

## EFFECTIVENESS OF UI NONCOMPLIANCE DETECTION

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**Abstract:** This article reports on the different methods of investigation employed to detect noncompliance with UI regulations, and their relative effectiveness. It considers a previous evaluation of the Unemployment Insurance program for which a national random sample of UI claimants was selected from the active claimload and referred to Investigation and Control Officers for in-depth enhanced investigations. Results of these investigations, along with details of the specific control and investigation activities, were reported for analysis. A variety of investigation methods were generally combined, which meant that these were intercorrelated, making it difficult to apply standard regression analysis. Instead, principal components method is used for grouping of variables, and these are then entered into a logit regression model.

**Résumé:** Cet article porte sur les différentes méthodes d'enquête utilisées pour repérer les cas de non-conformité au Règlement sur l'assurance-chômage, et notamment sur l'efficacité relative de chacune des méthodes. Il se base sur une évaluation précédente du régime d'assurance-chômage, dans laquelle un échantillon aléatoire de prestataires d'assurance-chômage de tout le pays a été constitué à partir des demandes de prestations actives. Des agents d'enquêtes et de contrôle ont mené une enquête approfondie sur ces prestataires. Les résultats de ces enquêtes, ainsi que des détails sur les activités de contrôle et d'enquête ont servi aux fins d'analyse. Il a été difficile d'appliquer une analyse de régression normale étant donné les intercorrélations, dans la majorité des cas, de plusieurs méthodes d'enquête. Les variables ont été regroupées grâce à la méthode de composantes principales et ensuite intégrées à un modèle de régression logit.

Under the Unemployment Insurance Act, Human Resources Development Canada (formerly Employment and Immigration Canada) has the mandate to “prevent, deter and detect abuse and fraud committed against the programs and services administered under the Unemployment Insurance Act and Regulations” (Employment & Immigration Canada, 1975, p. 2). In this role, HRDC is responsible for conducting investigations of suspected cases of fraud and abuse. These investigations employ a variety of different techniques. They are directed at discrepancies in claim documentation and may involve contact with claimants, employers, and employees as well as with officials of businesses, federal, provincial and municipal governments, and police forces.

The Canadian Unemployment Insurance system is a large and complex national program that has been a major part of the social safety net since 1940. Despite its size and social importance, systematic evaluation of its impacts and effects is very recent (although there have been ongoing administrative checks on the system of control). Among the least-understood phenomenon is the issue of UI abuse and misuse, or noncompliance with UI regulations. An in-depth evaluation was recently performed to determine the current system’s effectiveness in detecting claimant abuse of the UI program. With a view to determining the incidence of UI claimant abuse and analyzing the relative effectiveness of different methods used in identifying abuse, a national random sample of “regular” UI claimants from the active claimload was referred to Investigation and Control Officers (ICOs) for in-depth “enhanced investigations.” Regular UI claimants (due to layoffs, etc.) account for about 85% of all UI claimants. Other kinds of UI claims are based on sickness, maternity, and lapses in seasonal employment (e.g., fishing). Enhanced investigations meant that ICOs were instructed to carry out the investigations in the most detailed manner under normal circumstances. The investigation was conducted in two phases, during the fall of 1990 and the spring of 1991. Some 950 investigations were completed in Phase 1 and a further 1,722 investigations in Phase 2, producing a total sample of 2,672 UI claimants for analysis. This article reports on evaluation methodology to determine the effectiveness of different investigative methods employed to detect noncompliance with UI regulations. A detailed analysis of noncompliance as well as estimates of direct and indirect savings to the UI account are documented elsewhere (Wong et al., 1992).

In recent years a few American studies have focused on the issues relating to UI noncompliance (for a review of literature on this sub-

ject, see Kingston and Burgess, 1990). In the Canadian context, there is no published or easily accessible evidence on the level of UI claimant abuse or the relative effectiveness of methods of investigation. This article makes a modest contribution toward filling this gap.

## THE INCIDENCE OF NONCOMPLIANCE

A basic requirement for receiving UI benefits is that the claimant be available for work during the benefit period and be engaged in active job search. In addition, the claimant is required to report whether he or she is employed while receiving UI benefit and, if so, earnings from such employment. UI claimants are required to submit biweekly reports for each claim. Claimants can compromise the integrity of their UI account in a variety of ways, including:

- misreporting as being “available for work” when this is not true (e.g., claimant was on vacation, out of the country, or ill);
- misreporting as “actively looking for work” when this is not true; and
- suppressing or misreporting weekly hours of work and/or earnings while working on a job and still on UI claim.

