

The Perception of Job Insecurity in France: Between Individual Determinants and Managerial Practices

Stéphanie Moullet* and Zinaïda Salibekyan**

Abstract – Since the crisis, to what extent is the perception of the risk of job loss affected by the nature of the work environment, the employer’s human resources management policy and its economic situation – or what employees know or perceive about it? Understanding what determines the perception of job insecurity is still rarely the subject of research by labour economists, even though this perception has proven effects, particularly on labour market behaviour and employee health. The analysis is conducted for France, using linked employee-employer data from the *REPONSE* 2011 survey. A multilevel model with a random constant is estimated after transforming the reported risk of job loss variable into a continuous “pseudo” variable of perceived insecurity. We show that managerial practices based on communication, promoting discussions between employees and management, as well as employee profit-sharing schemes or incentive practices, appear to reduce the perception of job insecurity.

Codes JEL / JEL Classification: J81, J28, O15

Keywords: perceived job insecurity among employees, managerial practices, workplace, linear probability model, multi-level approach

Reminder:

The opinions and analyses in this article are those of the author(s) and do not necessarily reflect their institution's or Insee's views.

* Aix Marseille University, CNRS, LEST (stephanie.moullet@univ-amu.fr)

** CEET, CNAM at the time this research was carried out (zinaida.salibekyan@travail.gouv.fr)

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Since the mid-1970s, France has seen an overall increase in employment insecurity, understood as frequently alternating between being in employment and being unemployed. This increase reflects the flexibility of the labour market and the development of particular forms of employment (Cahuc & Postel-Vinay, 2002). The 2008 economic crisis further increased the risk of job loss and the overall uncertainty of employees about the future of their employment; the unemployment rate is indeed a major determinant of the perception of job insecurity. Erlinghagen (2008) shows that, for a set of European countries, the long-term unemployment rate reinforces this perception, regardless of the situation of employees on the labour market.

The first contribution dealing with the perception of job insecurity, by Greenhalgh & Rosenblatt (1984), defines it as “the perceived powerlessness to maintain desired continuity in a threatened job situation”. Therefore, employees may feel threatened even when their employment contract, for example a permanent contract, is deemed stable. Thus, in France, the perception of growing job insecurity, which was already widespread before the crisis, has since increased significantly among private sector employees on permanent contracts: 16% feared losing their jobs in 2005 and 24% in 2013 (Algava, 2015). Though permanent contracts constitute the “normal”¹ form of the employment relationship, more than a third of them are terminated within one year for the period 2007-2011 (Paraire, 2015). More generally, although the perception of insecurity and the rigorousness of employment protection play an important role in France (Deloffre & Rioux, 2005), they appear to be unrelated once the characteristics of employees and those of their jobs have been controlled – they may even be negatively linked (Postel-Vinay & Saint-Martin, 2004). In the French context of mass unemployment, employees are both highly protected and very anxious (Maurin, 2009). Their perception of risk, given the scale of the potential loss, would feed their fear. The fear of job loss (of social downgrading, for Maurin) is a psychological and social notion that is separate from the reality of unemployment itself. In other words, even when the risk of job loss is objectively low for some, they still lose hope to find one in a society where finding a job is difficult. This means that the risk stems from the scale of the loss rather than its probability. In addition, the perceived risk may be more or less significant, from very high to zero, via an

intermediate situation where the risk cannot be assessed as high or low; in other words, it is unknown or uncertain.²

To date, few studies in labour economics have focused on the subjective aspect of job insecurity. As with any variable related to perceptions, its determinants are multidimensional and relate to other disciplinary fields, such as psychology (Fernandez-Ballesteros, 2002). Ultimately, very little is known about the determinants of employees’ perception of their job insecurity, even though the perception of a risk of job loss has consequences on behaviour that are as important as those of the job loss itself. It is therefore very important to understand what influences the formation of this perception (Postel-Vinay & Saint-Martin, 2004). As early as 2005, the French *Conseil de l’emploi, des revenus et de la cohésion sociale* recommended that the perception of employment insecurity be the subject of numerous studies, stressing that “the perception of risk has consequences on the well-being and behaviour of personnel that make it as interesting as the actual risk” (*Conseil de l’emploi, des revenus et de la cohésion sociale*, 2005, p. 129). We know that employees’ perception of job insecurity affect their professional performance and family life (Bohle *et al.*, 2001; Böckerman, 2004; Sverke *et al.*, 2002) and that it conditions voluntary mobility on the labour market. Therefore, examining the perception of insecurity makes particular sense from a public policy perspective. Various studies have also highlighted the implications of this perception in terms of general well-being, through its effects on the physical and mental health of individuals (Burgal *et al.*, 2009; Ferrie *et al.*, 2005; Näswall & De Witte, 2003). For example, for European countries in the mid-2000s, Burchell (2009) shows that the increase in job insecurity is associated with an increase in anxiety and depression symptoms and a decrease in sleep quality. In France in 2013, half of employees whose health is impaired fear losing their jobs, compared to 20% of those in good health (Algava, 2015). Recently established by Caroli & Godard (2016), the strictly causal effect of the perception of job insecurity on health (once the potentially endogenous nature of that perception of insecurity has been addressed) mainly concerns stress.

1. According to Article L1221-2 of the French Labour Code, permanent employment contracts constitute the normal and general form of employment relationships.

2. Uncertainty is defined as the inability of employees to predict the consequences of choices and decisions (Miliken, 1987). Such inability stems from a lack of information.

