

# CONSTRUCTION AND FIRST VALIDATION OF A FRENCH SCALE OF ENVIRONMENTAL HARASSMENT AT WORK (EHWS)

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**Abstract:** *Harassment is a form of violence that is increasingly reported in the world of work and has given rise to numerous studies. This article presents the results of a series of five studies to construct and validate the French Environmental Harassment at Work Scale-EHWS. Four hundred and four people employed in various professional sectors (health, education or services) participated in the five studies. A questionnaire of Environmental Harassment at Work was constructed (Study 1). Study 2 revealed a four-dimensional factor structure, which was confirmed by confirmatory factor analysis (Study 3). The questionnaire was shown to have good reliability (Study 4) and convergent validity (Study 5). The EHWS could be a valuable tool for human resource managers to assess environmental harassment in the organisation, and also for occupational health and safety organisations to highlight the nature of environmental harassment, how it can be reported and prevented.*

**Key words:** *environmental harassment, violence, workplace, scale.*

## 1. Introduction

Harassment is a form of violence that is increasingly reported in the world of work. As stressed in a report by the ILO (International Labour Office [ILO], 2018), it “often reflects wider societal violence...” (p. 40). It has been the subject of numerous researches (i.e., Wang et al., 2018; Camerino & Marlasca, 2018), which can be divided into studies focusing on three types of harassment in the workplace: (a) psychological, (b) sexual, and (c) environmental (Ein-Eli, 2020).

(a) This form of harassment occurs in the worker’s daily activity with the aim of harming his/her dignity (i.e. withdrawing tasks or work tools) and leads to deterioration of working conditions (Bernard et al., 2010), which in turn often undermines the worker’s physical and/or psychological health (ILO, 2018).

(b) Even though there are highlighted differences across the world in the definition of

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sexual harassment, it is considered as a form of violence in its own right, although less frequent than psychological harassment (Chappel & Di Martino, 2003) and has multiple origins (organisational, interpersonal, individual, etc.).

(c) Environmental harassment was defined by Ein-Eli (2020) as “the behaviour or repeated action of a worker with the intention of harming another worker by manipulating the work environment in order to make it hostile or uncomfortable” (p. 203).

Somewhat curiously, in spite of the growing environmental awareness in the general public and in research addressing environmental issues at work (Jahncke, & Hallman, 2020), to the best of our knowledge, there is no tool to assess environmental harassment at work.

Our research aims to fill this gap through five studies to construct and validate a French scale of environmental harassment at work. The objective of the first study was to create a list of items describing environmental harassment behaviours, the second and third studies tested the factor structure of the questionnaire through an exploratory factor analysis and confirmatory factor analysis. The fourth and fifth studies tested respectively the temporal stability and convergent validity of the scale.

## **2. Study 1**

To create the items of our questionnaire, we carried out interviews with people who were, or perceived themselves to be, victims, and analysed them to identify the defining elements of environmental harassment, in other words, manipulation of the work environment to make it hostile or uncomfortable (actions affecting the environment, the layout of the work space, the appropriation and personalisation of the work space, and interpersonal distance).

### **2.1. Method**

#### **2.1.1. Participants**

The study sample included 16 people (12 women and 4 men) who all considered themselves to be, or to have been, victims of workplace violence. The age range of the participants was 25 to 64 years, mean age 37 years (SD 12.17). Nine people worked in the private sector and 7 in the public sector. They were selected on a voluntary basis following an advertisement placed on social networks.

#### **2.1.2. Material and Procedure**

The interview started with the following deliberately broad question: “Can you tell me about your work?”. Four sub-themes were addressed, either spontaneously or prompted by the interviewer: (a) The participants’ experience of violence at work; (b) Their perception of the facts and how they experienced the situation; (c) Their experience of how the situation was managed; (d) Repercussions of these situations on their life in general (family, professional or social). The interviews were recorded with the participants’ consent and lasted between 30 minutes and 2 hours.

