

René ARVOLA*, Piia TINT*

TELEWORK USAGE AMONG WHITE COLLAR WORKERS IN THE REAL ESTATE SECTOR

DOI: 10.21008/J.0239-9415.2017.075.03

Telework has become a common form of work for white-collar workers in recent years. Although the number of telework studies increases, there is still a lack of knowledge regarding telework – as the opportunities for this mode of work are developing rapidly. The purpose of the current study is to find out the spread and drivers of telework in the real estate sector. The current research uses empirical data from a survey with 127 respondents who work for real estate companies in Estonia. Data were collected through a quantitative questionnaire during 2017. Three hypotheses were presented regarding the drivers for the employees. The study confirmed that employees in the real estate sector use telework in order to save commuting time and costs, and to have more freedom and privacy. The results show that only a small number of employees have remained untouched by telework. Based on the current study on information-communication technology (ICT) and mobile devices' daily use, telework has a high potential in the real estate sector. The decision to work remotely is usually made by workers themselves and therefore the main drivers for teleworking have been employee-centred. It is necessary to educate employees and employers concerning the advantages and risks connected with telework. That would contribute to introducing telework's potential and suggestions to them.

Keywords: telework, telecommuting, ICT use, office work, real estate sector

1. INTRODUCTION

The modern workplace is becoming increasingly reliant on distributed work arrangements, in which employees work part-or-full-time from home, coffee shops, satellite offices, and elsewhere, rather than at unified scenes (Arvola, 2015). Tele-

* Institute of Business Administration, Tallinn University of Technology.

work was considered as an innovative work establishment form for new decentralized assemblies already in 1999 (Arvola, Kristjuhan, 2015). The flexibility of telework in both time and site of task performance has to be economical in order for this type of work administration to be beneficial. Organisations increasingly introduce workplace flexibility practices that provide flexibility with regard to where or when the employee works (Arvola, Tint, Kristjuhan, 2017a). Telework has a positive effect on the new creation development presentation through enabling knowledge distribution, cross-functional cooperation and inter-organisational participation.

Telework has been suggested as a means to reduce unnecessary work-related travel, including the daily commute. Telework occurs when information communication technologies (ICTs) are applied to enable work being accomplished at a distance from the location where results are needed .

Private sector companies have rather big savings from telework (Atkyns, Blazek, Roit, 2002). At IBM, 40% of its 386,000 global employees do not have a traditional office and many tens of thousands more work outside their offices at least some of the time. Since 1995, office space has been reduced and the savings have been up to 100 million dollars. Sometimes it is forgotten that the public sector is the largest industry, employer, landowner and tenant in the world. For example, if only a small percentage of the 1.8 million U.S. federal employees were equipped to perform their jobs outside the office, cost savings in real estate, related to capital assets, and utilities could number in the tens of billions. The IBM case study (Atkyns, Blazek, Roit, 2002) includes how telework adaption depends upon a systematic, cross-discipline approach to real estate management, human resources, finance, and information technology. Many people already work at locations other than the office. With a little more support and an overall strategy, office space can be drastically reduced.

To the question, where people work instead of their workplace, the 1st option was home (63 %) and the 2nd option was car (40 %) (Barros, 2017). Who wants to work from home? Only 21% said they would not be interested at all. There are also some groups of people for whom telework as a possibility is more critical. These include the disabled, those with eldercare responsibilities (a rapidly growing group), military families, and rural workers. There are different opinions on telework effectiveness (Barros, 2017; Bayrak, 2012; Buessing, 2000; Caldow, 2009; Coenen, Kok, 2014). From that viewpoint the research question is: how effective is telework in different work activities?

The aim of the paper is to find out the spread and drivers of telework in combination with traditional office work on the example of the real estate sector.

