



# Self-employment and Adaptation to Transformative Digitalization during Later Working Life<sup>1</sup>

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## ABSTRACT

In Europe, the self-employed typically have greater career longevity than employees. In Finland, self-employment is becoming more prevalent among older workers. Digitalization complicates the workforce attachment of older workers because of the need to acquire new skills and manage technological interruptions. Few studies have explored how self-employed workers are affected by digitalization. First, this article explores what aspects of transformative digitalization are challenging for the self-employed in particular. Second, it identifies strategies used by the older self-employed to address digitalization-related challenges. The study presents three case studies of self-employed Finns aged over 60. While each participant adopted new digital technologies at work, they spent different amounts of time managing technological interruptions. The study shows that diverse technological requirements of different clients increase the digital complexity at work for the self-employed, and that the self-employed pursue diverse strategies to manage digitalization-related work demands, ranging from avoidance of technology to technological specialization.

## KEYWORDS

*Digitalization / Finland / older workers / retirement plans / self-employment*

## Introduction

The world of work is changing. The working environment is increasingly mediated through digital technologies, communication systems, apps, and digital interfaces. This increasing mediation of business activity through computer technologies is called digitalization (Thun et al. 2019). The COVID-19 pandemic has accelerated the growth of many aspects of digitalization. Remote work and remote face-to-face interface systems have reshaped procedures for meetings, conferences, and training events. Previously, these events mainly took place in singular physical locations, but digital interfaces can be now utilized as the primary communication platforms. Remote working has reduced commuting, making work more flexible and increasing leisure time for many (Hensher et al. 2022). However, the increased speed of information flows can

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intensify certain work tasks (Kubicek et al. 2015), and digitalization can have both destructive and transformative effects. Automation through artificial intelligence, for example, is likely to result in the loss of certain jobs (Brynjolfsson & McAfee 2014; Frey & Osborne 2017) or otherwise transform working roles as they are restructured to fit new technological paradigms (Alcover et al. 2021). Digitalization also creates new learning demands. Workers must now acquire skills related to the use of digital technologies in order to take advantage of the new world of work (Jacobs & Karen 2019). Transformative digitalization introduces requirements for learning new skills, expanding one's knowledge, and planning one's career development; workers must focus on these elements so that they can advance in a digitally changing work environment (Kubicek et al. 2015).

Digitalization of occupations is associated with the growth of entrepreneurship as an employment type, and in Finland, self-employment has been the fastest growing work status category (Fossen & Sorgner 2021; Pöllänen 2021). Older adults typically have higher rates of self-employment than younger adults, and the population aging trend is further boosting this divergence, as the 'younger old' become the 'oldest old' (Halvorsen & Morrow-Howell 2017). Self-employment and digitalization are connected to a third social trend – population aging. In comparison to other workers in Europe, self-employed entrepreneurs are more likely to continue working past retirement age (Zwier et al. 2020). The conditions of self-employment may offer greater flexibility for workers who seek more autonomy and adaptable working conditions at a later career stage (Halvorsen & Morrow-Howell 2017; Zwier et al. 2020). Remaining in the workforce for a longer period may also help secure an adequate retirement income (Wainwright & Kibler 2014), which is of particular relevance when examined in the context of declining pension generosity (Ebbinghaus 2017). Previous research has suggested that digitalization may introduce additional challenges for older workers because of the new skill requirements and the pressure to change established work practices (Mauno et al. 2019). It is likely that the older self-employed also encounter these barriers. However, the effects of digitalization for older workers have not been extensively researched and there are still few studies that examine the responses to digitalization among older self-employed specifically. The present article targets this research gap by studying the older self-employed in Finland.

The aim of this study is to improve the understanding of how older self-employed entrepreneurs manage the challenges related to sudden transformative digitalization. Case studies are ideal for analyzing emerging phenomena because of their exploratory nature. A multiple case study facilitates the exploration of a complex topic while studying a specific sample that would be difficult to access by other methods. This approach is also particularly useful for research on work and business processes in a naturalistic setting because of its emphasis on the study of change and the situational context (Stake 2013). Multiple case studies focus on broader processes, experiences, or events by identifying what each particular case reveals about the wider phenomenon under study. This research explores digitalization through case studies of three different enterprises operated by independent self-employed entrepreneurs over 60 years of age. This paper answers two research questions: (1) What aspects of transformative digitalization are challenging for the older self-employed? And (2), what strategies do the older self-employed use to adapt to the challenges of transformative digitalization?

## Digitalization, protean careers, and self-employment

Building on the theory of protean careers (Obschonka et al. 2012; Pongratz & Voß 2003), Kubicek and colleagues (2015) have suggested that intensification of work is becoming increasingly driven by enhanced demands related to the acquisition of new skills and knowledge and continuous career planning throughout one's working life. In addition to performing work duties, modern workers are required to continuously develop a broader skill set to maintain employability. Protean workers must be prepared to readjust their long-term career plans but also accommodate changes to the planned flow of the working day (Pongratz & Voß 2003). The increase in the speed of information flow caused by transformative digitalization can increase the pace of work for some individuals. Technologically facilitated interruptions can be caused by technical problems as well as intensified communication networks, that is, the increased frequency of spam, software updates, or team communications via chat or email (Kubicek et al. 2015).

Tafdrup and colleagues (2019) divided technological breakdowns (technical problems) into two groups: potent and impotent. Potent breakdowns are characterized by situations in which a person perceives that the breakdown has been caused by a logical chain of events, for example, a video call freezing because of a problem with internal signal strength. Impotent breakdowns represent a technical problem that does not have an easily identifiable and logical source, which means that the course of action required to resolve the problem may not be immediately recognized. Technologies are always designed for an intentional purpose (Ihde 2012), and technical problems or breakdowns represent an interruption to this purpose and the related actions. These types of breakdowns can be experienced more often by employees and self-employed entrepreneurs, as entrepreneurs with employees may have the option to focus on managerial tasks and delegate the more complex technical issues to their staff.

In many fields, datafication and the interconnections of customers, firms, and their subcontractors have transformed service provision into service ecosystems. Different service providers work together to facilitate increasingly complex services (Toivonen & Kijima 2019) – a complexity that is driven by the diverse range of employee skills required for the production and delivery of a service. Outsourcing is one aspect of this development. In addition to adapting the skills of their existing workforce, companies may need to introduce new actors in their service ecosystems (Koskela-Huotari et al. 2016). This development can create demand for services that may be best performed by outside consultants, such as self-employed service sector entrepreneurs, legal experts, staff trainers, or IT professionals. The growth of self-employment could be partly explained by this type of outsourced service demand.

