"This time may be a little different" – exploring the Finnish view on the future of work

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Abstract

Purpose – The purpose of this paper is to explore Finns' labor market development predictions for the next ten years and shed light on preferred policy responses to the digital economy.

Design/methodology/approach – Nationally representative survey data employed in this paper were collected in autumn 2017. The data collection utilized a multiphase sampling, and the interviews ($n = 1004$) were carried out on telephone to minimize selection-bias and produce demographically balanced data.

Findings – Over two-thirds (71 percent) of Finns do not expect technological unemployment to constitute a permanent problem in the digital economy. Nevertheless, 74 percent assume that technological unemployment will increase at least temporarily. A considerable majority (85 percent) also believe that future jobs will be more precarious. Younger generations, despite their currently weak position in the labor market, are surprisingly more optimistic in their predictions. Analysis of preferred policy responses support this paper's main thesis that the Finnish view on the future of work is rather optimistic: education reforms and streamlining the current social security gather dedicated support, whereas more unconventional ideas such as basic income or work-sharing remain contested.

Originality/value – To predict possible barriers to labor mobility stemming from digital economy discourses and to anticipate possible political fluctuations, studies on the public view are needed. This research aims to provide a solid framework for further comparative explorations of the public view.

Keywords Automation, Digital economy, Future of work, Technological unemployment, Platform economy, Basic income

Paper type Research paper

1. Introduction

Breakthroughs in digital technologies and artificial intelligence (AI) have led to unabated discourse on the implications of new general-purpose technologies for labor and public policy. A few quantitative attempts have been made to estimate the potential effects of the digital revolution on employment (Pajarinen and Rouvinen, 2014; Arntz *et al.*, 2016; Acemoglu and Restrepo, 2017; Frey and Osborne, 2017; Manyika *et al.*, 2017; Nedelkoska and Quintini, 2018), but expert discourse continues to be polarized, and the debate on technological unemployment as a permanent problem remains unresolved.

Despite the challenges of forecasting the digital economy's impact on labor, it is reasonable to hypothesize that broad public discussion of the issue has strongly influenced views on the future of work within the industrialized world. Studying these views provides valuable insight regarding individuals' decision making in the context of a changing labor market (e.g. Stephen, 2004). Predictably, pessimistic labor market expectations increase one's psychological impediments to labor mobility which is considered one of the key elements in maintaining strong employment and productivity levels.

Automation anxiety is also expected to produce a more widespread desire for radical political change (Frey *et al.*, 2017). Therefore, negative future views among the public can

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anticipate rise of populist movements and an increase of support for unconventional policies regardless of actual changes in the labor market. To put it differently, studying the public's views on the future of work can reveal whether the often alarmist digital economy discourses have constituted incitements to political fluctuations.

The specific objective of this study is to shed light on the public's views in Finland, employing survey data that were collected in autumn 2017. Finland makes an interesting case study as the country relies on an innovation-based growth model and is expected to be among the first to utilize digital technologies and AI on a large scale. Given Finland's position as an innovation-driven economy, it can be postulated that Finns have eminently optimistic views on the employment effects of utilizing recent technologies. On the other hand, the collapse of Nokia at the turn of the last decade, showed people how disruptive consequences new innovations, such as smart phones, can have on overall economy and employment.

The main finding of this paper is that Finns have relatively optimistic views on the long-term future of work. Simultaneously, Finns are clearly concerned about the labor market's increasing volatility. The preferred policies of Finns validate the observation that a considerable majority trust in conventional policies over a radical political alternative.

The paper is structured as follows: First, I formulate three "ideal type" scenarios based on expert discussions which provide a coherent theoretical framework for interpreting the survey results. After presenting the employed data and methods, I proceed to the essential findings of my empirical analysis. Finally, I present the main conclusions and discuss the implications of this study for digital economy research and public policy.

The purpose of this paper is to answer the following research questions:

RQ1. Which labor market scenario do Finns follow?

RQ2. What are the essential differences in sociodemographic characteristics in views on the labor market development?

RQ3. What are the essential differences in sociodemographic characteristics in views on the preferred policy responses?

To provide answers for these questions, I employ nationally representative survey data ($n = 1004$) that were collected in autumn 2017 as a part of the research project, "Title in Finnish (Title in English) Suomalainen työ murroksen jälkeen (Finnish Work After the Transformation)" (Annala *et al.*, 2018). The study was funded by the prime minister's office and will be utilized in the government's "Report on the Future."

Throughout this paper, the term "digital economy" will refer to future automation and utilization of digital platforms. The future-oriented approach of this study relies on an observation of implementation and restructuring lags when it comes to the most potential technological breakthroughs in the 2010s, particularly in the field of machine learning (Brynjolfsson *et al.*, 2017). Therefore, the survey was designed to study the public's views on the expected changes instead of analyzing the public view on the already witnessed digital transformation.

It is, however, necessary to note that digital technologies have reconfigured the ways we work and have been doing that for a while, for instance by enabling work to extend beyond formal workplaces and to intensify by the logic of continuous connectivity (see e.g. Richardson, 2018). ICT technologies and digitalization have without a doubt transformed the world of work, but widespread utilization of digital technologies and AI remains in the near future.

