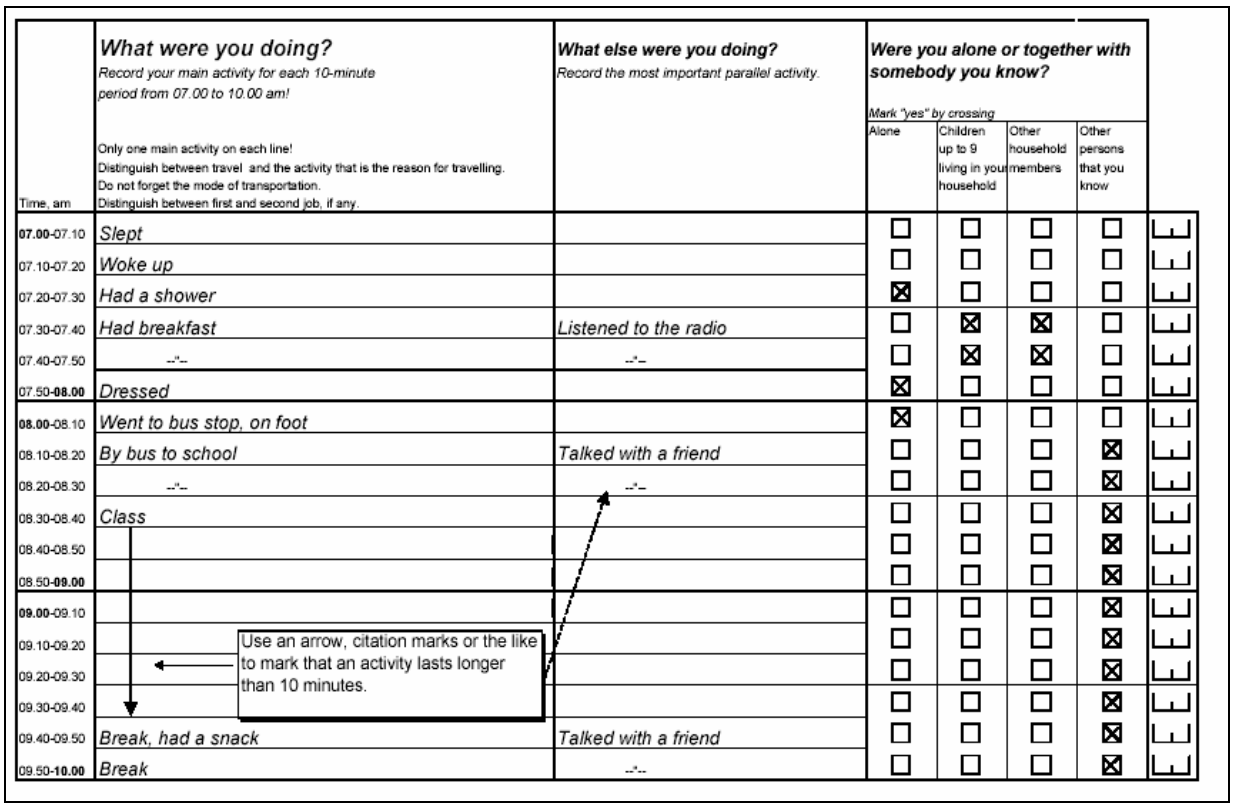

Figure 1: Kernel density estimate of the distribution of hours of work

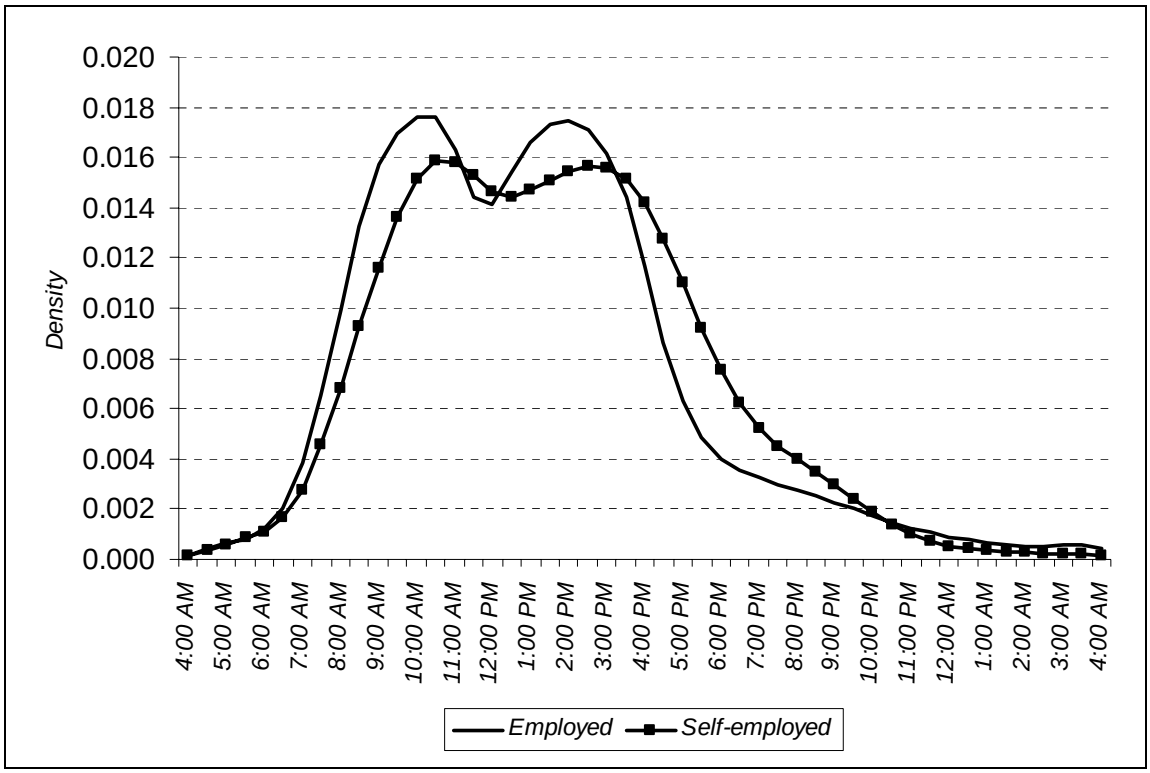

Table 1: Conditional time use (regression results)

	1	2	3	4	5	6
PANEL A	OLS	OLS	OLS	OLS	OLS	OLS
Dep.var	*Weekday work*	*Weekend work*	*Total weekly work*	*log(Weekday w.)*	*log(Weekend w.)*	*log(Total weekly w.)*
Day	(Weekday)	(Weekend)		(Weekend)	(Weekend)	
Self-employed	247.382	158.4235	405.8055	.0024488	.0066914	.0020507
(Std error)	(87.03064)	(31.28624)	(99.54318)	(.000046)	(.0001584)	(.000049)
R2	0.0866	0.0683	0.0833	0.8033	0.7831	0.7241
Obs.	2347	2347	2347	2347	2347	2347
PANEL B	Probit	Probit	OLS	Probit	Probit	OLS
Dep. Var	*Working status*	*Sickness*	*Interruptions*	*Working status*	*Sickness*	*Interruptions*
Day	(Weekday)	(Weekday)	(Weekday)	(Weekend)	(Weekend)	(Weekend)
Self-employed	.0635863	-.0129784	.1052726	.221905	-.0045	.0556069
(Std error)	(.0299445)	(.0037276)	(.0474229)	(.0367555)	(.005399)	(.1340128)
R2 / Pseudo R2	0.0519	0.0818	0.0365	0.0802	0.1030	0.0937
