IMMIGRANT CONSTRUCTION WORKERS AND SAFETY AND HEALTH IN SOUTH FLORIDA

A Research Report

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EXECUTIVE SUMMARY

This report is based on surveys conducted with four hundred construction workers on large construction sites in South Florida in 2006. The survey elicited information on the safety training received, personal protective safety equipment regularly used, and the safety policies and practices of the employers of these workers. It also collected a wide variety of demographic data and information on non-safety employer practices that were thought to be possibly related to safety conditions on the job.

The purpose of the study is threefold:

(1) To provide a portrait of south Florida immigrant construction workers: demographics, incomes, safety conditions on the job, and employer treatment in other ways that may be related to their safety conditions;

(2) To determine if union membership or documented legal status of these workers is associated (perhaps causally) with different safety outcomes (measured by degree of safety training, use of personal protective equipment, and employer safety policies and practices) and secondarily to see if other factors may be associated with better or worse safety conditions; and

(3) To analyze results to determine any public policy measures that may improve the safety conditions of these workers.

Key findings

DEMOGRAPHICS: Virtually all immigrant construction workers were from Central or South America or Mexico or the Caribbean. Cubans, Nicaraguans, Mexicans, and Hondurans were most numerous. They averaged thirty-six years old, and all but two were male. A majority had been in the U.S. ten years or less; the average (mean) number of years was twelve. They averaged approximataely seven and a half years of work experience in the U.S. construction industry. Almost a third earned less than $20,000 per year, and half had a family income below $30,000 per year. (Average family income for all Florida residents was approximately $55,000 per year). Forty-four percent had less than a high school degree; yet twenty-one percent had taken some college courses and thirteen percent had a college or graduate degree. Seventy-three percent were either a U.S. citizen or had a documented legal status, while twenty-seven percent were undocumented.

SAFETY TRAINING: Seventy percent had received the basic safety training for the industry, the “OSHA 10-hr. training;” an almost identical percentage had received training in scaffold safety. Other types of training (CPR/First Aid, Asbestos Awareness, Hazardous Materials) had been provided to between one fifth and fifty-seven percent, depending on type of training.

USE OF PERSONAL PROTECTIVE EQUIPMENT: Use of work boots, hard hats, and protective eyewear was nearly universal. Between forty-two percent and seventy-eight percent regularly use other types of protective equipment (work gloves, guards on cutting tools, hearing protection, respiratory protection), depending on type of equipment.

SAFETY POLICIES AND PRACTICES OF EMPLOYERS: Some employer practices, like required use of body harness, providing hand rails for scaffolds, and provision of drinking water and bathrooms, were virtually universal. Other practices, like holding weekly safety meetings, providing copies of a safety program, providing access to Material Safety Data Sheets (MSDS), providing ground fault electrical outlets, and providing first aid kits, were practiced by employers between half and ninety percent of the time, depending on particular practice. Over a fifth used cut and taped electrical cords at the worksite.

INJURIES: Eleven percent had experienced a workplace injury within the past three years that resulted in loss of work of a day or more. Thirty-nine percent had witnessed a worksite accident within the past year serious enough to cause a fellow worker to be taken to the hospital. In their entire construction work career (average length: approximately seven and a half years), eighteen percent had witnessed a death at a worksite where they worked.

OTHER EMPLOYMENT CHARACTERISTICS AND PRACTICES: A majority had worked for their current employer less than one year, but most had worked for only one or two employers in the past twelve months. Nine percent worked for a temporary help firm, not a construction contractor. Sixty-six percent worked for an employer with one hundred or more employees and more than a quarter worked for an employer of five hundred or more. Eighteen percent had been paid at some point in their construction career in cash, and eight percent had been asked to dishonestly sign a form (a "1099 form") stating that they were an independent contractor rather than an employee. Thirty-five percent had been offered a retirement or savings plan, and almost fifty-six percent had been offered health insurance coverage.

PERCEPTIONS OF EMPLOYER ATTITUDES ABOUT SAFETY: Over ninety percent thought that their foremen and employers were concerned about safety and that their job site had a good safety program. Ninety-six percent were willing to report a safety violation that they saw; the other four percent were afraid to do so. Eighty-nine percent thought that unions lead to safer jobs. However, close to twenty percent thought that productivity was more important than worker safety at the place they work, and sixty percent thought that their work conditions were dangerous.