2. "Ideal type" scenarios on the future of work

Rather than providing another literature review of expert discussion on the digital economy in this decade (see e.g. Greve, 2017), this study presents three "ideal type" scenarios on the future of work. In this paper, the Weberian concept of "ideal type" refers to an approach that

intends to facilitate understanding of the foremost divisions in discussion and help interpret the public view in a solid theoretical framework (see also Pulkka, 2017). Thus, any of the formulated scenarios may not be found as such in expert discussion.

2.1 The "this time is different" scenario

It is evident that the most influential empirical study exploring the future of work has been the working paper published by Michael A. Osborne and Carl Frey in 2013. This study was a groundbreaking attempt to quantitatively estimate the automation potential of digital technologies and AI based on expert evaluation of the technological possibilities and task content of 702 job titles. It suggests that 47 percent of the current jobs in the USA are at high risk of being automated within the next two decades. Though the study highlights many uncertainties involved in estimating the actual automation of present jobs (Frey and Osborne, 2017, p. 268), it has undoubtedly convinced many commentators to believe that this time is different from earlier technological quantum leaps.

Besides Frey and Osborne's influential paper on technological feasibility, tech expert Martin Ford's (2015) analysis has been continuously cited as a defense for the notion that "this time is different." According to Ford (2015, pp. 63-81), exponential and stable development of technology, often referred to as Moore's Law (see also Brynjolfsson and McAfee, 2014, pp. 39-56), prevents education from providing solutions to technological unemployment since task automation will be even more comprehensive as new technologies mature. Due to the exponential rate of the change that is expected to continue, there will not be enough time to adjust through means of education, and co-operation with machines will only be temporary before the machines replace workers. An essential part of Ford's (2015) analysis (pp. 175-191) is a presumption that digital production is less labor-intensive than industrial production. Digital production may create great wealth for owners and simultaneously drive more people to face unemployment or underemployment.

Besides automation, self-employment via on-demand platforms is expected to become an increasingly utilized method of organizing work (e.g. OECD, 2016; Valenduc and Vendramin, 2016, pp. 29-38; Stern, 2016, pp. 91-118; Greve, 2017, pp. 34-49). The "this time is different" scenario assumes that the expansion of paid work through on-demand platforms (i.e. dismantling work processes to even a microtask level) will lead to the weakening of workers' rights. Since the at-poverty-risk is significantly higher among self-employed in comparison to salary earners (Eurofound, 2017, p. 7), it is fair to expect that increased self-employment translates into less income. Additionally, more efficient organization of work tasks may also increase competition over remaining jobs, thus leading to downward elasticity of salaries.

Should these changes materialize, the anticipated implications for labor and public policy will be drastic, especially if adequate policy responses are lacking. The "this time is different" scenario forecasts permanent technological (mass) unemployment, harsher competition over remaining jobs, downward elasticity of salaries, macroeconomic instability, heightened inequality, increasing indebtedness, declining social cohesion and additional social issues resulting from the aforementioned trends. Since the "this time is different" scenario expects demand for human labor to permanently decrease, its advocates tend to rely on unconventional policy initiatives such as basic income (e.g. Santens, 2017) and work-sharing (e.g. Bregman, 2016, pp. 44-47). The advocates of this scenario may also propose progressive capital income taxation or "robot taxes" (e.g. Berg *et al.*, 2016), reconceptualization of work (e.g. Greve, 2017, p. 127), guaranteed jobs programs (e.g. Meyer, 2014), or employee ownership expansion (e.g. Freeman, 2015).

2.2 The "this time is no different" scenario

While employment development has been historically positive in light of technological gains, discussion regarding the negative effects of technology on labor has continued

without interruption throughout the last two centuries (e.g. Mokyr *et al.*, 2015). Thus, it is unsurprising that historical evidence (e.g. Miller and Atkinson, 2013) is one the key arguments behind the notion of "this time is no different."

Alternatively, mainstream economists' belief in the "this time is no different" scenario rests on an economic model that expects productivity growth to stabilize demand on human labor in the long term. This model relies on an assumption that productivity growth leads to the expansion of innovation-based sectors and lowering of consumer prices (i.e. positive spillovers). Expansion of production translates into expansion of labor demand, and lower prices make it possible for people to reallocate consumption to other sectors, which again creates more demand. The followers of this model accuse technology pessimists of a lump-of-labor fallacy: a false understanding of labor being constant (Miller and Atkinson, 2013, p. 2). To put it in the language of economics, the followers of the "this time is no different" scenario emphasize that in addition to destruction effect, technology has always had a capitalization effect, i.e. it creates new jobs (Pissarides, 2000, pp. 75-91).

Proponents of this scenario, such as Autor (2015) and Arntz *et al.* (2016), also point out that instead of replacing entire jobs, it is more likely that individual tasks will disappear; therefore, the nature of occupations will simply shift as cooperation with intelligent machines increases. This scenario highlights the fact that work tasks can change drastically within an occupational classification, such as secretary. Arntz *et al.* (2016) utilized such an approach in their widely cited OECD study which reported the tasks-based automation risk of jobs to be significantly lower than reported by Frey and Osborne. Instead of exploiting standardized occupational classifications, the authors based their estimates on work tasks reported by individuals for OECD's Survey of Adult Skills (PIAAC). Utilizing this approach, the average automation risk estimate across the 21 OECD countries is only 9 percent.