In addition to the role of the labour market context and employees' own attributes, the perception of job insecurity can also be mitigated or reinforced by organisational factors, such as the type of work environment, the level of insecurity experienced by other employees in the same establishment, the social climate in the same establishment, its human resource management policy, the economic situation in the workplace and what employees know or perceive about it. Thus, the individual determinants of perceived job insecurity are nested in the organisational contexts of the different employing establishments. Taking this specific context into account at the establishment level, makes it possible to take a further step forward in understanding perceived insecurity, by taking into account individual and contextual determinants of the perception of insecurity. These determinants which are partly unobserved influence what happens on the labour market (see, for example, Abowd *et al.*, 1999), as well as job satisfaction (Haile, 2015) and even the perception of happiness (Ferrer-i-Carbonell & Frijters, 2004). Self-assessed job insecurity by employees can only be properly analysed by simultaneously taking into account contextual factors at the macro level (the unemployment rate, for example), the individual resources of those stakeholders (education level, for example) at micro level (Erlinghagen, 2008; Esser & Olsen, 2012) and the employer establishment at meso level. To our knowledge, the links between the determinants associated with the workplace and the insecurity perceived by employees have not been empirically investigated for France, with the exception of Amossé *et al.* (2016). This is a comparative study on perceived job insecurity in France and Great Britain. They show that by controlling the characteristics of individuals and establishments, there has been no significant change in the insecurity experienced since the onset of the crisis.³

In this article, we examine perceived job insecurity by investigating their individual determinants together with, in particular, those associated with the employer establishment. Therefore, our objective is to characterise the context in which employees express their fears and to measure its effect by using a set of variables, including variables characterising managerial policies, to evaluate the specific role of each on employees' perceptions. To do this, we use data from the national linked employee-employer 2011 *REPONSE* survey (Dares), which allows conducting a joint analysis of employers' human resources

management practices and the situation of employees. The purpose of the survey is also to provide a graduated measurement of the perceived risk of job loss, by taking into account an intensity of perceived insecurity. This is done by distinguishing between insecurity and security and an intermediate situation in which the risk of job loss is unknown. The empirical analysis focuses specifically on employees with more than 15 months of seniority in establishments with 11 or more employees in the private non-agricultural sector.

The rest of the article is organised as follows: The first section reviews previous literature on perceived job insecurity and so-called objective insecurity; the second section presents the data and variables used for the analysis. Then, the third section describes the methodological approach. The last section analyses and discusses the results.

Objective vs Perceived Job Insecurity

The subjective dimension of job insecurity that is of interest has been the subject of much work. The literature supports the idea that insecurity cannot correspond to an objective state insofar as it results from what individuals perceive and experience: an economic situation can be considered to correspond to a state of insecurity or not, depending on both the perception of different individuals and their own ability to cope with insecurity. This is related to their individual experience and their past practices, where the subjective or psychological component – the perception of anxiety or safety – is predominant. Thus, in its subjective dimension, job insecurity is highly dependent on the individual and can be felt differently by two different employees, even though their objective employment situation is identical. According to Van Vuuren (1990), job insecurity also includes a dimension relating to uncertainty about the future. Not knowing whether the job currently held will be sustainable is a key component of perceived insecurity.

For Anderson & Pontusson (2007), subjective job insecurity is a cognitive aspect, namely employees' perceived risk of losing their jobs in the near future. This article adopts precisely this definition, which is based on the employees'

3. The data used are from the *REPONSE* and *WERS* 2004/2005 and 2010/2011 surveys.

own assessment of the risk of job loss in the coming year. Gallie *et al.* (2016) distinguish between the concern of losing one's job (job tenure insecurity) and the concern of losing certain job characteristics that are important to the employee (job status insecurity). Chung & van Oorschot (2011) also address employment insecurity as a combination of the job insecurity perceived by the employee (individuals believe they will lose their job in the coming year) and labour market insecurity, namely the risk of not finding a job quickly.

In respect of the so-called objective employment insecurity, the literature also contains multiple definitions. Labour market insecurity is determined on the basis of possible job loss rather than employment prospects (Dixon *et al.*, 2013). Some studies define security and "implicitly" its opposite, as multidimensional (Wilthagen & Tros, 2004): job security corresponds to the possibility of retaining a given job with a given employer. Less restrictive, employment security and employability security mean the possibility of holding a job and, therefore, not being in search of a job. Income security, which is broader still, corresponds to the fact of having an income throughout one's life, especially in the absence of employment. Lastly, combination security refers to the possibility of reconciling paid and unpaid work throughout life.

Most of the work on subjective job insecurity has been conducted on the basis of individual data for Western European countries (see for example, Rugulies *et al.*, 2006), Canada (McDonough, 2000) and Taiwan (Cheng *et al.*, 2005). Numerous studies show that this perceived insecurity depends only in part on the objective risk of exposure to risk. Generally, those studies focus on the insecurity generated by globalisation, changes to technology and skills and the increased duality of the labour market (Chung & van Oorschot, 2011; Clark & Postel-Vinay, 2009; Erlinghagen, 2008; Näswell & De Witte, 2003). For example, in a context of atypical employment growth, temporary employment contracts are more associated with greater perceived insecurity than permanent contracts (Chung & van Oorschot, 2011, among others). However, the relationship between seniority and subjective insecurity is not clearly established. By allowing the accumulation of firm-specific human capital (Becker, 1964) and the development over time of mutual trust between employees and employers (Rosen, 1985), seniority can be expected to protect employees from the risk of dismissal.

In the context of the dual system of the French labour market, protected employees with high lengths of seniority are opposed to a precarious labour force, largely excluded from on-the-job training and more at risk of forced mobility (Le Barbanchon & Malherbert, 2013). In this context, it is also possible to think that many employees consider such mobility as "normal", with job losses appearing less as risks than as transitions to be managed.

In addition, other studies highlight gender differences in relation to perceived insecurity, which is higher among women, in addition to their labour market situation, which is generally more precarious (Green, 2009). The perception of insecurity is also related to the age of employees (Erlinghagen, 2008; Green, 2009), as well as their level of education, a proxy for individual levels of human capital (Green, 2009; Postel-Vinay & Turon, 2007). Lastly, previous experiences of unemployment increase perceived job insecurity, insofar as such interruptions make it more difficult to return to work (Erlinghagen, 2008; Esser & Olsen, 2012). The increased use of short-time working arrangements since the 2008 crisis (Calavrezo & Lodin, 2012) enables establishments to reduce their labour force (employees working less than the legal working time) to avoid layoffs. This arrangement undoubtedly has the effect of increasing uncertainty about the future among employees and, for some of them, their perception of insecurity. In contrast, on-the-job training, as a potential support for upwards mobility, reduces the perception of job insecurity (Goux & Maurin, 1997). Access to training for employees can enable them to increase their level of skills, to be more informed about the skills to be acquired and, therefore, to feel better equipped to deal with hazards. For the employer, training and the skills development that it enables can be a tool for employee retention, as those skills are valued on its internal labour market. Forth *et al.* (2016) show that there is a positive link between being part of the internal labour market of an establishment and benefiting from formal training.⁴ Therefore, it can be expected that participation in on-the-job training increases the perception of job security among employees and reduces the perception of uncertainty, as it can be considered by employees as a sign that they belong to the internal market of the establishment.