RELATIONSHIP OF UNION MEMBERSHIP AND DOCUMENTED LEGAL STATUS WITH SAFETY OUTCOMES: It was hypothesized that union membership and documented legal status are associated with better safety outcomes than those experienced by their non-union and undocumented counterparts. Results show the following:

- Initial cross-tabulations broadly confirm both hypotheses, but documented legal status is unexpectedly associated with <u>less</u> use of personal protective equipment.
- However, these results may be spurious if "union member" and "documented" are acting as proxies for other factors, such as length of time in the industry, length of time in the

country, or industry craft (skill). After performing a variety of tests for the possibility of proxy behavior, results suggest that only unionization is consistently associated with improved safety outcomes. Documented legal status loses all its association with better safety outcomes when only one craft (for example, carpentry) is considered.

- The positive union association with improved safety outcomes is most pronounced for those immigrant construction workers with shorter time in the industry.
- Union membership is also associated with sharply lower serious injury rates than those of non-union immigrant workers. And, when union members are injured, they lose far fewer days of work than do their non-union counterparts. (Caution: these results come from a relatively small sample on the union side, making results only preliminary.)
- The associations found proably show a positive union "impact" given intuitive knowledge about the plausibility/possibility of causality in each direction.

OTHER ASSOCIATIONS DISCOVERED:

- Completely unskilled (general laborer) respondents were less likely to receive safety training than were their semi-skilled or skilled counterparts. There is some very weak evidence that they may experience inferor employer safety practices, but no evidence that they use less personal protective equipment on the job.
- Immigrant construction respondents who were either (1) paid in cash, (2) not provided a health insurance plan, or (3) not provided a pension plan received less safety training and experienced worse employer safety practices. Less favorable (no health plan, no pension) or irregular (cash payment) practices of a non-safety nature are "bundled" with inferior safety treatment. ("Bad" employers "cut corners" in all areas, including safety.)

POTENTIAL PUBLIC POLICY IMPLICATIONS:

- Unionization should be encouraged if the aim of public policy is to improve the safety conditions of these relatively vulnerable workers in a very dangerous industry.

- Public policies that encourage or require better treatment in areas like employer-provided healthcare and pension plans may improve the safety of these workers, either through the mechanism of "weeding out" the "bad" employers who skimp in all these areas (including safety) or by forcing employers to develop a more responsible attitude toward employee treatment in general. Similarly, perhaps stronger enforcement of wage and hour laws to ferret out illegal cash payments in the underground economy would lead to safer work for these immigrant construction workers. But these conclusions are very tentative because the research only uncovered a positive association between these undesirable non-safety employer treatments and worse safety outcomes; it did not find or prove a causal relationship between them and less safe conditions.

IMMIGRANT CONSTRUCTION WORKERS AND SAFETY AND HEALTH IN SOUTH FLORIDA

INTRODUCTION

Immigrants are a large and growing percentage of the total construction labor force in the United States today. According to the Current Population Survey (CPS) Annual Social and Economic Supplement, as of March 2006 almost twenty four percent of all construction workers in the country were foreign born. Most of the immigrant construction workers are Hispanic, although not all Hispanic construction workers are immigrants, of course. In March 2006 a little over twenty-four percent of the construction work force was Hispianic, compared to approximately six percent in 1980 (Construction Chart Book: Chart 16b). Seventy percent of the 1.4 million Hispanic construction workers in the U.S. in 2000 were born outside the United States, and fifty-seven percent were not U.S. citizens (Construction Chart Book: section 16).

Immigrants and Hispanics are an even larger percentage of the construction workforce in Florida than they are nationally. According to the CPS Annual Social and Economic Supplement of March 2006 immigrants were 34.7% of Florida construction workers, and Hispanics were 31.69%. And south Florida has an even greater concentration: about three quarters of construction workers in Miami-Dade County (Miami area) are Hispanic.

Hispanic workers (and most likely immigrant workers) in this industry face especially dangerous working conditions. Hispanics constituted less than 16% of the construction workforce in 2000 yet suffered 23.5% of fatal job injuries. Hispanic construction workers that year were nearly twice as likely to be killed by occupational injuries as their non-Hispanic counterparts (Dong and Platner: 2004).