2. THEORETICAL BASIS

Telework (telecommuting) can be conceptualized as an “anytime-anyplace” form of work (Coenen, Kok, 2014; Dangelmaier, Kress, Wenski, 1999). Work

involving data processing, accounting, computer programming, design, customer service, quality control, and health care, can be performed from home. The number of employers who allowed their employees to work at least one day per month from home, increased from 9.9 million to 12.4 million. If contract workers are included, then about one fifth of the total workforce, 28.7 million workers were teleworking between 2005 and 2006 (Eyster, Johnson, Toder, 2008). Many companies, especially in the financial, information technology, and communication sectors, are now referring to knowledge management of enterprises of different size (Federal Computer Week, 2016). Also, the advanced systems for improvement of working environment conditions have gained more importance (Zhang, Leung, 2009). Some companies rely on a “work-at-home model” that has been referred to as a virtual or remote workforce. However, the majority of workplaces do not offer telework opportunities to employees, or if offered, there is a limited scope with respect to the amount of time an employee can work from home (Grimes, 2000). The concern for retaining older workers through the telework arrangement was voiced by the head of the U.S. government’s telework program: “With fierce competition for human capital and a retirement wave, telework provides a work style to retain older workers and recruit younger workers looking for flexibility” (Hatcher, 2013). There are very few empirical studies that have analysed the differences in perception of telework benefits and barriers in industrial and service companies (Heinonen, 2000).

Telecommuting practices and their environmental and organisational performance impacts have stimulated research across academic disciplines. Although telecommuting trends and impact projections are reported, few true longitudinal studies involving large organisations have been conducted (Hill, Ferris, Mårtinson, 2003). M. Telework has been one of the most vaunted areas of opportunities for rural areas by European policymakers (Hill et al. 2008) arising from the new ICTs. The difference in employee perceptions between the adopters and non-adopters of telework suggests that the latter lack confidence in their firm’s broader human resource management practices to adapt appropriately to the requirements of effective telework implementation (Hunton, Harmon, 2004).

The work/family border theory (Hynes, 2016) has been worked out to investigate the role of ICT use at home in shaping the characteristics of work/family borders (i.e. flexibility and permeability) and consequently influencing individuals’ perceived work-family conflict, technostress, and level of telecommuting. The results showed that the more people used ICT to do their work at home, the greater they perceived their work/family borders flexible and permeable. Low flexibility and high permeability, rather than the use of ICT at home, had a much stronger influence on increasing family-to-work conflict. The work-to-family conflict was significantly and positively associated with technostress (Illegems, Verbeke, 2004; Kardasz, 2016) .

There are different training methods for telework. Using a game-based training method facilitates the training process by increasing users’ intrinsic motivation resulting in increased intention to use the technology (Kossek, Lautsch, Eaton, 2006; Kristjuhan, Arvola, 2006; Leung, Zhang, 2017).

According to Potter (Grimes, 2000), the main reason why telework is not extensively used in most organisations is due to the priority that first-line supervisors and middle managers place on the “socialization aspects of the workplace” as a basis for confirming whether the worker is meeting performance standards and adapting to corporate culture. Other contributing factors include difficulty in ascertaining the economic benefits of such programs and a lack of training regarding how to best manage telework.

There are a lot of advantages that employers obtain using telework (Likert, 1932):

- a) Evaluate the extent to which home-based work can reduce traffic congestion and greenhouse gases in their communities
- b) Solve regional issues such as outbound workforce migrations, talent shortages, and labour force mismatches
- c) Encourage the population to work and shop where they live
- d) Help understand the role that work-at-home programs could play in transportation demand management, energy conservation, and greenhouse gas emissions
- e) Increase productivity.

The ACS (American Community Survey) (Likert, 1932) is a nationwide survey conducted annually by the U.S. Census Bureau. ACS data showed that the employee WAH (work-at-home) population grew 61% between 2005 and 2009. WAH by class of worker shows that growth in the federal government has been up to the 400% during 2005-2009. The original driving force for WAH among federal workers was the threat of a bird flu pandemic. Swine flu and other crises have bolstered the government’s resolve to make telework necessary. Other meanings of the benefits and concerns associated with telework have become more clearly articulated from the perspectives of both the employer and the employee (Dangelmaier, Kress, Wenski, 1999). For employers, some of these benefits include an increased labour pool (to include older people and people with disabilities) and enhanced recruiting potential; improved retention of qualified staff; less sick leave and absenteeism; reduced costs for office space and parking; heightened productivity, improved customer service and improved organisational image. The concerns for organisations: the negative effects on activities requiring teamwork (considerations in 2003, without Skype), less control over data security (2003, the security systems have improved up to 2017), less control and greater ambiguity with respect to legal issues governing work at home, such as worker injuries or health risks (Grimes, 2000).