4. Only participation in formal training is available in the REPOSE survey.

In addition, managerial practices aimed at improving employee performance, such as incentives or regular one-on-one meetings with supervisors, can have an effect on the perception of job insecurity (Gallie *et al.*, 2016⁵). Though these types of practices can increase the risk of job loss in the event of underperformance, they can also reduce perceived insecurity. In fact, by seeking to increase productivity, they require higher investments in employees' skills and thereby encourage employers to retain their jobs (*id.*).

The empirical studies presented here have primarily highlighted the determinants of the perception of job insecurity at individual level, whether in terms of the attributes of the employees or of the jobs they hold. They also reflect the difficulty of defining and understanding the perception of insecurity, which, while the opposite of the perception of security, is partly a feeling of uncertainty. Our contribution here is to link establishment-level policies, human resource management practices and the

perception of job insecurity with a measure that distinguishes between perceived insecurity and uncertainty.

The Perception of Job Insecurity among Employees: First Descriptive Overview

In the *REPONSE* survey (Box 1), employees are specifically asked to evaluate the chances of losing their job over the next 12 months; possible responses range from “none” to “very high”, including a “do not know” option (Table 1). In 2011, almost 13% of employees consider these risks to be high (8.6%) or very high (4.1%), while over 67% consider them to be low (37.5%) or non-existent (29.9%). Almost 20% respond that

5. Gallie *et al.* (2016) examine the links between the subjective insecurity of employees – their risk of job loss – and the organisational contexts based on the 2012 British Skills and Employment Survey. This is because, individually, these data do not make it possible to take into account the heterogeneity of establishments.

Box 1 – The REPONSE Survey

The data used to analyse the individual perception of job insecurity are taken from the 2011 survey on *Relations Professionnelles et Négociations d'Entreprises, REPONSE* (Professional Relations and Business Negotiations) conducted by Dares (the Directorate for statistics and studies of the French ministry of Labor). Since 1993, every six years, DARES uses this survey to question social relations stakeholders within establishment. Thus, for the third time, the 2011 survey provides a snapshot of social relations in the workplace in France.

The aim of the survey is to understand the dynamics of employment relations within establishments between management, employee representative institutions and employees. This objective justifies the multiplicity of stakeholders surveyed. The establishments surveyed are randomly sampled through a face-to-face interview with a management representative. These establishments belong to the private and semi-public sectors (excluding administration and agriculture), are representative in terms of size and business sector and have at least 11 employees. Employees are surveyed by post, if they have at least 15 months' of seniority within the establishment; they represent 87% of employees in the non-agricultural commercial sector in establishments with 11 employees or more. The 15-months threshold leads to over-representation of employees on permanent contracts whose objective job insecurity, and probably their perceived insecurity, is less than for other employees – with this minimum length of tenure, more than 90% are on permanent contracts.

Thus, the survey makes it possible to cross-reference the views of the stakeholders by surveying, on the one hand, a management representative (Management component – more than around 4,000 interviews) and, on the other, an employee representative (where there is one – almost 2,400 interviews) and, in addition, a sample of employees (over 18,000 surveyed). Insofar as the determinants of job insecurity are variables related to both employee and establishment levels (this level rather than company level allows more analysis of organisational practices, see Askenazy & Grenet, 2009), here we use linked data from the Employee and Management components.

After removing non-responses relating to the perception of job insecurity and observations with missing information for the individual variables, a sample of 10,033 individual observations (employees) from 3506 establishments is left.

We note that employees not answering the question relating to the RJL have individual characteristics that are closer to those who report insecurity than other employees, with the exception of their length of tenure within the establishment, which is higher (the proportion with less than 5 years is 20%, in comparison with 28% and 32% for employees who report security and insecurity, respectively).

In addition, to take into account local economic contexts on the individual in relation to the individual perception of job insecurity, departmental unemployment rates for 2011 (Insee) are attributed to individual observations.

that do not know: this uncertainty about the duration of employment or the situation can be considered a major aspect of the perception of job insecurity, or even a perception of powerlessness (Dekker & Schaufeli, 1995). In this first descriptive approach, the degree of perceived insecurity is determined based on three options that can be given: high, unknown and low.

The level of insecurity perceived varies in accordance with employee characteristics. In particular, the descriptive statistics reveal, unsurprisingly, that the perception of insecurity is most widespread, firstly, among employees who have experienced unemployment during the previous three years and, secondly, among those on fixed-term employment contracts (Table 2).

Table 1
Perception of Job Insecurity: “Do you think there is a risk of losing your job over the next 12 months?”

(In %)

Very high	4.1	High risk of job loss (RJL) (or insecurity)	12.7
High	8.6		
Do not know	19.9	Unknown RJL	19.9
Low	37.5	Low RJL (or security)	67.4
None	29.9		

Reading Note: In 2011, 37.5% of employees report a low RJL over the next 12 months.

Coverage: Private sector establishments with more than 11 employees, with at least 15 months of seniority. Weighted data.

Sources: Dares, *REPONSE* 2011.