For that reason it is important to investigate the conditions these workers face, both because they are an ever-growing segment of the workforce and because their treatment will affect the treatment of all U.S. construction workers. This study explores the safety and health training and the safety and health conditions of immigrant construction workers in south Florida. It has several purposes. First, it provides a general portrait of who these workers are, where they come from, length of time in the country, and the like. Second, it gives a general picture of the safety and related conditions of these workers, providing a preliminary picture of how they are

trained and treated in the area of safety and health. Third, it looks for relationships between other statuses/conditions of these workers and their safety training and conditions. And finally, it offers tentative public policy measures that may improve the safety of these workers.

The following section examines literature relevant to the present study. Following that, the methodology of the current study is explained. Then a section summarizes the characteristics of those surveyed. The section following that displays the results from the survey answers, with a minimum of analysis or interpretation. Two sections after that present some hypotheses about likely factors influencing the different safety and health outcomes for different workers, followed by a testing for relationships that provide evidence for or against those hypotheses. Finally, a concluding section summarizes and discusses the results and offers public policy suggestions.

LITERATURE ON THE TOPIC

An earlier pilot study of immigrant construction workers about safety and health issues by the author surveying only fifty workers in south Florida was done in 2004 (Nissen, 2004). That study found that the surveyed workers were primarily Hispanic and that most were not U.S. citizens, although a majority was legally documented. It found that they labored under extremely unsafe conditions, had less than adequate training, generally used personal protective equipment but had less consistent employer safety policies and practices, and sometimes faced questionable or illegal employer practices making medical care for serous injury difficult. It found only two factors consistently associated with positive safety outcomes (measured by safety training, use of personal protective equipment, and safer employer policies and practices): union membership and documented legal status. Other potential correlations with better safety outcomes, such as longer residence in the U.S. or longer tenure in the U.S. construction industry, were not found to be significant. This study was suggestive but not definitive because of small sample size.

Some studies have done a comparative analysis of injuries or illnesses of Hispanics vs. other groupings, such as non-Hispanic whites and blacks. Robinson (1989) surveyed California data and discovered that for <u>all</u> workers (not specifically construction workers), Hispanic workers faced higher probabilities of exposure to occupational injuries and illnesses than did non-Hispanic whites. Utilizing emergency room records and looking at construction workers in the Washington D.C. area, Hunting, Nessel-Stephens, Sandford, Shesser, and Welch (1994)

found that laborers and Hispanic workers were overrepresented among severe cases of injury. Looking at New Jersey construction workers, Sorock, O'Hagan Smith, and Goldoft (1993) found that Hispanics had death rates over three times that of non-Hispanic whites. Anderson, Hunting, and Welch (2000) found that Hispanic construction workers were more likely to be employed in the less-skilled trades and had a higher proportion of serious injuries. They suggested that minority status is a predictor of trade and that trade is a predictor of injury risk. Welch, Hunting, and Nessel-Stephens (1999) found that Hispanic and older construction workers were more likely to have continuing symptoms long after an injury. The Dong and Platner (2004) study cited in the introduction found that from 1992 to 2000, for every age group, Hispanic construction workers consistently faced higher relative risks. All of these studies suggest that Hispanics in the construction industry are more likely to face injury and inadequate safety conditions than others.

O'Connor, Loomis, Runyan, Abboud dal Santo, and Schulman (2005) surveyed fifty young Latino construction workers. This study was concerned with both their youth and their ethnic status, and concluded that they had received very little health and safety training, particularly those with less English language ability.

Of course, not all Hispanic workers are also immigrants. Very few studies have been done looking specifically at health and safety conditions of immigrant construction workers in the U.S. although there are some regarding immigrant workers in other or all occupations or in other countries (Gannagé 1999; Wu, Liou, Hsu, Chao, Liou, Ko, Yeh, and Chang 1997). Perhaps closest to the aim of the present study, Pransky, Moshenberg, Benjamin, Portillo, Thackrey, and Hill-Fotouhi (2002) surveyed urban immigrant workers in an immigrant community in northern Virginia, and found that they face high risk of occupational injuries, with adverse outcomes. Thirty-two percent of these workers worked in construction, and of that group, thirteen percent had been injured in the past three years.