John Berry announced (Likert, 1932): ‘Presenteeism, the practice of sitting at one’s desk without working, can be just as problematic as absenteeism. I am an adamant supporter of telework because workers in an effective telework program can only be judged by their results’. Most employees who work at home have at least a college degree, and a significant percentage have a postgraduate degree.

A study at IBM in 2001 with over 5000 respondents (incl. traditional, virtual and home office employees) found little evidence for telework’s negative business effect (Kardasz, 2016). This study also brought out that although the perception was that telework had enhanced employee productivity, the direct comparison showed no significant difference between teleworkers and traditional office workers.

3. HYPOTHESES

Greater freedom and flexibility for employees constitute the common benefits that are mentioned regarding telework. Workplace flexibility is the ability of workers to make choices influencing when, where, and for how long they are engaged in the work – influencing when, where, and for how long they are engaged in the work-related tasks, but these depend on several characteristics: individual; home and family; workplace; community, etc. (Lister, Harnish, 2001).

Flexible work schedules and telework are often integral because of the mutual influence between them (Arvola, Tint, Kristjuhan, 2017a). Telework causes flexibility in work schedules and flexible work schedules give rise to telework.

The flexibility that telework offers, broadens options for companies to attract new employees. Staffing is more effective because the flexibility of telework can be marketed as an advantage (Heinonen, 2000). Telework allows more flexible alteration to market situations, where and when to work (Mierzwiak, 2016).

Flexibility exists when employees are able to choose where and when to work. Survey results among 245 United States educated professional employees concluded that employees' positive well-being is determined by the type of access to telework – formal access to telework will not ensure positive well-being for employees and therefore, informal flexibility practice is necessary (Illegems, Verbeke, 2004).

The following hypothesis was proposed:

H1: The need for greater freedom influences the decision of employees to telework

One of the telework benefits according to literature is reduced commuting time and costs (O'Neill, Hambley, Chatellier, 2014; George, Baker, Karabatsos, Brimble, Wilson, Cullen, 2009; Potter, 2003). In many studies, commuting time was found to have a large positive effect on telework. It is often so, that the reduced commuting time is the most valuable benefit compared to direct transport costs. However, the Dutch survey with 1335 respondents found that teleworkers did not save commuting expenses more often compared to non-teleworkers (Leung, Zhang, 2017). On the environmental level, telework can reduce pollution of the air caused by less traffic (Arvola, Tint, Kristjuhan, Siirak, 2017). The second hypothesis was proposed as follows:

H2: The need to reduce transportation costs influences the employees' decision to telework

Teleworking may offer better working conditions for mental work when there is less noise compared to a traditional office (Coenen, Kok, 2014). Telework increases work efficiency by providing peaceful conditions to do work (Peters, Tijdens, Weyzels, 2004). Often traditional offices do not allow possibilities for concentrating. A telework study among 259 academic employees in Estonia showed that bet-

ter concentration on work is one of the top reasons for teleworking (Bayrak, 2012). The third hypothesis was proposed as follows:

H3: The need for reduced interruption influences the employees' decision to telework

4. MATERIAL AND METHODS

There are different possibilities to collect information on where and when people work. For example, are they travelling to work (travel costs and time) or are

Table 1. Survey sample structure (n = 127)

Characteristics	Group	Frequency	Share of respondents (%)
Age	Less than 30 years	16	12.6
	30 to 39 years	39	30.7
	40 to 49 years	32	25.2
	50 to 59 years	23	18.1
	60 to 69 years	9	7.1
	70 years and older	3	2.4
	No response	5	3.9
Gender	Male	63	49.6
	Female	64	50.4
Education	Basic	1	0.8
	Vocational	15	11.8
	Secondary	12	9.4
	Higher	97	76.4
	No response	2	1.6
Position	Real estate agent	42	33.1
	Real estate appraiser	21	16.5
	Real estate manager	17	13.4
	Project manager	8	6.3
	Managing director	6	4.7
	Other	16	12.6
	No response	9	7.1
Personal status	Single	12	9.4
	Cohabiting	49	38.6
	Married	51	40.2

Table 1 cont.

