


Should work contracts change to improve quality of work life? A structural modelling approach

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Měly by se změnit pracovní smlouvy, aby se zlepšila kvalita pracovního života? Přístup založený na strukturálním modelování

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Abstract

Temporary work arrangements have become increasingly popular, leading to inherently less security for workers compared to permanent contracts. Using Structural Equation Modelling on a sample of 1,698 employees, representative of the overall employee population in the Czech Republic, we show that temporary workers show lower overall quality of working life than their peers with permanent contracts, and that the pathway of effect is both direct and indirect, mediated through worse perception of one's job. At the same time, the perception of support from managers and organisation appears unaffected by the type of contract, suggesting an equivalent personal treatment of workers by organisations. The results highlight the need to provide adequate support to temporary workers during the ongoing shift towards more prevalent temporary employment in order to maintain or improve satisfactory quality of working life levels in the organisation and the broader society.

Keywords: Structural Equation Modelling, temporary contracts, job security

Abstrakt

Smlouvy na dobu určitou nabývají na oblíbenosti, ačkoli vedou k nižší pracovní jistotě zaměstnanců ve srovnání se smlouvami na dobu neurčitou. Statistickou analýzou vzorku 1 698 zaměstnanců, reprezentativních celkové populaci zaměstnanců v České republice, ukazujeme, že pracovníci se smlouvami na dobu určitou vykazují celkově nižší kvalitu pracovního života v porovnání s těmi se smlouvou na dobu neurčitou, a že tento účinek je částečně prezentován skrze vnímání práce. Zároveň se zdá, že typ smlouvy neovlivňuje to, jakým způsobem zaměstnanci vnímají podporu ze strany nadřízených a vedení firmy, což naznačuje rovnocenné osobní zacházení ze strany vedení. Výsledky zdůrazňují potřebu poskytovat přiměřenou podporu všem zaměstnancům pro udržení a zlepšení úrovně pracovního života.

Klíčová slova: Structural Equation Modelling, smlouva na dobu určitou, pracovní jistota

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Introduction

The ever-increasing pace of technological advancement, digitalisation, ability to work from home and other factors have greatly contributed to the many changes to the way people work in the recent decades. One of the key changes is a gradual increase of temporary employment and an ongoing shift towards less secure employment contracts (Davis, 2013).

Indeed, as noted by Schoukens and Barrio (2017), the standard model of employment relationship, where most employees work under a full-time, open-ended employment contract and thus typically receive the greatest labour and social security protection, have been on decline recently, giving way to alternative work arrangements such as fixed-term, part-time, agency and zero-hour contracts, as well as freelancing and contracting. While such alternative work arrangements may provide a desired level of flexibility, opportunity to work for multiple employers or spend more time with family to some workers, particularly the overall lack of social security protection can have significant detrimental impacts as outlined in the recent psychological and sociological literature (De Cuyper and Isaksson, 2017).

The recent data from the OECD show that the proportion of temporary workers among all employed has increased in the last decade to approx. 12% for the OECD countries, with men and women equally represented (OECD, 2020). There are, however, substantial differences both at the country level, ranging from 5% in the UK to 26% in Spain, and even greater by age, with those aged 15-25 being approx. three times more likely to have a temporary work contract than those aged 55-64. For instance, in Spain, nearly 70% of all employees aged 15-25 are employed on a temporary basis. Combined with the fact that younger workers show higher overall prevalence of mental wellbeing issues, job stressors, lower job satisfaction, work engagement and more (see e.g., Dobrow Riza et al., 2018), understanding the potential risks of temporary employment – and alternative work arrangements in general – is essential from the research and public policy perspective.

As we discuss in more detail below, the detrimental effects of temporary employment on worker's health, wellbeing and work outcomes have received substantial attention in the literature. What is less clear are the pathways of effect: do workers perceive lower quality of working life due to the inherent job insecurity, being treated differently by their employer or colleagues, feeling differently about their job or employer, or perhaps all of the above?

In this article, we shed further light on the indirect links between work contract type and the overall quality of working life using data from a representative sample of the working population in the Czech Republic. Based on the findings from the prior literature, we argue that, controlling for socioeconomic characteristics, job position and type of organisation, workers with non-permanent contracts are inherently in different position in their organisations, which may result in different perceptions of their job and work relationships, and ultimately lower quality of working life as a result. To test the hypotheses, we take advantage of simultaneous equation modelling with latent variables representing job characteristics – career opportunities, control over one’s tasks, feeling like at home and more – and perceived support from the organisation and managers as latent variables mediating the effects of work contract type.