### The self-employed as adaptive workers in later working life

Self-employed entrepreneurs do not necessarily aim for business growth. Discourse that emphasizes economic growth as the goal can challenge entrepreneurial identities among the self-employed, and many prefer to focus on the intrinsic value of their work (Mallett & Wapshott 2015). Self-employment can be a lifestyle choice, a forced decision due to exclusion from other sources of employment, or a part-time endeavor that supplements



other income sources, such as pension income. Older self-employed entrepreneurs may continue to work after retirement age as a means to pursue meaningful activities (Wainwright & Kibler 2014). Halvorsen and Morrow-Howell (2017) assigned the term generativity to this aspect of entrepreneurship associated with maintaining a sense of purpose and legacy. Their research suggested that generativity could be a primary motivation for self-employment in later life. Among self-employed white-collar workers in Finland, positive job satisfaction appeared to strongly influence the decision to delay retirement (Kautonen et al. 2012). Besides personal commitment to work, preference toward civic engagement, like volunteering, seems to be more common among the self-employed compared to other private sector workers. (Rotolo & Wilson 2006). This may be influenced by personality characteristics, like perceived ability (Verheul et al. 2012), but also by the facts that volunteering can provide networks for locating new business opportunities, creating an incentive for civic participation (Nieto-Mengotti et al. 2019).

Autonomy associated with self-employment may provide opportunities to manage working conditions via task selection and wider job crafting (Vanbelle et al. 2017). Autonomy and the ability to shape one's working conditions are likely among the main reasons for the extended career longevity among the self-employed. However, not all older self-employed realize the benefits of planned autonomy, as limited financial resources and arduous workloads can reduce the range of available strategies (Platman 2003; Viherä & Viukari 2016). Retirement may be delayed because of economic necessity, especially for workers who perceive that their self-employed status is due to circumstances rather than personal choice; their options for maintaining an adequate work-life balance may be reduced in comparison to waged workers (Bell & Rutherford 2013). Moreover, the voluntarily self-employed tend to have more retirement savings than the involuntarily self-employed (Hershey et al. 2017).

Later life career plans must consider retirement options. According to Feldman and Beehr's (2011) three-phased model of retirement planning, individuals typically go through phases as they consider their retirement path. First, workers imagine the activities that could replace those of working life, and second, they assess the consequences of their work exit. This shift in perspective often begins in later working life because of factors such as social norms, intensified work strain, and a lack of further career goals. Finally, workers start to assemble resources for retirement. There are several ways in which the self-employed may differ from waged workers in regard to retirement. The independent nature of their work can mean that the self-employed need to adopt a more active approach to financial planning, including developing a plan at an early stage. In many countries, the universal pension coverage is different for entrepreneurs and waged workers. Small-scale entrepreneurs may be more exposed to changing market trends and therefore experience more varied working life patterns and income histories. While these patterns offer less repetitive career conditions, they can also lead to economic hardship.

Older workers typically maintain better late career employability when their work tasks involve crystalized knowledge, that is, working knowledge and skills that are accumulated over the course of a long career (Zacher et al. 2014). Earlier research focused on small-scale entrepreneurs and digital technology for commercial service delivery suggested that entrepreneurs encounter significant barriers to adopting digital technology because of job-related time pressures and a lack of financial resources (Viherä & Viukari 2016). Sudden digitalization may challenge existing skills and knowledge and complicate career and retirement plans among the older self-employed.

## Analytic strategy

Explanation building as outlined by Yin (1994) was used as the analytical approach to review the cases in this study. This strategy is useful for exploratory studies in which the goal is to develop a conceptual grounding for further research rather than draw definitive conclusions about the phenomenon (Yin 1994). Explanation building is an inductive research method. The purpose of utilizing an explanation building strategy for multiple case studies is to construct an explanation of the quintain – the underlying phenomenon, such as digitalization – through a comparison of the cases (Kompier et al. 2010; Stake 2013). The cases in this study differ in regard to how they relate to the quintain – the cases have different levels of complexity related to transformative digitalization. The aim of theoretical explanation building is to conceptually identify the underlying factor that can explain the variation between cases (Stake 2013). This approach can deepen our understanding of the effects of digitalization on the older self-employed and establish foundations for further study.

## Sampling

Self-employed entrepreneurs constitute a heterogeneous category, and to recognize the variety in this group, the focus of the research must be precisely framed. This study examines service-based, university educated, self-employed knowledge workers. Viherä and Viukari (2016) have previously conducted research on small-scale entrepreneurs working in fields with a more manual focus. However, knowledge-based work includes activities that are highly likely to involve transformative digitalization; in contrast, fields of work that require more standardized and repetitive tasks may experience digitalization as destructive rather than transformative (Fossen & Sorgner 2021).

Case 1 is a professional lawyer, and case 2 is a staff training consultant who is hired by large companies to oversee staff training events and modular staff training courses. Case 3 is a marketing consultant who is contracted by client companies to undertake project-orientated marketing consultation, primarily for the design and production of marketing material. While the cases in this study represent different educational disciplines and industries, they share work characteristics related to managing information and analytical planning, and their interactions with client are project-orientated. Their personal backgrounds are similar. They all have higher education degrees, families, and have been self-employed for a long time. The research participants were recruited by contacting professional organizations that have large numbers of self-employed workers; in addition, the researchers utilized their extensive social networks. Informed consent forms were collected from the participants prior to each interview, and pseudonyms have been used to protect the interviewees' privacy. The interviews for cases 1 and 3 were conducted at the entrepreneurs' places of work, and at the participant's request, the interview for case 2 was conducted via a zoom call.

The cases represent different degrees of complexity in regard to transformative digitalization and the frequency of technological breakdowns as reported by the interviewees. In the first case, the transformation was relatively simple and was largely related to video call software. Remote working practices and tools related to them were used



in all cases. However, in cases 2 and 3, the entrepreneurs were using multiple different software that performed similar functions. This increases the digital complexity in terms of how many different software interfaces they had to navigate at work. Furthermore, in case 3, the software used were very complex in themselves. They included website tools and CRM software, which had features of software ecosystems (Toivonen & Kijima 2019). Therefore, the cases differed in levels of digital complexity as well. The level of digital complexity also roughly corresponds with how much the entrepreneurs reported using working time for dealing with technological breakdowns.