	Divorced	8	6.3
	Widow(er)	4	3.1
	No response	3	2.4
Household size	1	13	10.2
	2	48	37.8
	3	14	11.0
	4	31	24.4
	5	12	9.4
	6	3	2.4
	7	1	0.8
	No response	5	3.9

they not travelling at all (Likert, 1932)? The real estate sector was selected in the current study as the object for research since the majority of the workers in this area have experienced working remotely for many years.

The research methods used were formation of the expert group, sample selection, questionnaire structure, avoiding teleworkers and non-teleworkers bias, trust-building practices for gaining respondent cooperation and veracity, data collection and analysis (Hill, Ferris, Mårtinson, 2003).

In order to test the hypotheses, a questionnaire was designed. A survey was selected as a data collection method as the aim was to involve at least 100 participants. The questionnaire covered areas that are related to telework and factors that according to the theories may influence telework or may be influenced by telework. These areas involved the usage of ICT for work-related and non-work-related tasks; telework rate; reasons for working remotely; future intentions regarding telework; health issues; and demographic profile.

For measurement purposes, statements regarding the research questions were rated using a 7-point Likert scale (Venkatesh, 2000). For the questionnaire, 76 statements were selected. In addition to the statements, 19 multiple choice questions were added. In total, filling out the questionnaire was planned to take 20 minutes to achieve a higher response rate.

The questionnaire was designed for electronic survey in the Google Forms survey application. Web-survey was selected with the purpose to present the questionnaire to employees in the real estate sector who use ICT and the internet and, therefore, have a greater readiness to telework. The questionnaire was tested before the launch. A link to the survey together with a cover letter was sent to three trade associations in Estonia that unite real estate sector companies and some major real estate companies. An agreement was made beforehand for the dissemination of the survey link by the leaders of the trade associations and companies. Data were col-

lected from January to March 2017. As a result, 127 respondents participated. The sample size met expectations.

Convenient sampling was selected in order to achieve a larger sample. The sample structure is presented in Table 1.

ANOVA single factor, t-test and linear correlation analysis were conducted for statistical analysis of the data (Wojcak et al., 2016).

5. RESULTS

The survey results confirmed all three hypotheses.

Hypothesis H1. The need for greater freedom influences the decision of employees to telework.

Although respondents in general did not admit that the need for greater freedom has influenced them to do more work remotely (Fig. 1), teleworkers' responses differed statistically significantly ($t = 2.68$) from non-teleworkers' responses. The hypothesis was supported.

Hypothesis H2. The need to reduce transportation costs influences the employees' decision to telework.

47.2% of all respondents had the opinion that the need to save transportation costs has not influenced them at all to work remotely (Fig. 1), while only 16.5% were of the opposite opinion to some degree. Nevertheless, comparing teleworkers' responses to non-teleworkers' ones, statistically significant ($t = 3.40$) differences were found. Similar results occurred with respondents' need to save time. Teleworkers' compliance with the statement 'desire to save time has influenced them to work remotely' was different from non-teleworkers'. The difference was again statistically significant ($t = 2.99$).

Hypothesis H3. The need for reduced interruption influences the employees' decision to telework.

55.9 % of all the respondents expressed that the need for reduced interruption has not or rather has not influenced their decision to telework (Fig. 1). Again, teleworkers responses were statistically significantly different ($t = 2.43$) from non-teleworkers responses.

However, it can be said that teleworkers have chosen to work remotely based on their own choice. For 76% of all respondents teleworking has been their free choice and only 13% of respondents acknowledged that teleworking has not been their own decision. Mainly they admitted that working conditions at home are not better compared to the office. However, 44% of respondents admitted that working remotely is less stressful. All respondents had a workstation at an employer's office, too.