The research extends further the recent studies of e.g., Callea et al. (2016) and Dawson et al. (2017), who analyse the links between temporary employment and job satisfaction; Emanuel et al. (2018) and Griep et al. (2016), who look at associations with life satisfaction; and Cappellari et al. (2012) and Lisi and Malo (2017), who analyse links to work productivity. We contribute to the literature by confirming the previous findings that temporary employment has detrimental effects on quality of working life – and hence indirectly on a multitude of personal and work-related outcomes – and indicating the possible pathways of effects through job characteristics.

Theoretical background and hypotheses

Despite often performing equivalent tasks as permanent employees, workers without a full-time, open-ended employment contract face a number of challenges at the workplace, ranging from lower perceived employability (De Cuyper and De Witte, 2010) and low wages (Bosmans et al., 2016) to overall feeling of job insecurity. Particularly job insecurity, especially for low-skilled workers and specialised workers, for whom it is further exacerbated by also e.g., by automation and new disruptive emerging technologies that will likely change the types and amounts of jobs in the future (Cascio and Montealegre, 2016), has been identified as a root cause for outcomes across the areas of employee health and wellbeing; job, organisation, and career attitudes; and performance and work behaviour (Lee et al., 2018). While the research findings are not always consistent across the studies conducted on the phenomenon, at both an individual- and organizational-level, Lee et al. (2018) note that this was mostly attributable to variation in differences between labourer types and variation in data collection methods, and that more recent studies, which have improved upon the methods of data collection, have seen more consistent results on the detrimental impacts.

Job insecurity has been observed in response to a large array of work-related changes including organizational changes and larger economic downturns (Rattery and Griffin, 2006; Bordia et al., 2004) and the detrimental effects of this on the future career prospects, work attitudes, and job performance of workers has been well documented (Depetrie, 2005; Scherer, 2009; Darishmotevali and Ali, 2020). Moreover, job insecurity has impacts on individual employees in substantial ways unrelated directly to the labour market, such as child-planning (Vignoli et al., 2020) and family dynamics, with one study finding children having negative affect related to parental job insecurity (Lim and Loo, 2003).

Another major area of interest related to job insecurity is psychological wellbeing. De Witte et al. (2015) cite earlier meta-analyses by Cheng and Chan (2008) and Sverke et al. (2002) to show that employees who feel insecure about their job show, on average, 41%-43% lower job satisfaction, 24%-28% lower mental wellbeing, and 16%-23% worse physical health. They also note that job insecurity is considered as a work stressor in the literature and links have been shown between job insecurity and use of antidepressants, smoking and more.

While the ultimate outcomes of job insecurity for individuals and organisations are well documented, the exact pathways – mechanisms of effect – less so. Earlier theories (Jahoda, 1982; Ryan and Deci, 2000; Van den Broeck et al., 2008) evolve mainly around frustration of basic work and psychological needs, such as having authorship of one’s actions and propensity to feel connected to others. Newer theories then emphasise particularly the role of work stress (Warr, 2007; Vander Elst et al., 2011; 2014), relational psychological contract (De Cuyper and De Witte 2006, 2008). Critically, De Witte (2015) note that the impact of job insecurity on health and wellbeing can be weakened – or boosted

- by moderating factors. They specifically consider demographic and work-related variables (e.g., gender, age, job position - blue-collar workers experience job insecurity in a more detrimental way than white-collar workers; attributing the cause of job insecurity to an uncontrollable factor magnifies the negative effects) and employability (job insecurity is not as detrimental when employees perceive alternative employment opportunities).

In their recent article, Richter and Näswall (2019) propose trust in the organisation as one such potential mechanism linking job insecurity to job satisfaction and lowered mental health. Using structural equation modelling with longitudinal data from 906 Swedish employees from three organisations, their findings reveal an indirect effect of trust on job satisfaction, regardless of whether the previous levels of job satisfaction were controlled for. The indirect effect on mental health was only evident when previous levels of mental health were not controlled for.

Yet job insecurity is not the only demonstration of temporary work arrangements. Workers with temporary contracts may see the work itself differently and both the type of contract and the perception of one's job can have detrimental effects. To what extent this is a matter of perception and to what extent it reflects actual differences in the way employees with alternative working arrangements are treated is difficult to assess; the prior literature provides some insights in this respect but otherwise is mostly concerned with the ultimate outcomes: job satisfaction, work engagement, organisational commitment and more.