With regard to the third, under the Canadian UI program the claimant can work and still retain full UI benefits if these earnings do not exceed 25% of UI benefits. For earnings in excess of 25% of benefits, there is a dollar-for-dollar deduction from the eligible UI benefit amount (for a detailed review of legislative changes in the Canadian UI program, see Wong & Roy, 1992).

Enhanced investigations on the selected random sample yielded a noncompliance rate of 17% (both phases combined). In 3% of cases, noncompliance was determined to be of deliberate and intentional nature (Wong et al., 1992), and fell into two main categories. Some 41% of noncompliance cases were due to claimants' failure to remain available for work, and a further 21% were due to failure to report earnings correctly (earnings irregularities).

Table 1 shows the incidence of noncompliance (that is, the percentage of UI claimants who were found not to have complied with the UI regulations) by selected characteristics. The incidence of detected noncompliance did not significantly differ by gender, according to raw sample data; claimant noncompliance for both males and females

**Table 1**  
**Percentage of the Sampled UI Claimants with Detected Noncompliance**

	Full Pooled Sample (%)
<b>Personal Characteristics</b>	
<b>Sex</b>	
Male	17
Female	18
<b>Age</b>	
Youth (15–24)	27
Prime (25–54)	15
Older (55+)	11
<b>Job Characteristics</b>	
<b>Weekly Wage</b>	
Wage1 (\$100–199)	19
Wage2 (\$200–299)	20
Wage3 (\$300–399)	19
Wage4 (\$400–499)	18
Wage5 (\$500+)	15
<b>Occupation</b>	
Clerical	16
Sales	15
Services	21
Natural resources	16
Processing	19
Construction trades	11
Material handling	23
Other	17
Professional	17
<b>Industry</b>	
Agriculture/logging/forestry	11
Fishing & trapping	–
Mining/quarrying/oil wells	25
Manufacturing	21
Construction	10
Transportation/storage/communication	16
Wholesale & retail trade	18
Finance/insurance/real estate & business service	16
Government/educational/health & social services	22
Accommodation/food/beverage & other services	16
<b>Region</b>	
Atlantic	9
Quebec	20
Ontario	17
Prairies	23
Pacific	16

was about the same, at 18%. Detected noncompliance did, however, differ by age group. Some 27% of the 15–24 year old claimant population was identified as noncompliers, as compared with 15% for those aged 25–54 years and 11% for 55 years and over. The earnings profile of noncompliers showed that the incidence of noncompliance was slightly higher in the low wage group than in higher wage groups. By region, the Prairies had the highest detected noncompliance rate, of 22%. This was followed by Quebec (20%), Ontario (17%), Pacific (16%), and the Atlantic (9%). No reliable information was available from administrative data on other key demographic variables such as education, marital status, or number of dependents. By industry of claimant's last employment, the noncompliance rates were relatively high in the primary resource industry of mining, quarrying, and oil wells (25%), manufacturing (21%), and government, education, health, and social services (22%). They were lower in construction (10%), transportation and communications (16%), and finance, insurance, real estate, and business services (16%).

## METHODS OF INVESTIGATION

Information was requested from ICOs concerning the investigative methods used to carry out the enhanced selective investigations. ICOs were presented with a list of investigation activities and asked to indicate all methods used during an investigation.

In Phase 1, ICOs were asked to respond by checking a list of seven investigation methods: claimant file review, phone interview with claimant, in-person interview with claimant at the CEC, in-person interview with the claimant at home, phone interview with employer, and "other" investigative techniques. The category of "other" activities contained a variety of methods that could not be categorized elsewhere and included administrative procedures, verifying or completing file information, and interviews with diverse third parties. In Phase 2, the list of investigation methods was expanded and ICOs were questioned about the use of four additional methods: Social Insurance Number (SIN) verification; verification of automated earnings reporting system (AERS); verification of the record of hiring (ROH); and verification of insured earnings match.