## Data

The research utilized three different kinds of data to analyze the three cases. The primary data source was interviews with the entrepreneurs, which covered the topics of work, self-management, time-management, digitalization, and retirement plans. A single interview was conducted with each participant, and the interview durations ranged from 75 to 100 minutes. The interviewees were also asked to list the digital technologies they had adopted in the last three years as well as any other technologies they had used for long periods since the 1990s or early 2000s. The last five years of business income data from the research participants' companies was gathered from public sources to gain a contextual understanding of their economic situations. The software systems used by the participants at work were also reviewed to gather details on the different technologies. Gathering data on the technology used allowed looking at how many different kinds of features are included in the software systems that the entrepreneurs use at work. This allows assessing what kind of digital complexity contextualizes each case and to interpret the interview responses in relation to this background. There are software that perform single functions such as Teams and Zoom facilitating videocalls. Then, there are more complex programs with characteristics of software ecosystems. Complex software integrates multiple features, like marketing data collection, data analytics, and task management. The core feature of a software ecosystem is that the core software is often used with third-party modifications or otherwise facilitates interaction with third-party service providers, like technical support consultants, creating a platform economy (Toivonen & Kijima 2019).

It is difficult to observe self-employed workers without intrusively interrupting their workflows or their interactions with clients. Most of their work involved mental tasks, such as writing, planning, and exploring ideas. However, it was possible to gain an overall understanding of the relevant work-based software interfaces used by them by examining the different features of these software applications; how many software tools were used and how many different functions these tools had. Several programs that were previously unfamiliar to the researcher offered a freely available trial version, which allowed the researcher to explore various functions and the basic user interfaces. To look at the more complex software, the user instructions and promotional material (publicly available videos from company websites) related to these software were collected; this material provided information on what kind of technical features each software has and how users were instructed to take advantage of these tools. Table 1 presents the software programs relevant to each case and the type of data that was collected to further explore each software program.

**Table 1** Newly adopted software at work and methods for further data collection

Case	Newly adopted software at work	Further data collection method
Case 1	Teams, Zoom, Philips Dictation CSILakimies	User experience Instructional videos
Case 2	Jamboard, Flinga, Howspace, Teams, Zoom, Padlet, Wordpress	User experience
Case 3	Drupal, Joomla, Teams, Zoom Salesforce, Hubspot	User experience Instructional videos

## Results

### Case 1 – Simple technological change with curious but avoidant adaption strategy

Henri has worked as a self-employed lawyer for 25 years, having worked as an employee before that. He operates his general law practice in a small city. The original significant impact of digitalization in the law sector took place in the 1980s and 1990s when the Finnish law industry became increasingly computerized. FINLEX – the digital archive on Finnish laws – was released as an open web archive in 1995, and over time, the legal archives and law libraries have become increasingly focused on digital formats. Henri was the first lawyer in his hometown to adopt a personal website, so he regarded himself as a digital native and a groundbreaker among his peers. Henri continues to use a legal case management software CSIlakimies in his day-to-day work practices. The law industry recently experienced further sudden transformative digitalization as a result of the COVID-19 pandemic: the court system shifted to a digital format, as court hearings were managed through remote meetings to comply with health and safety recommendations. Prior to the pandemic, Henri occasionally used video calls for meetings with clients, and he had already made plans to start working remotely more often. Thus, Henri was able to use the crisis situation as an opportunity to take constructive action to aid his retirement plans. In this sense, Henri regarded the transition to remote work as a desirable development.

In addition, Henri had explored the use of AI at work in the form of an AI dictation software. He primarily used this to write notes through dictation and work-related memos, and to record thoughts, ideas, and rhetorical formulations of legal arguments. Henri intended to explore how AI dictation could be used to increase the flexibility of work tasks by generating rapid text on-the-go and recording notes at home. However, he eventually abandoned this tool, as he felt that it did not offer any specific benefits, for example, his typing speed was already very fast; thus, he concluded that the tool was not useful.

I have tried to use this digi-stuff and digital technologies at work and adopted programs like this speech recognition [AI dictation]. I started it let's say five years ago, trying to get use out of it, but then it sort of waned [...] It's OK and useful actually, but it requires a bit of familiarization – dictation I mean, you can grasp the text better when you have a screen.



Increased flexibility was described as the main element of change in comparison to Henri's previous working environment. Remote work has increased significantly and reduced the need for long distance commutes to attend court hearings and client meetings. The law itself is not extensively changed by digitalization, but increased use of remote working by courts allowed Henri to take on cases across wider geographical distances. Thus, he was less limited to his town in terms of the clients he was willing to accept. Also, the working time that was previously used on travelling could now be used on other work tasks. Lawyers in Finland are also required by the Finnish bar association to sit on a certain number of legal lectures each year to update their legal knowledge. Previously, these lectures would have required him to travel to another town, but now they could be accessed remotely as online events. Work has become more flexible due to less need to commute. However, Henri reported that he experiences that pace of change in general has intensified: legal changes, legal precedents, and high court decisions are now available online almost immediately. Information on new decisions that affect legal precedents are more quickly available, which means that his opponent also has this information at their disposal at the court hearings. The law itself does not necessarily change faster, but information regarding interpretation of existing laws is more quickly accessible to lawyers. In the oppositional process of legal argumentation, this benefit is also a challenge; One must follow legal changes more closely and check for changes more often than previously. However, Henri described himself as being able to select his cases, which means he is not particularly challenged by faster information flows as he sticks to areas where he is already strong; he is able to limit new learning tasks by selecting legal cases that best represent his existing legal expertise and previous work experience.

I don't go to new areas. I stay within areas where I'm already strong. If I get a client who has something completely new, then I don't accept the case, just because it would require so much learning of new things that it won't butter my bread.

Henri reported that he rarely experiences technological breakdowns or stress related to the technology he uses. He did however admit that he stays within the realm of the familiar also in this regard and avoids adopting new technology that could require learning new technical knowledge or generate technical problems. While Henri now works remotely, he does not use cloud software to store documents related to case work, as he feels that storing data remotely could potentially jeopardize data security. Henri wants a clear idea of where the data is physically stored at all times. He therefore uses a USB stick, as this can be carried around from place to place. In this way, Henri is able to avoid what Tafdrup and colleagues (2019) have called impotent breakdowns, that is, technology is maintained at a level that ensures one's own technological expertise and understanding remains potent.

I have not uploaded these case files into the cloud because – well I don't know, somehow it would frighten me because it would bring up additional data security problems; so they are there on the USB stick, which I always bring to court.