Specifically, Aletraris (2010) shows on a nationally representative sample of Australian workers that agency workers report lower levels of job satisfaction and that job security, control over the duration of work, and autonomy are important mediating mechanisms. In particular, she argues that temporary employment affects job satisfaction - or, in our case, quality of working life - through extrinsic rewards (e.g., wages) and intrinsic rewards (e.g., autonomy and self-esteem), where intrinsic rewards may play an important role as extrinsic rewards are often fewer than those of permanent workers. Other studies consider the mediating effects of e.g., workload and job exhaustion (Giunchi et al., 2016) and low wages, lack of benefits, insufficient training, poorer career prospects, high working time flexibility, minimal trade union representation and problematic triadic employment relations (Bosmans et al., 2016). Interestingly, Håkansson and Isidorsson (2015) show on example of Sweden, where temporary agency workers have the same type of employment contracts and are entitled to the same employment protection as other groups of employees, that job insecurity may indeed play only a limited role in the overall detrimental effects of temporary contracts and argue that competence development may be a key mediating factor, highlighting that organisations have limited incentive to invest more than the minimum necessary to temporary workers as they often constitute a buffer in case of a downturn.

The proposed associations have a common denominator: quality of working life. Falling into the broader complex of overall quality of life, quality of working life has been researched at least since the mid-20th century (see e.g., Herzberg et al., 1957; Jencks-Perman -Rainwater, 1988; Danna -Griffin, 1999; Sirgy et al., 2001; Alvesson, 2018), yet the areas of both quality of working life quality and the associated concept of job satisfaction have been approached differently both at both the theoretical level and empirical level. For research purposes, the two categories are sometimes even deemed interchangeable and working life quality be defined pragmatically as 'employee contentedness with the satisfaction of needs through resources, activities and results stemming from the job' (Sirgy et al., 2001: 242).

As described in Vinopal (2012), the two dominant theoretical approaches to quality of working life evolve around the concepts of needs satisfaction and the theory of side effects. The former focuses more narrowly on the issue of work life, and views quality as the extent to which work and a job satisfy needs that people wish to satisfy through them. In contrast, the theory of side effects approaches the concept in relation to other life domains, such as family. Critically, quality of working life encompasses all the aspects discussed above, from job insecurity and low wages to work stress and trust in the organisation. At the same time, quality of working life is a critical determinant of the overall quality of life and work outcomes more broadly and hence is a key indicator of interest for individuals, organisations, and policymakers more broadly.

In what follows we use quality of working life as a composite outcome measure to test the detrimental effects of temporary employment. Given the existing evidence in support of the negative relationship between the two, simple confirmation that temporary workers have lower quality of working life on average is of secondary importance. The key research question relates to the pathway of effect: we propose, in a similar but broader vein with e.g. Richter and Näswall (2019), that temporary work negatively affects workers' perception of their job and employer, making them feel less supported and generally worse about their employment. We test this proposal through three hypotheses (see Figure 1 for a conceptual model):

Hypothesis 1a: Job characteristics – career opportunities, control over one's tasks, feeling like at home and more – function as a mediating factor between type of work contract and quality of working life. Temporal nature of work contracts affects perceived job characteristics negatively, whereas the characteristics are positively related to quality of working life.

Hypothesis 1b: Perception of support from management and the organisation also acts as a mediating factor between type of work contract and quality of work life. Workers with temporary contracts feel less supported and have worse quality of working life as a result.

Hypothesis 2: Nature of work contract has an effect above and beyond the indirect (mediated) effects on the overall quality of work life. Temporary work arrangements are associated with lower overall quality of working life.

All hypotheses are tested controlling for socioeconomic characteristics and overall job flexibility (ability to take time off, work from home etc.) to better isolate the effects of interest.

Data

Data presented in this study come from a survey conducted in November 2020 by the Institute for Sociology of the Czech Academy of Sciences. The survey collected a total of 2,026 responses from the 6,095 initial survey requests using a computer-assisted web interviewing (CAWI) method and is representative of employees in the Czech Republic, 18-65 years of age, in terms of gender, age, education, region of residence and type of economic activity (employee/entrepreneur) as shown in Table A1. Each respondent received a remuneration of CZK 50 (approx. USD 2.26) for survey completion. A total of 328 entrepreneurs were excluded from the dataset, leaving 1,698 employee responses for the analysis.