A small number of studies have been done on the impact of unionization on workers' safety. Taylor (1987) found that the degree of unionization in an industry (not only the construction industry) and its safety record was significantly positively correlated in some years but not in others. He explains these differences in terms of a number of intervening variables, including labor-management safety committees and safety consciousness of union members or

management. He thus finds the relationship between unionization and safety to be complex. Dedobbeleer, Champagne, and German (1990) studied construction workers in the Baltimore area and found that union membership is significantly positively correlated with high safety performance. However, controlling for age (age 26 or younger vs. ages 27 and up) made most of the relationships insignificant, since union workers tended to be older. However, there was an extremely high correlation between union membership and exposure to safety training. This correlation remained significant after all attempts to control for all other variables. Yet, they found that the differences in likelihood of being injured were in the expected direction (union worker injury rates were lower), but not significant.

While these studies are suggestive of unique safety and health issues and problems for immigrant construction workers in the United States, none of them apart from the author's pilot study directly attempt to discern factors that might influence the safety and health outcomes for this population. This study empirically attempts to discover the safety and health conditions of immigrant construction workers in south Florida to determine if there is a relationship between the different safety outcomes they experience and other factors captured in the survey, and to compare their safety outcomes to those of non-immigrant construction workers employed at south Florida worksites.

METHODOLOGY OF THE CURRENT STUDY

Four hundred construction workers in Miami-Dade County, Florida were surveyed in the summer of 2006 using a sixty question survey instrument constructed by the author. The total sample was composed of 283 immigrant workers and 117 non-immigrant workers employed alongside theimmigrant sample. All construction workers in the sample pool were given identical surveys.

The survey instrument asks questions concerning demographic data, safety training, workplace safety practices, employer safety policies and practices, other employer practices regarding wages, pensions, workers compensation, and respondent evaluations of their employers' attitudes toward safety. Workers were surveyed in Spanish or English, depending on the language preference of the person being surveyed. Surveyors were fluent in Spanish and English. The original English language version of the survey instrument was translated into

Spanish and then re-translated back into English by different individuals, to ensure equivalence of survey instruments. (Copies of the survey instrument in English and Spanish are attached to this report as Appendix A and Appendix B.)

It is impossible in a project of this nature to get an entirely random sample of the universe of south Florida immigrant construction workers. There is no database containing the names and contact information for such workers. The researcher approximated random selection processes as closely as possible by creating a database of all Miami-Dade County construction projects costing over $10 million derived from the Dodge Report (containing "open bidding" projects) and the Industrial Info Report (containing "closed bidding" projects). Thus, the universe which was sampled was comprised of medium- and large-sized construction projects in the county. Sites were randomly selected from this database, and surveyors were sent to them to contact workers before and after the workday.

At the sites, surveyors sampled workers either as they prepared to begin work or as they ended their workday. In addition, through a "snowball" technique, participating workers sometimes led surveyors to other workers willing to participate in the survey. Thus individual respondent selection at the site was as close as one can come to random selection. (To get a random sample of the workers at the site would require the contractors' and sub-contractors' cooperation, which would introduce an enormous employer "self-selection bias" between those willing to cooperate and those unwilling). No more than 20 workers from any one site were surveyed to ensure a large and representative set of sites; however, since the local construction workforce is less than 5% unionized, an "all union" construction site was over-sampled to ensure a large enough number of union workers to be able to make meaningful comparisons. The researcher aimed to include at least twenty percent union members in the sample.[1]

Surveyors for this research project were Florida International University graduate research assistants and personnel with previous training in social science methodology. All surveyors were given additional training specific to the use of this particular survey instrument. Informed consent was obtained in accordance with the research protocols of Florida International University. All survey respondents were given a nominal sum of $20 as a token of appreciation for their cooperation.

[1] Of the 283 immigrant workers, 202 were non-union and 81 were union members.

Results were collected and entered into SPSS (statistical software) and the resulting database was analyzed to determine a number of demographic facts about these workers. As the following sections will show, an analysis was done of relationships between safety outcomes and a variety of other factors.

CHARACTERISTICS OF THOSE STUDIED

This section will cover only the characteristics of the immigrant workers surveyed. The native born were only included as a control group; this report is confined to results from the sample of immigrant construction workers.