While Henri described digitalization as a mostly positive phenomenon, he stated that he was not planning to remain in the labor force for long. Henri observed that computerization and long-term digitalization trends had not particularly affected his weekly



working hours or profit margins. In this sense, he had not experienced digitalization in general as particularly transformative. Increased remote work had made more of an overall difference, as this change had forwarded his retirement interests. Remote working had enabled Henri to increase his focus on his hobbies at his summer residence; for example, he had joined the Finnish Astronomical Society and attended remote lectures on astronomy via video call software; Henri had increased the amount of time he spent away from the city while continuing to work remotely part of the time. Digitalization has facilitated the gradual replacement of work-related activities with leisure activities.

In this case, new learning demands related to digital tools were purposefully limited; the entrepreneur recognized the boundaries of his technical knowledge and actively avoided unfamiliar technology that could challenge his existing expertise or introduce new problems. New technologies were primarily pursued by choice, with a focus on creating a job that offered greater flexibility. This approach was not necessarily commercially orientated, and overall represented an avoidance strategy that was based on the entrepreneur's approaching retirement and desire to stay within his current field of work-related expertise. This strategy is in line with Feldman and Beehr's (2011) model of gradual retirement planning and person environment fit perspective to retirement planning (Zacher et al. 2014): careers in later life are focused on perpetuating and maintaining existing knowledge and work tasks; new challenges are sought from life outside of work. The avoidance strategy is dependent on the ability to select the information and technology that is introduced into the workplace and to sustain existing expertise that is not challenged by market competition or societal change in the short term. The avoidance strategy is favored by the fact that forced digitalization in the law sector is not very extensive. The adoption of different digital tools like case management software and online data bases has taken place gradually without a steep learning curve.

## **Case 2 – Multiple software and facilitating transformative digitalization**

Sirkka has worked as a self-employed staff trainer for 18 years. Before becoming self-employed, she was an employee in HR-management. Sirkka is typically hired by large companies to provide staff training events either through single workshops or multi-day modular training courses. According to Sirkka, she offers a broad range of training topics covering management and teamwork, although her main service is motivational training. She has also recently started to offer digital skills training for older workers, which includes guidance on the use of new remote working technologies and motivational training on adaption to digitalization. Sirkka noted that she is often hired at short notice.

The COVID-19 pandemic caused an immediate disruption and transformation of Sirkka's enterprise: 'In March 2020 my calendar just emptied'. As a result of the initial COVID-related restrictions, she did not receive any contracts for several months and her income was significantly reduced. Sirkka was able to recover this situation by changing the format of her training programs to online events that utilized remote teaching software. She was able to transform her business model, but this process involved managing issues such as poor video quality and interrupted sessions due to lost connections. Furthermore, Sirkka encountered new teaching challenges, as it was difficult to



engage with students who turned their cameras off during training. Responding to the COVID-19 restrictions required the adoption of new software to facilitate teaching, but Sirkka also had to invest in new hardware; for example, she purchased a fiberoptic high speed internet connection to try to ensure a smooth connection during training events.

Sirkka described her civic participation as a factor that contributed to her ability to respond quickly to the crisis. Outside her paid working role, she also volunteers for civic society organizations, including a cooperative network for small entrepreneurs. This active involvement in civic society was a source of resilience for Sirkka, as it provided a platform for networking and sourcing new clients as well as sharing ideas with other entrepreneurs. After the start of the pandemic, she expanded her training options and developed a program for older workers dealing with digitalization and specifically the use of video call software. Sirkka also adapted her management training to maximize the opportunities of the remote online learning environment. In addition to investing in new technologies and the associated skill development, Sirkka had to devote more time to planning lessons in advance.

My main tool is Howspace digital dialogue platform if the client is ready to pay for it [...] one can put videos there and third party tools, and there's an AI assisted chat function, so even if there's a big group and the biggest group has been 70 people, so in Teams it would be impossible to try to follow the buzzing class interaction, but [...] when there's AI in the background, you can pick up instances and form a word cloud.

Remote teaching environments are not only affected by technical challenges but also by the way humans have learned to interact in these environments. According to Sirkka, the training participants' habit of turning their cameras off during sessions was particularly problematic, as this made it more difficult to elicit responses and follow reactions; moreover, the training could become boring and mechanistic if the sessions centered on a single speaker. In order to maintain an engaging participatory experience, Sirkka increased the preparatory planning for each event. The lessons had to avoid passive lecturing and be organized around activities that actively involved the students. A trainer must source digital tools that can be used to facilitate group interactions in digital environments, and they need to prepare for any technical problems that may arise during a lesson.

The most challenging is the hybrid event. The amount of preparation doubles at least, and that is the thing in general that has increased now that this [training] is done differently, but it is more impactful and actually useful, so one ought to invest time in preparation.

Sirkka had to learn to use online whiteboards and online teaching and facilitation software, such as Howspace. For some training events, the clients paid the licensing costs for the more complex software applications that she had recommended; however, she stated that more frequently, the client's preferences dictated the choice of platform for the training session. These tools could be software already purchased by the client or free online applications. For example, Sirkka's preferred active learning tool is Howspace, but freeware software could be used if the client requested a cheaper option. This variation in software caused some duplication of learning tasks, as Sirkka had to learn to use multiple different software applications (e.g., Howspace, Padlet, Flinga, and Jamboard) that performed the same or similar tasks. Each interface system had to be researched

and, at times, relearned if there was a significant delay between each use. These problems were reviewed during the lesson preparation and were often resolved by trial and error or by searching for instructions online. In order to facilitate self-learning, Sirkka kept notes on the solutions to each technical problem.

I'll write them down and take a screenshot of them or something, as I know that this [IT problem] will show up again later, and there is, for example, this sign-up form, which is an add-on that I seldom use [...] like once a month, and in a month I will have forgotten how I navigated to that part, so my notes will guide me – ah that way, and then it flows. It [successfully using the program] often depends on a very small thing.

While remote lessons brought new challenges, they also offered flexibility. As in the previous case, Sirkka no longer needed to travel to different cities across Finland to reach clients. This significant change saved time and also allowed Sirkka to modify the lesson schedule to allow more breaks and shorter programs. Previously, events based outside her hometown would have to be completed on a tight schedule with long continuous lessons in order to minimize the accommodation costs passed on to the client company. In contrast, video conferencing meant that the lessons and the training module as a whole could be presented in shorter segments over a longer duration; for example, the whole module could be spread over a week rather than involve two intensive learning days. Sirkka described these new timetables as less stressful and more in line with her pedagogical understanding of an optimal lesson duration.