We measure quality of working life using the Subjective Quality of Working Life index (SQWLi; see Vinopal, 2009; Vinopal, 2011; and Vinopal, 2012 for detailed information on the questions used and the overall construct validity). The index was developed as a standardised tool for long-term monitoring of quality of working life in the Czech Republic. It considers quality of working life in two dimensions – importance and satisfaction – each consisting of six domains: remuneration, relationships, time, self-realisation, security, and conditions. Each domain is scored on an 11-point numeric scale and the total domain and dimension scores are calculated as simple averages of the individual scores, ranging from 0 to 100.

Other variables in the dataset cover socioeconomic factors (age, gender, education, income, job position), information about the employer (type and size of organisation, existence of a workers’ union), work (relationship with colleagues and manager, ability to work flexible hours, work from home and take breaks, pace of work, and more), and work contract (type, work hours). Five types of work contracts were considered for employees: permanent contract, fixed-term contract, fixed-term agency contract, traineeship, and no contract. However, given the low prevalence of the fixed-term agency contracts (0.6%), traineeships (0.1%) and no contracts (0.4%), we transformed the categorical variable into a binary one, grouping all non-permanent contracts. Refer to Table 1 (main variables) and Table A2 (controls) for a summary of variables used and their key descriptive statistics.

VARIABLE	SCALE/CATEGORY/DETAIL	MEAN	SD	MEDIAN	MIN	MAX
Quality of working life	0-100	75.3	15.2	77.8	17.2	100.0
Work hours	Typical work hours per week	39.1	11.8	40.0	1.0	90.0
Ideal work hours	Ideal work hours per week	36.9	13.3	37.0	0.0	80.0
Ideal work hours (difference)	Difference between typical and ideal work hours	2.2	15.6	2.0	-60.0	55.0
Ability to work flexible hours	Never (1) - Always (5)	2.2	1.4	2.0	1	5
Ability to work from home	Never (1) - Always (5)	1.9	1.2	1.0	1	5
Ability to take breaks	Never (1) - Always (5)	3.4	1.2	4.0	1	5
Ability to take time off work	Never (1) - Always (5)	3.5	1.2	4.0	1	5
Ability to make up time off work	Never (1) - Always (5)	2.7	1.4	3.0	1	5
Line manager respect	Disagree (1) - Agree (5)	3.9	1.0	4.0	1	5

Line manager appreciation	Disagree (1) - Agree (5)	3.5	1.1	4.0	1	5
Line manager help	Disagree (1) - Agree (5)	3.4	1.1	4.0	1	5
Wellbeing importance for organisation	Disagree (1) - Agree (5)	3.8	1.0	4.0	1	5
Work monotony	Monotonous (0) - Diverse (10)	6.2	3.0	7.0	0	10
Career progress	Disagree (1) - Agree (5)	2.8	1.1	3.0	1	5
Work boringness	Agree (1) - Disagree (5)	3.6	1.0	4.0	1	5
Control over work tasks	Disagree (1) - Agree (5)	3.3	1.1	3.0	1	5
Help from others	Disagree (1) - Agree (5)	3.9	0.9	4.0	1	5
Feeling like at home at work	Disagree (1) - Agree (5)	3.1	1.1	3.0	1	5
Work contract	Permanent contract	80.1%				
	Fixed-term contract	18.8%				
	Fixed-term agency contract	0.6%				
	Traineeship	0.1%				
	No contract	0.4%				

Table 1: Descriptive statistics - variables

The analysed employees were 54% male, 42.7 years of age on average ($SD = 11.2$) and worked predominantly in private enterprises (69.7%). Temporary workers were younger ($M = 40.0$) and less frequently men ($M = 38.1\%$) than permanent workers ($M = 43.4$ and $M = 58.2\%$, respectively; $F(1689) = 44.7$, $p < .001$ for age; $F(1689) = 24.1$, $p < .001$ for gender). There were no differences education ($\chi^2(4, N = 1689) = 6.55$, $p = 0.162$).

Latent variables

The high level of interrelation among some of the explanatory variables prompts construction of latent variables (factors) to represent the conceptual content of the interrelated indicators. To this end we used exploratory (EFA) and confirmatory factor analysis (CFA) to establish associations among variables and create variable clusters defining composite, latent variables, examining goodness of fit for the constructed factors throughout the process (Child 1990; Hoyle, 1995). Given the data availability, theoretical background presented above and the hypotheses, we structured the variables around three concepts: *Support* (from line manager and organisation), *Flexibility* (in way of working), and *Job characteristics*, consisting of four, five and six independent variables, respectively. The detailed composition, factor loadings and goodness of fit are depicted in Table 2. All three new variables show good reliability (omega reliability

coefficients are 0.82, 0.76 and 0.71, respectively). The variables are structured so that higher values represent better outcomes, i.e., feeling supported, higher flexibility and better job characteristics.

