The impact of flexible contracts and job insecurity on vitality and productivity

Ziagul Hosseini

5506832

Master thesis: Work and Organisational Psychology

Publicly accessible on September 1st, 2018.

Reviewer: Dr. Jan Fekke Ybema

Second reviewer: Dr. Marieke den Ouden

Word count: 7,983

June 25th, 2018

Abstract

The number of employees with a flexible contract is increasing. The aim of this study was to investigate how types of flexible contracts and job insecurity were related to vitality and productivity. If the proportion of flexible contracts continues to increase in such a manner, then a negative relation with vitality and productivity may have consequences for the sustainable employability of the labour force. Cross-sectional analyses were used to investigate these relations and the *moderating* role of social support. In addition, longitudinal analyses were used to study whether the change of contract influences vitality and productivity over time. The data were derived from the 'Cohort Study on Sustainable Employability' (CODI) from TNO. 15,185 participants in 2016 and 9,698 in 2017 from 15 to 74 years old were included in this study. The results showed that employees with certain types of flexible contracts have higher vitality but lower productivity than those with a permanent contract. Employees with a fixed period and agency contract have lower vitality and lower productivity than permanent employees (partly) because their job insecurity was higher. Moreover, the vitality of permanent employees who obtained a flexible contract increased over time, while no evidence for changes in vitality was found for flexible employees who obtained a permanent contract. In conclusion, in this study, it appeared that job insecurity plays a role among flex workers. This means that policymakers and employers should improve the possibility and accessibility of formal and informal learning and pay attention to job design.

Keywords: Flexible contracts, Job insecurity, Vitality, Productivity, Social support

Introduction

The nature of employment conditions has dramatically changed in the past few decades. Besides permanent employment contracts, flexible forms of contracts are becoming more common. Flexible employment means having a contract which is either of limited duration or not for a fixed number of service hours (Chkalova, Goudswaard, Sanders & Smits, 2015). According to Statistics Netherlands (Centraal Bureau voor de Statistiek, CBS) (2015), in the past ten years, the proportion of the Dutch working population with a flexible employment contract increased from 15 percent to 22 percent in 2014, which is above the European average (Verbiest et al., 2017). Moreover, the latest numbers show that in the last quarter of 2017 there were 3 million flex workers on the Dutch labour market, which is 2.5 percent more than in 2016 (CBS, 2018).

There is empirical evidence that flexible employment may be linked to poor health and low productivity (Benavides, Benach, Diez-Roux & Roman, 2000; Delsen, 1997). Until now, the association between flexible employment and health or productivity has mainly been investigated among those with a temporary employment (e.g. Pirani & Salvini, 2014) but hardly among other types of flexible contracts. In fact, there is no such thing as one type of flex worker (Verbiest et al., 2017). According to Bernhard-Oettel, Sverke, and De Witte (2005), the most common employment types are: fixed period (which depends on the duration of a project or temporary replacement), on-call (working in a short-term position for a limited numbers of hours), and temporary agency work (being employed by the agency but temporarily subcontracted to a client's firm). Verbiest et al. (2017) add another type which is semi-permanent (temporary contract with prospects of a permanent contract). The focus of the present study will lie on these four different types of flexible contracts, and the main purpose is to examine how these flexible contracts, in comparison to a permanent contract, are related to Dutch employees' vitality and productivity.

The relation between flexible contract and health has been studied extensively, while the relation between flexible and productivity not as much. The results of these studies are contradictory and mixed. On the one hand, some researchers have demonstrated that flexible contract is linked to poorer physical and psychological health (Sanwald & Theurl, 2014; Virtanen, Kivimäki, Joensuu, Virtanen, Elovainio & Vahtera,

2005; Virtanen, Janlert & Hammarström, 2011). Flexible workers had more physical and psychosocial demanding work than permanent employees. They were, for example, more often exposed to loud noise, hazardous products or repetitive tasks (Benavides, Benach, Diez-Roux & Roman, 2000). They also showed more sleeping problems (Martens et al., 1999), mental distress and somatic complaints (Klein Hesselink & Van Vuuren, 1999), and they had a higher risk of occupational injuries than those with non-flexible contracts (Sanwald & Theurl, 2014; Benavides, Benach, Muntaner, Delclos, Catot & Amable, 2006).

On the other hand, some researchers suggested that flexible employment, especially fixed period employment, is positively related to health, lower sickness absenteeism, and more work-related effort when compared to permanent employment (Virtanen, Vahtera, Kivimäki, Pentti & Ferrie, 2002; Guest, Isaksson & De Witte, 2010; Engellandt & Riphahn, 2005). In addition, temporary employment appears to increase an individual's chances of getting a permanent job (Chkalova et al., 2015). This was also mentioned by Delsen (1997), who stated that having a temporary job may have a two-sided effect. A temporary employee may work hard to become a permanent employee. Contrastingly, this employee may work less hard because he or she is going to leave anyway. The second effect was found to be most dominant. However, some studies have found neither a negative nor a positive relation between flexible employment, health or productivity (Bernhard-Oettel, Sverke & De Witte, 2005; De Cuyper & De Witte, 2007).

The role of job insecurity on flexible contracts, vitality, and productivity

Since the role of job insecurity on flexible contracts, vitality, and productivity is even less investigated, this study will give special attention to it. According to De Witte (1999), job insecurity is a subjective perception, concerning uncertainty about his or her future, and having doubts about the duration of the job. In other words, job insecurity is a subjective phenomenon of a significant and involuntary event, which every employee perceives and interprets differently. Uncertainty about the future means that the employee is not sure if he or she will be able to find a job and continue to work. This may result in doubts about the future existence of the job (De Witte, 1999). In fact, Ferrie (1999) has identified job insecurity as a major pathway linking flexible employment with negative health outcomes. This significant relation was supported in the meta-analyses of De Witte (1999) and Sverke et al. (2002). They found that employees' reaction to uncertain employment conditions can negatively affect their health.

Moreover, it was found that those with flexible contracts report perceived job insecurity more frequently than permanent workers (Catalano, Rook & Dooley, 1986; Virtanen, Kivimäki, Elovainio, Vahtera & Ferrie, 2003; Virtanen, Janlert & Hammarström, 2011; Hooftman et al., 2016), and many international studies on perceived job insecurity show a negative association with health (Ferrie, Westerlund, Virtanen, Vahtera & Kivimäki, 2008; Kawachi, 2008). Since flexible employment is associated with higher levels of job insecurity, it is often defined as *precarious* and viewed as a determinant of poor health (Benach et al., 2014). Precarious is frequently applied to jobs that are 'casual, contract, labour-hire or not full time: it implies disadvantage' (Richardson, Lester & Zhang, 2012, p. 558). Furthermore, job insecurity may also have harmful consequences for employees' attitudes toward the organisation, willingness to work for the organisation, and their performance (Sverke, Hellgren & Näswall, 2002, Cheng & Chan, 2008). Thus, flexible contracts can be perceived as a threat to the continuity and stability of employment. Less job security may lead to poor health and less productivity. Therefore, it is expected that employees with a flexible contract (insecure condition) will be less vital and less productive than employees with a permanent contract (secure condition). Based on these findings the following expectations are formulated:

Hypothesis 1: *Employees with a flexible contract are less vital compared to those with a permanent contract.*

Hypothesis 2: *Employees with a flexible contract are less productive compared to those with a permanent contract.*

Hypothesis 3: *Having a flexible contract is related to more job insecurity, which in turn is related to worse vitality.*

Hypothesis 4: *Having a flexible contract is related to more job insecurity, which in turn is related to worse productivity*.

The role of social support on the relations between flexible contracts, vitality, and productivity

A mechanism that has not been studied, but can play a role in the relation between flexible contracts, vitality, and productivity is social support. Social support stands for emotional, instrumental, and informational aid exchanged through social interactions. Social support enhances individuals' well-being directly and indirectly (Thoits, 1986). This happens, for example, through increasing self-esteem, but social support can also

serve as a coping mechanism in various manners. Firstly, it can assist employees to exercise situational control by providing instrumental aid or advice on how to change circumstances to be less stressful. Secondly, it can distract the employee from potential stressors and help him/her to redefine the situation, so it appears to be less hostile. Lastly, the employee can be provided with feedback that expresses affirmation, caring or understanding. This might result in a decrease of anxiety when confronted with difficulties (Thoits, 1986).