Self-employed entrepreneurs can experience problems associated with a lack of resources or encounter difficulties with available resources that are inflexible. Sirkka's clients typically wanted the training events to take place during standard working hours. Thus, her lesson planning was frequently carried out in the evenings when external technical support was both limited and costly. As Sirkka was generally only able to access technical support via after-hours services or not at all, she frequently experienced delays when trying to resolve problems that emerged during the lesson preparation phase. This problem is particularly significant for single entrepreneurs who depend on outsourced technical support.

The Wordpress site that I have – it has many add-ons. Recently it has felt like three days a week there are updates to add-on, and sometimes the updates are not entirely successful. As a self-employed entrepreneur, I am very isolated when it won't work, so I don't dare to run updates during the day when I have a lesson starting. But that means that when I have a problem, I won't get any help in the evening, so it's double edged. Oh, I wish there was a helpdesk for the self-employed.

Sirkka stated that she is planning to remain in the labor force for several years once she reaches retirement age. She has been saving for retirement for many years because she recognized that as a self-employed entrepreneur, her work exit conditions may be unpredictable. She described her main reasons for wanting to delay retirement as socially conscious. As a trainer who worked with older adults to prolong their careers through retraining, she intended to lead by example and extend her own working life; however, she admitted that her business income has been unstable. Her civic engagements would provide an alternative focus of activity in the longer term, and her retirement savings



would mean that part-time work was possible. She intended to continue adapting to her transforming working life, and she was willing to pursue alternative options if her business did not continue to do well.

### **Case 3 – Multiple complex digital service ecosystems and the need to specialize**

Matti is a self-employed marketing consultant working with multiple client companies on a project-orientated basis, with each project generally lasting several months. He has been self-employed for 19 years, having previously worked in management of a larger company. Although his profession is marketing, his educational background is in engineering. Digital Customer Relationship Technologies (CRM) have featured prominently in the digitalization of work in the marketing industry (Choudhury & Harrigan 2014). In recent years, the marketing environment has changed, with more focus directed toward online platforms, customer data analytics, targeted advertising, and the use of CRM software. According to Matti, just prior to the COVID-19 pandemic, this process reached a critical stage when all of his clients abandoned the campaign-based marketing model and transitioned to targeted marketing that focused on data analytics: ‘About three years ago the big companies started, they realized – my god – this is the only thing people want to do these days’. The COVID-19 restrictions caused a sudden shift to remote work, but this transition was made easier because of the earlier transformation to data-analytics based online marketing. The marketing environment had already moved away from cultivating customer relations primarily through face-to-face interactions.

Digitalization in this area has intensified so much. Firstly, cloud services have expanded the use of databases, exploiting data has increased so that you can get direct feedback on your actions through data-analytics, and third is that this is such a big, rising business, so there’s an incredible supply of programs and companies offering these services.

Previously, marketing was more of a social activity and involved taking potential buyers out for drinks or dinner as part of marketing outreach, that is, crafting meaningful contacts. While Matti’s work still involves social interaction, it primarily targets the personnel of the client company and is more focused on coordinating project activities rather than marketing for a target audience. Moreover, social interaction is increasingly mediated through technology such as emails, online chats, and remote meetings. Multichannel communications and multiple unanticipated interruptions throughout the day characterize this interaction. Furthermore, the course of the working day is unpredictable because of the fast speed of communication. Matti stated that to effectively manage complexity, it is often best to deal with one project at the time, but sometimes there is a need to multitask when working with different clients: ‘I deal with the angriest client first’. Managing multiple different client companies adds to the unpredictability of communications, as the number of actors involved can be numerous: ‘Let’s say twenty times a day what I’m doing is interrupted, like in the olden days there was phone calls’.

Like Sirkka, Matti reported that the tools he uses are primarily determined by the client’s needs, which in turn increases the number of different communication channels

he must navigate throughout the workday. For example, the CRM software, website platforms, and editing tools provided by each company typically vary; thus, Matti must adapt to working with these different tools when updating website marketing content for his clients.

Marketing has digitalized so that everyone is on some kind of platform, so if I do a campaign, well there's always a landing page and a website. One client has Drupal, one keeps it in HubSpot, and one has F-plus and some version of Pardot, and somebody is still stuck in that Joomla world.

Once again, the wide range of different software systems leads to situations in which the self-employed must constantly learn new skills while also striving to retain their knowledge of older systems. Client requirements drive the learning demands related to the adoption of new software; however, the clients upgrade their software systems at different intervals. For self-employed subcontractors, this may require repeated phases of returning to older generation technologies, relearning previously executed tasks, and upskilling to learn the newest generation of software. The knowledge and comfort a worker associates with each technology will fluctuate over time. Digitalization has also altered the focus of working tasks. While Matti's primary target was still the creation of marketing content, he spent an increasing amount of time on technical problems related to managing content across different digital systems. The diverse digital environment has also resulted in significant compatibility issues. Matti stated that he spent at least an hour every day trying to resolve technical problems.

Most of all I would want to offer solutions to the client. That's the smartest thing. Now too much time is spent on figuring how things are done when the question should be what and for whom. Finding the solution ends up in this nighttime tinkering with systems so that it will show up on the website and newsletter and on social media.

The software products Matti identified are highly complex. CRM software, such as Salesforce and Hubspot, have evolved from project management programs into platform economies that perform a multitude of different functions. These products utilize app stores for customizable add-ons, and they aim to integrate customer data analytics, targeted advertising, B2B marketing, customer service, sales, company team communication, and team management; in addition, they offer surveillance of employees by tracking the completion of work tasks and operate as platforms through which more complex service eco-systems can function. For example, Salesforce contains a search function that identifies hireable third-party Salesforce experts for companies that use the product. A new field of expertise has developed in response to the complexity of this product navigation.

Software have gone through this developmental course, like if you remember the old Nokia phone that was made by engineers, the phone could not do anything, but you still got lost in the menu. Now we are talking about truly challenging software like Hubspot or Salesforce, like, they have hundreds of different functions, and the user interfaces are a bit behind those functions in comprehensibility. The user needs to be this little curious engineer who can figure out even the deepest functions.



Modern CRM software products offer different operational functions. While they perform similar tasks, their interfaces can vary widely and include customization changes that modify a program's operation in different companies. They also include novel terminology for unique features – for example, 'brand champions'– or use standard industry terminology in slightly different ways – for example, 'ticket' or 'pathways'. As well as identifying the technical aspects, the terminology represents the underlying approach applied to the interface functions, such as indicating where to click or what tab provides which function. While learning to use these systems, the user also adopts new concepts about marketing and management.

Matti stated that he wanted to continue working for at least another ten years, which would take him past retirement age. However, he felt that the aging process was affecting his ability to work, and work in turn was affecting his aging experience negatively.