LATENT CONSTRUCT	INDEPENDENT VARIABLE	FACTOR LOADING	UNIQUENESS	OMEGA RELIABILITY COEFFICIENT
Support	Line manager respect	0.78	0.39	0.82
	Line manager appreciation	0.84	0.30	
	Line manager help	0.76	0.42	
	Wellbeing importance in organisation	0.50	0.75	
Flexibility	Ability to work flexible hours	0.7	0.51	0.76
	Ability to work from home	0.61	0.63	
	Ability to take breaks	0.63	0.61	
	Ability to take time off work	0.67	0.55	
	Ability to make up time off work	0.50	0.75	
Characteristics	Work monotony	0.72	0.49	0.71
	Career progress	0.79	0.86	
	Work boringness	0.38	0.37	
	Control over work tasks	0.44	0.81	
	Help from others	0.32	0.90	
	Feeling like at home at work	0.35	0.87	

Table 2: Composition of latent variables

Method

The study’s theoretical model of overall working life satisfaction amongst employees is tested using structural equation modelling (SEM). SEM is a theory-driven data analytical approach for evaluation of a priory specified hypotheses about causal relations among measured and/or latent variables (Hancock et al., 2018). It allows testing an explicit, possibly complex model of direct and indirect (mediated through other variables) influences using CFA, which evaluates the measurement component of a theoretical model, and path analysis, which evaluates the relationship between latent variables (Hyland et al., 2015). This is helpful in the context of the presented study as it allows us to assess the independent effects of work arrangement specifications on quality of working life only through a specific set of other

variables – as predicted by the theory – as opposed to a simple regression model in which all variables are linked directly to the outcome. Another advantage of SEM is that it controls for measurement error in latent outcomes (Leite, 2017; McVeigh et al., 2019). SEM was previously used to analyse the effect of temporary work arrangements e.g. by De Cuyper and De Witte (2010) and Richtera and Näswall (2019).

The model specification follows the theoretical framework and hypotheses described above. We control for *Flexibility* independently of the type of work contract to isolate the effects of interest, as it reflects the overall nature of work and job position rather than the worker's perception of work. In reality, job flexibility levels may inherently differ for temporary and permanent work contracts and are agreed upon signing the contract. As such, it may in fact be the variance in flexibility that differentiates temporary and permanent contracts. By controlling for flexibility, we can better identify the actual effects of interest.

We tested several alternative structural models, adjusting the exact pathways among variables, and used the Akaike and Bayesian information criterion (AIC and BIC) measures to determine model fits. Its adequacy is then determined through model fit indices and standard recommendations (Hu and Bentler, 1999); a good model fit is reflected by a chi-square to degree of freedom ratio of less than 3 to 1; Comparative Fit Index (CFI) value > 0.90; and Root-Mean-Square Error of Approximation (RMSEA) < 0.08. We also allowed latent variables to covary. The analysis was done in Stata 15.1 (StataCorp, 2017).

Results

The final model specification is embedded in a path diagram with standardised coefficients depicted in Figure 1. The model fit is decent, $\chi^2 = 153.46$, $df = 35$, $p < .001$, CFI = 0.920, RMSEA = 0.047. All path coefficients connecting *Flexibility* with the other latent variables, as well as those connecting all three latent variables to the quality of working life are positive and statistically significant with high coefficients, confirming the overall theory. Hours worked and the difference between typical and optimal hours worked have a small effect on *Job characteristics* and *Support* (other pathways without statistically significant coefficients were removed from the diagram for presentation purposes). Regarding control variables, only age and gender show as statistically significant in the model.