Table 2
Perceived Job Insecurity and Employee Characteristics

(In %)

	Low RJL Security	Unknown RJL	High RJL Insecurity
<i>Employment contract type</i>			
Permanent	67.8 ^(a)	19.6	12.6
Interim	73.0	20.6	6.4
Temporary	59.8 ^(a)	23.4	16.8
<i>Seniority in the establishment</i>			
Less than 5 years	68.7	18.0	13.3
Between 5 and 10 years	69.5	19.5	11.0
More than 10 years	65.8	21.2	13.0
<i>Short-time working in the last 3 years</i>			
Absence of unemployment	54.7	23.6	21.7
<i>Employer-funded training in the last 3 years</i>			
Absence of training	69.1	19.1	11.8
<i>Employer-funded training in the last 3 years</i>			
Absence of training	73.4	15.5	11.1
<i>Men</i>			
Men	67.5	19.3	13.2
<i>Women</i>			
Women	67.2	20.5	13.3
<i>Age bracket in 2011</i>			
Aged 16-29	74.2	15.0	10.8
Aged 30-49	66.0	20.7	13.3
Aged 50 or over	60.4	30.0	9.6
<i>Level of education</i>			
Unqualified	49.2	39.9	10.8
BEPC ^(a)	61.2	23.3	15.5
CAP-BEC ^(b)	65.8	21.5	12.7
2 years of higher education	74.5	12.6	12.9
3/4 years of higher education	76.9	9.1	14.0
5 or more years of higher education	79.9	7.2	12.9
Total	67.4	19.9	12.7

(a) French middle school diploma

(b) French vocational qualifications and Baccalaureate

Reading Note: In 2011, among employees on permanent contracts, 67.8% report a feeling of job security (or consider their RJL to be low), whereas this is the case for only 59.8% of employees on temporary contracts.

Coverage: Private sector establishments with more than 11 employees, with at least 15 months of seniority. Weighted data.

Sources: Dares, *REPONSE* 2011.

At the other end of the scale, the perception of security is highest among the most highly educated employees and that perception increases steadily with the level of the qualification; the proportion of those who say they do not know whether the risk is high or low varies in the opposite way. Accepting the premise that this risk is unknown when individuals do not have sufficient information and/or are unable to distinguish between relevant and irrelevant information (Giffort *et al.*, 1979), then the highest qualified personnel are more capable than the others of assessing their employment situation. In contrast, a higher-than-average proportion of the least qualified employees

declare not to “know” their RJL. The differences in perception for other employee characteristics are less directly interpretable, given the correlation between various characteristics. However, it is interesting to note that the levels of RJL reported by men and women are quite similar.

The perception of insecurity among employees also varies in accordance with the economic situation and human resource management of the employing establishment (Table 3). Thus, employees in establishments whose business volume has declined or who have adjusted their workforce downwards over the past three years report a perception of job insecurity more often

Table 3
Perceived Job Insecurity and Organisational and Managerial Context of the Establishment

(In %)

	Low RJL Security	Unknown RJL	High RJL nsecurity
<i>Changes to workforce numbers in the last 3 years</i>			
Increase	73.0	18.7	8.3
No change	67.0	21.2	11.8
Reduction	59.8	19.9	20.5
<i>Business volume in the last 3 years</i>			
Increase	74.0	17.3	8.7
Stable	66.7	21.9	11.4
Decrease	57.8	21.5	20.7
<i>Skills reference system</i>			
Introduction or amendment in the last 3 years	70.7	17.1	12.2
Unchanged	65.6	21.4	13.0
<i>Removal of positions in the last 3 years</i>			
No removals	63.6	17.6	18.3
	68.5	20.6	10.9
<i>Dissemination of information on employment development prospects to all employees</i>			
Regularly	69.0	18.6	12.4
Occasionally	64.7	22.0	13.3
Never	66.0	21.5	12.5
<i>Regular interview between employees and their supervisors</i>			
For all employees	69.8	18.0	12.2
No interview or only for certain employees	62.7	23.7	13.6
<i>Social climate within the establishment</i>			
Calm	68.3	20.4	11.3
Stressed	61.1	16.8	22.1
<i>Frequency of strikes lasting less than 2 days (in the last 3 years)</i>			
More than 5	39.8	44.5	15.7
3 to 5	39.4	43.2	17.4
1 to 2	35.9	44.7	19.4
None	33.4	42.6	24.0
<i>Management reaction in case of difficulty</i>			
Absence of difficulty	43.9	26.4	29.7
No particular initiative	28.4	51.3	20.3
Unilateral decisions	29.5	46.6	23.9
Consultation of employees and employee representatives to find common solutions	39.1	41.2	19.7

Reading Note: In 2011, among employees in establishments where the number of employees has increased, 73% report a feeling of job security. Coverage: Private sector establishments with more than 11 employees, with at least 15 months of seniority. Weighted data. Sources: Dares, REPONSE 2011.

and, logically, a perception of security less often. The perception of insecurity also appears to vary in accordance with social climate: a tense social climate is associated with a higher proportion of employees expressing a higher perception of insecurity or uncertainty. In contrast, high levels of conflict – measured by the frequency of short-term strikes (less than two days in length) during the previous three years – appear associated with lower proportions of employees reporting high RJL. One possible explanation would be that the level of conflict manifests a context in which employees have the ability to mobilise themselves versus a context high in insecurity or discouragement. Another explanation would be that, knowing that conflict and the scale of negotiations go together in the establishments (Béroud *et al.*, 2008), the presence of employee representatives to negotiate and their ability to do so would contribute to a certain feeling of security for employees. There are also some differences associated with changes in

work organisation: for example, the prevalence of perceived security is lower when there have been job cuts in the recent past. In contrast, it is higher among employees in establishments that have set up or amended a skills reference system over the past three years.

Other characteristics of managerial practices seem favourable to the perception of job security. This is the case for regular communication between employees and their management (existence of regular interviews) and the quality of social dialogue, assessed by the existence of employee and employee representative consultations rather than decisions taken unilaterally by management in the event of difficulties. The establishment is further characterised by two indicators: one concerns the setting of precise and quantified objectives for employees; the other concerns incentive practices (Box 2). While there is no clear link between the perception of insecurity and the existence of objectives, employees who

Box 2 – Creation of Indicators for Management by Objectives and Incentive Practices

To create the indicator relating to management by objectives, we used the literature on managerial practices (Bloom & Van Reeve, 2010) and the work of Askenazy & Forth (2016). The indicator is created based on the positive answers to the following question:

“Have precise and quantified objectives been set in each of the following areas?” [yes/no]: quality; budgetary compliance; increasing market share; profitability.

The indicator is 1 if objectives are set for all areas, 0.75 if they are set for only 3 areas, 0.5 if they are set for 2 areas, 0.25 for 1 area and 0 if there are no explicit objectives set.