In conclusion, the key components of the "this time is no different" scenario are historical evidence, economic logic, and a tasks-based approach. These components, at least in the long term, are believed to lead to positive outcomes: more stimulating jobs and rising wages. The followers of this scenario believe that conventional measures, such as reforming education and stimulating labor supply, are sufficient measures to improve labor's adaptation to the digital economy in the years to come.

2.3 The conservative scenario

In my previous research paper (Pulkka, 2017), I suggested that a conservative scenario may offer the most fruitful starting point for discussions on the future of work and welfare states. Overconfident optimism and speculation of mass unemployment, found in the polarizing scenarios fail to provide a constructive basis for designing future policies. Alternatively, the conservative scenario, based on a critical synthesis of the polarized expert discussion, emphasizes that long-term forecasts are unavoidably speculative, and therefore, a flexible approach is necessary.

Due to lags in implementation and restructuring, not even the latest statistics can reveal the definite automation potential of developments like machine learning and advanced robotics (Brynjolfsson *et al.*, 2017). Brynjolfsson *et al.* (2017) have argued that, like previous general-purpose technologies, digital technologies and AI require development and implementation of complementary innovations before they can be fully employed in production. Moreover, there are serious data gaps when comes to statistics on technology's effects on workforce which makes the predictions increasingly speculative (Mitchell and Brynjolfsson, 2017, p. 291).

Given the technological breakthroughs of the 2010s (e.g. Brynjolfsson and McAfee, 2014; Brynjolfsson and McAfee, 2017, pp. 16-18), as well as the quantitative estimates on technological potential (Arntz *et al.*, 2016; Frey and Osborne, 2017), the conservative scenario demonstrates strong reason to believe that the implementation of digital technologies and AI

may lead to more comprehensive and rapid displacement of work tasks than previously seen with general-purpose technologies like the steam engine, electricity, the internal combustion engine, and the computer. This leads to the conclusion that more volatile labor markets, underemployment, and at least temporary technological unemployment are probable outcomes. Even if we posit the view that it is mainly work tasks, rather than entire jobs, that can be automated, replacing a vast amount of present work tasks can affect the aggregate demand on human labor in a significant manner. Ultimately, the utilization of on-demand platforms may create an increasingly fluctuating need for human labor.

While the conservative scenario suggests that technological unemployment may only be temporary due to capitalization effect, it would be risky to ignore the possibility of a more serious disruption that could produce permanent effects. Since previous studies have shown evidence of the technological potential to automate occupations which currently employ large numbers of people (e.g. transportation, logistics, production and administrative support), the employment effect of automating occupations in these sectors could be drastic. If jobs with the highest risk of automation target the least educated workers, as proposed by Frey and Osborne (2017) and Arntz *et al.* (2016), it is probable that these people will face serious obstacles re-educating themselves for future jobs.

The conservative scenario also emphasizes that despite the positive long-term employment effects, historical evidence shows that technological change may have a negative impact on labor temporarily. For example, the First Industrial Revolution produced substantial productivity growth, but wages stagnated from 1770 until 1830. (e.g. Allen, 2017, p. 322) In order to prevent more dire circumstances in the long-term, the top priorities of government officials should be addressing and preventing poverty, underemployment, hysteresis, inequality, and macroeconomic instability. Taking these observations into account, the key approach of the conservative scenario is to rely on flexible policies.

Table I summarizes the main characteristics of the formulated scenarios.

3. Data and methods

The data employed in this paper were collected in August and September 2017 by the market research company TNS Kantar. The data collection utilized a multiphase sampling (TNS Gallup Catibus), and the interviews ($n = 1004$) were carried out on telephone to minimize selection-bias and produce demographically balanced data.

	The "this time is different" scenario	The "this time is no different" scenario	The conservative scenario
Employment prediction	Permanent technological unemployment	No employment effect; temporary technological unemployment	More precarious labor market; temporary or permanent technological unemployment
Suggested policies	Unconventional policies: basic income, guaranteed jobs programs, increasing employee ownership, work sharing	Conventional policies: education reforms, stimulating labor supply	Flexible policies: decreasing means- and income testing gradually; streamlining social security
Analytical background	Occupation-based automation risk (Frey and Osborne, 2013/2017), exponential development (Brynjolfsson and McAfee, 2014); capital-intensive production (Ford, 2015), disruptive digital platforms (Stern, 2016)	Tasks-based automation risk (Arntz *et al.*, 2016), historical evidence (Miller and Atkinson, 2013), capitalization effect (Pissarides, 2000), augmentation (Autor, 2015)	Implementation lags (Brynjolfsson *et al.*, 2017), technological opportunities (Brynjolfsson and McAfee, 2014), resilience of low-educated workers (Arntz *et al.*, 2016), historical evidence (Allen, 2017)

Table I.
"Ideal type" scenarios on the future of work

Additionally, the data have been weighed using information from Statistics Finland (*Tilastokeskus*) and are thus nationally representative with respect to gender, age (15-79 years old population) and region (excluding the autonomous region of Åland).