Four countries comprise almost seventy four percent of the countries of origin for these workers. Cuba supplied over one fourth, while Nicaragua, Mexico, and Honduras each supplied around fifteen to eighteen percent. Virtually all were from Central or South America or the Caribbean. Table 1 shows details.

Table 1
Country of Origin of Immigrant Construction Workers Surveyed

Country	Number	Percent
Cuba	74	26.2%
Nicaragua	50	17.7%
Mexico	42	14.9%
Honduras	42	14.9%
Haiti	11	3.9%
El Salvador	10	3.5%
Guatemala	9	3.2%
Colombia	8	2.8%
Brazil	6	2.1%
Peru	5	1.8%
Puerto Rico*	5	1.8%
Dominican Republic	4	1.4%
Trinidad & Tobago	3	1.1%
Venezuela	3	1.1%
Bahamas	2	0.7%
Canada	2	0.7%
Jamaica	2	0.7%
Ecuador	1	0.4%
Grenada	1	0.4%
Panama	1	0.4%
St. Vincent	1	0.4%
Total	**282**	**100.0%**

One immigrant did not answer this question.
*For thepurposes of this study, Puerto Ricans are counted as “immigrants” even though technically they are not, since Puerto Rico is a U.S. territory.

All but two of the 283 respondents were male, with the two females being a 34 year old woman and a 35 year old woman, both from El Salvador. Respondents averaged 36 years of age, ranging between a 17 year old Mexican and a 78 year old immigrant from the Dominican Republic. Table 2 shows the spread of ages, in increments of ten.

Table 2
Age of Immigrant Construction Workers Surveyed

Age	Number	Percent
17-19	12	4.3%
20-29	85	30.1%
30-39	84	29.8%
40-49	58	20.6%
50-59	35	12.4%
60-69	7	2.5%
70 and over	1	0.4%
Total	**282***	**100.0%**

*One respondent did not answer this question.

On average, respondents had resided in the United States 12 years, with a range between less than a year (eleven people) to 63 years. Over fifty-six percent had been in the country ten years or less. Table 3 shows the spread, in increments of five years.

Table 3
Years of residence in the U.S. of Immigrant Construction Workers Surveyed

Years	Number	Percent
0-5	98	34.8%
6-10	60	21.3%
11-15	30	10.6%
16-20	37	13.1%
21-25	19	6.7%
26-30	22	7.8%
31-35	6	2.1%
36 and over	10	3.5%
Total	**282**	**100.0%**

One respondent did not answer this question.

They averaged 7.35 years working in U.S. construction, with a range from one week to 57 years. Most were concentrated at the lower end of the spectrum. Table 4 shows the spread, in increments of three years.

Table 4
Years of U.S. construction work of Immigrant Construction Workers Surveyed

Years	Number	Percent
0-3	121	42.9%
4-6	55	19.5%
7-9	30	10.6%
10-12	22	7.8%
13-15	15	5.3%
16-18	13	4.6%
19-21	11	3.9%
22-24	1	0.4%
25-27	7	2.5%
28-30	1	0.4%
30+	6	2.1%
Total	**282**	**100.0%**

One respondent did not answer this question.

The primary trade of these workers was carpenter, followed by ironworker and general laborer. Table 5 shows the results for all trades represented.

Table 5
Primary Trade of Immigrant Construction Workers Surveyed

Primary Trade	Number	Percent
Carpenter	100	35.3%
Iron Worker	46	16.3%
General Laborer	36	12.7%
Plumber or Pipe fitter	22	7.8%
Drywall	21	7.4%
Electrician	17	6.0%
Bricklayer or Mason	12	4.2%
Other	10	3.5%
Painter	8	2.8%
Heating, Ventilation, or Air Conditioning Installer	7	2.5%
Glass Worker or Glazier	2	0.7%
Roofer	1	0.4%
Insulation	1	0.4%
Total	**283**	**100.0%**

Some of these workers had also worked in other trades in their (usually brief) tenure in construction work. Table 6 shows the incidence of secondary trades, from most frequently cited to least.