Now that I concentrate on digitalization, taking advantage of it in P2P marketing, it has curtailed my work a bit. Realizing that I must get a good night's sleep to have the strength, and I've gotten slower in figuring things out.

Matti explained that he would prefer to reduce his workload. Thus, while transformative digitalization is a challenge, it can also provide opportunities. Matti presented the idea of employing a specialist to oversee the technical aspects of the job, which would ensure that the marketing consultant could focus primarily on designing marketing content and producing marketing strategies for their clients. A single entrepreneur would thus have to take on employees or a business partner. Matti also discussed a second option that involved him specializing as a technical expert in a particular software system. For example, both Salesforce and Hubspot offer advanced-level courses for people interested in becoming a specialist, and independent specialists can also market themselves via these platforms: 'With Hubspot, I'm starting my studies bit by bit, completing modules. Currently, I have only been in the process of adopting it for a year, so it has taken all my time just to get that stuff rolling'.

Matti regards specialization as the most suitable option for his career path because he can build on his professional IT background. Software products now function as platforms for complex service ecosystems; therefore, the complexity of the technology also aids the shift toward specialization. Transformative digitalization within the marketing industry can create particularly arduous job demands for self-employed workers with multiple clients. The diverse nature of client companies in terms of their adoption of new software systems and their asymmetric levels of modernization can increase the complexity of work tasks for the self-employed. These issues may also be relevant for other groups such as the precariously employed. For older workers, this situation can require significant investment in upskilling during the latter period of their working lives.

## Discussion and conclusion

Transformative digitalization creates new learning demands for self-employed entrepreneurs, as they may find it difficult to take full advantage of the technologies available. The complexities they encounter include technological breakdowns, interruptions of

work tasks due unfamiliar software functions, and social difficulties related to human interactions with software technologies. Managing these challenges has become an increasingly significant part of their workloads, involving planning, learning, relearning, and the retention of complex skills. This study sets out to explore what aspects of digitalization particularly affect the self-employed and what strategies do older self-employed use to adapt to transformative digitalization.

The core aspect of transformative digitalization that particularly affects the self-employed is how these entrepreneurs' clients and other parties, like institutions that they must interact with, influence what kinds of software technologies the entrepreneurs must use at work. Acquiring multiple clients with different software preferences contributes to the complexity of the digital environment, as this can lead to the expansion of digital technologies the entrepreneur has to use at work: self-employed entrepreneurs must effectively engage with every system they encounter and find ways to continually broaden their skill base and sometimes relearn previous skills when some client still uses older technology. While the sample of this study was three self-employed entrepreneurs, the effects of asymmetric client demands regarding technology are likely to impact also other workers who interact with multiple different clients or service different geographical areas, industries, and institutions. The diversity of client requirements and digital complexity are key concepts (Yin 1994) that should direct further studies on digitalization and self-employment; more specifically, future research could examine how self-employed workers in different life phases and across different industries address and manage new digital technology.

Second, our study was interested in what kind of strategies the self-employed were using to adapt to transformative digitalization. The strategies of the research participants connected to career- and retirement planning. We name these adaption strategies as avoidance, facilitation, and specialization. Table 2 describes the cases and the key areas of technological change identified by the participants in the last three years. For each case, Table 2 summarizes the recent technological changes, the benefits and

**Table 2** Technological change at work and strategies for adaption

<b>Case</b>	<b>Age</b>	<b>Family status</b>	<b>Place of work</b>	<b>Digital change at work</b>	<b>Benefits</b>	<b>Challenges</b>	<b>Adaption strategy</b>
Case 1 'Henri' (law)	61	Has a spouse, has children	Small city	Remote work, online archives	Flexible integration of work and leisure	No major problems	Avoidance
Case 2 'Sirkka' (staff training)	61	Has a spouse, has children	Large city	Remote work, online teaching tools	Flexible teaching schedule	Technical problems (<1 hour of daily workload), unpredictability	Facilitation
Case 3 'Matti' (marketing)	60	Has a spouse, has children	Large city	Remote work, data-analytics, web-based marketing	Flexible integration of work and leisure	Technical problems (approx. 1 hour of daily workload), unpredictability	Specialization

Note: Small city <100,000 residents. Large city >500,000 residents.



challenges of transformative digitalization, and the adaption strategies used to manage new job demands stemming from digitalization.

The avoidance strategy does not require any novel actions from the worker and is most useful when one intends to leave the labor market in the short term. This approach involves avoiding new learning tasks and focusing on areas of work in which one is already competent. This strategy can be adopted by workers who have options to select which technologies they will adopt or avoid and what projects they take on. However, if new technologies cannot be freely selected, their adoption may involve the facilitation strategy, which involves changing work practices. For example, technological change can be facilitated by developments in one's working style and personal marketing. In Sirkka's case, this shift required her to devote more time to planning work tasks in advance, a change that required her to source additional software tools and purchase new hardware. Besides asymmetric client demands regarding digital technologies, some of these technologies are highly complex themselves and are networked across multiple systems in a complex digital service ecosystem (Koskela-Huotari et al. 2016); a self-employed entrepreneur may need to entirely change their business strategy in order to adapt to a working environment with increasingly complex software. The specialization strategy may also necessitate the growth of a business. Matti identified his options as either expanding his firm to include a separate technical support worker or undertaking additional training to specialize in a particular interface system. The second option would enable Matti to market himself as a software specialist with knowledge of the marketing field rather than a marketing consultant with technical experience. The growth of these specialized roles in the labor market is due in part to the complexity of the software and the rapid pace of technological change but also the fact that these software systems themselves facilitate third-party service providers by providing online platforms for marketing these types of specialist services.

The findings also have theoretical implications. Our finding supports the protean career hypothesis (Pongratz & Voß 2003), as responses to digitalization involve learning new skills and knowledge, management of learning tasks, planning related to organizing work tasks, and career planning – features of protean careers as outlined by Kubicek et al. (2015). Digitalization clearly poses challenges to the self-employed, but the protean career conditions partly also stem from the project-based nature of self-employed work and the diverse client demands. New learning demands have often been thought to be detrimental to the interest of older workers, as they have fewer years to take advantage of new skills (Mauno et al. 2019), but in the context of protean careers, it might be that skill requirements change often enough that workers cannot expect to not to update their skills or change career plans between few years. In this kind of context, earlier crystalized knowledge and skills related to specific work tasks, like face-to-face marketing, can become obsolete, but the more general level knowledge and accumulated skills, thinking patterns, etc., which provide a baseline for new learning, may actually facilitate constant adaption fairly well among some highly skilled older workers. In this sense, the reactions to digitalization among older self-employed may be highly diverse and some self-employed could actually be particularly well-equipped for adapting to protean conditions, provided that they are able to learn on the job. High complexity may provide a field for specialization. Specialization in turn could allow entrepreneurs to manage the digital complexity at work. The more reactive strategies: avoidance and facilitation do not only provide this benefit but also demand less effort in terms of new learning tasks.