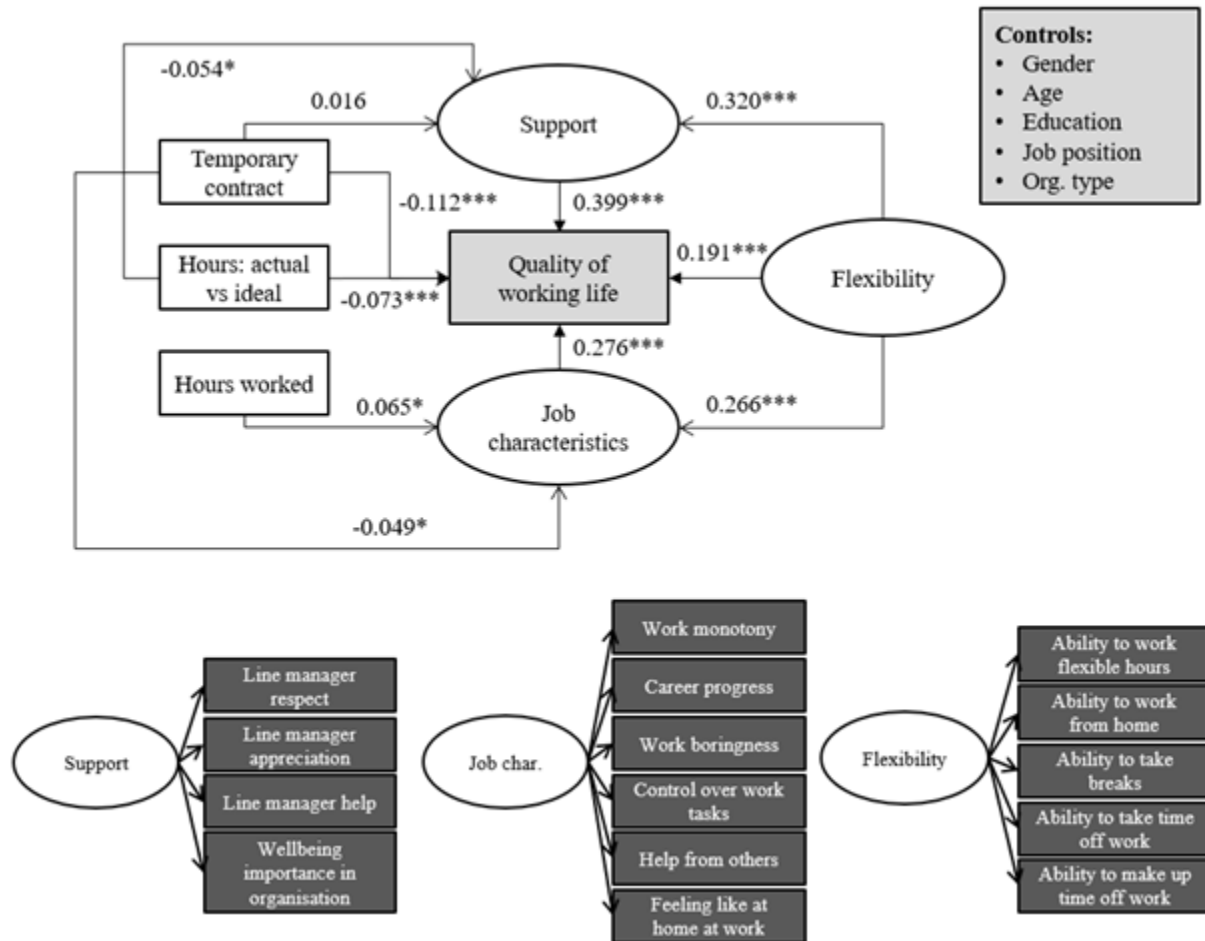


Figure 1: Analytical model

Note: The diagram represents the model with the best fit to the observed data. All coefficients are standardized and represent change (in standard deviations) in a dependent variable per standard deviation increase in the predictor. Variables with dark background represent indicators associated with latent variables. $\chi^2 = 153.5$, $df = 35$, $p < .001$, comparative fit index (CFI) = .920, root mean square error of approximation (RMSEA) = .047. *, **, *** represent significance at the 0.05, 0.01 and 0.001 levels, respectively. $n = 1,698$.

As expected, having a temporary work contract is negatively associated with the overall quality of working life, both directly and indirectly. The direct effect is relatively strong; all else equal, workers with a temporary work contract show 0.112 SD lower quality of working life, in line with the second hypothesis. The indirect effect through *Job characteristics* is weaker but statistically significant; temporary work contracts are associated with the overall worse perception of one's job and hence lower quality of working life, in line with hypothesis 1a. However, the link through *Support* is not statistically significant, suggesting that having a temporary contract is not necessarily associated with perception of being less supported by the manager organisation.