Table 6
Secondary Trades of Respondents

Secondary Trade	# of Times Mentioned
General Laborer	21
Bricklayer or Cement Mason	17
Carpenter	17
Drywall (sheetrock) hanger	13
Ironworker	11
Electrician	9
Painter	8
Plumber of Pipefitter	4
Heavy Equipment Operator	3
Sheet Metal Worker	3
Painter	3
Other, or unclear answer	3
Air Conditioning Worker	2
Carpet Layer	1
Insulation	1

Eighty-one of the 283 respondents (28.6%) were union members. Of these eighty-one, fifty-two were members of either the Carpenters union (30) or the Ironworkers union (22). Other unions were the Plumbers and Pipefitters (11), the Laborers (9), the Electrical Workers (7), and

the Bricklayers (1). One respondent who claimed union membership gave no name for his union. Average length of union membership was exactly three years to the month, with a range from two weeks to nineteen years. Most of these are at the low end of the spectrum: well over half had been union members for less than two years, with almost a third less than a year. Table 7 shows the spread.

Table 7
Length of union membership for union member respondents

Length of Union Membersip	Number	Percent
Less than one year	26	32.1%
One year	18	22.2%
Two years	7	8.6%
Three years	8	9.9%
Four years	3	3.7%
Five years	2	2.5%
Six to Ten years	13	16.0%
Ten year and over	3* (10, 19, 25)	3.7%
No answer	1	1.2%
Total	**81**	**100.0%**

*The three respondents had ten, nineteen, and twenty-five years of union membership.

Almost a third (32.2%) personally earned less than $20,000 per year, and over fifty-eight percent earned less than $30,000. Table 8 shows a breakdown:

Table 8
Personal Yearly Income of Respondent Immigrant Construction Workers

INCOME RANGE	Number	Percent
Under $10,000	23	8.1%
$10,000 to $15,000	33	11.7%
$15,000 to $20,000	35	12.4%
$20,000 to $25,000	36	12.7%
$25,000 to $30,000	37	13.1%
$30,000 to $35,000	32	11.3%
$35,000 to $40,000	21	7.4%
$40,000 or more	34	12.0%
Wouldn't answer; or gave unusable information	32	11.3%
TOTAL	**283**	**100.0%**

The respondents' family income was generally higher than personal income; nevertheless, fifty percent had a family income below $30,000 per year, and thirty percent had a family income below $20,000 per year. (Average family income during Summer 2006 in the state of Florida was approximately $55,000 per year.) Table 9 shows the immigrant construction worker family income spread.

Table 9
Family Yearly Income of Respondent Immigrant Construction Workers

Income Range	Number	Percent
Less than 20,000	85	30%
20,000-29,999	58	20%
30,000-44,999	62	22%
45,000-59,999	22	8%
More than 60,000	29	10%
Wouldn't answer	27	10%
Total	**283**	**100%**

Forty-four percent had not completed high school or earned an equivalent diploma; yet the other end of the educational spectrum was also well represented. Twenty-one percent had taken at least some college courses, and thirteen percent had a college or graduate degree. Table 10 shows the schooling attainments of the immigrant respondents.

Table 10
Schooling Attainment of Respondent Immigrant Construction Workers

Amount of Schooling	Number	Percent
Less than high school	57	20%
Some high school (9th - 12th Grade)	61	22%
High school degree	98	35%
Vocational or technical school	7	2%
Some college (no degree)	22	8%
College or graduate degree	38	13%
Total	**283**	**100%**

Eighteen percent were U.S. citizens and almost three quarters were legally documented in one way or another. Twenty-seven percent were undocumented. Table 11 shows details.

Table 11
Legal Status of Respondent Immigrant Construction Workers

Legal Status	Number	Percent*
U.S. Citizen	50	18%
Not a Citizen; Documented	158	56%
Not a Citizen; Undocumented	75	27%
Total	**283**	**100%**

*Percentages do not add up to 100% because of rounding.

How representative is this sample of the overall population of immigrant construction workers in the area? The sample departs from our best estimate of the immigrant construction labor force in at least one important way. Union members were intentionally over-sampled to

ensure a large enough group of union workers to make meaningful comparisons between union and non-union workers.

Beyond this over-sampling, the survey was not a random sample, as already noted, even though an attempt was made to approximate randomness as closely as possible. Therefore statistical tests of significance will not be used directly in the following analyses. Limited sample size due to resource limitations also means that some sub-sets of the data are too small for meaningful comparisons. Construction sites sampled were large or medium large, leaving out smaller commercial and residential construction workers. Despite these limitations, the database obtained in this research is still the largest and most representative sample of South Florida immigrant construction workers in existence, to the best knowledge of the author. It provides relatively good and extensive evidence that can be accepted as generally representative until better evidence is obtained.