The adaption strategies also illustrate how the reactions to digitalization are connected to retirement planning. First, being close to retirement can provide an income buffer in case the late working life career plans do not succeed like the entrepreneur had hoped. Second, transformative change can create new working life goals for older workers. According to Feldman and Beehr's (2011) phased theory of retirement planning, older workers tend to shift personal focus away from working life toward post-working life, especially when the final working years are characterized by routinization and lack of further career goals – retirement becomes the new ground for self-actualization. The case of avoidant adaption strategy fits well within this framework, both in terms of the underlying working conditions – retaining established routines – and career goals – new personal interests are focused on post-retirement life. In this context, technology is primarily used to increase work flexibility and provide opportunities for activities and new interests outside work. The two latter strategies involve framing the problems related to digitalization as challenges to be mastered, a perspective that offers opportunities to change established routines and advance career development, which could help to maintain the generative aspects (Halvorsen & Morrow-Howell 2017) of entrepreneurship. While digitalization may not directly push them to retirement, the older self-employed will likely alter their business strategies in response to the impacts of digitalization unless they are planning to retire soon.

The core limitation of this study is that the results are transferable only to a specific subset of older self-employed. The research participants in this study were all involved in knowledge work that required the manipulation of symbols, the construction of arguments, and the development of persuasive communication. Based on their work- and educational backgrounds, the entrepreneurs possessed significant social capital, and they also reported having robust retirement savings. These factors allowed the entrepreneurs to exercise a high level of autonomy regarding work exit decisions; hence, the participants were able to contribute meaningful insights into later working life and the adaption to digitalization. For entrepreneurs with limited financial resources, monetary concerns are more likely to play a central role in retirement decisions (Viherä & Viukari 2016). However, entrepreneurs who possess less social capital and financial resources probably experience transformative digitalization itself differently. Digitalization would likely be experienced differently also in fields where computers have not served as the primary work tools. Further studies should therefore examine how the self-employed in manual fields of work, such as farmers or independent contractors, are currently responding to digitalization. The effectiveness of the adaption strategies also remains an open question. Further research should, for example, explore if the self-employed have better career longevity in digitalized industries that have opportunities for technological specialization.

The entrepreneurs in this study also highlighted the benefits of digitalization, particularly those related to remote work and the shift away from the physical workplace. The participants noted that remote work made it easier to reconcile their workload with other activities and hobbies contributing to better work-life balance. Overall, this article highlights how differently the older self-employed react to transformative digitalization. The self-employed have greater freedom in their working conditions than employees, and they utilize this freedom to meet digitalization on their own terms. This self-determination is one of the reasons why the self-employed work until a later age than employees. It may also be one of the reasons why the self-employed seem to



embrace transformative digitalization more easily. Policymakers and employers could consider giving older employees more freedom in how they approach transformative digitalization in their workplace. Such a step holds the potential to also entice them to expand their working lives.

## References

- Alcover, C.M., Guglielmi, D., Depolo, M. and Mazzetti, G. (2021). Aging-and-tech job vulnerability: A proposed framework on the dual impact of aging and AI, robotics, and automation among older workers, *Organizational Psychology Review* 11(2): 175–201. doi: <https://doi.org/10.1177/2041386621992105>
- Bell, D.N. and Rutherford, A.C. (2013). Older workers and working time, *The Journal of the Economics of Ageing* 1(2): 28–34. doi: <https://doi.org/10.1016/j.jeoa.2013.08.001>
- Brynjolfsson, E. and McAfee, A. (2014). *The second machine age*. New York: W.W. Norton.
- Choudhury, M.M. and Harrigan, P. (2014). CRM to social CRM: The integration of new technologies into customer relationship management, *Journal of Strategic Marketing* 22(2): 149–176. doi: <https://doi.org/10.1080/0965254X.2013.876069>
- Ebbinghaus, B. (2017). The privatization and marketization of pensions in Europe: A double transformation facing the crisis, *European Policy Analysis* 1(1): 56–73. doi: [onlinelibrary.wiley.com/doi/abs/10.18278/epa.1.1.5](https://onlinelibrary.wiley.com/doi/abs/10.18278/epa.1.1.5)
- Feldman, D.C. and Beehr, T.A. (2011). A three-phase model of retirement decision making, *American Psychologist* 66(3): 193–203. doi: <https://doi.org/10.1037/a0022153>
- Fossen, F.M. and Sorgner, A. (2021). Digitalization of work and entry into entrepreneurship, *Journal of Business Research* 125: 548–563. doi: <https://doi.org/10.1016/j.jbusres.2019.09.019>
- Frey, C.B. and Osborne, M.A. (2017). The future of employment: How susceptible are jobs to computerization, *Technological Forecasting and Social Change* 114: 254–280. doi: <https://doi.org/10.1016/j.techfore.2016.08.019>
- Halvorsen, C.J. and Morrow-Howell, N. (2017). A conceptual framework on self-employment in later life: Toward a research agenda, *Work, Aging and Retirement* 3(4): 313–324. doi: <https://doi.org/10.1093/workar/waw031>
- Hensher, D. A., Beck, M. J., and Balbontin, C. (2022). Time allocation of reduced commuting time during COVID-19 under working from home. *Journal of Transport Economics and Policy*, 56(4): 399–428. doi: <https://www.ingentaconnect.com/contentone/lse/jtep/2022/00000056/00000004/art00003>
- Hershey, D., Van Dalen, H.P., Conen, W. and Henkens, K. (2017). Are ‘voluntary’ self-employed better prepared for retirement than ‘forced’ self-employed? *Work, Aging and Retirement* 3(3): 243–256. doi: <https://doi.org/10.1093/workar/wax008>
- Ihde, D. (2012). *Experimental phenomenology: an introduction*. New York: SUNY Press.
- Jacobs, J.A. and Karen, R. (2019). Technology-driven task replacement and the future of employment. In Vallas, S.P. and Kovalainen, A. (eds.) *Work and labour in the digital age*. Bingley: Emerald, pp. 43–60. doi: <https://doi.org/10.1108/S0277-283320190000033004>
- Kautonen, T., Hytti, U., Bögenhold, D. and Heinonen, J. (2012). Job satisfaction and retirement intentions in Finland: Self-employed versus salary-earners, *International Journal of Manpower* 33(4): 424–440. doi: <https://doi.org/10.1108/01437721211243778>
- Kompier, M.A., Cooper, C.L. and Sabine, A.E. (2010). A multiple case study approach to work stress prevention in Europe, *European Journal of Work and Organizational Psychology* 9(3): 371–400. doi: <https://doi.org/10.1080/135943200417975>