It was found that temporary agency workers receive the least social support at work (Hooftman et al., 2016). According to Verbiest et al. (2017), experiencing less social support at work has consequences for one's health, well-being, and sustainable employability. In fact, social support might buffer the negative impact of work-related stressors (Buunk, 1990). Social support from management was found to have a moderating influence on the relationship between stress at work and strain (Hagihara, Tarumi & Miller, 1998). It appeared to buffer the stressor-mental stress relation. In case of higher social support, the relationship between work stressors and mental stress is reduced. In particular, social support from supervisors and colleagues was found to be more relevant than social support from family or friends on work-related stressors, such as emotional exhaustion (Winnubst & Schabracq, 1996; Lim, 1996; Tetrick, Slack, Da Silva & Sinclair, 2000).

As for productivity, it was found that perceiving organisational support reduces absenteeism (Eisenberger et al., 1986). Aforementioned studies focused on the buffering effect of social support on work-related stressors and strain. It appears that no specific research has been done regarding the role of social support and its impact on flexible contracts and productivity. Hence, what the exact role of social support is in the relation between flexible contracts, vitality, and productivity is yet unclear in academic literature. According to existing literature on work-related outcomes, one can assume that social support could act as a buffer (Pinneau, 1976; Greenglass, Fiksenbaum & Burke, 1994). Therefore, one might expect that among employees who receive more social support, the negative relation between having a flexible contract and vitality might get weaker compared to employees who receive less social support. The same goes for productivity, one might expect that among employees who receive more social support, the negative relation of having a flexible contract and productivity might get weaker compared to

employees who receive less social support. Based on these reasons the following expectations are formulated:

Hypothesis 5: *Employees with a flexible contract will especially have worse vitality than those with a permanent contract when social support is low*.

Hypothesis 6: *Employees with a flexible contract will especially have worse productivity than those with a permanent contract when social support is low*.

Scientific and societal relevance

The aim of this study is to increase our insight into how flexible contracts and job insecurity are related to employees' vitality and productivity. Moreover, this study also aims to test for social support that could play a role in these relations. Since the role of job insecurity and social support is yet unclear in the aforementioned relations, many authors have suggested that more research should be conducted on this topic (Greenhalgh & Rosenblatt, 1984; Sverke et al., 2002; De Witte et al., 2016; Verbiest et al., 2017). Furthermore, this study will make an important contribution to the scientific field since longitudinal data on two measurements will be analysed. This way, it may come to light which types of flexible contracts predict higher vitality and productivity.

If the proportion of flexible contracts continues to increase, then a negative relation with vitality and productivity may have consequences for the sustainable employability of the labour force. Verbiest et al. (2017) mention that those who have health issues because of their work might leave the labour market. As a result, this group may claim social security benefits such as unemployment benefits. At the same time, the Dutch government is gradually increasing the pension age with the General Old Age Act (Algemene Ouderdomswet, AOW), which pushes the labour force to extend their working life and delay their retirement. Therefore, it is necessary to improve employability and health sustainability in order to keep employees vital and productive for a longer period of time. The research question is: *To what extent are employees' vitality and productivity affected by the nature of flexible contracts? To what extent do job insecurity and social support play a role in the relation between types of flexible contracts, vitality, and productivity?*

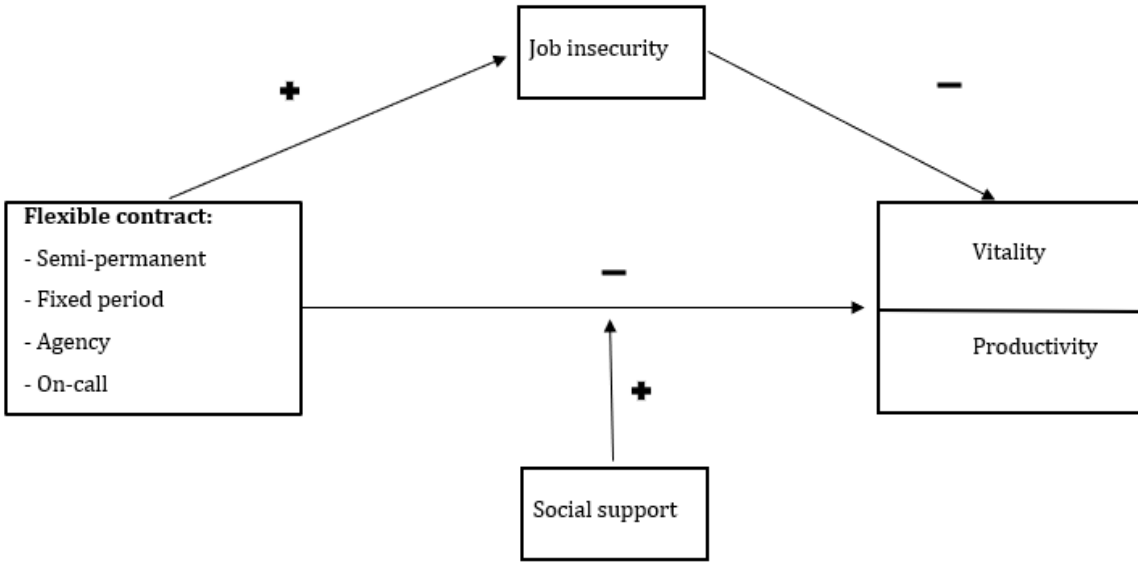


Figure 1. *Research model*

Method

Study population

The data for this study were derived from the 'Cohort Research on Sustainable Employability' (Cohort Onderzoek Duurzame Inzetbaarheid; CODI), an ongoing longitudinal study at TNO. Data were collected via questionnaires among participants who participated in the Netherlands Working Conditions Survey (Nationale Enquête Arbeidsomstandigheden; NEA) and the Netherlands Survey of The Self-employed (Zelfstandigen Enquête Arbeid; ZEA) in 2015. They were invited to participate in CODI and are followed annually, with assessments in 2016 and 2017. For the current study, only data from 2016 and 2017 were used. The sample consisted of 15,185 participants with an employment contract (excluding self-employed) with ages ranging from 15 to 74 years old (M=44.78, SD=12.55) in 2016. There were 8,287 (54.6%) men and 6,898 (45.4%) women. Participants highest level of education was low (from none to MAVO) (13.7%), secondary (from HAVO to MBO) (42.0%) and high (from HBO to postdoctoral) (44.3%).

Measures

Vitality was assessed through four items on a 6-point Likert scale asking how often (1=always, 6=never) the respondent felt energetic; alive; burned out, or tired in the last four weeks. The first and second item were reversed so a higher score means that one is

more vital. These four items were obtained from SF-36 (Ware & Sherbourne, 1992) and *M*=4.16 which entails that most people view themselves as vital. Reliability was good (α= 0.89).

Productivity was assessed by asking two questions. Firstly, '*How much work have you done in the last 4 weeks compared to what you usually do?*' There were 11 answer possibilities from 1 (less than normal) to 11 (much more than normal). This item was based on Quantity and Quality questionnaire (QQ), which was part of PRODISQ survey obtained from a study by Brouwer, Koopmanschap, and Rutten (1999). Secondly, they were asked to judge their overall work performance in the past year: '*How do you rate your overall work performance in the past year?*', there were 11 answer possibilities from 0 (very badly) to 10 (excellent). This item was based on Health and Performance Questionnaire obtained from a study by Kessler et al. (2003). Most people indicated that they had done more work than what they usually do (*M*=7.12) and they rated themselves very good (*M*=7.90). These two items were significantly correlated (r=0.23) but it was too low to combine both items.

Types of contracts. There were five answer categories to the question: '*What kind of contract do you have?*' Most people had a permanent employment contract (85.5%). Others had a semi-permanent (5.7%), fixed period (5.4%), agency (1.8%) and, on-call contract (1.6%). This item was derived from Study on Transitions in Employment, Ability, and Motivation (STREAM).

Job insecurity was measured by one-item 5-point Likert scale asking to what extent (1=completely agree, 5=completely disagree) the respondent agreed with the following sentence: '*all in all, I think I have sufficient opportunities to stay employed.'* Most people did think they have sufficient opportunities to stay at work (*M*=2.11). This item was originally derived from Goudswaard et al. (1998).

Social support was measured through four items, (e.g., *'my supervisor pays attention to what I say'* and *'my colleagues show personal interest in me'*) with answer possibilities from 1 (completely disagree) to 4 (completely agree). A high score means that one receives social support. Reliability was good (α= .75). Most respondents agreed with the statements, which means that they get social support (*M*=3.20). These four items were derived from Karasek's 'Supervisory support' and 'Co-worker support', which was translated to Dutch by Houtman et al. (1995). A complete overview of descriptive

statistics and correlations of the study variables can be found in table 4 and 5 in the appendices.

Statistical analyses

IBM SPSS statistics 25 was used to analyse the data cross-sectional as well as longitudinal. Analyses of variances were conducted to test hypothesis 1 (employment contract groups have different vitality) and hypothesis 2 (different productivity). The type of employment contract was used as an independent variable. Vitality and productivity were used as dependent variables. By using Dunnett in Post Hoc Tests (control category first) permanent contract acted as the reference category (0 for all dummies).

