

Is Fixed-Term Employment a New Risk for Adverse Physical Working Conditions?

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Relationships between employment type and the physical work environment were studied among blue-collar workers (n = 1,127). Based on survey data, we set out to compare the evaluations of environmental load and physical strain at work given by fixed-term (17% of all) and permanent workers.

The type of employment was not related to environmental load. However, working on a fixed-term basis increased the risk of physical strain at work. Analyses revealed that this connection was evident only among fixed-term construction workers.

The results did not support the much-cited view that the disintegration of standard employment has given rise to a new series of work environment problems. Such problems are concentrated in an area with a long tradition of work environment problems, that is, in the construction industry.

fixed-term employment work environment working conditions construction work

1. INTRODUCTION

Non-standard employment has established itself as an essential aspect of contemporary working life. “Non-standard” covers a wide range of jobs from part-time work to self-employment. However, the very phrase suggests the deterioration of a cornerstone of modern wage labour: a life-long contract of full-time employment [1, 2]. This study concentrates on fixed-term employment, that is, a situation in which the duration of the employment contract is limited and has neither an explicit nor implicit promise of continuity (see, e.g., [3]).

In the past 10 years the increase in fixed-term employment has merited growing scientific attention. Flexibility and the division between the core and periphery labour forces have been the usual guises under which it has been investigated.

As a rule, the image of fixed-term employment is not very positive. Typically new forms of employment have been seen as sources of inequality in terms of wages and other work-related benefits, and also with regard to opportunities for skill acquisition and job security [4, 5, 6, 7].

Recent studies carried out by the European Union (EU) have indicated that poor working conditions tend to concentrate among employees who do not have a permanent contract [8, 9]. Also meriting attention is the fixed-term employees’ limited access to occupational safety and health services and their limited opportunities for participating in the decision-making on work environment issues (e.g., [10, 11, 12]). The lack of training and low level of integration in work places have been cited for the increased rates of accidents among fixed-term employees [13, 14].

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However, in some studies that control for the dimensions of working conditions the connection remains unclear [15].

Words like *information*, *service* and *post-industrial* are frequently used when defining the basic nature of work in modern societies. These terms include an allusion and a promise to the world that the connection between work and physical toil is disappearing. There are actually two trends that should in principle account for this development. First, high-tech machines are replacing more and more tasks which traditionally demanded muscle power. Secondly, dangerous and physically demanding work is disappearing because of the decline in heavy manufacturing and the rise of the service and information technology (IT) sectors (e.g., [16, 17]).

The problems in the physical work environment have proved to be more complicated, however. Firstly, in spite of the changes in technology and in economic structures, there are many jobs and industries in which the physical work environment is still an essential problem [18]. Secondly, it is difficult to show that poor physical conditions in work environments are actually declining. The nature of physical or chemical exposure did not dramatically change during the 1990s in the Nordic countries [18, 19] or in the whole EU area [9]. Thirdly, it is noteworthy that diseases of the locomotive system still predominate as the reasons for early disability pension [20]. In brief, physical work environment is not passé in discussions about problems in modern working life.

In general terms, our objective was to study whether there was a structural logic which combined work environment problems and fixed-term employment. There were grounds for suspecting that the intensive utilisation of non-standard employment made the division between the core and the periphery labour forces sharper and generated a two-tier system within workplaces: “good” jobs with development opportunities for the core (i.e., permanent) workers, while “bad”, stressful and monotonous

jobs went to the peripheral (i.e., fixed-term and other non-permanent) workers. The risk was that improvements in working conditions would benefit only the core workers [2, 11, 21]. The hypothesis of this study was derived from the aforementioned situation: we suspected that fixed-term employees incurred a poor physical work environment.

2. MATERIAL AND METHODS

2.1. The Sample and Its Main Characteristics

The data were from The Quality of Work Life Survey 1997 carried out by Statistics Finland. The survey took the form of face-to-face interviews conducted among a representative sample of employees aged from 15 to 64. Out of 3,895 people, 2,978 (79%) accepted the invitation to participate (e.g., [19]).

As our interest was in the problems of physical work environments and as blue-collar workers are the most exposed to physical loads, they became a natural focus of this study. In all, 38% ($n = 1,127$) of respondents were classified as blue-collar workers according to their occupation. (The term respondents will refer to this group.)

The type of employment was addressed by the question “Is your current employment permanent or fixed-term?” In all, 189 (17%) respondents had a fixed-term contract.

Age, gender, and industry were taken into account as background variables. Age was categorised according to three groups, using lower and upper quartiles as cut-off points. Industries were grouped into six categories: manufacturing (including mining, energy and water supply), construction, transportation (including communication), trade (including financing and insurance), public services (including all personal services), and agriculture (including forestry).

The number of participants and their proportions within each category of background variables are shown in Table 1.