The employed data can be divided thematically into two sections; the first set of questions sought to study the Finnish view on labor market changes, and the second set focused on preferred policy responses. Due to the compact nature of the questionnaire, only simple statistical methods were available for analyzation of the collected data. After analyzing frequencies for various responses, cross-tabulations were utilized to identify differences in sociodemographic characteristics. Sociodemographic background variables explored in this study are gender, age, educational attainment, occupational status, labor market status, and household's income group. However, the data also offers information on region, political leanings, phase of life, size of household and if the participant is primary breadwinner.

Bivariate correlation analyses were conducted using Pearson product-moment correlations between employment views and sociodemographic variables, and again between policies and sociodemographic variables. According to bivariate correlation analyses, employment views have some correlation with certain policies, but the relationship was weak. This indicates that employment predictions do not significantly affect supported policies. In addition, factor analysis and logistic regression analysis were employed in policy analysis, but these observations did not provide further information on the data. All statistical analyses presented in this paper were performed using IMB SPSS Statistics version 24.

The formulated three scenarios are operationalized as follows:

(1) The "this time is different" scenario: belief in permanent technological (mass) unemployment, assumption of increasing volatility in the labor market (more precarious jobs, increasing self-employment, heightening inequality, and declining wages), support for a ban of on-demand platforms, and support for unconventional policies (basic income, guaranteed job programs, extending the eligibility period for unemployment benefits, increasing employee ownership, raising the level of unemployment benefits, work sharing).

(2) The "this time is no different" scenario: belief in decrease of unemployment or no employment effects, and support for conventional policies or status quo (active finance policies, education reforms, increasing current activation measures, increasing economic incentives, increasing employment subsidies, increasing local agreements, no changes to benefits).

(3) The conservative scenario: belief in temporary, or moderate (1-10 percent) permanent technological unemployment, assumption of increasing volatility in the labor market, and support for gradual reduction of means- and income-testing (using unemployment benefits more independently for studying, using unemployment benefits as start-up grants, participation income, reducing bureaucracy traps).

4. Results

4.1 The Finnish view on the risk of permanent technological unemployment

To assess the public view on the digital economy's long-term employment effect, respondents were directed to choose which one of the five presented employment scenarios they view as most plausible within the next ten years. The primary goal was to produce a robust estimate of views on the risk of technological unemployment in the long term by providing divergent employment scenarios instead of a dichotomous option.

Table II presents the results obtained from this survey question. From this data, it is apparent that a considerable majority of Finns (71 percent) do not believe that technological unemployment will constitute a permanent problem. Even so, 73 percent expect that

unemployment will increase at least temporarily. A mass unemployment scenario, however, does not resonate among Finns. These results suggest that clear majority of Finns tend to follow the conservative and the "this time is no different" scenario.

To guarantee large enough sub-group sizes, differences in sociodemographic characteristics were analyzed by recoding the multiple-choice question into a dichotomous (technological unemployment increases permanently/technological unemployment does not increase permanently) variable. The single most striking observation to emerge from the cross-tabulations was difference between age groups ($p = 0.000$). As shown in Table III, the youngest age group (15-24) considers the risk of permanent technological unemployment less likely than older generations, whereas those in the middle of their working careers are the most concerned ones.

Interestingly, education, labor market status, or income group do not affect the views. However, occupational status does ($p = 0.031$). Lower clerical workers seem to be the most concerned ones: 38 percent of them do believe that technological unemployment will increase permanently.

4.2 The Finnish view on other conceivable changes in the labor market

The second set of analyses examined the public view on other conceivable changes stemming from the labor market. The purpose of the questions was to observe whether Finns consider other unfavorable changes likely in the digital labor market. To assess this, the respondents were asked to indicate their views on jobs becoming more precarious, self-employment increasing significantly, wages declining, and inequality increasing. Additionally, respondents were asked about their views on the platform economy.

Even though Finns see the employment development rather optimistically within the next ten years, the second set of questions reveals that Finns do believe that the digital economy may also produce negative consequences for the labor market. Table IV exhibits the summary statistics for the presented theses. The option "agree" is a variable recoded from alternatives "strongly agree" and "somewhat agree"; likewise, the option "disagree" is a variable recoded from "strongly disagree" and "disagree."

Table II.
The Finnish view on employment development within the next ten years

	n	%
Unemployment increases temporarily but stabilizes with new jobs. (the conservative scenario)	448	45
Unemployment stabilizes permanently at 1–10% higher than the current level. ("this time is different" scenario/the conservative scenario)	193	19
Unemployment does not increase with automation of work tasks. ("this time is no different" scenario)	142	14
Unemployment decreases with automation. ("this time is no different" scenario)	121	12
Unemployment stabilizes permanently at over 10% of the current level. ("this time is different" scenario)	87	9
No opinion	15	2
n	1,004	100

Table III.
The Finnish view on the possibility of permanent technological unemployment within the next ten years by age group

	Age group					Total
	15–24	25–34	35–49	50–64	65+	
Agree	12%	27%	33%	34%	27%	28%
Disagree	86%	73%	66%	64%	70%	71%
No opinion	1%	1%	0%	2%	3%	1%
n	147	164	235	233	226	1,005

As Table IV shows, Finns are convinced that jobs will become more precarious in the digital economy. This indicates that instead of the "this time is no different" scenario, the conservative scenario may more accurately reflect the Finnish view on labor market development.