The incentive practices indicator is created based on the same principle, by combining 4 characteristics: employees’ ownership of a portion of the company’s share capital (by benefiting from stock options, for example), the existence of bonuses linked to collective performance, linked to individual performance and, lastly, the existence of a link between the results of employees’ periodic evaluations and their salaries or bonuses. As with the foregoing indicator, the value ranges from 0 to 1 in accordance with the incentive methods in place.

Table A shows the proportion of employees by level of RJL perceived for the different values of these indicators.

Table A
Management Type and RJL

	Low RJL (Security)	Unknown RJL	High RJL (Insecurity)
(In %)			
<i>Management by objectives indicator</i>			
0	64.1	22.7	13.2
0.25	67.6	19.4	13.0
0.50	68.4	19.6	12.0
0.75	67.7	20.9	11.4
1	67.3	19.5	13.2
<i>Incentive practices indicator</i>			
0	53.2	28.4	18.4
0.25	65.4	22.5	12.2
0.50	67.3	18.4	14.3
0.75	67.9	20.3	11.9
1	71.4	16.9	11.8

Coverage: Private sector establishments with more than 11 employees, with at least 15 months of seniority. Weighted data.
Sources: Dares, REPONSE 2011.

benefit from more performance related practices (bonuses, for example) express a perception of insecurity or uncertainty less often and of security more often (see Table A in Box 2).

After this initial descriptive approach, it is now necessary to identify the determinants of perceived insecurity and their respective effects, by separating those that are related to employees' characteristics and those that are related to the professional and organisational context within the establishment.

What are the Determinants of the Job Insecurity Perceived by Employees?

Insofar as we are seeking to understand what contributes to the formation of employees' perception of job insecurity, it is crucial to take into account, beyond the employees' own attributes, the elements of the employment context. To do this, the multi-level approach (Goldstein, 2003; Bryk & Raudenbush, 2002) is appropriate given the hierarchical structure of the data, where each employee is located in a particular establishment. Therefore, the dependent variable, reflecting the perception of job insecurity, is measured at the first level of the hierarchy and the explanatory variables are measured at the level of the individual and the level of the establishment. Failure to take into account this double source of heterogeneity would lead to estimation bias (Haile, 2015).

Estimation Strategy

To address the role of the employment context, a fixed-effects model (Model 1) is used as an initial approach: it consists of considering the unobserved contextual effects specific to each employing establishment as parameters to be estimated. However, the latter absorb the different observable variables that relate to the establishments. Therefore, to isolate the effects of each of these establishment variables, a multilevel random constant model (Models 2 and 3) is then used. This makes it possible to measure the associations between variables that characterise the practices in the workplace, in particular, and the job insecurity reported by employees. The aim is not so much to control for heterogeneity of the employment context to limit the bias in estimating the specific effects of individual attributes, but rather to highlight

the effect of the establishments' organisational and human resources (HR) practices on the insecurity perceived by employees. In addition, while this approach allows the variance of the context to be considered as a potential source of information, it requires the validation of a strong assumption, according to which the unexplained establishment effects (i.e. those beyond the observable characteristics that describe the context) are independent of the individual explanatory variables. It should be remembered that the fixed-effect models are not based on such a hypothesis. In contrast, where the latter is verified and where the objective of the analysis is primarily to highlight context effects, as is the case here, the random constant model is preferable (Givord & Guillerm, 2016).

The job insecurity perception variable – that is, employees' assessment of the greater or lesser risk of losing their job over the coming year – is based on ordered response options: very high, high, unknown, low or no risk. By “cardinalising” this variable to be explained, it is possible to use linear probability models (see the details of this transformation in the appendix): the coefficients estimated using random constant linear model where the dependent variable is now “pseudo” continuous are equivalent to those derived from the ordered multinomial model (Origo & Pagani, 2009; Van Praag & Ferrer-i-Carbonell, 2006; or Van Praag *et al.*, 2004). It is then possible to interpret the coefficients of the linearised model thereby obtained as marginal effects.⁶

The estimation of the fixed-effects model used in the initial approach (Model 1) suggests that taking establishment effects into account as fixed effects is preferable to a standard linear estimation. The multilevel random constant model allows a further step as it includes both individual and establishment variables and controls for unobserved heterogeneity at both levels. This modelling is proving to be an approach preferable to simple linear regression⁷

6. *Though the speed and flexibility of the estimates of the linear model make it possible to highlight the potential effects of interaction between individual and contextual variables, we are not pursuing in this manner with this contribution.*

7. *Advance estimation of a model without an explanatory variable makes it possible to identify the proportion of variance of individual perceptions that is attributable to differences between establishments. The intra-class correlation coefficient (ICC) is then 22%: the differences in individual perceptions for this portion would be due to the heterogeneity of the employing establishments or, in other words, 22% of variability in perceptions corresponds to the variability between the establishments. The magnitude of this coefficient, the significance of the variance of the constants in this empty model and the Likelihood Ratio test confirm the relevance of multilevel modelling and the existence of an establishment effect on individual perceptions (Bressoux, 2010).*

and the integration of individual variables (Model 2) and then variables characterising the establishments (Model 3) shows that both are among the determinants of perceived employment insecurity. The proportion of variance in individual perceptions that remains attributable to differences between establishments is 15% (Table 4). At this stage, each establishment is characterised by variables relating to its managerial policy, organisational changes, social climate changes and trade union presence (the variables listed in Table 3, together with an indicator of trade union presence), in addition to the sector of activity, size and how long it has been established.

To what extent does the remaining unexplained part of the context correlate with individual variables? It can be assumed that the proportion of employees on temporary contracts at an institution, which is the form of contract most frequently offered to young people and those with few qualifications, is linked to the age and qualification variables. This variable was found to have no significant effect on perceived employment insecurity. Likewise, the proportion of managers, which can affect the recruitment and job stability of the most highly qualified, also has no significant effect on employees' feelings. Furthermore, the estimated coefficients and their significance in the fixed-effect models appear to differ very little from those obtained by the random constant model, which helps to demonstrate the robustness of the results.⁸ Therefore, multilevel modelling with a random constant appears to be the most relevant.

Hereinafter, we comment successively on the role of employees' characteristics, then that of their environment, first the establishment and then the local economic context. The results are based on estimates from random constant models, where the dependent variable is "cardinalised" (cf. Table 4, Model 3).