TABLE 1. Participants by Type of Employment Contract (Permanent/Fixed-Term) and the Proportion of Fixed-Term Employees by Background Variables (Gender, Age and Industry). The *p* Value Indicates the Significant Difference in the Proportions of Fixed-Term Employees Between Classes of the Background Variable

| Participants | Permanent Employees | Fixed-Term Employees | Proportion of Fixed-Term Employees (%) | <i>p</i> Value |
|-----------------|---------------------|----------------------|--|-----------------|
| All | 938 | 189 | 17 | |
| Gender | | | | <i>ns</i> |
| Men | 620 (66%) | 117 (62%) | 16 | |
| Women | 621 (34%) | 72 (38%) | 19 | |
| Age | | | | <i>p</i> < .001 |
| 15–29 | 118 (21%) | 82 (43%) | 29 | |
| 30–47 | 490 (52%) | 75 (40%) | 13 | |
| 48–64 | 251 (27%) | 32 (17%) | 11 | |
| Industry | | | | <i>p</i> < .001 |
| Manufacturing | 392 (42%) | 46 (25%) | 11 | |
| Construction | 92 (10%) | 38 (20%) | 29 | |
| Transportation | 122 (13%) | 7 (7%) | 10 | |
| Trade | 167(18%) | 39 (19%) | 18 | |
| Public services | 142 (15%) | 48 (25%) | 25 | |
| Agriculture | 22 (2%) | 7 (4%) | 24 | |

The type of employment was not associated with gender, but the association with age was strong ($p < .001$), the proportion of fixed-term employees being nearly three times higher in the youngest age group than it was in the oldest.

Fixed-term employment also varied by industry ($p < .001$). Construction and public services stood out as industries with a high proportion of fixed-term employment, while in manufacturing and transportation these proportions were below the average.

2.2. Measuring Work Environments

Respondents evaluated their work environment by answering the question “Does this adverse factor affect your work *very much* (5), *quite a lot* (4), *to some extent* (3), *a little* (2), or *not at all* (1)”? (0 meant the *non-existence* of the factor at work). In the case of environmental load (EL), the participants judged a total of 13 factors (heat, cold, vibration, draught, noise, smokes/gases/fumes, humidity, dust, dirtiness of the work

environment, poor or glaring lighting, irritant or corrosive substances, restlessness work environment and lack of space). Meanwhile, the physical strain of work (PSW) was studied according to three elements: monotonous movements, difficult working positions and heavy lifting during the daily work.

Those who reported at least one adverse factor affecting their work *very much* or *quite a lot* (values 4 or 5 on the Likert scale of 0–5) were classified as workers with high EL or PSW. Six hundred and ninety (61%) and 472 (42%) respondents respectively ended up in these categories.

2.3. Statistical Methods

The associations between the employment type and EL and PSW were first described using cross-tables and Chi² tests. Respective cross-tabulation was also carried out separately for men and women, for each age group, and for each industry.

The associations were studied further using logistic regression analysis. The basic model included the employment type and all background variables. These results are displayed with odd ratios (OR) and their 95% confident intervals (CI). The analyses were continued in order to clarify whether the effect of the employment type was different according to the class of the background variable, in the other words, we studied the possible interactions between the employment type and background variables. If the interaction of the outcome variable was statistically significant, second-stage logistic regression analyses were performed in each category defined by the background variable. Agriculture was excluded from these analyses because of its small size.

3. RESULTS

Compared to permanent employees, the proportion of high PSW was more common among fixed-term employees (41% vs. 48%, $p = .038$). On the other hand, there was no difference in the proportions of high EL (61% both in permanent and in fixed-term respondents).

When studied separately according to gender, age, and industry, no significant associations

were observed (Figure 1).

Corresponding analyses with PSW identified some significant differences (Figure 2).

Among men, fixed-term workers fell significantly ($p < .001$) more often into the group with high PSW, while among women the trend was in the opposite direction, although this difference was not statistically significant. In the oldest age group, fixed-term workers were more often found in the group with high PSW ($p = .048$). Although the association between PSW and the type of employment varied by industry, construction was the only branch in which fixed-term workers' risk of high PSW turned out to be significantly higher ($p = .003$).

Logistic regression analyses adjusted for background factors revealed that the employment type was not an independent risk factor either for high PSW (OR 1.10, 95% CI 0.96–1.98) or for high EL (OR 1.34, 95% CI 0.78–1.56).

Analyses of the interactions revealed that employment type had statistically significant interactions with gender for EL ($p = .042$) and for PSW ($p < .001$). Moreover, the interaction with industry for PSW ($p = .053$) gave reason to carry out separate analyses of each branch.