ICOs used these methods with varying frequency (see Table 2). Most commonly used, in 95% of the investigations, was the claimant file review. A majority of investigations (69%) included an in-person interview with the claimant at the Canada Employment Centre, and

**Table 2**  
**Percentage of Claimants Investigated By Investigation Activity**

Investigation Activity	Full Pooled Sample (%)	Phase 1 Sample (%)	Phase 2 Sample (%)
Claimant's file review	95	96	93
SIN verification	19	—	40
Claimant phone interview	20	21	18
Claimant in-person interview at CEC	69	70	69
Claimant in-person interview at home	5	6	4
Employer phone interview	34	43	23
Employer in-person interview	3	3	2
Verification of AERS	1	—	2
Verification of ROH	1	—	2
Verification of insured earnings match	1	—	2
All other	25	10	40

phone interviews with the claimant were conducted in 20% of the investigations. SIN verification was used in 40% of Phase 2 investigations, but this information was not available for Phase 1. Some 34% of all investigations conducted in both phases of study included a phone interview with the employer, although this varied between phases. In-person interviews outside the CEC, in either the claimant's home or employer's office, occurred infrequently. Computer matching techniques — AERS, ROH, insured earnings match — were also used infrequently, with each of these techniques being reported in about 2% of Phase 2 cases.

It was also noted that ICOs typically used more than one method to complete an investigation. In Phase 1, a combination of two or three of the investigation activities was most frequently used to complete an investigation. In Phase 2, three different methods were combined in the majority of investigations. Although ICOs reported using a greater variety of techniques to complete an investigation in Phase 2, this is at least partly due to more detailed questioning about the methods employed, especially the use of SIN verification. These results do not, therefore, necessarily indicate that Phase 2 investigations were more intensive than those of Phase 1.

Simple frequency analysis suggested that several combinations of investigative activities were highly successful in detecting abuse. In Phase 1, the combination of claimant file review with "other"

activities and the combination of claimant file review, employer phone interview, and “other” activities resulted in detection rates of 58% and 46%, respectively, for the subset of cases to which they were applied. In Phase 2, the combination of claimant file review, SIN verification, and “other” activities produced a 76% abuse detection rate, and the combination of claimant file review and employer phone interview resulted in abuse detection in 40% of cases in which it was used. However, these combinations were applied to only 2% of investigated cases in Phase 1 and to 6% of cases in Phase 2, suggesting that the success of these methods may have been due to unique features of these cases.

In Phase 1 the most frequently applied combinations had lower rates of abuse detection, but resulted in the identification of more cases of detected abuse due to the larger number of cases to which they were applied. The combination of claimant file review with claimant in-person interview at the CEC was used in 31% of cases with a success rate of 13%. Similarly, claimant file review in combination with claimant in-person interview at the CEC and employer phone interview was used in 24% of cases and detected abuse in 14% of those investigations.

For Phase 2, three combinations of activities were used most frequently. The combination of claimant file review and claimant in-person interview at the CEC was used in 15% of cases; claimant file review, SIN verification, and claimant in-person interview at the CEC was applied in 16% of cases; and claimant file review, claimant in-person interview at the CEC, and “other” activities was used in 10% of cases. These combinations detected, respectively, 7, 8, and 16% noncompliance in the cases to which they were applied.

The descriptive analysis suggests that abuse detection is enhanced by the use of multiple activities and, further, that certain combinations of activities were more effective than others. However, because the combinations of investigation activities shared common methods, they were highly intercorrelated and multiple regression could not be used to evaluate their relative effectiveness.

## A FRAMEWORK FOR ANALYSIS

UI claimants can be considered to be complying with UI regulations only if the net benefit (cost less benefit) of compliance exceeds the net benefit (cost less benefit) of noncompliance. The factors that de-

termine the costs and benefits of noncompliance include the productivity of nonmarket time of the claimant, probability of detection, penalty for noncompliance, and job opportunities for the unemployed. Details of this analysis are contained in Roy and Wong (1997).