Newly Hired Employees, or on Temporary Contracts, or Having Experienced Unemployment are More Likely to Report a Feeling of Insecurity

Firstly, the estimate confirms that there is no difference in the perception of job insecurity between genders. However, perceived job insecurity varies with age. In fact, for the youngest (under 30 years of age), perceived insecurity is lower than for the middle age group. It is at

the ages corresponding to the time of building a career and the core of working life that employees more often express perceived insecurity. At that time in life, the responsibility of children who are still at home or in education certainly contributes to viewing the potential loss of employment more negatively than in the absence of dependent children (De Witte, 1999). In the opinion of Gallie *et al.* (2016), due to family responsibilities and skills obsolescence, employees over 35 years of age are significantly more concerned about a potential job loss. Being aged under 30 (rather than aged between 30 and 50) reduces the level of perceived insecurity by nearly 20%. Some younger workers, who are generally more susceptible to cyclical variations than other employees, at the start of their working lives, are objectively more subject to disrupted career paths and, therefore, to a more uncertain future for their current job, together with a manifestly greater objective risk of losing their jobs (Beduwé & Dupray, 2018).

In general, the higher the level of qualification held, the lower the perception of insecurity. The most highly qualified (with five years of higher education) are the employees for whom the imminent loss of their job is perceived as the least likely. This population has a better idea of its professional future and is also the one for which external mobility, when it takes place, is more often chosen. Insecurity is also lower among those with two years of higher education than for less qualified employees.

The type of employment contract should be considered with caution, insofar as permanent contracts are over-represented in the survey. However, it is demonstrated that having a temporary contract rather than a permanent contract "predisposes" employees to a greater perception of insecurity about the future.⁹ In contrast, the perception of insecurity is lower among those with agency contracts than among those with temporary contracts. The perception among employees of the risk of losing their jobs depends on the consequences in terms of unemployment (of its duration) and of the associated loss of income. Though employees

8. One way of testing the independence of establishment effects and individual variables is to add, according to Mundlak (1978), the averages for each establishment to each of these variables and the statistical significance of the estimators obtained for these variables then constitutes a test of the independence hypothesis. Our results show that only the variable relating to short-time working is significant. This estimate, which is not reported here, is available from authors.

9. This can be explained through the low rate of conversion of temporary contract into permanent contracts (OECD, 2016).

Table 4
Linear Model - Estimation of the Level of Perceived Insecurity

	Model 1 Fixed Effects	Model 2 Random intercept	Model 3 Random intercept
<i>Individual variables</i>			
Women (ref. Men)	0.01 (0.02)	-0.02 (0.02)	0.00 (0.02)
Aged 16-29 (Ref. Aged 30-49)	-0.19*** (0.03)	-0.23*** (0.03)	-0.24*** (0.03)
Aged 50 or over	-0.07 (0.09)	-0.13 (0.08)	-0.12 (0.08)
Level of education (Ref. CAP-BEC)			
Unqualified	0.03 (0.03)	0.06** (0.03)	0.08*** (0.07)
BEPC	0.13*** (0.05)	0.12*** (0.04)	0.13*** (0.10)
2 years of higher education	-0.07** (0.03)	-0.05** (0.03)	-0.06** (0.06)
3/4 years of higher education	-0.03 (0.04)	-0.02 (0.03)	-0.02 (0.08)
5 or more years of higher education	-0.08** (0.04)	-0.08** (0.03)	-0.07** (0.07)
Temporary Contract (Ref. Permanent)			
Interim contract	-0.68*** (0.20)	-0.35*** (0.11)	-0.26*** (0.11)
Seniority in the establishment (Ref. more than 10 years)			
Less than 5 years	0.03 (0.03)	0.04 (0.02)	0.08*** (0.03)
5 to 10 years	0.02 (0.03)	0.02 (0.02)	0.04* (0.02)
Having experienced short-time working	0.31*** (0.05)	0.31*** (0.03)	0.21*** (0.03)
Not having received ongoing training	0.10*** (0.02)	0.14*** (0.02)	0.10*** (0.02)
<i>Establishment variables</i>			
The establishment is not in Paris			0.11*** (0.03)
Business volume (Ref. increased)			
Stable			0.09*** (0.03)
Decreased			0.22*** (0.03)
Number of employees over time (Ref. increased)			
Stable			0.04 (0.03)
Decreased			0.16*** (0.08)
Systematic interviewing of managers and non-managers			-0.05* (0.03)
Introduction or amendment of a skills reference system			-0.05** (0.02)
Removal of positions			0.17*** (0.03)
Regular dissemination of information on employment development prospects			-0.04*** (0.02)
Index of precise and quantified objectives			0.09*** (0.04)

→

Tableau 4 (contd.)

	Model 1 Fixed Effects	Model 2 Random intercept	Model 3 Random intercept
Index of incentive practices			-0.10** (0.05)
Union presence			0.10 (0.03)
<i>Frequency of short strikes (less than 2 days) in the last 3 years (Ref. none)</i>			
More than 5			-0.18*** (0.05)
3 to 5			-0.15*** (0.05)
1 to 2			-0.01 (0.04)
<i>Reactions of management (Ref. consultation of employees and employee representatives to find common solutions)</i>			
Unilateral decisions			0.25*** (0.02)
No particular initiative			0.27*** (0.03)
Never any difficulty			-0.04 (0.04)
Climate: Stressed (Ref. calm)			0.21*** (0.03)
Unemployment rate in the department of the establishment			0.04*** (0.02)
Intercept	-0.07*** (0.02)	-0.07*** (0.02)	-0.28*** (0.1)
Variance (establishment)		0.17 (0.01)	0.11 (0.1)
Variance (individual)		0.67 (0.01)	0.65 (0.1)
ICC		0.21 (0.01)	0.14 (0.1)
ICC empty model		0.22 (0.01)	0.22 (0.1)
R ² adjusted	0.24		
F(14.6513)	10.89		
Prob. > F	0.00		
Log likelihood		-13,193.80	-11,977.36
Wald chi2		304.49	1002.18
Prob. > chi2		0.00	0.00
F(3505. 6513)	1.77		
Prob. > F	0.00		
LR test versus Chi2 linear regression (01)		447.10	210.5
Prob > chi2		0.00	0.00
Number of employees	10,033	10,033	9396
Number of establishments	3,506	3,506	3,281