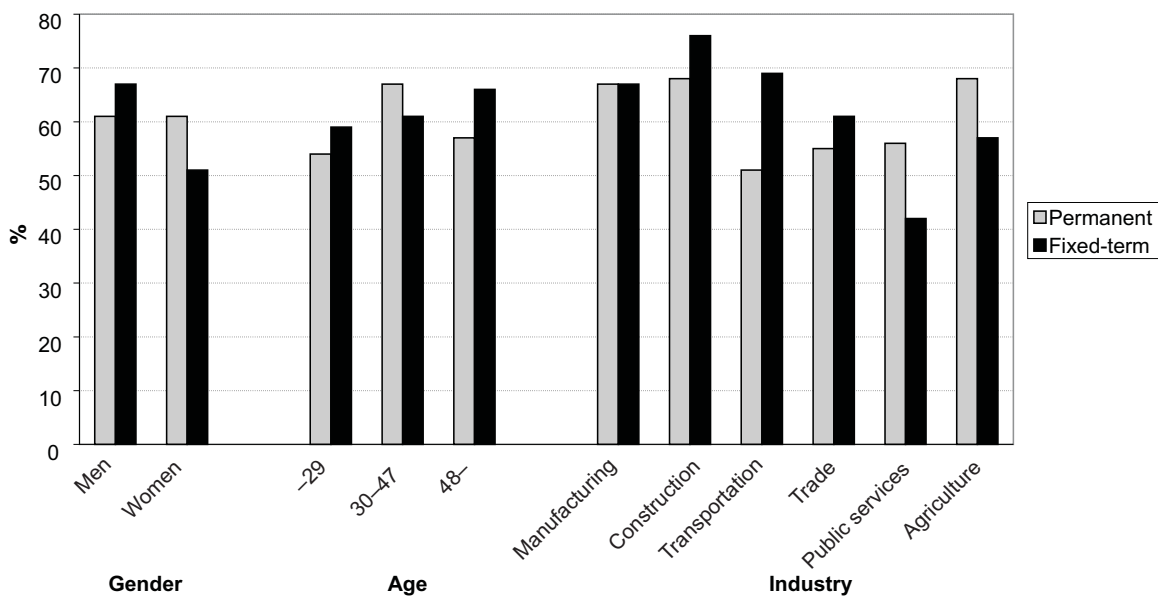


Figure 1. Proportions (%) of fixed-term and permanent employees reporting high environmental load at work by gender, age, and industry.

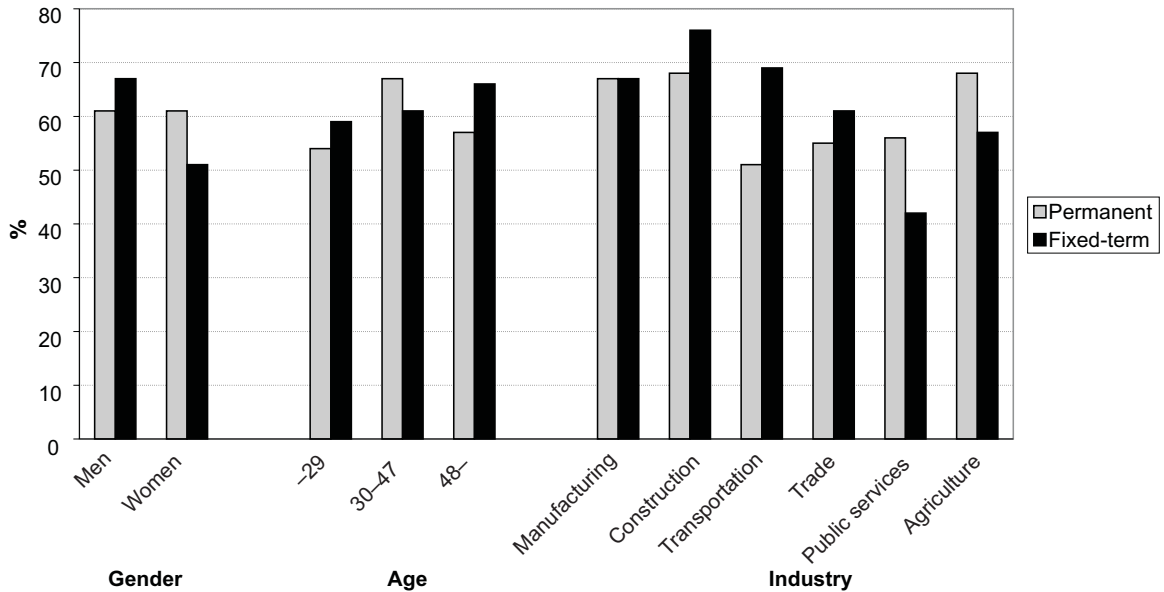


Figure 2. Proportions (%) of fixed-term and permanent employees reporting high physical strain at work by gender, age, and industry.