It seems reasonable to argue that the incidence of noncompliance and its detection would depend upon a variety of personal characteristics of claimants, institutional features of the UI program, and labor market conditions in which the claims are made, in addition to the methods of investigation used. The following logit regression model was estimated using the individual claimant micro data to analyze the relationship between the incidence of detected noncompliance, sample characteristics, and the combinations of investigation methods:

$$(1) \log [ P_i / (1 - P_i) ] = \alpha + \beta_1 X + \beta_2 J + \beta_3 U + \beta_4 R + \beta_5 UI + \beta_6 S + \beta_7 I + \varepsilon$$

where:

$P$  = probability of noncompliance; equals 1 if the UI claimant is a detected noncomplier and 0 otherwise;

$X$  = a vector of claimant's personal characteristics, such as sex and age group;

$J$  = a vector of dummy variables relating to job characteristics, such as weekly wages and industry/occupation in which the claimant last worked;

$U$  = the local unemployment rate of the claimant's Canada Employment Centre;

$R$  = claimant's region of residence;

$UI$  = a vector of variables relating to prior UI history, such as last UI claim duration, number of previous claims over the last five years, and number of disqualifications and disentitlements (D/Ds) received during the last previous claim;

$S$  = a vector of characteristics relating to the sample, such as Phase 1 versus Phase 2, weeks on claim, reason for separation, and the number of ROEs to establish the claim;

$I$  = a vector of variables relating to the investigation activities to which the claimant was subject.

For this regression analysis, the samples from the two phases were combined. Because the characteristics of the samples were slightly different, a dummy variable was used to identify the phase. For a discussion of the rationale for using the logit regression method in this type of analysis and the statistical properties of the functional structure, see Maddala (1983).

## EXPLORATORY FACTOR ANALYSIS

A statistical procedure, factor analysis, was used to develop the analysis of the effectiveness of combinations of activities and to deal with the problem of intercorrelated variables. This analysis served two purposes. First, it sorted the range of enhanced investigation activities into a smaller and more easily interpretable set of activities. Second, it provided a set of independent, uncorrelated investigation variables suitable for use in multiple regression analysis.

Those variables that were unique to Phase 2 (SIN verification, AERS verification, ROH verification, and insured earnings match) were deleted from the factor analysis in order to provide comparable data for each phase. The computer matching activities were deleted because they were highly correlated with each other but only minimally related to the other investigative variables. SIN verification was also dropped because it was the only remaining variable that was not common to both phases and because it had little in common with the other activity variables. Finally, the category of "other" investigative activities was dropped from the factor analysis because this variable did not contribute to the factor structure.

The factor analysis was conducted separately for the two phases and is described below. In each phase three factors were obtained that showed similar patterns and magnitudes.

## FACTOR ANALYSIS METHODOLOGY

Where several variables are not mutually exclusive in their effect, factor analysis techniques help to reduce the number of variables in an analysis by determining the minimum number of hypothetical factors that account for the observed covariance. Factor analysis

linearly reconstructs the original variables by finding a small number of factors common to those variables. Briefly, factor analysis explores the interdependencies among variables, derives the underlying structure of the variables, and provides a set of uncorrelated variables for further analysis with regression models. The underlying structure of the factors was set to be orthogonal. (For further details and a more rigorous discussion of factor analysis, see Kim and Mueller [1982].)

In this study, factor analysis was performed using the principal-components factor method where communalities were assumed to be one. *Communality* is the variance of an observed variable accounted for by the common factor. The communality is often defined in terms of  $(1 - \textit{uniqueness})$ . The uniqueness is the percentage of variance for the variable that is not explained by such factors as measurement error or is a part of the information that is only reliably explained by the variable itself, not by any combination of variables. When we set communalities equal to one, we assume that there is no unique factor.

The minimum value of retained eigenvalues was also set to one. Therefore, factors predicting less variance than what would be expected from random data are dropped. The factor analysis was conducted only for those investigative activities common to both phases in order to compare the results in the multivariate analysis. These activities are claimant's file review, phone interview with claimant, in-person interview with claimant at Canada Employment Centre, in-person interview with claimant at home, phone interview with employer, and in-person interview with employer.