In order to test hypotheses 3 and 4, PROCESS was used with job insecurity as a mediator. For the flexible employment contracts, four dummy codes (0,1) were made. Each dummy acted in turn as an independent variable. Vitality and productivity acted as dependent variables and the other dummies as covariates (Hayes & Preacher, 2014). These analyses were interpreted by using the decision tree made by Zhao, Lynch, and Chen in 2010. For hypotheses 5 and 6, again PROCESS was used with social support as a moderator. Type of contract acted as an independent variable. Vitality and productivity acted as dependent variables. As recommended by Hayes and Montaya (2017), Helmert coding of groups was used because the independent variable is a multicategorical variable.

In order to check whether a transition from permanent to semi-permanent and fixed period is accompanied by worse vitality and productivity (and vice versa from semi-permanent and fixed period to permanent contract), employees were categorized into three different change groups. The first group consisted of employees moving out of a permanent contract to semi-permanent (N=200) and fixed period (N=101). The second group consisted of semi-permanent employees who obtained a permanent contract (N=287). The final group consisted of fixed period employees who obtained a permanent contract (N=106). Longitudinal data were analysed using linear regression analyses to check how certain transitions go hand in hand with changes in vitality and productivity. Vitality and productivity in 2017 acted as dependent variables. Vitality and productivity in 2016 and the aforementioned transition groups acted as independent variables.

Results

Personal characteristics

The five different types of contract groups differed with respect to gender (χ^2 (4)=52.96, p<.001), age (F(4, 15040)=405.38, p<.001), and education (F(4, 15002)= 39.59, p<.001). There were more men with a permanent (86.9% vs. 83.9%) and agency contract (1.9% vs. 1.6%) than women. More women had a semi-permanent (5.9% vs 5.5%), fixed period (6.6% vs. 4.4%), and on-call contract (2.0% vs. 1.3%) than men. Permanent employees (46.28 years) were older than workers with flexible contracts (M=34.44-42.5). Employees with a (semi)permanent and fixed period contract were better educated than agency and on-call employees.

The relation between flexible contracts, vitality, and productivity

An analysis of variance was conducted to compare vitality and productivity of workers with each type of flexible contract to those with a permanent contract. As shown in table 1 the groups differed with respect to vitality. Semi-permanent (M=4.24) and on-call employees (M=4.40) appeared to be more vital than permanent employees (M=4.15). No significant group differences were found for the ones with a fixed period and agency contract. Aforementioned results were not in the predicted direction which means that hypothesis 1 does not receive support. The groups differed with respect to productivity. Those with a fixed period (M=6.88), agency (M=6.83), and on-call contract (M=6.15) had a lower quantity of productivity than those with a permanent contract (M=7.16). No significant group difference was found for semi-permanent employees. As for the quality of productivity, only fixed period employees (M=7.77) reported lower quality than those with a permanent contract (M=7.92). No significant group differences were found for other contract groups. Thus, hypothesis 2 receives some support, although more for quantity than quality of productivity. When statistically controlling for employees' gender and age similar results were found for vitality as well as productivity.

Table 1. *Employment contracts, vitality, and productivity*

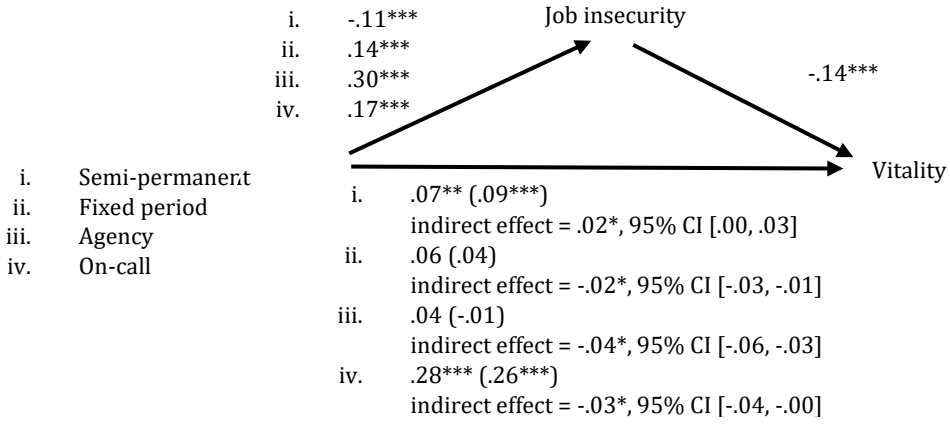
Type of contract	Vitality (1-6)	Quantity of productivity (1-11)	Quality of productivity (0-10)
	Mean (SD)	**Mean (SD)**	**Mean (SD)**
Permanent	4.15 (.88)	7.16 (1.88)	7.92 (.99)
Semi-permanent	4.24** (.84)	7.10 (1.72)	7.85 (.85)
Fixed period	4.19 (.86)	6.88*** (1.93)	7.77*** (.99)
Agency	4.15 (1.00)	6.83** (1.96)	7.81 (1.00)
On-call	4.40*** (.83)	6.15*** (1.98)	7.87 (.91)
Total sample	4.16 (.88)	7.12 (1.89)	7.90 (.98)
F-values	*F*(4,14989)= 7.019***	*F*(4,15006)= 22.22***	*F*(4,15013)= 5.41***

Note: Average scores (standard deviations: SD) for total sample and for each of 5 contract groups. The F-test represents the overall group effect as deviation from the grand mean. Each type of flexible contract was compared to permanent contract. *=p<.05, **=p<.01, ***=p<.001.

The role of job insecurity on flexible contracts and vitality

Figure 2 illustrates that semi-permanent employees experienced higher vitality (B=.07). Against expectations, job insecurity appeared to be significantly lower among semi-permanent workers (B=-.11) than among permanent workers. As job insecurity was higher, the vitality of the total sample group was significantly lower (B=-.14). This means that semi-permanent employees experienced higher vitality than permanent employees partly because their job insecurity was lower. No significant direct relations were found between fixed period, agency contract and vitality. As expected, job insecurity appeared to be significantly higher among fixed period (B=.14) and agency workers (B=.30) than among permanent workers. As job insecurity was higher, the vitality of the total sample group was significantly lower (B=-.14). This means that these employees experienced lower vitality than permanent employees because their job insecurity was higher. Moreover, on-call employees experienced higher vitality (B=.28). As expected, job insecurity appeared to be significantly higher among on-call workers (B=.17) than among permanent workers. As job insecurity was higher, the vitality of the total sample group was significantly lower (B=-.14). This means that on-call employees experienced higher vitality than permanent employees even when their job insecurity was higher. Thus, hypothesis 3 received some support for fixed period and agency employees. These

employees experienced lower vitality than permanent employees because their job insecurity was higher.

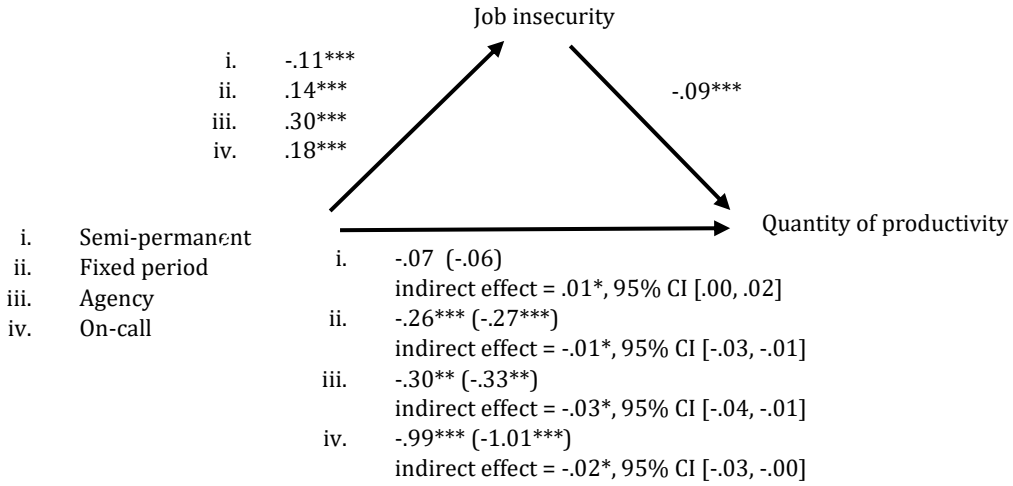


Note: The coefficient .07** etc. represents the strength of linear association between contract type and vitality when job insecurity is controlled by including it as another predictor vitality; the coefficient in parentheses represents the linear association between type of contract and vitality when job insecurity is not statistically controlled. Each type of flexible contract was compared to permanent contract. *=p<.05, **=p<.01, ***=p<.001.