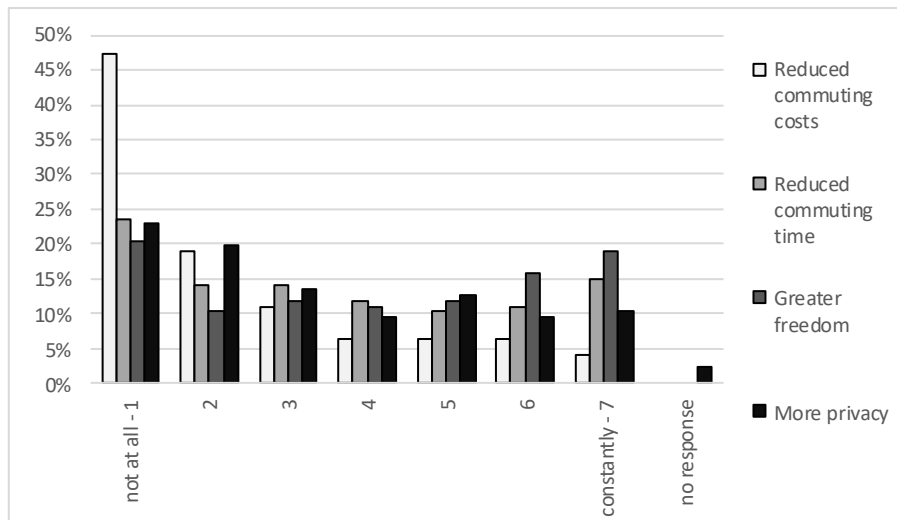


Fig. 1. Factors that influenced respondents' decision to telework. Based on survey results

Telecommuting is very common in real estate workers' practice, as they have the free choice, how, where and when to work. 85% of respondents used telework at least in some extent and 12% teleworked the majority of their work-time. Only 15% of respondents were non-teleworkers. Respondents' self-evaluation of their computer usage skills was high. On a one to seven point scale, the mean for all the respondents was 5.49. They also had a positive attitude towards ICT. On a one to seven point scale, the mean was 6.04. A common opinion was that they have adequate skills for computer use (the mean on a one to seven point scale was 6.17).

Most of the respondents were used to communicating using the ICT achievements. All respondents were using a laptop or PC for work-related tasks constantly (95% 'agreed totally' and 5% 'rather agreed' with the corresponding statement). The smartphone was relatively less important. 9% of respondents did not use smartphones; although a majority (55%) described themselves as constant users. In contrast to laptop, PC and smartphone usage, the use of tablet computers for work-related tasks was unusual (66% do not use them at all and only 7% of respondents declare a constant use of tablet computers for work-related tasks).

Fig. 2 shows the variety of the work-related tasks that the respondents perform with computers. It can be concluded that the employees in the real estate sector perform different types of computer-related tasks. Only blogging and editing webpages stood out as a rare task (45% are concerned 'not at all'). Surprisingly, social media was not as popular a tool for communication with colleagues or customers as it was expected. Still, 29% of all respondents used it 'constantly' and 38% at least 'in some extent' for work-related communication.

For communication with colleagues and customers white-collar workers prefer cell phones and e-mail (the mean on a one to seven point scale was 6.08 and 5.90 respectively), followed by face-to-face communication (4.28), instant messaging applications (3.21) and SMS (2.70). Social networks and blogs (2.13) and desktop phones were used (1.84) the least. The small usage of desktop phones and active use of cell phones and e-mail point to electronic work, which can easily be carried out remotely as well. The relatively high importance of face-to-face communication, which is difficult to substitute totally by ICT, demonstrates that in the real estate sector telework can be applied only to a part of the work duties.

6. DISCUSSION

In recent years, information technology has had a profound effect on human resources (HR) processes and practices. Relatively little research has examined its effectiveness, and most of the existing studies have assessed the degree to which these new systems enable organisations to reach their HR goals of attracting, motivating and retaining employees. Their limitations: a) use one way communication systems, b) are impersonal and passive, c) do not always allow for interpersonal