When men and women were studied separately, the odds for high EL among fixed-term men was 1.44 (95% CI 0.92–2.28) and among fixed-term women 0.74 (95% CI 0.43–1.39) compared to permanent employees. The respective risk of high PSW among fixed-term men was 2.14 (95% CI 1.39–3.29), while among women the risk ran in the opposite direction (0.63, 95% CI 0.36–1.09).

When the industries were studied separately (Table 2), construction stood out as a branch in which the risk of high PSW was three times higher among fixed-term employees.

TABLE 2. Fixed-Term Employees’ Risk for High Physical Strain at Work in Different Industries With Permanent Workers as a Reference Group (Adjusted by Age and Gender)

| Industry | Odds Ratio* | 95% Confidence Interval |
|-----------------|-------------|-------------------------|
| Manufacturing | 1.27 | 0.66–2.44 |
| Construction | 2.99 | 1.35–6.64 |
| Transport | 2.13 | 0.66–6.83 |
| Trade | 0.97 | 0.44–2.14 |
| Public services | 0.76 | 0.38–1.54 |

Notes. *—odds ratio indicates statistically significant risk if the lower limit of the confidence interval is >1 (marked as bold in the table).

4. DISCUSSION

This study about the physical work environment of blue-collar workers showed that fixed-term employees did not differ from permanent ones with respect to environmental load, but they experienced physical strain more often. The latter association was related to socio-demographic factors: strain was more common among men, among older respondents, and among those working in the construction industry.

The Quality of Work Life Survey [19] offers a comprehensive portrayal of gainfully employed people in Finland. The response rate of the survey was high (79%), and there is no reason to assume that the rate would have been different among fixed-term employees. In fact, the proportion of fixed-term respondents was precisely the same as in the data based on registers [22]. Thus we had access to data which enabled us to make reliable comparisons between temporary and permanent employees.

A survey, even if carried out as face-to-face interviews, always runs the risk of being insensitive or unreliable. Individual employees’ perceptions and interpretations about their physical working conditions may vary greatly.

Could our results, that only partially support the hypothesis about an increased risk of a poor work environment among fixed-term employees, be due to information bias, that is, systematically different interpretations between permanently and temporarily employed respondents? While not ignoring this possibility, we take the view that, at most, it can explain only a minor part of the findings. This view is supported by the established use of the questions in studies on work environment, as well as by the present study which shows a relationship between poor work environment and fixed-term employment in the area of construction, where occupational health and safety problems have traditionally been most prevalent [23]. Actually, the finding that supports the null hypothesis in industries (e.g., public services and trade) where the increase in fixed-term employment has been most intensive [22] suggests that temporary employment is no new source of physical risks at work.

The assessments [4, 11, 24] of fixed-term employment as being a source of new inequalities at work did not find support from this study on physical working conditions. Our results also differ from those describing the whole EU area [9, 25]. However, the results are not so unexpected if they are related to comparable Finnish—and Swedish—studies. In terms of health status [26, 27], commitment [28], autonomy and social support [29] the differences between fixed-term and permanent employees are not remarkable. This body of research raises broader questions about the political geography of fixed-term employment: why does the damaging potential of fixed-term employment not get expressed in the Nordic countries?

The aforementioned Nordic studies are cross-sectional, that is, the findings might well be due to selection of the fittest and most committed to fill temporary posts. Labour markets and recruiting practices differ internationally, but there is no evidence to support the view that Nordic practices are especially discriminating; in fact the situation seems to be to the contrary. Our suggestion is to look for an explanation of our

findings in the structures of labour markets. For well-founded reasons, the majority of studies reduces the ongoing changes in the labour markets to the already existing divisions between primary and secondary labour markets (core and periphery labour forces). Logically, problems in the work environment are associated with those in the secondary segment of the labour market. Compared to many other industrialised economies, the level of segmentation in the Finnish labour markets is relatively low. High union density, collective bargaining and general cultural unity have kept the differences between the labour market segments rather “gradual than discontinuous” ([30] p. 154, also [31]). Moreover, the occupational structures of fixed-term and permanent employment are approximately similar [22]. In other words, in Finnish labour markets there are no occupations that are clearly dominated by fixed-term employees.

In general, Finland’s labour market circumstances leading to intensive use of fixed-term employment are different from those found in many other EU countries and in the USA. The relative homogeneity is no doubt an important explanation for our observations that the type of employment is only weakly related to physical work environments.

It would be senseless to ignore the results of the numerous previous studies pointing to a connection between temporary work and work environment problems. However, the connection seems to be contextual rather than universal. In Finland, for example, temporary work indicates poor environment in the case of construction workers, that is, the classic problem group not only in terms of occupational safety, but also in terms of occupational health services. This finding refers to old structural inequalities in this area of work. Accordingly, whether or not temporary employment is a source of work environment problems, is to a considerable extent determined by structures, factors and actors outside the immediate workplace.

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