Figure 2. *The role of job insecurity on flexible contracts and vitality*

The role of job insecurity on flexible contracts and productivity

Figure 3 illustrates that no significant direct relation was found between semi-permanent contract and quantity of productivity. Against expectations, job insecurity appeared to be significantly lower among semi-permanent (B=-.11) than among permanent workers. As job insecurity was higher, the quantity of productivity of the total sample group was significantly lower (B=-.09). This means that these employees performed a higher quantity of productivity than permanent employees because their job insecurity was lower. Moreover, lower quantity of productivity was performed by a fixed period (B=-.26), agency (B=-.30) and on-call workers (B=-.99). As expected, job insecurity appeared to be significantly higher among fixed period (B=.14), agency (B=.30) and on-call employees (B=.18) than among permanent workers. As job insecurity was higher, the quantity of productivity of the total sample group was significantly lower (B=-.09). This means that these employees had a lower quantity of productivity than permanent employees partly because their job insecurity was higher.

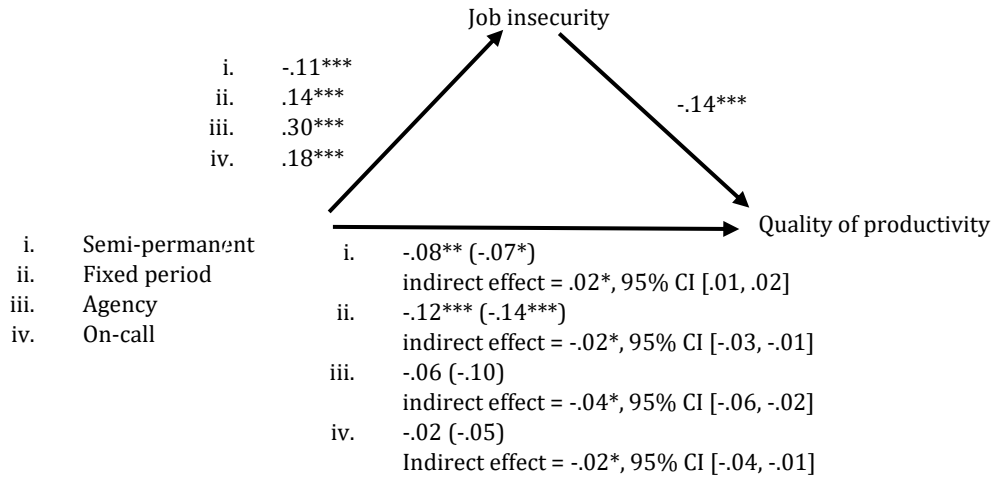


Note: The coefficient -.07 etc. represents the strength of linear association between contract type and quantity of productivity when job insecurity is controlled by including it as another predictor of quantity of productivity; the coefficient in parentheses represents the linear association between type of contract and quantity of productivity when job insecurity is not statistically controlled. Each type of flexible contract was compared to permanent contract. *=p<.05, **=p<.01, ***=p<.001.

Figure 3. *The role of job insecurity on flexible contracts and quantity of productivity*

Lower quality of productivity was performed by semi-permanent contract (B=-.08). Against expectations, job insecurity appeared to be significantly lower among semi-permanent (B=-.11) than among permanent workers. As job insecurity was higher, quality of productivity of the total sample group was significantly lower (B=-.14). This means that these employees had a higher quality of productivity than permanent employees partly because their job insecurity was lower. Also, fixed period employees performed lower quality of productivity (B=-.12). As expected, job insecurity appeared to be significantly higher among them (B=.14) than among permanent workers. As job insecurity was higher, quality of productivity of the total sample group was significantly lower (B=-.14). This means that fixed period employees had a lower quality of productivity than permanent employees partly because their job insecurity was higher. Moreover, no significant direct relations were found between agency, on-call employees and quality of productivity. However, as expected job insecurity appeared to be significantly higher among agency (B=.30) and on-call employees (B=.18) than among permanent workers. As job insecurity was higher, quality of productivity of the total sample group was significantly lower (B=-.14). This means that these employees performed lower quality of productivity than permanent employees because their job

insecurity was higher. In conclusion, hypothesis 4 received some support for fixed period, agency, and on-call workers. These employees had lower productivity than permanent employees (partly) because their job insecurity was higher.



Note: The coefficient -.08*** etc. represents the strength of linear association between contract type and quality of productivity when job insecurity is controlled by including it as another predictor of quality of productivity; the coefficient in parentheses represents the linear association between type of contract and quality of productivity when job insecurity is not statistically controlled. Each type of flexible contract was compared to permanent contract. *=p<.05, **=p<.01, ***=p<.001.

Figure 4. *The role of ob insecurity on flexible contracts and quality of productivity*

The role of social support on the relations between flexible contracts, vitality, and productivity

As illustrated in table 2, higher vitality was experienced by semi-permanent (B=.08) agency (B=.11) and on-call workers (B=.23). The higher social support, the higher vitality (B=.29). Moreover, the interaction between contracts and social support contributed significantly to the regression (R^2=.001). However, the interactions showed that the relationship between social support and vitality was significantly weaker or even absent for those with a semi-permanent (B=-.14) and on-call contract (B=-.32) than permanent workers. The relationship between social support and vitality did not differ for those with a fixed period and agency contract compared to permanent employees. The relation between social support and vitality was strongest for those with a permanent contract, which means that hypothesis 5 was not supported (see figure 5 below).

Concerning quantity of productivity, lower quantity of productivity was performed by those with a semi-permanent (B=-.41), fixed period (B=-.51), agency (B=-

.40) and on-call contract (B=-.64). Against expectations, the higher social support, the lower the quantity of productivity (B=-.21). However, the interaction between contracts and social support did not contribute significantly to the regression (R^2=.001). With regard to quality of productivity, only semi-permanent employees performed significantly lower quality of productivity (B=-.11). As expected, the higher social support, the higher quality of productivity (B=.09). However, the interaction between contracts and social support did not contribute significantly to the regression (R^2=.001). Therefore, it seems that no interaction was found in the relation between social support and productivity for flexible contract groups (see appendix: table 6, figure 6 and 7). Thus, hypothesis 6 was not supported.

Table 2. *The relation between contracts and vitality, with social support as a moderator*

	B	**SE**
Constant	4.21***	.018
Semi-permanent	.08***	.024
Fixed period	.05	.041
Agency	.11*	.049
On-call	.23***	.078
Social support (centred)	.29***	.033
Semi-permanent*social support	-.14***	.044
Fixed period*social support	-.11	.078
Agency*social support	-.07	.089
On-call*Social support	-.32*	.144
Model summary	R^2 = .0561***	
Contracts*social support	R^2 change = .001**	

Note: Reference category is permanent contract. N = 14,967. *=p<.05, **=p<.01, ***=p<.001