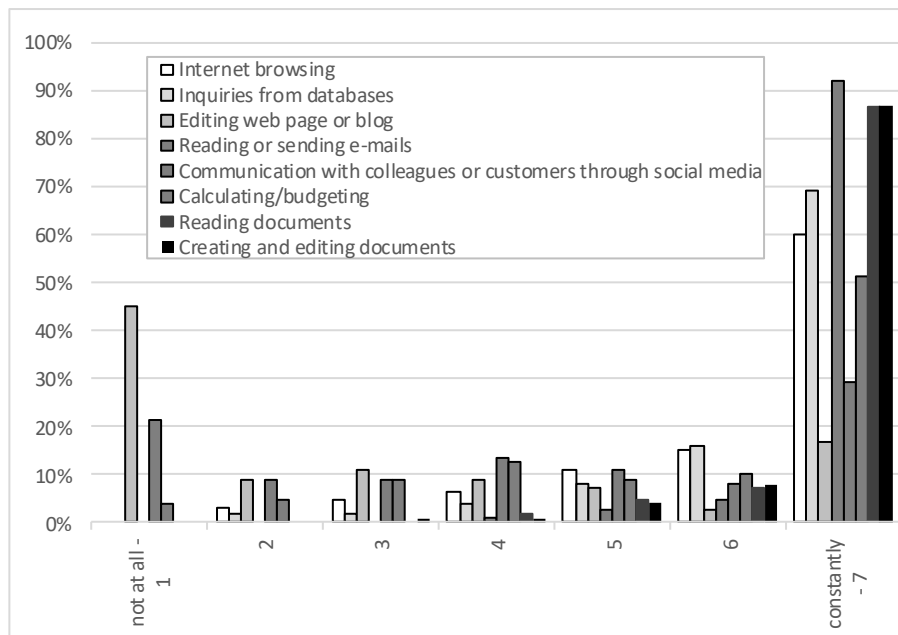


Fig. 2. Work-related tasks that are performed with a computer. Based on survey results

interaction, and d) often create an artificial distance between individuals and organisations (WorldatWork: Telework, 2009). This paper offers directions for future research and practice.

Several sources have emphasized the flexibility that telework enables (Arvola, Tint, Kristjuhan, 2017a; Illegems, Verbeke, 2004; Lister, Harnish, 2011). The responses that real estate workers gave supported that idea. However, the results of teleworkers and non-teleworkers varied. Influence depends on an employee's situation.

An earlier study of Peters (Leung, Zhang, 2017) found that teleworkers valued time saving, but did not save commuting expenses more often compared to non-teleworkers. The results of the current paper revealed that for those workers who use telework, both, time and money (saved from reduced commuting) are adequately significant.

Sometimes working from home can be quieter. This may be particularly important for mental work where some kinds of tasks need more concentration. A survey in a university showed that telework is often preferred among academic staff due to less noise (Bayrak, 2017). According to the current study, a large number of respondents expressed that telework offers more privacy compared to office work.

The aim of the study was confirmed. Results showed that telework is widely used. Although testing the hypothesis gave the expected results, it was also evident that these factors have an individual influence over employees' teleworking. Not everybody has the will to telework, but employers should consider work arrangements concerning telework.

7. CONCLUSIONS

The survey results revealed that telework is very common among white-collar workers in the real estate sector. As they have good skills in working with ICT and ICT is in constant use, it may be concluded that there is a high potential for telework. However, employers' inactivity regarding telework arrangements is distressing. With little or no interference by employers, telework's potential will not be achieved. As it is common to work part of the time remotely, office hours should be considered and arranged in a way that avoids the disintegration of teams and ensures colleagues' mutual support and synergy in the organisation.

It is also important to note that the suitability of telework is individual. The distance between home and office, working conditions at home and other conditions may vary greatly. Therefore, the decision whether and how much to use telework should be made by employees themselves.

The main conclusions from the investigation supported by statistical analysis were:

1. Telework offers much more freedom compared to the employer's office

2. Telework reduces commuting time and costs for performing work tasks
3. Telework helps to focus the attention to the content of the work.

Work arrangements considering the above presented results can improve work efficiency and create higher customer satisfaction.