## **2.2. Results**

The verbatim accounts of environmental harassment were analysed. At this stage, the environmental harassment questionnaire contained 32 items, based on content analysis of the interviews. It was then submitted to a committee of experts composed of 4 teacher-researchers (2 in law and 2 in occupational psychology) in order to test the validity of its content, and a sample group of 12 public sector employees aged from 24 to 56 years, of whom 34% were senior executives. These participants discussed the clarity of each item. The committee of experts recommended focusing the items on environmental harassment and not on its consequences. So, some items were removed (i.e. "I prefer to work late in the evening to avoid meeting certain colleagues or managers"); others were considered to be repetitive and the only one retained was "People make remarks about my private life or me". The panel of workers felt that "People criticise my work in front of my colleagues or superiors" was vague and concerned a behaviour that is completely "normal" in the work environment. It was thus removed. The questionnaire at this stage contained 26 items.

## **3. Study 2**

### **3.1. Method**

#### **3.1.1. Participants and Procedure**

The sample for this study comprised 202 French employees, with an age range of 22 to 62 years, mean 41 years ( $SD=10$  years); 114 worked in the private sector, 83 in the public sector. The environmental harassment questionnaire was distributed online and all the participants responded individually and voluntarily. They rated each item on a Likert scale ranging from 1 (never) to 5 (very often). It took about 20 minutes to complete the questionnaire.

### **3.2. Results**

We conducted an exploratory factor analysis of the responses to the questionnaire. It revealed a four-dimensional structure: manipulation of the acoustic environment (4 items), manipulation of the work space (4 items), manipulation of the work environment (3 items), and manipulation of the personal space (4 items). These four dimensions explained 57% of the total variance. Cronbach alphas were above .70 and thus acceptable (from .70 to .89). At this stage, we removed 11 items, resulting in a 15-item scale.

*Exploratory Factor Analysis of the data*

Table 1

Items	M	SD	Factor			
			1	2	3	4
06. I have to work with background noise that prevents me concentrating.	2.62	1.41	.87			
01. I have to work in a place where the background noise disturbs me.	2.94	1.42	.86			
03. I have to work in a place that is too noisy.	2.25	1.41	.83			
04. I have to work in a place where the conversation of my colleagues disturbs me, although I have pointed this out.	2.30	1.35	.54			
18. People constantly put things on my desk that don't belong to me, although I've said that it disturbs me.	1.55	.90			-85	
29. People deliberately put their personal belongings on my desk, in spite of my remarks.	1.50	.89			-82	
16. People often take things from my desk without asking, although I've said that it disturbs me.	1.92	1.15			-61	
23. My personal belongings systematically disappear or are moved when I'm out of my office.	1.50	.84			-41	
12. I'm the only person who can't control the temperature when I'm working, even if I'm too hot or too cold.	2.80	1.64				.99
28. I have to work in a temperature that I can't adjust to my needs, but my colleagues can.	2.40	1.48				.66
10. I can't adjust the lighting as I would like when I'm working, although my colleagues can.	2.58	1.66				.38
08. I have to work with people who are known to be unfriendly towards me.	2.00	1.17				.65
27. People systematically encroach on my personal space at work, in spite of my remarks.	1.63	.95				.50
05. Someone is always looking over my shoulder to check what I'm doing, although I have said that it disturbs me.	2.08	1.15				.49
13. Things are organised in such a way that I'm isolated from my colleagues.	1.55	1.07				.41
Explained variance			19%	15%	12%	11%
Alpha			.89	.80	.77	.70

Note.  $N=202$ ; Extraction method: *Principal Axis Factor Analysis*; Rotation method: *Oblimin with Kaiser normalisation*.

1: Manipulation of the acoustic environment, 2: Manipulation of the work space, 3: Manipulation of the work, environment, 4: Manipulation of the personal space

The means per dimension varied from 1.62 (SD=.97) for "Manipulation of the work space" to 2.60 (SD=1.60) for "Manipulation of the work environment". "Manipulation of the work environment" and "Manipulation of the acoustic environment" obtained higher means, 2.60 and 2.53 ( $p<.05$ ) respectively. These two dimensions explained 31% of the variance. More precisely stressors related to temperature ("I'm the only person who can't control the temperature when I'm working, even if I'm too hot or too cold") and noise ("I'm made to

work in a place that is too noisy”) are the most frequent forms of environmental harassment in organisations. The dimension “Manipulation of personal space” obtained a mean of 1.82, with a standard deviation of 1.11, significantly lower than the means of the first two dimensions ( $p < .05$ ). More precisely, the items “Someone is always looking over my shoulder to check what I’m doing, although I have said that it disturbs me” and “I have to work with people who are known to be unfriendly towards me” obtained means of 2.08 and 2 respectively. These items illustrate a violation of the workers’ personal space. Finally, “Manipulation of the work space” had the lowest mean ( $SD = .97$ ) ( $p < .05$ ).