EMPIRICAL RESULTS FROM SURVEY RESPONSES

The survey asks questions concerning six topic areas: (1) safety and health training received; (2) use of personal protective equipment on the job; (3) safety policies and practices of employers; (4) injuries and illnesses and related issues regarding workers compensation and disability; (5) other employer characteristics and practices which may be related to their safety practices; and (6) respondents' evaluation of their employers' attitude toward safety. This section will report results from responses by immigrant workers in each of these areas sequentially.

SAFETY AND HEALTH TRAINING RECEIVED

Immigrant respondents were asked which if any of six types of safety training they had received:

- the "OSHA 10 Hour Training," which is a basic ten hour class offered by the Occupational Safety and Health Administration (OSHA) on safety and health matters;
- Scaffold Safety Training;
- CPR/First Aid Training in the past three years (A three year period was used because CPR certification expires after three years);
- Asbestos Awareness Training in the past three years (A three year period was used because asbestos awareness certification expires after three years);

- Hazardous Materials/Hazardous Location Training in he past three years (A three year period was used because Hazardous Materials/Location certification expires after three years); and
- Any other safety and health training.

OSHA 10-hour training and Scaffold Safety training had been received by seventy percent and sixty-eight percent respectively. Hazardous materials/area training was also received by over half of the respondents. Other types of training had been given to only one-fifth to one-third of the respondents. Table 12 shows the details.

Table 12
Numbers and Percentages of Respondents Receiving Various Types of Training

TYPE OF TRAINING	# who received training	% YES
OSHA 10-hr. Training	198	**70%**
Scaffold Training	192	**68%**
CPR/First Aid Training (last 3 yrs.)	97	**34%**
Asbestos Awareness Training (last 3 yrs.)	58	**20%**
Hazardous MaterialsTraining (last 3 yrs.)	160	**57%**
Other Safety Training	81	**29%**

Respondents were also asked about the language used to do the training, and their level of understanding of the training. In all but one case, between seventy percent and eighty percent had received training either in their native language, or with translation. In all cases, only one percent or two percent claimed they could not fully understand the training they had received. Table 13 shows details. (In this and following tables, "other training" is omitted, as it turned out to mean such different things that non-uniformity made the data meaningless.)

Table 13
Language and Level of Understanding of Training Received, by Type of Training

Type of Training	In Native Language	In English without Translation	In English with Translation	Fully Understood	Not Fully Understood
OSHA 10-hr. Training	69% (137)	30% (59)	1% (2)	99% (197)	1% (1)
Scaffold Training	73% (140)	26% (50)	1% (2)	98% (189)	2% (3)
CPR/First Aid Training	74% (72)	23% (22)	3% (3)	97% (94)	3% (3)
Asbestos Training	59% (34)	40% (23)	2% (1)	98% (57)	2% (1)
Hazardous Training	74% (119)	24% (39)	2% (3)	99% (159)	1% (2)

A separate question asked who provided the training. In virtually all cases, either the employer or the union (if there was one) was the provider. Between twenty-eight and twenty-nine percent of the immigrant respondents were union members, and the various unions were responsible for between fourteen and twenty-two percent of the training received by the entire sample. Especially for OSHA 10-hour training and Asbestos training, union members usually got their training from a union. Table 14 has details.

Table 14
Provision of Training by Unions, Employers, and "Other"

TYPE OF TRAINING	UNION PROVIDED (% AND #)		EMPLOYER PROVIDED	PROVIDED BY "OTHER"
	apprenticeship	not apprenticeship	(% AND #)	(% AND #)
OSHA 10-hr. Training	16% (31)	6% (12)	76% (151)	2% (4)
Scaffold Training	13% (4)	3% (5)	82% (158)	3% (5)
CPR/First Aid Training (last 3 yrs.)	13% (13)	3% (3)	74% (72)	9% (9)
Asbestos Training (last 3 yrs.)	14% (8)	7% (4)	74% (43)	5% (3)
Hazardous Training (last 3 yrs.)	12% (19)	2% (3)	82% (132)	4% (7)

Because the OSHA 10-hour training is basic training that all construction workers should have received immediately upon beginning work in the industry, immigrant respondents were asked how soon they received it after beginning work in construction. Answers ranged all the way from "before I started work" to "twenty two years." The "average" time, inflated by some "outliers" who received training only after many years in the industry, was a little over a year and a half. The much more meaningful median (half longer, half shorter) was fourteen days, and almost one-third (65 of the the 198) had received their training within a day or less.