*** p<0.01; ** p<0.05; * p<0.1

Notes: Models 2 and 3 include control variables for 11 industries, 6 establishment sizes (fewer than 20, 20 to 49, 50 to 99, 100 to 249, between 250 and 499, over 500) and 4 lengths of seniority (less than 5 years, between 5 and 9 years, between 9 and 19 years, between 20 and 49, 50 years or over)

who are most stable in terms of their employment contract feel insecure more often than those on interim contracts, this may reflect greater uncertainty regarding the possibility of dismissal¹⁰ – agencies very rarely dismiss employees – together with the fact that they would have more to lose from a potential dismissal in a crisis context: the perception of the risk of job loss is influenced by the potential duration of unemployment and the associated loss of income (Gautié, 2009).

It is also noted that employees with low seniority within the establishment are more likely to perceive insecurity. This finding corresponds to the generally protective role of seniority on the French labour market (Behagel, 2003).¹¹

On-the-job training seems to play a specific role. In fact, the likelihood of employees reporting a perception of insecurity is reduced among those who have received on-the-job training during the last three years. In other words, for employees, access to training would improve the level of security perceived: on the one hand, investment in training would contribute to sustainable job retention, with the employer expecting a return on its investment, and on the other hand, it would contribute to the employee's employability in the event of dismissal.

Lastly, experience of short-time working over the past three years has the expected effect on employees' perceptions, in line with other studies (Heckman & Borjas, 1980). Previous experience of unemployment is a factor that fosters fear of repeated job loss (Clark, 2001; Gallie *et al.*, 2016), while also contributing to making employees less confident about the future and more "sensitive" to the risk of unemployment. The additional insecurity perceived even exceeds that associated with having a temporary contract rather than a permanent contract.

The Situation of the Establishment and Managerial Practices Influence the Perception of Job Insecurity

What is the role of human resource management practices on the perception of job insecurity, once the employee characteristics have been controlled? To answer this question, the sector of activity, size of the establishment and seniority in the establishment are also controlled, as such characteristics are likely to influence the HR management practices implemented.

The Transformation of Jobs and the Decline in the Number of Employees, Logical Sources of Perceptions of Insecurity

Downward shifts in the volume of an establishment's workforce constitutes one expected factor among the determinants of perceptions of job insecurity (Gallie *et al.*, 2016; Reichert & Tauchmann, 2017). We show here that, logically, a decrease in the number of employees is associated with greater expressions of insecurity than when employee numbers have increased or remained stable. However, the effect of the decrease in business volume is even more important (with the level of perceived insecurity increasing by 22% and 16%, respectively).¹² Expectedly, job transformations, such as the removal of certain positions within the establishment in the recent past (within the last three years), increase the level of perceived insecurity (by 17%). In respect of the management of the workforce, Greenhalgh & Rosenblatt (1984) maintain that the subjective risk of job loss depends, in particular, on the decline of the organisation, which leads to adjustments likely to affect the continuity of employees' professional situations.¹³

Financial Incentives Reduce Perceived Insecurity, Management by Objectives Increases It

It is demonstrated that the implementation of incentive practices (measured using the indicator described in Box 2) within the establishment is associated with a perception of job security.¹⁴ In other words, the modes of involvement seem to contribute to reducing the risk of job loss perceived by employees. This result is in line with that of Bryson *et al.* (2016), showing that

10. Duhautois & Petit (2015) also show that the level of dismissals for economic reasons is rather high in France, which suggests that the legal constraints imposed on employers are not as strict as is often thought.

11. Nevertheless, at the beginning of working life, young people's concern over their professional future increases with their seniority in the establishment. This can be explained through the fear of losing a relatively privileged position (Beduwé & Dupray, 2018).

12. After matching the data with the Labour Movement Declarations (Déclarations de mouvements de main-d'œuvre - DMMO), the turnover and economic lay-off rates in the various establishments in 2010 were found to have no significant effect on the perceived RJL (results not reported here).

13. In respect of the organisation of work, once again, the indicator of a just-in-time production type was also shown to have no significant effect on the RJL.

14. The fact that the establishment is part of a family business has no effect on the perception of insecurity, contrary to that maintained by Bassanini *et al.* (2013), in whose opinion job security is higher in this type of firm. They show that the dismissal rate is lower in family businesses than in other types of businesses.

incentive practices have a positive and significant effect on job quality in France.

Other managerial practices can play an important role in reducing anxiety: for example, regular interviews with their supervisor can inform employees about their skills and their employment or career prospects, as well as providing them with more general information (and, thereby, potentially reduce uncertainty and subjective insecurity) regarding organisational changes and potential upward mobility (Milkovich *et al.*, 1976). The perception of job insecurity depends on the sense of powerlessness that can result from a lack of information on the expected level of performance. It is shown here that having regular interviews with their supervisor contributes to a perception of security: employees' level of employment insecurity is reduced, even if only slightly, all other things being equal. These practices may also reflect forms of employers' commitment to their employees (Renwick, 2003; Herriot *et al.*, 1997). This result should be compared to the one reached for the establishment's social dialogue. In fact, when rather than consulting employees and their representatives during periods of difficulty to develop common solutions, management takes decisions unilaterally or does not have any particular initiative, perceived insecurity increases to a relatively significant extent. As a factor that contributes to the quality of social dialogue, the fact that employees (or their representatives) are consulted or can influence management decisions helps to reduce the level of insecurity felt.¹⁵

In contrast, managerial practices based on setting precise and quantified objectives appear to make employees feel more insecure. We show, in fact, that the existence of such objectives established for employees contributes to raising their perception of the RJL: this risk is then felt all the more strongly where such objectives are present and numerous (in the sense that they cover multiple aspects).