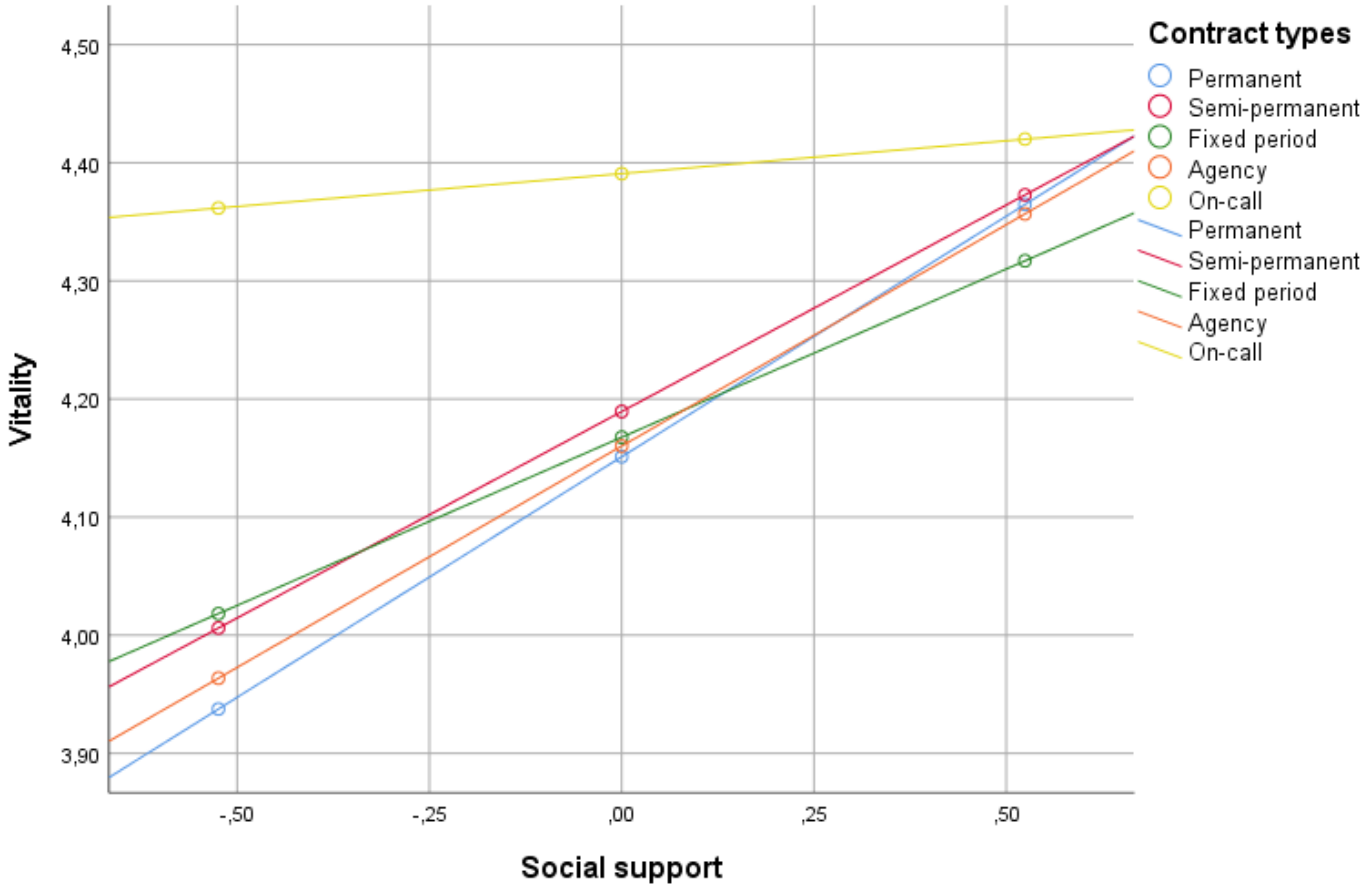


Figure 5. *Contract types as a predictor of vitality, moderated by social support. The permanent contract is the reference category*

A transition from permanent to flexible contracts over time (and vice versa)
As illustrated in table 3 below, corrected for vitality in 2016, the vitality in 2017 was significantly higher for permanent employees who became either semi- or fixed period workers (B=.33) over time. This means that these employees' vitality increased when they obtained flexible contracts. However, those who transit from flexible contracts to a permanent contract did not change in vitality significantly (B=.06, B=-.17). This means that obtaining a permanent contract did not have an influence on one's vitality. Corrected for productivity in 2016, employees who obtained other types of contract did not change significantly in their productivity in 2017, except for those with a fixed period contract who obtained a permanent contract. Their quantity of productivity (B=.62) increased significantly over time (see appendix: table 7 and 8).

Table 3. *Transition results for permanent and flexible contracts over time*

	From permanent to semi-permanent		From permanent to fixed period		From semi-permanent to permanent		From fixed period to permanent	
	B	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Constant	1.45***	.038	1.43***	.038	1.65***	.183	1.79***	.232
Transition	.33***	.050	.33***	.070	.06	.072	-.17	.092
Vitality '16	.64***	.009	.64***	.009	.56***	.041	.56***	.052

Note: Dependent variable is Vitality '17. *=p<.05, **=p<.01, ***=p<.001.

Discussion

Findings

The aim of the current study was to evaluate how types of flexible contracts and job insecurity are related to employees' vitality and productivity, compared to employees with a permanent contract. Another aim was to find out what the role of social support is within these relations. It was found that those with semi-permanent and on-call contract have higher vitality. Those with fixed period, agency and on-call contract have lower productivity. As expected, fixed period and agency employees experienced lower vitality than those with a permanent employment because their job insecurity was higher. Those with a fixed period, agency and on-call contract have lower productivity than permanent employees (partly) because their job insecurity was higher. Moreover, the relationship between social support and vitality was significantly weaker or even absent for those with a semi-permanent and on-call contract than permanent workers.

Interpretation of the findings

The hypothesis that those with a flexible contract have worse health than those with a permanent contract (hypothesis 1) is not supported, but the hypothesis that those with a flexible contract have worse productivity than those with a permanent contract (hypothesis 2) is supported. The former result is not in line with the predictions based on previous studies, such as a study by Klein Hesselink and Van Vuuren (1999) and Martens et al. (1999). They demonstrated that individuals with a flexible contract showed more

health complaints than those with a permanent contract, as opposed to the results that were found in this study. Semi-permanent, and on-call employees showed higher vitality than permanent employees. An explanation for higher vitality among these employees could be that they have voluntarily chosen to work in these employment contracts. In literature, it was found that those who *voluntarily* chose to work in flexible employment experience enhanced the quality of life (Guest & Clinton, 2006; Benavides, Benach, Diez-Roux & Roman, 2000). In addition, it was found that flexible workers who accept their contract are more healthy than those who do not accept it (Zotnierczyk-Zreda, Bedynska, 2018). Confirming hypothesis 2 is in line with a study by Delsen (1997), who stated that flexible jobs could have two-sided effects: on the one hand, a temporary employee may work hard to become a permanent employee. On the other hand, this employee may work less hard because he/she is going to leave anyway. Delsen (1997) found that the latter was found to be most dominant and this was also supported in the current study.

Over the past few decades, much attention has been paid to the role of job insecurity and its consequences on individuals. This study contributes to previous research and indicates that job insecurity (partly) explains how types of flexible contracts are related to vitality and productivity. Hypothesis 3 which stated that flexible contract is related to more job insecurity, which in turn is related to worse vitality is supported for fixed period and agency employees. Hypothesis 4 which stated that flexible contract is related to more job insecurity, which in turn is related to worse productivity is (partly) supported for fixed period, agency and on-call employees. Supporting these hypotheses is in line with the theoretical framework of job insecurity and the meta-analyses of De Witte (1999) and Sverke et al. (2002). They found that employees' reaction to uncertain employment conditions can negatively affect their health. However, for those with a semi-permanent, it was found that they have higher vitality and higher productivity partly because they have lower job insecurity. An explanation for their low job insecurity could be the fact that they have prospects of a permanent contract.

Moreover, the hypotheses that employees with a flexible contract will especially have worse vitality and worse productivity than those with a permanent contract, when social support is low (hypothesis 5 and 6) are not supported. Since not much research has been conducted regarding social support in the mentioned relations, the results of the current study cannot be validated. Therefore, this theory should be tested in other studies to examine whether this theory also holds for different samples. A possible

explanation for not finding evidence for social support as a moderator could be the fact that the average score on social support was relatively high in this sample, which could make it more difficult to make a distinction between high and low social support.

Limitations, strengths, and recommendations

The current study has a few limitations, it depended on self-reporting measures, which may affect the outcomes. The answers of workers about their vitality and productivity could be responded socially desirable. In fact, validity and reliability can be at risk in self-reports. Thus, the interpretation of the results should be done with some prudence. Moreover, since results on vitality suggest that semi-permanent and on-call employees are more vital than permanent employees, it seems highly probable that voluntarily choosing a specific type of contract may also be a factor that plays a role in this relation. Furthermore, the question regarding job insecurity was not literally asked in this study, but based on the aforementioned definition this study assumed that this single-item covered the three components of job insecurity. Wanous and Reichers (1997) mention that single-item measures for psychological construct are discouraged because of their low reliability. Thus, future researchers are encouraged to collect data on whether types of contracts are chosen voluntarily and examine more aspects of job insecurity.

Despite these limitations, there were also some strong points in this study. The current study did besides cross-sectional also longitudinal analyses, providing more insights into the temporal order between flexible employment, vitality, and productivity. Also, a large sample size was used to analyse the data, making the study more heterogeneous and largely representative sample. Furthermore, four different types of flexible contracts were used as it was recommended by Wagenaar et al. (2012), and social support was included as a moderator as it was suggested by Sverke et al. (2002), making this one of the first studies to do so.

Conclusion and practical implications

The outcomes of the present study show that fixed period and agency employees have lower vitality than permanent employees, because of their higher job insecurity. Fixed period, agency, and on-call employees show lower productivity than permanent employees, (partly) due to their higher job insecurity. Although findings of this study

need to be replicated before they can be taken as hard evidence, it is nonetheless clear that policymakers and employers should find practical solutions regarding job insecurity among the increasing numbers of flex workers.