LITERATURE

- Arvola, R. (2006). Telework as a solution for senior workforce. *Working papers in Economics (TUTWPE) / Tallinn University of Technology, School of Economics and Business Administration*, 19, 35-49.
- Arvola, R., Kristjuhan, Ü. (2015). Workload and health of older academic personnel using telework. *Agronomy Research*, 13, 3, 741-749.
- Arvola, R., Tint, P., Kristjuhan, Ü. (2017a). Employer attitude towards telework in real estate sector. In: *Proceedings of the 2017 International Conference "Economics Science for Rural Development"*. Jelgava, LLU ESAF, 27-28 April, 9.
- Arvola, R., Tint, P., Kristjuhan, Ü., Siirak, V. (2017b). Impact of telework on the perceived work environment of older workers. *Scientific Annals of Economic and Business*, 13.
- Atkyns, R., Blazek, M., Roit, J. (2002). AT&T. Measurement of environmental impacts of telework adoption amidst change in complex organizations: AT&T survey methodology and results. *Resources, Conservation and Recycling*, 36, 267-285.
- Barros, A.S.S. (2017). Subjective Well-Being (Sb) and Burnout Syndrome (BnS): correlation analysis teleworkers Education Sector. *Procedia – Social and Behavioral Sciences*, 237, 1012-1018.
- Bayrak, T. (2012). IT support services for telecommuting workforce. *Telematics and informatics*, c29, 286-293.
- Buessing, A. (2000). Telework. In: W. Karwowski (ed.). *International encyclopedia of ergonomics and human factors*. London: Taylor & Francis, 1723-1725.
- Caldow, J. (2009). *Working outside the box: A study of the growing momentum in Telework*. Institute for Electronic Government. IBM Corporation, 14.
- Coenen, M., Kok, R.A.W. (2014). Workplace flexibility and new product development performance: The role of telework and flexible work schedules. *European Management Journal*, 32, 564-576.
- Dangelmaier, W., Kress, S., Wenski, R. (1999). TelCoW: telework under the co-ordination of a workflow management system. *Information and Software Technology*, 41, 341-353.
- Ellison, N.B. (2004). *Telework and social change*. Westport, CT: Praeger.
- Eyster, L., Johnson, R.W., Toder, E. (2008). *(Current strategies to employ and retain older workers. Final Report (January) by the Urban Institute for the U.S. Department of Labor*. Washington, DC: The Urban Institute.
- Federal Computer Week (FCW.com)(2016). *CSA clarifies telework rules for managers*, http://www.fcw.com/print/12_11/news/92766-1.html (6.16.2016).
- Grimes, S. (2000). Rural areas in the information society: diminishing distance or increasing learning capacity? *Journal of Rural Studies*, 16, 13-21.
- Hatcher, L. (2013). *Advanced Statistics in Research: Reading, Understanding, and Writing Up Data Analysis Results*. Shadow Finch Media LLC.

- Heinonen, S. (2000). *Analysis of the Finnish telework potential*. Helsinki: Ministry of Labour and VTT Communities and Infrastructure.
- Hill, E.J., Ferris, M., Mårtinson (2003). V. Does it matter where you work? A comparison of how three work venues (traditional office, virtual office, and home office) influence aspects of work and personal/family life. *Journal of Vocational Behaviour*, 63, 220-241.
- Hill, E.J., Grzywacz, J.G., Allen S., Blanchard V.L, Matz-Costa C., Shulkin S., Pitt-Catsouphes M. (2008). Defining and conceptualizing workplace flexibility. *Community, Work & Family*, 2008, 11, 2, 149-163.
- Hunton, J.E., Harmon, W.K. (2004). A model for investigating telework in accounting. *International Journal of Accounting Information Systems*, 5, 417-427.
- Hynes, M. (2016). Developing (tele)work? A multi-level sociotechnical perspective of telework in Ireland. *Research in transportation Economics*, 57, 21-31.
- Illegems, V., Verbeke, A. (2004). Telework: what does it mean for management? *Long Range Planning*, 37, 319-334.
- Kardasz, B. (2016). Knowledge management in micro, small and medium-sized enterprises. Case studies from Poznan county. *Zeszyty Naukowe Politechniki Poznanskiej. Organizacja i Zarzadzanie*, 68, 45-59.
- Kossek, E.E., Lautsch, B.A., Eaton, S.C. (2006). Telecommuting, control, and boundary management: correlates of policy use and practice, job control, and work-family effectiveness. *Journal of Vocational Behavior*, 2006, 68, 347-367.
- Kristjuhan, Ü., Arvola, R. (2006). Employment of senior workers in Estonia. Meeting Diversity in Ergonomics. In: Pikaar, R.N., Koningsveld, E.A.P., Settels, P.J.M.: Elsevier, *Proceedings IEA2006 Congress. Maastricht, 2006*.
- Leung, L., Zhang, R. (2017). Mapping ICT use at home and telecommuting practices: A perspective from work/family border theory. *Telematics and Informatics*, 34, 385-396.
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 140, 1-55.
- Lister K., Harnish T. (2011). *The state of telework in the U.S. How individuals, business, and government benefit*. Telework Research Network.
- Mierzwiak, R. (2016). Expert and clustering method of quality evaluation of working conditions. *Zeszyty Naukowe Politechniki Poznanskiej. Organizacja i Zarzadzanie*, 70, 127-137.
- O'Neill, T., Hambley, L.A., Chatellier, G.S. (2014). Cyberslacking, engagement, and personality in distributed work environments. *Computers in Human Behavior*, 40, 152-160.
- St George, I., Baker, J., Karabatsos, G., Brimble, R., Wilson, A., Cullen, M. (2009). *How safe is telenursing from home?* Collegian, 16, 119-123.
- Stone, D.L., Deadrick, D.L., Lukaszewski, K.M. (2015). Johnson, R. The influence of technology on the future of human resource management. *Human Resource Management Review*, 25, 216-231.
- Potter, E.E. (2003). Telecommuting: the future of work, corporate culture, and American society. *Journal of Labour Research*, 24, 73-84.
- Perez, M.P., Sanchez, A.M., de Luis Carnicer, M.P. (2002). Benefits and barriers of telework: perception differences of human resources managers according to company's operations strategy. *Technovation*, 22, 775-783.
- Peters, P., Tijdens, K.G., Weyzels, C. (2004). Employees' opportunities, preferences, and practices in telecommuting adoption. *Information & Management*, 41, 469-482.