When assessing differences in sociodemographic characteristics, age plays a significant role once again ($p = 0.000$). Those who are mid-career and pensioners overwhelmingly expect (88-90 percent) increasing volatility in the labor market. However, even the youngest age group (72 percent) is clearly concerned increasing labor market volatility.

Interestingly, people with a minimum of a master's-level university degree or a polytechnic degree find this particularly often (91 percent) a probable scenario ($p = 0.000$). By occupational group, especially entrepreneurs (94 percent) are convinced of this tendency ($p = 0.000$). Occupational group 'entrepreneurs' ($n = 81$) include farmers ($n = 14$) in this paper.

If paid jobs become more precarious, it is probable that self-employment will increase substantially. Thus, rising self-employment is understood in this study as an indirect indicator of labor market uncertainty. 82 percent of Finns believe that the number of self-employed persons will increase significantly in the digital economy. Educational background has a moderate connection to this opinion ($p = 0.000$); respondents with a minimum of a master's-level university degree or a polytechnic degree are nearly unanimous (91 percent) in their belief that the number of self-employed persons will increase substantially. This further substantiates the argument that Finns are likely to follow the conservative scenario rather than the "this time is no different" prediction.

A probable consequence of competition over (decent) jobs in the labor market is downward elasticity of salaries. Even though Finns are quite convinced of the uncertainty of the digital labor market, the view regarding its impact on salaries is polarized: 49 percent of Finns agree that salaries will decline while 48 percent disagree. People with higher education (42 percent) are least convinced about this tendency while the least educated (61 percent) find it to be a more plausible scenario ($p = 0.000$).

Experts who subscribe to the "this time is different" scenario are particularly convinced that technological change may increase inequality by expanding unemployment or underemployment and by favoring those with unique skill sets (skill-biased technical change, see e.g. Brynjolfsson and McAfee, 2014, pp. 134-137). Finns are somewhat convinced that the digital economy is likely to produce a structural change that will result in increasing inequality. Over two-thirds (69 percent) agree with this notion, which may be interpreted as an indication of weak support for the "this time is different" scenario. Once again, the youngest respondents (51 percent) reported the most optimistic outlooks ($p = 0.000$), though a majority of them also find this scenario plausible.

Lower clerical workers, the group most concerned about permanent technological unemployment, see an increase of inequality (76 percent) as a highly probable repercussion of the digital economy. However, the group most convinced of this outcome is entrepreneurs (83 percent) ($p = 0.000$).

4.3 The Finnish view on the platform economy

Organizing more paid work via digital on-demand platforms may have negative consequences on wages and workers' rights. To observe whether Finns see the platform economy and its

Thesis	Agree (%)	Disagree (%)	No opinion (%)
Jobs will become more precarious	85	13	2
Number of self-employed persons increases significantly	82	16	2
Changes in the labor market will lead to increased inequality	69	27	4
Wages will decline as a consequence of increasing competition over jobs	49	48	3

Table IV.
The Finnish view on conceivable changes in the digital labor market

potential consequences as a threat, the respondents were asked about their opinion on a ban of on-demand platforms that weaken workers' rights. Despite a rather negative public discussion of on-demand platforms in Finland, it seems Finns do not find the weakening of workers' rights to be a significant concern. Only 29 percent of Finns would support a ban of on-demand platforms that weaken workers' rights. Therefore, the Finnish view on the platform economy further indicates that Finns do not believe this time to be different.

Age has a connection to the respondents' views yet again ($p = 0.000$), but this time the distinction is mainly between people under and over 50 years old. As shown in Table V, respondents over age 65 have difficulties forming an opinion on this question. This comes as no surprise since applications associated with the platform economy are supposedly least utilized by seniors.

Besides age, educational background has a clear connection to the opinion ($p = 0.000$). In brief, the higher the level of education attained, the less willing respondents were to support a ban of on-demand platforms. Among the respondents with a minimum of a Master's-level university degree or a polytechnic degree, only 18 percent agree with a ban. Interestingly, part-time workers are more opposed (81 percent) to banning on-demand platforms than unemployed (71 percent) or full-time employees (73 percent) ($p = 0.000$). This indicates that particularly part-time workers view on-demand platforms as an economic opportunity more so than a threat.

4.4 Preferred policy responses

The second section of the survey concerned preferred policy responses as measures to increase labor adaptation to the digital economy. In this study, preferred policy responses are an important indirect indicator of people's perception of the changes in the digital labor market. In brief, those who predict drastic changes in the labor market are more likely to favor radical political change (cf. Frey *et al.*, 2017), whereas those who do not predict fundamental changes to the labor market prefer conventional policy measures.