Obs.	2347	2289	1878	2299	2217	567
PANEL C	Probit	Probit	Probit	Probit	Fractional logit	Fractional logit
Dep. Var	*Generally rushed*	*Time pressure*	*Today rushed*	*Today rushed*	*Sleeping*	*Sleeping*
Day			(Weekday)	(Weekend)	(Weekday)	(Weekend)
Self-employed	.0520482	.0770652	.1191034	.0578894	.0562215	-.0422647
(Std error)	(.016516)	(.0366868)	(.038412)	(.0312174)	(.0207698)	(.0267372)
R2 / Pseudo R2	0.0730	0.0555	0.0219	0.0307		
Obs.	2250	1998	2347	2347	2347	2347
PANEL D	Fractional logit	Fractional logit	Fractional logit	Fractional logit	Probit	Probit
Dep. Var	*Pure leisure*	*Not in workplace*	*Pure leisure*	*Not in workplace*	*HolidayWeek*	*HolidayDay*
Day	(Weekday)	(Weekday)	(Weekend)	(Weekend)	(Weekday)	(Weekday)
Self-employed	-.1186833	-1.269468	-.1125978	-.113483	-.0491884	-.0666918
(Std error)	(.0482278)	(.1870274)	(.0489253)	(.2616051)	(.0074297)	(.0213227)
R2 / Pseudo R2					0.1689	0.0750
Obs.	2347	1878	2347	567	2336	2336

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