- Koskela-Huotari, K., Edvardsson, B., Jonas, J.M., Sörhammar, D. and Witell, L. (2016). Innovation in service ecosystems—breaking, making, and maintaining institutionalized rules of resource integration, *Journal of Business Research* 69(8): 2964–2971. doi: <https://doi.org/10.1016/j.jbusres.2016.02.029>
- Kubicek, B., Paškvan, M. and Korunka, C. (2015). Development and validation of an instrument for assessing job demands arising from accelerated change: The intensification of job demands scale (IDS), *European Journal of Work and Organizational Psychology* 24(6): 898–913. doi: <https://doi.org/10.1080/1359432X.2014.979160>
- Mallett, O. and Wappshot, R. (2015). Making sense of self-employment in late career: Understanding the identity work of olderpreneurs, *Work, Employment and Society* 29(2): 250–266. doi: <https://doi.org/10.1177/0950017014546666>
- Mauno, S., Minkkinen, J., Tsupari, H., Huhtala, M. and Feldt, T. (2019). Do older employees suffer more from work intensification and other intensified job demands? Evidence from upper white-collar workers, *Scandinavian Journal of Work and Organizational Psychology* 4(1): 3, 1–13. doi: <https://doi.org/10.16993/sjwop.60>
- Nieto-Mengotti, M., López-Arranz, A. and Novo-Corti, I. (2019). Smart city as a platform economy: Civic engagement and self-employment in focus. In Visvizi, A. and Lytras, M.D. (eds.). *Smart cities: Issues and challenges: Mapping political, social and economic risks and threats*. Amsterdam: Elsevier, pp. 63–76. doi: <https://doi.org/10.1016/B978-0-12-816639-0.00005-3>
- Obschonka, M., Silbereisen, R.K. and Wasilewski, J. (2012). Constellations of new demands concerning careers and jobs: Results from a two-country study on social and economic change, *Journal of Vocational Behavior*, 80(1): 211–223. doi: <https://doi.org/10.1016/j.jvb.2011.08.002>
- Platman, K. (2003). The self-designed career in later life: A study of older portfolio workers in the United Kingdom, *Aging & Society* 23(3): 281–302. doi: <https://doi.org/10.1017/S0144686X03001168>
- Pongratz, H.J. and Voß, G.G. (2003). From employee to ‘entreplooyee’: Towards a ‘selfentrepreneurial’ work force? *Concepts and Transformation* 8(3): 239–254. doi: <https://doi.org/10.1075/cat.8.3.04pon>
- Pöllänen, K. (2021). Organizational culture and masculinities in a startup company in Finland, *Nordic Working Life Studies*, 11(4): 117–135. doi: <https://doi.org/10.18291/njwls.126226>
- Rotolo, T., and Wilson, J. (2006). Employment sector and volunteering: The contribution of nonprofit and public sector workers to the volunteer labor force. *The Sociological Quarterly*, 47(1): 21–40.
- Stake, R.E. (2013). *Multiple case study analysis*. New York: Guilford Press.
- Tafdrup O.A., Lindsø, A.B. and Hasse, C. (2019). Learning to interpret technological breakdowns: A path to technological literacy. In Toivonen, M. and Saari, E. (eds.) *Human-centered digitalization and services*. Singapore: Springer, pp. 139–157. doi: [https://doi.org/10.1007/978-981-13-7725-9\\_8](https://doi.org/10.1007/978-981-13-7725-9_8)
- Thun, S., Kamsvåg, P.F., Kløve, B., Seim, E.A. and Torvatn, H.Y. (2019). Industry 4.0: Whose revolution? The digitalization of manufacturing work processes, *Nordic Journal of Working Life Studies* 9(4): 39–57. doi: <https://doi.org/10.18291/njwls.v9i4.117777>
- Toivonen, M. and Kijima, K. (2019). Systems perspective on the interaction between human and technological resources. In Toivonen, M. and Saari, E. (eds.) *Human-centered digitalization and services*. Singapore: Springer, pp. 37–56. doi: [https://link.springer.com/chapter/10.1007/978-981-13-7725-9\\_3](https://link.springer.com/chapter/10.1007/978-981-13-7725-9_3)
- Vanbelle, E., Van Den Broeck, A. and De Witte, H. (2017). Job crafting: Autonomy and workload as antecedents and the willingness to continue working until retirement age as



- a positive outcome, *Psihologia Resurselor Umane* 15(1): 25–41. doi: <https://hrp-journal.com/index.php/pru/article/view/56>
- Verheul, I., Thurik, R., Grilo, I. and Van der Zwan, P. (2012). Explaining preferences and actual involvement in self-employment: Gender and the entrepreneurial personality. *Journal of Economic Psychology*, 33(2): 325–341. doi: <https://doi.org/10.1016/j.joep.2011.02.009>
- Viherä, M. and Viukari, L. (2016). Digitalisaatio mikroyrityksiä voimaannuttamaan [Digitalization empowers micro-enterprises], *Futura* 16(1): 35–46.
- Wainwright, T. and Kibler, E. (2014). Beyond financialization: older entrepreneurship and retirement planning, *Journal of Economic Geography* 14(4): 849–864. doi: <https://doi.org/10.1093/jeg/lbt023>
- Yin, R.K. (1994). *Case study research: design and methods*. Thousand Oaks: Sage.
- Zacher, H., Feldman, D.C. and Schulz, H. (2014). Age, occupational strain, and well-being: a person-environment fit perspective. In Perrewé, P.L. Rosen C.H. and Halbesleben J.R.B. (eds.) *The Role of Demographics in Occupational Stress and Well-being*: Volume 12. Bingley: Emerald Publishing, pp. 83–111. doi: <https://doi.org/10.1108/S1479-355520140000012002>
- Zwier, D., Damman, M. and Van den Heuvel, S.G. (2020). Explaining differences in retirement timing preferences between the solo self-employed and employees, *International Journal of Manpower* 42(2): 286–304. doi: <https://doi.org/10.1108/IJM-01-2019-0038>