One of the first actions that should be taken by employers and policymakers, is to pay special attention to the position of flex workers. In the literature, it is evident that employers are inclined to invest less in (transferable) skills and competences as well as formal and informal education of flex workers in comparison with permanent employees (Arulampalam & Booth, 1998). Transferable skills and competences entail, for example, communication and working according to a plan. Informal learning entails, for example, giving employees the opportunity to perform a variety of tasks. In fact, informal learning increases the chances of individuals on more job security and career opportunities (Van Wijk, Verbiest & Preenen, 2013). In addition, a report by the European Commission (2010) states that training and education, especially in uncertain and dynamic labour markets, remains important for employees. These learning experiences could entail updating existing skills or developing new ones. Under such circumstances, skill development is a major contributor to sustainable employability.

Although there is a law on Flexibility and Security in The Netherlands which states that flex workers should obtain a permanent contract, if they have continuously worked for 24 months at the same organisation, this law might not strengthen their position. After all, employers can still simply choose to not offer further work if the next contract should be a permanent one. Therefore, the government should also offer post-initial education and improve its accessibility for flex workers. If flexible workers are given better opportunities to invest in their skills and competences on the one hand and have jobs that fit them better, on the other hand, it might strengthen their career development. Hence, this could lead to sustainable employability and better chances of obtaining permanent contracts.

References

Arulampalam, W., & Booth, A. (1998) Training and Labour Market Flexibility: Is there a Trade-off? The British Journal of Industrial Relations 36(4): 521-536.

Benavides, F. G., Benach, J., Diez-Roux, A. V., & Roman, C. (2000). How do types of employment relate to health indicators? Findings from the Second European Survey on Working Conditions. Journal of Epidemiology & Community Health, 54(7), 494-501.

Benavides, F. G., Benach, J., Muntaner, C., Delclos, G. L., Catot, N., & Amable, M. (2006). Associations between temporary employment and occupational injury: what are the mechanisms?. Occupational and environmental medicine, 63(6), 416-421.

Benach, J., Vives, A., Amable, M., Vanroelen, C., Tarafa, G., & Muntaner, C. (2014). Precarious employment: understanding an emerging social determinant of health. Annual review of public health, 35.

Bernhard-Oettel, C., Sverke, M., & De Witte, H. (2005). Comparing three alternative types of employment with permanent full-time work: How do employment contract and perceived job conditions relate to health complaints? Work & Stress, 19(4), 301-318.

Brouwer, W. B. F., Koopmanschap, M. A., & Rutten, F. F. (1999). Productivity losses without absence: measurement validation and empirical evidence. Health policy, *48*(1), 13-27.

Buunk, B. P. (1990). Affiliation and helping interactions within organizations: A critical analysis of the role of social support with regard to occupational stress. European review of social psychology, 1(1), 293-322.

Catalano, R., Rook, K., Dooley, D. (1986). Labor markets and help-seeking: a test of the employment security hypothesis. J. Health Soc. Behav. 27(3): 277–87

Centraal Bureau voor de Statistiek (2015). Sterke toename flexwerk. Retrieved on January 10th, 2018 from https://www.cbs.nl/nl-nl/nieuws/2015/23/sterke-toename-flexwerk.

Centraal Bureau voor de Statistiek (2018). Weer meer vast werk maar flexwerk groeit harder. Retrieved on February 21st, 2018 from https://www.cbs.nl/nl-nl/nieuws/2018/08/weer-meer-vast-werk-maar-flexwerk-groeit-harder

Cheng, G. H. L., & Chan, D. K. S. (2008). Who suffers more from job insecurity? A meta-analytic review. Applied Psychology, 57(2), 272-303.

Chkalova, K., Goudswaard, A., Sanders, J., & Smits, W. (2015). *Dynamiek op de Nederlandse arbeidsmarkt: de focus op flexibilisering*. Centraal Bureau voor de Statistiek.

Delsen, L. (1997). Flexibilisering van de arbeid in Europa. Tijdschrift voor Arbeidsvraagstukken, 13(1), 23-36.

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived Organizational support. *Journal of Applied psychology*, *71*(3), 500.

Van Emmerik, M. L., De Vroome, E. M., Kraan, K. O., & Van den Bossche, S. N. (2016). Werkgevers Enquête Arbeid. Leiden: TNO.

European Commission (2010). Changing patterns of working, learning and career development across Europe. Final Report. Luxembourg: Publications Office of the European Union.

Ferrie, J. E. (1999). Health consequences of job insecurity. WHO Regional Publications European Series, 59-100.

Ferrie, J. E., Westerlund, H., Virtanen, M., Vahtera, J., & Kivimäki, M. (2008). Flexible labor markets and employee health. Scand. J. Work Environ. Heath (Suppl. 6): 98–110.

Goudswaard, A., Dhondt S. & Kraan, K. (1998). Flexibilisering en Arbeid in de Informatiemaatschappij; werknemersvragenlijst, bestemd voor werknemers van organisaties die deelnemen aan het SZW-Werkgeverspanel. Hoofddorp: TNO.

Greenglass, E. R., Fiksenbaum, L., & Burke, R. J. (1994). The relationship between social support and burnout over time in teachers. Journal of Social Behavior and Personality, 9, 219–230

Greenhalgh, L., & Rosenblatt, Z (1984). Job insecurity: Toward conceptual clarity. Academy of Management Review, 9: 438-448.

Guest, D., & Clinton, M. (2006). Temporary employment contracts, workers' well-being and behavior: Evidence from the UK. Department of management working papers (Vol. 38). London: King's College

Hagihara, A., Tarumi, K., & Miller, A. S. (1998). Social support at work as a buffer of work stress-strain relationship: A signal detection approach. Stress and Health, 14(2), 75-81.

Hayes, A. F. (2013). Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. New York, NY: The Guilford Press

Hayes, A. F., & Montoya, A. K. (2017). A tutorial on testing, visualizing and probing an interaction involving a multicategorical variable in linear regression analysis. Communication Methods and Measures, 11, 1-30.

Hayes, A. F., & Preacher, K. J. (2014). Statistical mediation analysis with a multicategorical independent variable. British Journal of Mathematical and Statistical Psychology, 67, 451-470.

Van den Heuvel, S., Geuskens, G., Bouwhuis, S., & Petricheva, V. (2016). Study on transitions in employment, ability, and motivation (STREAM): Technical report (2010-2015). TNO, Leiden.

Hooftman, W. E., Mars, G. M. J., Janssen, B., De Vroome, E. M. M., Pleijers, A. J. S., & Michiels, J. M. M. (2016). Nationale Enquête Arbeidsomstandigheden 2016. Hoofddorp: TNO.

Houtman, I.L.D., Goudswaard, A., Dhondt, S., Grinten, M. van der, Hildebrandt, V. & Kompier, M. (1995). Evaluatie van de monitorstudie naar stress en lichamelijke belasting. Den Haag: VUGA.

Kessler, R. C., Barber, C., Beck, A., Berglund, P., Cleary, P. D., McKenas, D., & Wang, P. (2003). The world health organization health and work performance questionnaire (HPQ). Journal of Occupational and Environmental Medicine, 45(2), 156-174.

Klein Hesselink, D. J., & Van Vuuren, T. (1999). Job flexibility and job insecurity: The Dutch case. European Journal of Work and Organisational Psychology, 8, 273-293

Lim, V. K. (1996). Job insecurity and its outcomes: Moderating effects of work-based and nonwork-based social support. Human relations, 49(2), 171-194.

Martens, M., Nijhuis, F., Van Boxtel, M., & Knottnerus, J. (1999). Flexible Work Schedules and Mental and Physical Health. A Study of a Working Population with Non-Traditional Working Hours. Journal of Organizational Behavior, 20(1), 35-46.

Pinneau, S. R. (1976, September). Effects of social support on occupational stresses and strains. In *Meeting of American Psychological Association*.

Pirani, E., & Salvini, S. (2015). Is temporary employment damaging to health? A longitudinal study on Italian workers. Social Science & Medicine, 124, 121-131.

Richardson, S., Lester, L., & Zhang, G. (2012). Are casual and contract terms of employment hazardous for mental health in Australia?. Journal of Industrial Relations, 54(5), 557-578.

Sanwald, A., & Theurl, E. (2014). Atypical employment and health: A meta-analysis (No. 2014-15). Working Papers in Economics and Statistics.

Sverke, M., Hellgren, J., & Näswall, K. (2002). No security: a meta-analysis and review of job insecurity and its consequences. *Journal of occupational health psychology*, *7*(3), 242.

Tetrick, L. E., Slack, K. J., Da Silva, N., & Sinclair, R. R. (2000). A comparison of the stress-strain process for business owners and nonowners: Differences in job demands, emotional exhaustion, satisfaction, and social support. *Journal of occupational health psychology*, *5*(4), 464.