Detailed analysis of 31 policies (see Table AI) is beyond the scope of this paper. Therefore, I shall highlight only the essential differences in sociodemographic characteristics. The support rates provided in brackets indicate the percentage of respondents who find the policy either a "very good idea" or "good idea."

4.5 Education reforms and stimulating labor supply gather dedicated support

Finland's consistently excellent PISA scores have inspired widespread international attention to the top-notch education system, and Finns consider high-quality education to be a point of pride. Thus, it is understandable that Finns perceive education as a key strategy for labor adaptation. In addition to investments in adult education (89 percent), emphasizing social skills and creativity (85 percent) and entrepreneurial education (86 percent), Finns are supportive of allowing students to access unemployment benefits (77 percent) in a more autonomous manner than at present throughout their studies. Finns' approach to education can be described as rather pragmatic: two-thirds (68 percent) and particularly older respondents (77 percent among

Table V.
The Finnish view on banning on-demand platforms that weaken workers' rights by age group

	Age group					Total
	15–24	25–34	35–49	50–64	65+	
Agree	18%	18%	25%	32%	43%	28%
Disagree	78%	79%	72%	60%	45%	65%
No opinion	5%	3%	3%	8%	13%	7%
n	147	163	235	232	226	1,003

65+ group, $p = 0.005$) think it is a reasonable idea to re-educate unemployed only for occupations that are expected to be in high-demand of labor (e.g. care occupations).

As in every western welfare state since the 1980s, activation policies emphasizing labor supply, has been the key paradigm of labor market policies. Despite increasing means testing and sanctions of unemployment benefits, another essential element of this paradigm has been the emphasis on diminishing economic disincentives of the unemployed to participate in the labor market (referred often as "unemployment traps" in the Finnish discourse). Even though economic incentives in Finland have improved substantially as a consequence of lowering income taxation, the discourse has remained prominent. Therefore, it is not surprising that the single most endorsed idea among Finns (90 percent) is to improve economic incentives to participate in the labor market.

Interestingly enough, reducing bureaucracy traps (i.e. delays in payments, impractical meeting and reporting obligations, risks of repayments of benefits or difficulties to combine paid work and self-employment) gathers the support of "only" 74 percent. In other words, when it comes to incentives to stimulate labor supply, Finns trust in money more than decreased bureaucracy.

Another indicator of the willingness to stimulate labor supply is the broad support (79 percent) for increasing the current activation measures. Given the relatively moderate impact of the activation measures for employment (Card *et al.*, 2017), it is somewhat surprising how unanimous Finns view this. Interestingly, the youngest age group is the most supportive (89 percent) of activation measures ($p = 0.000$). According to Card *et al.* (2017), effectiveness of activation programs is typically less positive for youths and older workers. Unemployed (58 percent) ($p = 0.000$) are not as satisfied with the current activation, but a majority of them support increasing the measures nonetheless. Though activation measures are widely supported at a general level, ironically, the effective option according to evaluation studies (Card *et al.*, 2017) is (private) employment subsidies which gather support of only 62 percent. Women (68 percent), however, are more likely to support employment subsidies than men (56 percent) ($p = 0.000$).

In addition to stimulating labor supply, Finns clearly believe that stimulation of labor demand is reasonable. Active finance policies gather support of 82 percent and, surprisingly, no significant sociodemographic differences can be observed. Another Keynesian initiative that has been discussed in the context of the digital economy, guaranteed jobs programs, resonate among Finns. 69 percent consider public sector as an employer of the last resort a good idea. Interestingly, the idea is supported more often by women (74 percent) than men (64 percent) ($p = 0.000$). The idea is also popular among persons with basic (80 percent) or occupational (77 percent) education. Similarly, persons living in small income households (78 percent) consider the idea rather good as well ($p = 0.000$). In this study, small income household refers to a household with annual gross income less than €20 000. However, the most educated ones (56 percent) are clearly more skeptic ($p = 0.000$).

Another factor that might have influence on labor demand is terms and conditions of employment, particularly wage level. Big debate in Finland in recent years has been whether the significance of collective agreements should be diminished by increasing importance of local agreements. Finns' view on this is explicit: 78 percent support more local agreements, but only 21 percent if it means weakening collective agreements, men (26 percent), however, more often than women (16 percent) ($p = 0.000$).

4.6 Streamlining of unemployment benefits instead of unconditional basic income

Finns want to enable studying (77 percent) and starting up a business (60 percent) on unemployment benefits, or in other words, they want to increase flexibility of social security with decreasing means testing. However, when it comes to the level or eligibility periods of unemployment benefits, Finns seem to consider status quo the ideal situation.

Only one-third (34 percent) of Finns are willing to raise the level of unemployment benefits and only 24 percent support extending eligibility periods. At the same time, only 10 percent want to weaken the level and 19 percent support shortening eligibility periods.