At this stage, no item was removed.

## 4. Study 3

### 4.1. Method

The sample for this study comprised 201 people, all in employment, with an age range of 21 to 63 years, mean 42 years ( $SD = 10$  years); 109 worked in the private sector and 82 in the public sector. The environmental harassment questionnaire was distributed online and all the participants responded individually and voluntarily.

### 4.2. Data Analysis

We conducted a confirmatory factor analysis (CFA) in order to check the fit of the data to the theoretical factor structure. The CFA was performed using structural equation models. Three models were compared: one-factor, four-factor and correlated four-factor. To identify the best model, the following fit indices were calculated (Hu & Bentler, 1999): Comparative Fit Index (CFI), Non-Normed Fit Index (NNFI), and Root Mean Square Error of Approximation (RMSEA). CFI and NNFI values above .90 and .95 were considered benchmarks for an acceptable and good fit, respectively; and RMSEA values of below .08 and .06 were benchmarks for acceptable and good fit, respectively. We also calculated the Carmines-McIver Index to obtain a more parsimonious model, by dividing the chi-square fit index by the degrees of freedom. A value between 1 and 3 indicates a good fit. The fit indices are presented in Table 2.

<b>Model</b>	<b>X<sup>2</sup></b>	<b>df</b>	<b>p</b>	<b>X<sup>2</sup>/df</b>	<b>CFI</b>	<b>NNFI</b>	<b>RMSEA</b>	<b>(Low)</b>	<b>(High)</b>
One-factor	618	89	<.001	6.94	.66	.61	.17	.16	.18
Four-factor	411	89	<.001	4.62	.79	.76	.13	.12	.15
Correlated four-factor	184	83	<.001	2.22	.94	.92	.07	.06	.09