- Venkatesh, V. (2000). Creating an effective training environment for enhancing telework. *International Journal of Human-Computer Studies*, 2000, 52, 991-1005.
- Wojcak, E., Bajzikova, L., Sajgalikova, H., Polakova, M. (2016). How to Achieve Sustainable Efficiency with Teleworkers: Leadership Model in Telework. *Procedia – Social and Behavioral Sciences*, 229, 33-41.
- WorldatWork: Telework (2009). Trendlines 2009, data from The Dieringer Research Group.
- Zhang, R., Leung, L. (2017). Mapping ICT use at home and telecommuting practices: A perspective from work/family border theory. *Telematics and Informatics*, 34, 385-396.

ZASTOSOWANIE TELEPRACY WŚRÓD PRACOWNIKÓW UMYSŁOWYCH SEKTORA NIERUCHOMOŚCI

Streszczenie

Telepraca stała się powszechną formą pracy dla pracowników umysłowych w ostatnich latach. Choć wzrasta liczba badań z zakresu telepracy, nadal brakuje wiedzy na jej temat – ponieważ możliwości tego trybu pracy rozwijają się szybko. Celem badania było znalezienie obszaru i motywacji do telepracy w sektorze nieruchomości. Aktualne badania wykorzystują dane empiryczne z badania przeprowadzonego wśród 127 respondentów, którzy pracują w Estonii dla firm zajmujących się nieruchomościami. Dane zbierano w ramach ilościowego kwestionariusza w 2017 r. Przedstawiono trzy hipotezy dotyczące motywacji pracowników. Badanie potwierdziło, że pracownicy sektora nieruchomości korzystają z telepracy w celu oszczędności czasu i dojazdu do pracy oraz większej wolności i prywatności. Wyniki pokazują, że tylko niewielka liczba pracowników nie korzysta z telepracy. Według wyników badania dotyczącego technologii informacyjno-komunikacyjnych (ICT) i urządzeń przenośnych codziennego użytku, telepraca ma duży potencjał w sektorze nieruchomości. Decyzja o pracy zdalnej odbywa się zazwyczaj przez samych pracowników, a zatem główne czynniki wpływające na telepracę zostały skoncentrowane na pracownikach. Konieczne jest wykształcenie pracowników i pracodawców w zakresie zalet i zagrożeń związanych z telepracą. To mogłoby przyczynić się do zapoznania ich potencjałem i propozycjami telepracy.

Słowa kluczowe: telepraca, telekomunikacja, zastosowanie technologii ICT, praca biurowa, sektor nieruchomości