Even so, there are considerable differences in sociodemographic characteristics worth mentioning. Persons with only a basic education (49 percent) or occupational education (44 percent) ($p = 0.000$), unemployed (52 percent) and part-time workers (50 percent) ($p = 0.000$) are more likely to support raising the level of unemployment benefits, whereas support is particularly low among entrepreneurs (18 percent) ($p = 0.000$). Shortening the eligibility period is least popular among the youngest age group (8 percent) ($p = 0.003$), unemployed (7 percent), part-time employees (8 percent) ($p = 0.002$) and small income households (12 percent) ($p = 0.000$) whereas entrepreneurs (28 percent) are slightly more willing for this ($p = 0.000$).

Finns want to reduce means testing of unemployment benefits, but unconditional basic income gathers rather moderate support at best. Earlier surveys on support of basic income in Finland have measured support from anywhere between 29 and 79 percent. This highlights the many pitfalls involved in measuring basic income's support in a reliable manner (Pulkka, 2018). Asking about support at a general level is relatively futile since the levels of basic income, replaceable benefits, and applicable tax models determine the static effects, as well as the support they gather. In this survey, the pitfalls were tackled by defining not only the concept of basic income, but also accurate descriptions of the models. In doing so, the measured support for different basic income models was between 20 and 51 percent.

The relatively moderate support for basic income indicates that Finns do not want to break the connection between paid work and guaranteed income. Finns find the most feasible model to be the same model that is now tested in Finland among 2,000 25-58 years old long-term unemployed and persons with short working history. This model, partial basic income of €560 a month, corresponds roughly to the current net-level of the basic security benefits and would not replace housing allowance or earnings-related benefits. In total, 51 percent of Finns consider this model a good idea whereas 21 percent are against it. Finns do not find models weakening or improving social security to be feasible.

Interestingly, the basic income experiment model is supported most often by the youngest age group (72 percent) ($p = 0.000$), the same group that has the most optimistic view on automation's effect on employment. Lower clerical workers, who are the most concerned occupational group, support the model relatively widely (64 percent), whereas higher clerical workers (35 percent), entrepreneurs (38 percent) and pensioners (43 percent) perceive the model less often as a feasible policy ($p = 0.000$). Also, part-time employees (61 percent) and unemployed (68 percent) find basic income a rather good idea ($p = 0.020$). This implies that persons in the weaker position in the labor market are more likely to support basic income.

Participation income, a conditional model that would provide unemployed options to define activation measures more autonomously, gathers a considerable support of 78 percent. This is worth mentioning since participation income, popularized initially by Anthony Atkinson (1996), has often been advocated as a more feasible alternative for an unconditional basic income.

4.7 Unconventional measures gather only moderate support

Work sharing has been widely discussed as a solution to unemployment for decades, and the discussion has increased yet again in the context of the digital economy; however, this has occurred to a lesser extent in Finland. Perhaps this partially explains that 43 percent of Finns support the idea. Among persons over 65, the support is even lower (32 percent) ($p = 0.000$).

In addition to basic income and work sharing, another unconventional measure that has been advocated in the expert discussion is increasing employee ownership. This is an interesting initiative particularly in the context of Nordic countries due to the experiences in

Sweden during the 1980s and 1990s (Lowitzsch *et al.*, 2009, pp. 165-168). Voluntary employee funds have also increased in popularity in Finland during this decade, but they are still considered an unconventional practice.

The idea is, in brief, that employees could earn more income as capital income if the demand in their labor decreases. Support for employee funds is as high as 63 percent on a voluntary basis, and on obligatory basis, as was the case with the Swedish *löntagarfonder*, support is slightly lower at 50 percent. However, only 20 percent is against idea, which is the case with the most popular basic income model as well. Even among entrepreneurs, 52 percent support the idea of obligatory employee funds ($p = 0.003$).

5. Conclusions

This study was designed to explore the Finnish view on future labor market prospects and preferred policy responses to the digital economy. Both sections of the survey indicate that a clear majority of Finns are likely to follow a conservative scenario, which expects the labor market to become more volatile and technological unemployment to increase at least temporarily. At a policy level, Finns trust, however, particularly in the policies that are most often advocated by the proponents of the "this time is no different" scenario. Both findings suggest that the views on the future of work may not play a crucial role when it comes to psychological barriers to labor mobility, or more generally, decision-making in the context of a changing labor market.

Nevertheless, it is fair to note that besides the optimistic views in the long term, a clear majority believes that the labor market will become more volatile. At the same time, one-third of Finns do believe that permanent technological unemployment can pose a plausible threat. Finns do not see the end of work in the digital economy, but the findings of this study suggest that Finns assume that this time may be a little different.

Finns are willing to reform education and decrease means testing of social security gradually, but unconventional measures that require more fundamental changes in the labor market do not gather considerable support. Finns are not opting for radical political change in this respect. However, ideas such as basic income, employee funds, and work-sharing do evoke support that could make them politically feasible options should technological unemployment increase permanently. This argument is backed up by the finding that basic income's support is the strongest among the most vulnerable groups in the labor market: youth and unemployed.

Sociodemographic characteristics in views were analyzed at a relatively detailed level to identify population groups that might differ considerably from the average. Another important finding in this study is that the youngest age group (15-24) has the most optimistic view on the digital economy's implications for the future of work. This is somewhat surprising since Youth Barometer 2016, an annual survey of Finns ages 15-29, had revealed that 47 percent of youth is concerned about their future job prospects (Myllyniemi, 2017, pp. 57). From any line of interpretation, this should be perceived as an indication of deep concern among young people.