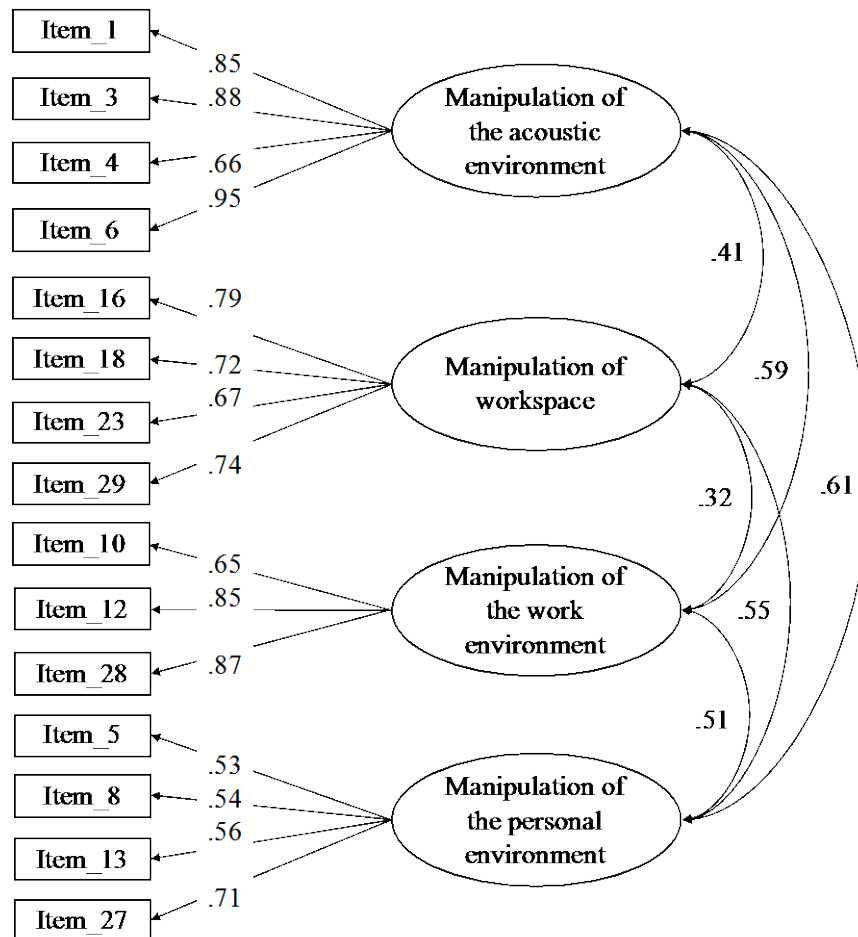


Fig. 1. *Confirmatory analysis of the data obtained from the environmental harassment at work questionnaire*

We identified three types of index:

(a) an absolute fit index making it possible to evaluate to what extent the theoretical model can be reproduced from the data. We retained Steiger and Lind's RMSEA (Root Mean Square Error of Approximation), which was .07 and thus acceptable.

(b) incremental indices measuring the improvement of the fit by comparing the tested model with a reference model, here the null model. We chose the NNFI (Non-Normed Fit Index) and the CFI (Comparative Fit Index). Both were above .90 (.92 for the NNFI and .94 for the CFI), and the model parameters were significant at .05.

(c) an index of parsimony, calculated by dividing the chi-square fit index by the degrees of freedom. We obtained 2.22, which is acceptable (i.e. between 1 and 3).

## 5. Study 4

The scale was designed to evaluate environmental harassment at work, which should not

fluctuate much over time. We thus expected a high test-retest correlation with a three-week interval.

## **5.1. Method**

### **5.1.1. Participants**

The sample comprised 3 men and 26 women (N=29) with an age range of 23 to 56 years, mean 42 years (SD=11 years). They completed the environmental harassment at work questionnaire twice, separated by an interval of three weeks.

## **5.2. Results**

The test-retest correlation indices ranged from 0.88 for the “Manipulation of the acoustic environment” dimension to .92 for “Manipulation of personal space”. This confirms that our questionnaire has acceptable temporal stability over a 3-week period.

## **6. Study 5**

The objective of this study was to measure the convergent validity of the EHWS by comparing it with scales measuring harassment at work.

### **6.1. Method**

#### **6.1.1. Participants and Procedure**

The sample comprised 407 participants (393 women and 14 men), all in employment, 206 in the private sector and 201 in the public sector. Age range was 21 to 63 years, mean age 42 years (SD=9 years).

#### **6.1.2. Instruments**

The French version (Zid et Jeoffrion, 2014) of the Negative Act Questionnaire (NAQ-R) by Einarsen and Raknes (1997). This version has 16 items (e.g. “You are the subject of excessive mockery”) aimed at evaluating the frequency of exposure to negative acts at work over the last six months. Items are divided into two groups:

- Harassment related to the task. This part has 9 items; for example, “someone withholds information that you need and thus makes your work more difficult”.
- Harassment related to the person, with 7 items; for example, “insulting or ridiculing jokes”.

Two dimensions of the French version (Ein-Eli, 2020) of the Sexual Experiences Questionnaire (SEQ-W) (Fitzgerald et al., 1995) evaluating sexual harassment:

- Sex-based harassment with 5 items, such as “made sexist comments”.
- Unwanted sexual attention, with 7 items, such as “made unwelcome sexual advances”.

We retained these two dimensions because the authors linked them to a hostile environment. Responses are made on a 5-point Likert scale, from 1 (never) to 5 (every day). We expected to observe a positive correlation between the EHWS on the one hand, and the NAQ-R, the dimensions of sex-based harassment and unwanted sexual attention on the other.

## 6.2. Results

The table below presents the correlations between the four dimensions of the EHWS and three tools evaluating violence at work. All the correlations were significant at .01, confirming that the convergent validity of the EHWS is completely acceptable.