Discussion

The three hypotheses framing the analysis in this study aim to provide a structure to the complex dynamics of modern working arrangements in relation to worker's health and wellbeing. On one hand, the inherent aspects of temporary employment – particularly job insecurity – have been shown to cause detriment to workers' job satisfaction, performance, career prospects and more. The extent to which this is the case depends on multiple factors, from the exact type of temporary contract (e.g., fixed-term contracts typically provide greater job security than zero-hour contracts) and type of work to the broader legislative environment dictating the baseline level of social security. Czech Republic provides a good level of protection in this regard and requires that e.g. agency workers must have the same

pay and working conditions as permanent employees, while zero-hour contracts are generally not permitted. In other countries, temporary workers may be given lower wages, fewer benefits and minimal trade union representation (Bosmans et al., 2016).

At the same time, while companies may not be able to explicitly differentiate between their permanent and temporary staff in terms of pay or working conditions, they may be less inclined to invest in their long-term development, leading to poorer career prospects and worse perception of their job (Håkansson and Isidorsson, 2015). The pattern of our results supports these observations and provides further indication on the exact pathways.

In support of *Hypothesis 1a*, workers with temporary work contracts are, compared to workers with permanent contracts, less likely to feel supported by their colleagues and feel at work like at home; perceive their job as more monotonous, boring and with inadequate career prospects; and are less likely to feel that they are in control of their work duties and responsibilities. These work stressors are then negatively associated with the overall working life quality and other work and wellbeing outcomes including job performance (e.g., Jalagat, 2017 and Olsen et al., 2017), job satisfaction (e.g., Platis et al., 2015), and mental health (e.g., Rogers et al., 2016). This key finding indicates an important pathway through which alternative arrangements affect workers and, importantly, is arguably not directly linked to the other inherent aspects of temporary employment, namely job insecurity.

Regarding *Hypothesis 1b*, the fact that having a temporary work contract has no effect on feeling supported by one's manager or organisation is equally an important insight into the overall dynamics. It indicates that, even though organisations may not invest the same effort and resources into long-term development of temporary workers, the way the formal structures in an organisation perceive and treat temporary workers on a more routine basis is not different from permanent workers. This is a critical step in management of workers' mental wellbeing and outcomes as the results show that feeling supported has nearly the same overall effect as the broader job flexibility and characteristics combined, which is in line with e.g. the findings of Stepanek et al. (2019).

Finally, the significant direct link between type of work contract and quality of working life in line with *Hypothesis 2* indicates that there are indeed other aspects of temporary employment and that giving temporary workers the same level of support and quality of work environment as permanent workers will diminish but not eliminate the negative consequences.

The findings refer to average effects and there may be many employees for whom temporary working arrangements are preferable to a permanent contract due to a number of reasons. The findings are also likely to vary with time. At times with good macroeconomic conditions and low unemployment rate, having a temporary work contract may be less impactful as employees may feel greater security through higher chance to find a new job position. Other institutional factors – such as traditions and overall labour market composition – will equally play an important role and must be reflected in cross-country comparisons.

Methodological considerations

The dataset collection occurred during the COVID-19 pandemic in November 2020, when the number of infections in the Czech Republic was on the rise and various restrictions limiting mobility and business activity were in place. The Czech authorities left majority of businesses largely unaffected, with the exception of non-essential small retail stores, gyms, beauty salons and other business areas commonly restricted in other countries. The government also did not explicitly request all workers who can work from home to do so; the daily working routines of many workers at the time were thus similar to the pre-pandemic state. Specifically, as shown in Table 3, 30% of employees indicated that their work arrangements changed as a result of the pandemic, with 22% newly working from home some of the time and 8% newly working exclusively from home. In addition, 3% employees had their working hours reduced and 13% had their income reduced. The differences between workers with both temporary and permanent contracts, ranging between 1.8 and 2.8 pp, are statistically significant only in the case of full-time work from home ($p = 0.029$). The results can

therefore be arguably generalised beyond the pandemic period.

WORK CONTRACT TYPE	N	WORKING FROM HOME SOME OF THE TIME	WORKING FROM HOME ALL OF THE TIME	HAD WORKING HOURS REDUCED	HAD INCOME REDUCED
Permanent contract	1,355	21.4%	7.7%	12.5%	15.4%
Temporary contract	336	23.2%	9.8%	14.9%	18.2%
Total	1,698	21.8%	8.1%	2.6%	13.0%

Table 3: Consequences of the COVID-19 pandemic

Due to the relatively low prevalence of agency and traineeship contracts in the data sample (and in the Czech Republic overall), all non-permanent work contracts were grouped under a single label of temporary work contracts. While this should not affect the study’s key conclusions as the general arguments and pathways of effect are expected to apply in the more specific cases as well, it is reasonable to assume a variance in the effect sizes. We recommend conducting a follow-up study focusing on such differences.