The first step was to extract initial factors that explain the observed correlations among the observed variables. The number of factors to be extracted was determined by the eigenvalue criterion, set to be equal to or greater than one. The corresponding communalities were then iteratively estimated until convergence. The initial solution provided a set of factors such that the first factor accounts for as much variance of the original variables as possible, the second factor accounts for as much as possible of the residual variance left unexplained by the first factor, the third factor accounts for as much as possible of the residual variance left unexplained by the first two factors, and so on. Three factors were retained for both Phase 1 and Phase 2, which accounted for 66% of the variance in the original data set (see Tables 3 and 4). These sets of activities were: (1) claim-

**Table 3**  
**Factor Analysis of Investigation Activities, Phase 1**

Investigation Activity	Factor 1 Loading	Factor 2 Loading	Factor 3 Loading	Uniqueness
Phone interview with claimant	.83	.15	-.09	.29
In-person interview with claimant at CEC	-.80	.31	-.31	.22
Claimant's file review	-.32	.71	.15	.37
Phone interview with employer	.20	.76	-.13	.36
In-person interview with claimant at home	.13	-.07	.81	.32
In-person interview with employer	.02	.10	.72	.47
Proportion of variance	.28	.20	.19	.66

**Table 4**  
**Factor Analysis of Investigation Activities, Phase 2**

Investigation Activity	Factor 1 Loading	Factor 2 Loading	Factor 3 Loading	Uniqueness
Phone interview with claimant	.82	.11	-.12	.31
In-person interview with claimant at CEC	-.88	.09	-.17	.18
Claimant's file review	-.14	.79	.13	.33
Phone interview with employer	.19	.71	-.12	.45
In-person interview with claimant at home	.23	.04	.75	.39
In-person interview with employer	-.13	.02	.72	.46
Proportion of variance	.27	.20	.19	.65

ant in-person interview at the Canada Employment Centre and claimant phone interview; (2) claimant file review combined with employer phone interview; and (3) claimant in-person interview at home combined with employer in-person interview. These three sets of activities were entered into a multivariate logit regression model along with other relevant variables.

## EMPIRICAL FINDINGS

To economize on space, the detailed regression results are not reproduced here but are available upon request from the authors. The logit regression results indicated that claimant interviews (conducted in-person at the Canada Employment Centre or by phone) formed the combination of investigative methods that was most effective

and significantly increased the likelihood of noncompliance detection. This finding confirmed the common belief of ICOs that in-person interviews of claimants at the Canada Employment Centre are the most effective method of UI abuse detection. Initial claimant interviews are usually followed by contacts with employers.

Results relating to other variables (that is, variables other than methods of investigation) are briefly summarized below. (For details, see Roy and Wong [1997].) When the derivatives were evaluated at the sample mean, the probability of noncompliance was 5.5% higher for females than for males. Viewed in the context of the return to noncompliance with UI job search regulations, higher noncompliance for women suggests that their nonmarket opportunity costs may be higher than for men, because of the higher household productivity of women. A similar finding has been reported in an American study (Burgess, 1992). For younger claimants (15–24 years), the probability of noncompliance was substantially higher, at 14.5%, and for prime age claimants 6.2% higher than for workers 55 years and over. For low wage workers (an average weekly wage of \$100–199), the noncompliance probability was 7.8% higher than that of high wage workers (over \$500). The noncompliance probability was 8% higher for the processing occupations than for professional occupations. By region, the noncompliance probabilities were higher in Quebec and the Prairies than in Ontario, by 6.6% and 8.5% respectively.

## CONCLUSION

This article is based on an evaluation study that was prepared as part of evaluation of the UI Regular Benefit program and focused on an analysis of the incidence of claimant noncompliance with UI regulations. The study used a data base that was created for this evaluation exercise. A national random sample of UI claimants was selected from the active claimload and was referred to Investigation and Control Officers for in-depth enhanced investigations. Results of the investigations were reported, along with details of the specific control and investigation activities, for analysis. Details of the analysis of the incidence of noncompliance are being reported elsewhere (Roy and Wong, forthcoming). This article reports on the different methods of investigation employed to detect noncompliance with UI regulations, and their relative effectiveness. Investigative methods that were frequently used included claimant file review, phone interview with claimant, in-person interview with claimant

at the Canada Employment Centre, in-person interview with the claimant at home, phone interview with employer, Social Insurance Number verification, verification of automated earnings reporting system, verification of the record of hiring, and verification of insured earnings match.

A variety of investigation methods were generally combined, which meant that these were intercorrelated, making it difficult to apply standard regression analysis. Principal components method is used for grouping of variables, and these are then entered into a logit regression model. The logit regression results indicated that claimant interviews (conducted in-person at the Canada Employment Centre or by phone) were the combination of investigative methods that was most effective, significantly increasing the likelihood of noncompliance detection.

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