Thoits, P. A. (1986). Social support as coping assistance. *Journal of consulting and clinical psychology*, *54*(4), 416.

TNO (w.y.). NEA: Nationale Enquête Arbeidsomstandigheden. Retrieved on March 1st, 2018 from http://www.monitorarbeid.tno.nl/databronnen/nea.

Verbiest, S., Koopmans, L., Torre, W., Ven, H., & Goudswaard, A. (2017). *De flexibele schil: het kan anders*. Leiden: TNO.

Virtanen, P., Janlert, U., & Hammarström, A. (2011). Exposure to temporary employment and job insecurity: a longitudinal study of the health effects. Occup. Environ. Med. 68(8): 570–74

Virtanen, M., Kivimäki, M., Elovainio, M., Vahtera, J., & Ferrie, J.E. (2003). From insecure to secure employment: changes in work, health, health-related behaviors, and sickness absence. Occup. Environ. Med. 60(12): 948–53

Virtanen, P., Vahtera, J., Kivimäki, M., Pentti, J., & Ferrie, J. (2002). Employment security and health. Journal of Epidemiology & Community Health, 56(8), 569-574.

Wagenaar, A. F., Kompier, M. A. J., Houtman, I. L. D., Van den Bossche, S., Smulders, P., & Taris, T. W. (2012). Can labour contract differences in health and work-related attitudes be explained by quality of working life and job insecurity? International Archives of Occupational and Environmental Health, 85(7), 763–773.

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: how good are single-item measures?. Journal of Applied Psychology, 82(2), 247.

Ware, J.E., Jr., Sherbourne, C.D. (1992). The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. Med.Care. 1992;30(6):473-83.

Van Wijk, E. B., Verbiest, S. E., & Preenen, P. T. Y. (2013). Ontwikkel (loop) banen

uitzendkrachten fase A/1-2 zonder startkwalificatie. Hoofddorp: TNO.

Winnubst, J.A.M., & Schabracq, M.J. (1996). Social support, stress, and organization: towards optimal matching. In Schabracq, M. J., Winnubst, J. A., & Cooper, C. L. (Eds.). (2003). *The handbook of work and health psychology*. John Wiley & Sons

De Witte, H. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. European Journal of work and Organizational Psychology, 8(2), 155-177.

De Witte, H., & Näswall, K. (2003). Objective' versus subjective' job insecurity: Consequences of temporary work for job satisfaction and organizational commitment in four European countries. Economic and industrial democracy, 24(2), 149-188.

De Witte, H., Pienaar, J., & De Cuyper, N. (2016). Review of 30 Years of Longitudinal Studies on the Association Between Job Insecurity and Health and Well-Being: Is There Causal Evidence?. Australian Psychologist, 51(1), 18-31.

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. Journal of consumer research, 37(2), 197-206.

Appendices

Questions	Answer possibilities
1. What is your gender?	○ Male ○ Female
2. How old are you?	
3. What is the highest level of education you have completed?	○ Elementary education ○ VMBO, MBO, 1 AVO ○ HAVO, VWO, MBO ○ HBO-, WO-Bachelor ○ HBO-, WO-Master, PhD
4. How often did you feel energetic in the last four weeks?	○ Always ○ Most of the time ○ Often ○ Sometimes ○ Hardly ever ○ Never
5. How often did you feel alive in the last four weeks?	○ Always ○ Most of the time ○ Often ○ Sometimes ○ Hardly ever ○ Never
6. How often did you feel burned out in the last four weeks?	○ Always ○ Most of the time ○ Often ○ Sometimes ○ Hardly ever ○ Never
7. How often did you feel tired in the last four weeks?	○ Always ○ Most of the time ○ Often ○ Sometimes ○ Hardly ever ○ Never
8. How much work have you done in the last 4 weeks compared to what you usually do?	Less than normal 1 2 3 4 5 6 7 8 9 10 11 much more than normal
9. How do you rate your overall work performance in the past year?	Very badly 0 1 2 3 4 5 6 7 8 9 10 excellent
10. What kind of employment contract do you have?	○ Permanent contract ○ Semi-permanent contract ○ Fixed period contract ○ Agency contract ○ On-call contract

To what extent do you agree with the following sentence? 11. 'All in all, I think I have sufficient opportunities to stay employed'	o Completely disagree o Disagree o Agree/disagree o Agree o Completely agree
To what extent do you agree with the following sentences? 12. .My supervisor pays attention to the well-being of employees.	o Completely disagree o Disagree o Agree o Completely agree o Not applicable
13. My supervisor pays attention to what I say.	o Completely disagree o Disagree o Agree o Completely agree Not applicable
14. My colleagues show personal interest in me.	o Completely disagree o Disagree o Agree o Completely agree Not applicable
15. My colleagues are friendly.	o Completely disagree o Disagree o Agree o Completely agree Not applicable

Table 4. *Descriptive statistics of used variables 2016 and 2017*

	2016 (N=14,135)	2017 (N=9,664)		
Variable	**Mean/percentage (SD)**	**Mean/percentage (SD)**	**Min**	**Max**
Dependent variable				
Vitality (4 items; 1=never – 6 =always)	4.16 (0.89)	4.11 (0.89)	1	6
Productivity				
Quantity of productivity	7.12 (1.89)	7.11 (1.89)	1	11
(1=less than normal – 11=much more than normal)				
Quality of productivity	7.90 (0.99)	7.89 (1.01)	0	10
(0=very badly - 10=excellent)				
Independent variable				
Employment contract (1=permanent - 5=on-call)				
Permanent	85.5 %	88.8%	1	5
Semi-permanent	5.7 %	5.0%	1	5
Fixed period	5.4 %	3.7%	1	5
Agency	1.8 %	1.6%	1	5
On-call	1.6 %	0.9%	1	5
Mediator				
Job insecurity				
(1 item; 1=completely agree – 5=completely disagree)	2.11 (0.92)	2.02 (0.88)	1	5
Moderator				
Social support	3.20 (.53)	3.20 (.53)	1	4
(4 items; 1=completely disagree – 4=completely agree)				

Table 5. *Pearson correlations of used variables 2016*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Semi-permanent	-											
2. Fixed period	-.059**	-										
3. Agency	-.033*	-.032**	-									
4. On-call	-.031**	-.031**	-.017*	-								
5. Vitality	.022**	.008	-.002	.035**	-							
6. Quantity of productivity	-.002	-.030**	-.021*	-.066**	.005	-						
7. Quality of productivity	-.014	-.031**	-.012	-.005	.227**	.227**	-					
8. Job insecurity	-.033**	.034**	.042**	.023**	-.152**	-.049**	-.127**	-				
9. Social support	.060**	.025**	-.009	.026**	.232**	-.028**	.078**	-1.44**	-			
10. Gender	.008	.051**	-.013	.025**	-.053**	.013	.010	.038**	.054**	-		
11. Age	-.201**	-.192**	-.024**	-.104**	.092**	.002	.057**	.113**	-.124**	-.107**	-	
12. Level of education	.026**	.004	-.057**	-.081**	-.007	.034**	-.074**	-.106**	.137**	.045**	-.095**	-

Note: N = 15,045. *=p<.05, **=p<.01, *** = p<.001

Table 6. *The relation between contracts and productivity, with social support as a moderator*

	Quantity of productivity		Quality of productivity	
	B	**SE**	**B**	**SE**
Constant	6.83***	.039	7.83***	.020
Semi-permanent	-.41***	.051	-.11***	.027
Fixed period	-.51***	.090	-.02	.047
Agency	-.40***	.108	.07	.056
On-call	-.64***	.170	.04	.088
Social support (centered)	-.21***	.072	.09**	.037
Semi-permanent*social support	-.17	.095	-.08	.049
Fixed period*social support	-.11	.171	-.12	.088
Agency*social support	-.18	.195	-.21*	.101
On-call*Social support	.26	.314	.25	.163
Model summary	R^2 = .0068***		R^2 = .0084***	
Contracts*social support	R^2 change = .0003		R^2 change =.0005	

Note: N = 14,967. *=p<.05, **=p<.01, *** = p<.001. Reference category is permanent contract