Lastly, while the pathways of effect through *Job characteristics* is clearly documented in the analysis, it is not clear to what extent *Job characteristics* differ between temporary and permanent workers due to the work temporary workers are given and the way they are treated, and to what extent it is a matter of perception associated with being on a temporary contract. We attempted to limit the possible bias in the analysis due to simply having a worse job by controlling for gender, age, education, and job position, yet a more objective assessment of job characteristics may be helpful in this regard.

Conclusion

We show that temporary workers compared with permanent workers show lower overall quality of working life and that the pathway of effect is both direct and indirect, mediated through worse perception of one’s job. These results are important in two distinct ways.

From the research perspective, the results contribute to the understanding of the detrimental effects of temporary work arrangements on workers’ wellbeing and work outcomes. While the existing studies are broadly aligned on the overall negative consequences, the exact pathways are not clear. Our results are in line with the previous findings of e.g. Warr (2007) and Vander Elst et al. (2011, 2014) who emphasise the role of work stress, and De Cuyper and De Witte (2006, 2008), who discuss the role of psychological contract, and signal the importance of workers’ perception of their employment. At the same time, temporary workers do not show statistically significant differences in perception of support from their managers or the broader organisation.

From business owners’ and policymakers’ perspective, the results highlight the need to provide adequate support to temporary workers during the ongoing shift towards more prevalent temporary employment in order to maintain or improve satisfactory quality of working life levels in the organisation and the broader society.

Dedication



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Appendix

VARIABLE	CATEGORY/UNIT	FREQ./ MEAN	SD	MIN	MAX
Age	Years	42.7	11.2	18	65
Income	CZK/month	24,509	11,603	600	150,000
Gender	Male	54.2%			
Education	None or primary	2.0%			
	Secondary (GCSE equivalent)	35.0%			
	Secondary (A levels equivalent)	34.0%			
	Post-secondary or undergraduate	10.0%			

Graduate or postgraduate	2.0%			
Job position	Skilled agricultural, forestry and fishery workers	8.0%		
	Plant and machine operators, and assemblers	9.5%		
	Craft and related trades workers	11.6%		
	Service and sales workers	17.6%		
	Clerical support workers	21.4%		
	Technicians and associate professionals	15.0%		
	Professionals	14.9%		
	Managers	2.0%		
Organisation type	Private enterprise	69.7%		
	State enterprise	5.3%		
	Public institution or NGO (school, hospital)	14.1%		
	Public office	10.9%		
Organisation size (# employees)	1-9	14.2%		
	10-19	11.2%		
	20-49	14.5%		
	50-249	25.7%		
	250+	34.5%		
Existence of workers union	Yes	39.7%		

Table A1: Descriptive statistics – control variables

CATEGORY	VARIABLE	POPULATION	DATASET	DIFF.
Gender	Male	55.5%	55.5%	0.0%
	Female	44.5%	44.5%	0.0%
Age	18-29	16.1%	16.1%	0.0%
	30-39	24.9%	24.9%	0.0%

40-49	28.8%	28.8%	0.0%	
50+	30.2%	30.2%	0.0%	
Education	Primary or secondary (GCSE equivalent)	28.9%	38.8%	-0.1%
	Secondary (A levels equivalent)	36.8%	36.8%	0.0%
	Post-secondary or higher	24.3%	24.4%	0.1%
Region	Prague	13.0%	13.0%	0.0%
	Central Bohemian	12.7%	12.7%	0.0%
	South Bohemian	6.0%	6.0%	0.0%
	Plzen	5.5%	5.5%	0.0%
	Karlovy Vary	2.9%	2.9%	0.0%
	Usti and Labem	7.4%	7.4%	0.0%
	Liberec	4.0%	4.0%	0.0%
	Hradec Kralove	5.2%	5.2%	0.0%
	Pardubice	4.9%	4.9%	-0.1%
	Vysocina	4.7%	4.7%	0.0%
	South Moravian	11.1%	11.1%	0.0%
	Zlin	5.4%	5.4%	0.0%
	Olomouc	5.8%	5.8%	0.0%
	Moravian-Silesian	11.3%	11.3%	0.0%
Economic activity	Employee	83.0%	83.1%	0.1%
	Entrepreneur	17.0%	16.9%	-0.1%

Notes: n = 1,698

Table A2: Representativeness of the dataset compared to the Czech working population aged 18-65

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