Table 3

*Correlations between the EHWS and respectively the SEQ-W, the NAQ-R and the free item representing the definition of environmental harassment at work*

	<b>EHWS</b>			
	Manipulation of acoustic environment	Manipulation of work space	Manipulation of work environment	Manipulation of personal space
Free item: "My environment is altered without asking my opinion".	.34	.55	.39	.56
NAQ-R				
Harassment linked to work	.48	.43	.38	.78
Harassment related to the person	.47	.50	.33	.74
SEQ-W	.46	.35	.32	.51

## 7. Discussion and Conclusion

The aim of this research was to design a tool to measure environmental harassment at work and to assess its psychometric properties. The five studies show that our tool has acceptable psychometric properties. First, we developed a 26-item environmental harassment at work questionnaire (study 1). This questionnaire was completed by a sample of 202 French workers, and exploratory factor analysis of the data showed its four-dimensional structure, accounting for 57% of the variance. The Cronbach's Alpha values are acceptable (from .70 to .89) (study 2). The confirmatory factor analysis confirmed the four-dimension structure of the scale with a sample of 201 French workers, the absolute and incremental indices being above the recommended levels (study 3). The study investigating the reliability of the tool revealed satisfactory levels of internal consistency and temporal stability over a three-week period (from  $r = .88$  for the "manipulation of the acoustic



environment” dimension to  $r = .92$  for the “manipulation of personal space” dimension). Finally, the convergent validity of the Environmental Harassment at Work Scale-EHWS was validated, because, as expected, it correlated positively with the French version of the Negative Act Questionnaire-NAQ-R (Einarsen & Raknes, 1997) and two dimensions of the French version of the Sexual Experiences Questionnaire (SEQ-W) (Fitzgerald et al., 1995), namely “Sex-based harassment” and “Unwanted sexual attention”. While these results need to be compared with the findings of other studies, we believe that the availability of a scale of environmental harassment at work is useful at both the theoretical and the applied level. At the theoretical level, the EHWS was designed in the framework of environmental psychology of organisations and work and assesses a specific type of violence, namely, environmental harassment. It would be interesting to investigate the links between this type of violence and other types of organisational violence (physical, psychological, sexual), as well as its links with the type of environment where it occurs. For example, this investigation could be based specifically on an ecological systems approach, notably Bronfenbrenner’s (1979; 1986) model, composed of six interacting systems (ontosystem, microsystem, mesosystem, exosystem, macrosystem and chronosystem), to provide a better understanding of the interactions between the construction of personal experiences and the environment. At the applied level, the multidimensional structure of our scale based on the type of manipulation reveals and clarifies the pathogenic sources of the work environment and thus enables more effective action to be taken against environmental harassment at work. The EHWS could be a valuable tool for human resources managers to assess environmental harassment in the organisation, and also for occupational health and safety organisations to highlight the nature of environmental harassment, how it can be reported and prevented. It could also be used to provide information for legal proceedings or requested by organisations. Given the strong correlations (.3 to .5) of our items, it would have been possible to create a short 4-item scale. However, we wished to build on the results of the strong correlations of the dimensions of the scale, and the development of a short form will be the subject of a future study.

This work has a number of limitations. The first concerns the online data collection. We wished to ensure the anonymity and voluntary character of the procedure, but in addition to the usual biases related to this type of tool, it also raises the question of what led the participants to respond to the questionnaire. Even though we took the precaution of choosing forums that had no apparent link with suffering at work, we cannot rule out the hypothesis that the people who responded were particularly concerned by the issue. The second limitation concerns the actual definition of harassment; what constitutes harassment at the legal level is not necessarily the same as what the participants perceive. The legal definition remains relatively vague and does not necessarily match the view of employees. Finally, complementary studies, notably of convergence and discrimination, are needed to identify more precisely the construct validity of the tool. The EHWS should also be presented to other groups of workers in France, and also in other European countries, in order to be validated as a tool that can be used at the European scale.

This Study was conducted in accordance with the 1964 Helsinki declaration and the American Psychological Association’s ethical principles and code of conduct for research with human participants (APA, 2017). The French law on biomedical researches (Article L.1121-1-1

and Article R.1121-1 of the public health code) does not apply to this study, however, this one does not present particular ethical problem. Participants were informed about the purpose of the study (i.e. to investigate the relationship between personal characteristics, perception of the workplace and OCBs). No compensation was provided and total anonymity was guaranteed. On behalf of all authors, the corresponding author states that there is no conflict of interest.

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