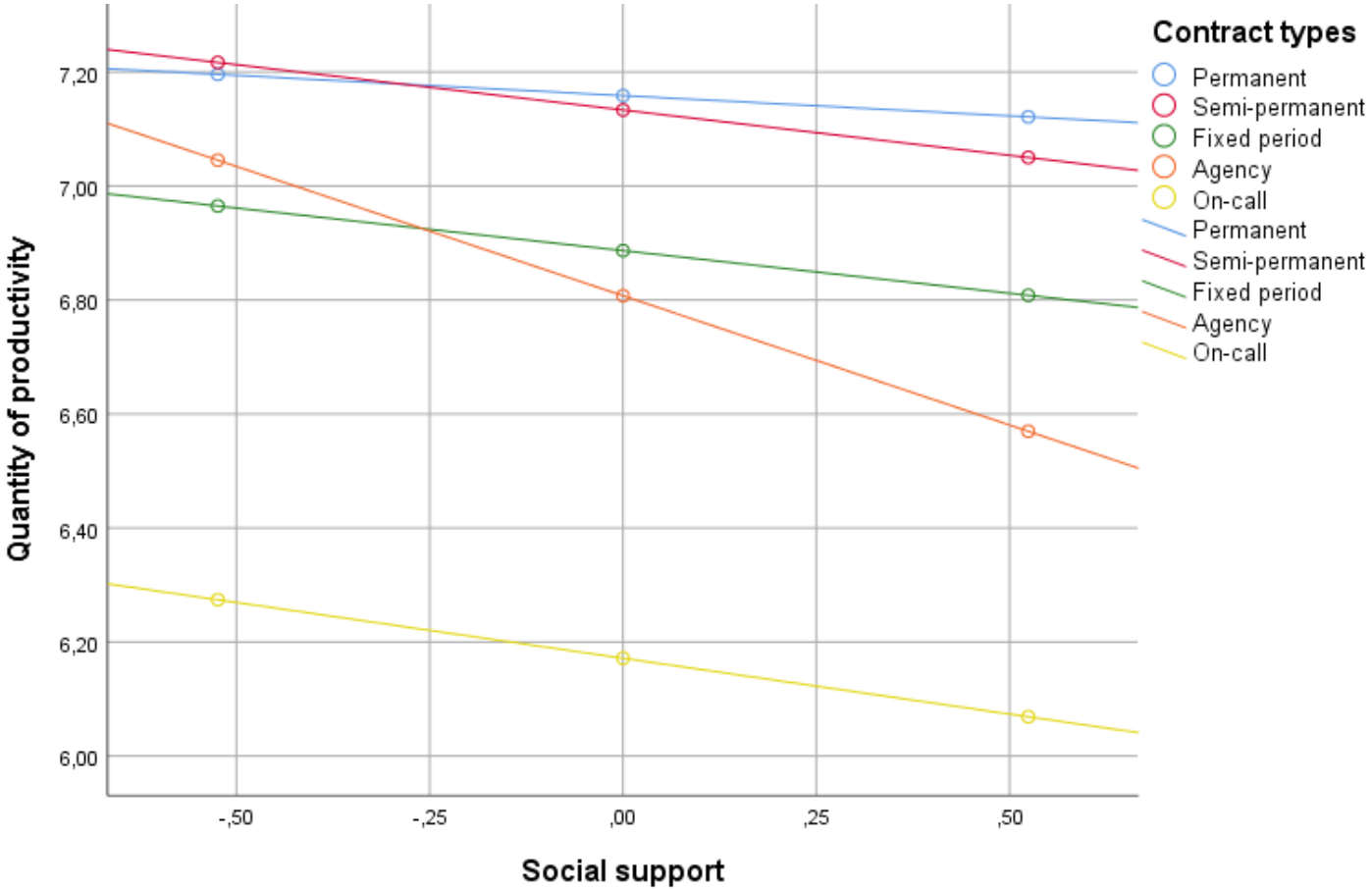


Figure 6. *Contracts as a predictor of the quantity of productivity, moderated by social support. Reference category is the permanent contract*

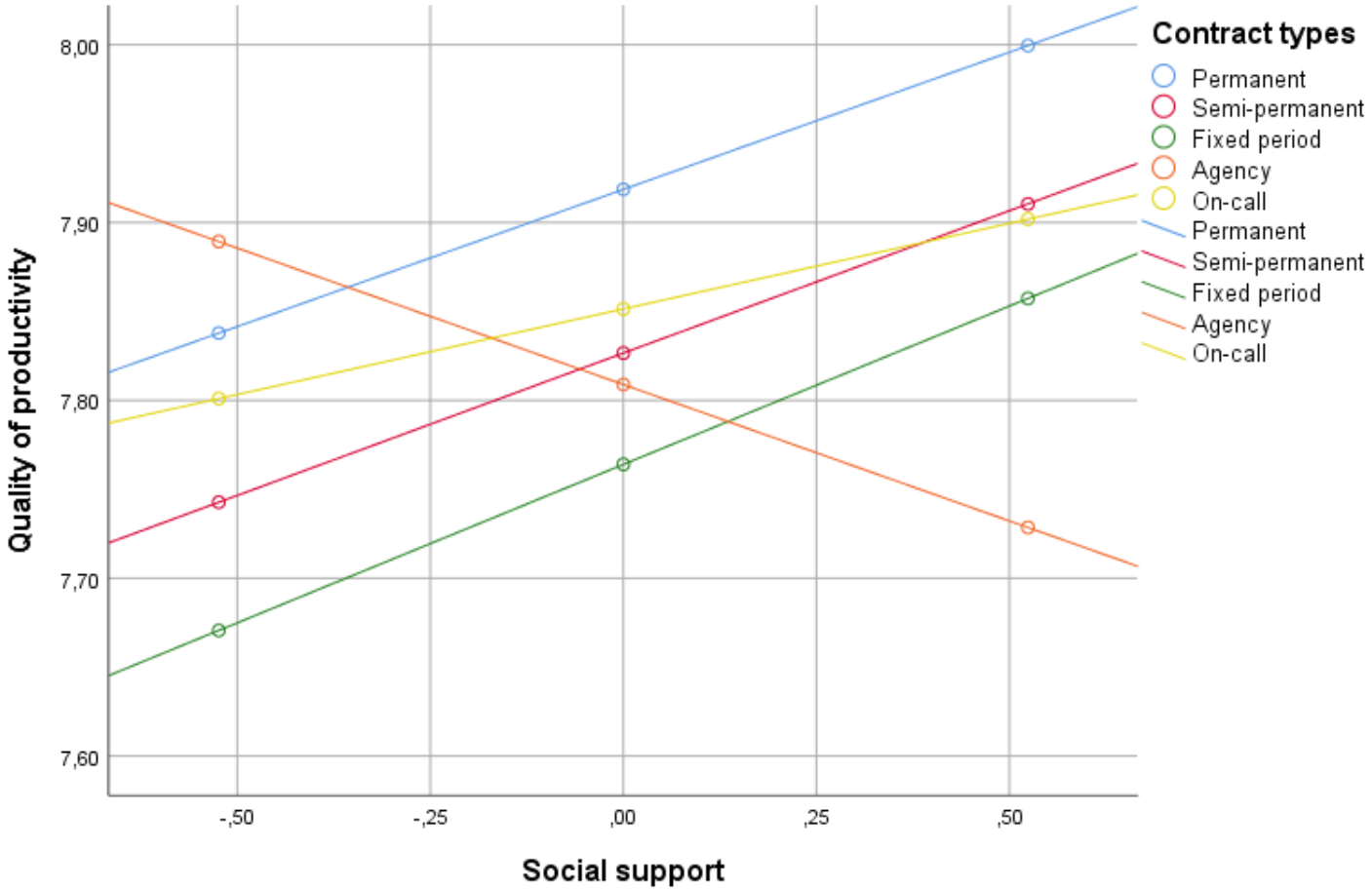


Figure 7. *Contracts as a predictor of the quality of productivity, moderated by social support. Reference category is the permanent contract*

Table 7. *Transition results for permanent and flexible contracts over time*

	From permanent to semi-permanent		From permanent to fixed period		From semi-permanent to permanent		From fixed period to permanent	
	B	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Constant	5.07***	.081	5.07***	.082	5.67***	.372	5.63***	.451
Transition	.03	.130	-.20	.183	.01	.174	.62***	.232
Quantity of productivity '16	.29***	.011	.29***	.011	.22***	.049	.15**	.062

Note: Dependent variable is quantity of productivity '17. *=p<.05, **=p<.01, ***=p<.001.

Table 8. *Transition results for permanent and flexible contracts over time*

	From permanent to semi-permanent		From permanent to fixed period		From semi-permanent to permanent		From fixed period to permanent	
	B	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Constant	3.84***	.083	3.74***	.084	3.56***	.329	4.17***	.42
Transition	-.06	.064	-.07	.090	.11	.077	.18	.107
Quality of productivity '16	.51***	.010	.52***	.011	.54***	.042	.46***	.054

Note: Dependent variable is quality of productivity '17. *=p<.05, **=p<.01, ***=p<.001.