Lastly, in respect of management communication with all employees, when issued regularly, the dissemination of information on employment development prospects decreases perceived insecurity. At workstation level, the update or introduction of a skills reference system (over the past three years) is another factor that is associated with significantly increased perceived security. The existence of skills reference systems for jobs within the establishment may be used as a tool for skills

development, which is positively linked to employees' perception of their employability (for example, Wittekind *et al.*, 2010). These management tools can be considered to help employees to obtain a more objective view of their skill level and, thereby, contribute to reducing their perception of job insecurity (or uncertainty). However, the dissemination of information by management and the existence of a skills reference system have only a limited impact on the level of insecurity perceived by employees.

A Deteriorated Local Economic or Social Context Raises Perceived Insecurity

Not surprisingly, we also observe that the higher the unemployment rate in the department in which the establishment is located, the higher the level of perceived insecurity; here we encounter the result found by Green (2009), who showed the link between regional unemployment rates and the perception of job insecurity. In the same vein, we observe a significant negative link between the level of perceived insecurity and the establishment being based in the Paris region: local employment opportunities and the proportion of skilled jobs that are much higher than elsewhere in France certainly contribute to this lower perception of insecurity.

Lastly, the perception of job insecurity appears to be associated with the social climate within the establishment (assessed in the survey by management representatives): a tense climate goes with a higher perceived risk of job loss. This effect is as important as that of a decrease in business volume. However, the impact of a tense social climate on employees' perceptions of insecurity can be more than offset by the practice of discussions between employees and managers (periodic interviews) and the consultation of employees in the development of solutions to the establishment's difficulties. However, it is difficult to interpret these associations further: in fact, though the perception of insecurity is stronger when the social climate is tense, that perception itself can contribute to a tense climate. Such a limitation on interpretation also affects the results obtained in relation to the link between perceived insecurity and union presence or strikes within the establishment. Indeed, we observe that union presence within the establishment increases the perception

15. Gallie *et al.* (2016) show, in particular, that job insecurity is lower when employees can influence decisions relating to the reorganisation of work.

of job insecurity among employees. In this respect, reverse causality may be considered: if the perception of job insecurity encourages unionisation, union presence would be more frequent where perceived insecurity is widespread. Bryson & Freeman (2013) have indeed shown that deteriorated working conditions increase the desire for union representation and, therefore, it is not surprising to find a negative association between union membership and the perception of job insecurity.¹⁶ Amossé *et al.* (2016) show that neither union presence within the establishment nor the rate of unionisation have an impact on perceived job insecurity. The result obtained here, according to which union presence is associated with greater insecurity perceived by employees, is confirmed when conflict in the establishment is controlled for. The frequency of short-term strikes is negatively associated with perceived insecurity¹⁷: the more short-term strikes over the past three years, the lower the perceived insecurity. This could indicate a “reassuring” effect of the existence of a balance of power (of which strikes are the manifestation) or of a favourable outcome of these strikes, if they have influenced certain practices or decisions – however, our data do not allow us to go any further.

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Based on linked employer-employee data from the *REPONSE* 2011 survey, which allows taking into account the heterogeneity at the level of the establishment to which employees belong, we have shown that the perception of job insecurity depends on the characteristics of the establishment. The results obtained suggest that employees’ perception of job insecurity is linked

16. Even though, on an individual basis, being unionised appears to reduce perceptions of insecurity (Bryson *et al.*, 2011).

17. Other manifestations of conflict such as work-to-rule campaigns and disengagement have no significant impact. □

to the economic situation of their establishment and to that of the local labour market: a decline in business volume or employment volume, a tense climate within the establishment and high local unemployment are all factors that, quite logically, increase concern among employees regarding their jobs.

Managerial practices can influence risk perception. Those that contribute to employee engagement, whether in financial terms, through bonuses or incentive or profit-sharing schemes, or by means of the way in which employees relations are handled (regular discussions between employees and their supervisors, consultations, etc.), are associated with a lower level of insecurity or uncertainty. These results are in line with those of Amossé *et al.* (2016), also dealing with the link between establishment characteristics and employees’ perception of job insecurity, but not addressing the impact of different managerial practices on that perception. For their part, Gallie *et al.* (2016) explored the latter aspect; however, they were unable to take into account the unobserved heterogeneity between the different institutions in a multilevel approach due to the absence of linked employer-employee data such as those used in this article.

However, our results remain limited due to the possible bias of omitted variables, inherent in any descriptive analysis of the type conducted here. Other establishment characteristics that are not observable with the survey data could contribute to the effects obtained for managerial practices. Though it is possible here to interpret perceived job insecurity by linking it to a context (local labour market conditions, the economic and social situation of the establishment, human resources management and management policy), the matter of the non-random assignment of employees to different professional environments in terms of the employment security they offer is not considered. Lastly, to further, it would be necessary to take into account possible effects of interaction between individual variables and establishment characteristics that could further enrich the analysis. □

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LINEAR PROBABILITY MODEL - PROBIT ADAPTED OLS (POLs)

The method proposed by Van Praag & Ferrer-i-Carbonell (2006) consists of "cardinalising" an ordinal variable. This is an adjustment made to the scale of the categorical dependent variable by deriving the Z values of the standard normal distribution that correspond to the cumulative frequencies of the initial ordinal variable. For a given value of this original variable, the value of the "cardinalised" dependent variable is the expectation of a standard variable normally distributed, provided that it is in the interval between these two Z values that correspond to the class of the value of the original variable.

Therefore, Z is an ordered categorical variable related to the unobserved continuous variable Z^* as follows:

$$Z = j \text{ si } \mu_{j-1} < Z^* < \mu_j \text{ for } j=1,2,\dots,k.$$

This latent variable is partitioned into k intervals so that if modality j is observed then Z^* is situated in the interval between μ_{j-1} and μ_j .

Even without knowing the exact values of the latent variable, its conditional expectation can be calculated by using the properties of the normal distribution. The calculation of the "cardinalised" variable Y_c is then:

$$Y_c = E(Z^* / \mu_{j-1} < Z^* < \mu_j) = [\phi(\mu_{j-1}) - \phi(\mu_j)] / [\Phi(\mu_j) - \Phi(\mu_{j-1})]$$

where ϕ is the standard normal probability density function and Φ is the standard normal cumulative density function. One of the advantages of this transformation is that the calculation time is considerably reduced, especially in the case of multilevel modelling, with the estimated model now being linear (Van Praag & Ferrer-i-Carbonell, 2006).