One explanation, however, is that youth are concerned about the future of work, but their insecurity is not specifically related to technological change. Flexibilization of the European labor market has affected negatively particularly young persons, and therefore, it is less surprising that youth are concerned about their future job opportunities (e.g. Méda and Vendramin, 2017, pp. 93-108). Nevertheless, since it seems that young people perceive the technological change in a more positive light, it would be reasonable to study generational digital divisions further at an international level.

Besides the distinct connection between age and technology optimism, differences in sociodemographic characteristics are rather moderate apart from a few individual policies. Clerical workers seem to be more concerned of the future of work, but even this difference is

relatively insignificant. However, this result implies that those who work in occupations with high automation risk are more concerned about the future. It would be reasonable to study occupational differences in a more detailed level, but this would require a larger sample to ensure statistically representative sub-group sizes. Due to the limited *n* size of 1004, such an approach was outside the scope of this study.

The debate on technology's employment effects has continued throughout the history of capitalism (Mokyr *et al.*, 2015) arousing both dystopian and utopian visions among the public. Based on this study, it seems clear that digital economy discourses have not led, at least thus far, to drastic changes in the people's future beliefs. While Finns do not consider the end of work a realistic scenario, the possible productivity gains of the digital economy are neither regarded as a pathway to decommodify labor or dismantle the institutional position of paid work (cf. the support for basic income or work sharing). In a historical perspective this is somewhat interesting since shorter working hours have been one of the most visible political consequences of the significant productivity gains of industrial capitalism.

The unabated debate on the implications of the digital economy for labor and public policy will undoubtedly continue in the years to come. To predict possible barriers to labor mobility stemming from digital economy discourses and to anticipate possible political fluctuations, further comparative studies on the public view are needed. I hope that the design of this study offers a solid basis for future comparative studies between Nordic countries and beyond.

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Appendix

Table AI.
The Finnish view on policy proposals to improve labor's adaptability to the digital economy

Policy	Good idea (%)	Neither good nor bad idea (%)	Bad idea (%)	No opinion (%)
Increasing economic incentives to participate in the labor market	90	5	2	3
Increasing adult education	89	8	3	1
Increasing entrepreneurial education	86	10	3	2
Emphasizing creativity and social skills in education	85	11	3	2
Active finance policies (state investments that increase employment)	82	10	4	4
Increasing current activation measures (e.g. work trials, internships, courses through an employment office, subsidized work, independent studies, rehabilitative work activities)	79	11	8	2
Increasing local agreements without weakening collective agreements	78	10	8	4
Participation income that provides eligibility for social assistance or basic security benefits based on more autonomous activation measures (e.g. voluntary work, studying, caring for close relatives, or certain hobbies)	78	11	7	5
Using unemployment benefits more independently for studying	77	12	6	4
Reducing bureaucracy traps (payment delays due to benefits' means and income testing, reporting and meeting obligations, repayment of benefits)	74	12	8	6
Guaranteed job program (public sector guarantees a job based on individual's existing skills and provides additional skill development)	69	14	12	4
Re-educating unemployed for occupations expected to require a larger workforce in the future (e.g. care occupations)	68	15	1	1
Voluntary employee funds	63	19	9	9
Increasing employment subsidies (public sector pays a portion of employee's pay, either to employer or directly to employee)	62	18	18	5
Using unemployment benefits as start-up grants	60	19	15	6
A basic income that would correspond to the current net level of basic security benefits (approximately €560 a month) and retain eligibility for housing allowances and earnings-related benefits	51	20	21	9
Obligatory employee funds for large companies (shares of companies are bought for employees by a proportion of company profits so that employees can earn some of their incomes as a capital income)	50	21	21	9
Limiting immigration	45	19	32	4
Work sharing	43	21	31	4
Tightening the obligation to accept a job	43	18	36	4
Increasing sanctions of unemployed benefits (e.g. canceling eligibility for benefits or cutting the level of a benefit upon refusal of activation measures or job offers)	37	18	41	4
Raising the level of unemployment benefits	34	26	35	6

(*continued*)

Policy	Good idea (%)	Neither good nor bad idea (%)	Bad idea (%)	No opinion (%)
A basic income that would raise the net level of current basic security benefits (higher than €560 a month) and retain eligibility for housing allowances and earnings-related benefits	33	20	39	8
A basic income that would weaken the net level of current basic security benefits (lower than €560 a month) and retain eligibility for housing allowances and earnings-related benefits	27	27	37	9
Extending the eligibility period for unemployment benefits	26	26	42	6
A basic income of €1500 that would replace housing allowances and earnings-related benefits	25	17	66	9
A basic income of €1000 that would retain eligibility for housing allowances and earnings-related benefits	24	17	51	8
Increasing local agreements by weakening the significance of collective agreements	21	17	56	6
A basic income of €1000 that would replace housing allowances and earnings-related benefits	20	20	51	9
Cutting the eligibility period for unemployment benefits	19	23	53	6
Lowering the level of unemployment benefits	10	20	66	5

Table AI.

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