Most immigrant respondents who had received OSHA 10-hr. training had been asked to sign a statement acknowledging having received it; one 173 of the 198reported having signed such a statement. The same is true for the other types of training: scaffold safety training (149 out of 192); CPR/first aid training in the last three years (84 out of 97); asbestos awareness training (50 out of 58); and hazardous materials/areas training (134 out of 160).

The types of training requiring periodic (three year) re-certification (CPR/first aid, asbestos awareness, and hazardous materials/areas training) had been taken multiple times by some of the immigrant respondents. For each type of training, the most frequent response was only one training, but in all cases a majority had taken the training two or more times. Table 15 shows the details.

Table 15
Number of Times 3-year Certification Training Received, by Type of Training

Number of times received	CPR/First Aid Training	Asbestos Awareness Training	Hazardous Materials/Spaces Training
Once	42	22	51
Twice	27	21	37
Three times	12	5	33
Four times	4	5	13
Five times	5	0	9
Six times	2	1	1
Seven times	1	0	1
Eight times	1	1	0
Nine times	0	1	0
Ten times	1		6
12 times			2
20 times			3
24 times			1
30 times			1

Immigrant respondents were also asked how long their longest training in each of the certifiable areas had been. Responses ranged from less than one hour to more than forty hours. "Training" of less than one hour probably should not be counted as genuine training because its brevity makes it too superficial. We will return to this issue later, when analyzing relationships of training with other variables. Table 16 shows the range of responses regarding longevity of longest training in each area.

Table 16
Length of Longest Training, by Type of Training

Longest Training	CPR/First Aid Training	Asbestos Awareness Training	Hazardous Materials/Spaces Training
Less than 1 hour	7	5	16
1 hour	13	8	25
1.5 hours	0	3	6
2 hours	14	10	33
2.5 hours	0	0	2
3 hours	12	4	16
3.5 hours	1	0	1
4 hours	13	8	18
4.5 hours	1	0	0
5 – 9 hours	18	11	23
10 hours	8	5	10
11 – 15 hours	1	1	3
16 – 25 hours	6	0	4
26 – 40 hours	2	1	5
41 – 60 hours	1	2	0
Over 60 hours	0	0	1 (90 hours)

OTHER SAFETY AND HEALTH TRAINING

Asked to describe the type of training received, respondents displayed an enormous variation in what they considered "training." Two of the eighty-one claiming some "other training" described weekly or monthly general safety meetings, not training sessions. The most common types mentioned were "general safety training" (twenty-one mentions), safety harness training (eleven mentions), fall protection training (eleven mentions), crane or crane rigging training (six mentions), "safety tools" training (five mentions), training videos (four mentions), and nail gun safety training (two mentions). Others mentioned once include: electrical grounding training, elevator safety training, deck safety training, safety flagging training, material safety data sheet (MSDS) training, fire safety training, ironlift operator training, safety glasses training, fork lift training, "more OSHA" training, "personal training," etc. The responses to this question were too varied to provide much beyond a listing of training types.

USE OF PERSONAL PROTECTIVE EQUIPMENT

Respondents were asked to mark whether they "never," "sometimes," "regularly," or "always" used various types of personal protective equipment on the construction job site. Table 17 shows the percentages and numbers for each response for seven types of protective equipment.

Table 17
Number and Percentage of Immigrant Respondents Using Various Types of Protective Equipment on the Job

TYPE OF PROTECTIVE EQUIPMENT	NEVER USE	SOMETIMES USE	REGULARLY USE	ALWAYS USE
Wear Work Boots	0.4%	1.1%	2.5%	96.1%
	1	3	7	272
Wear a Hard Hat	0%	0.7%	0.4%	98.9%
	0	2	1	280
Wear Work Gloves	8.5%	20.9%	12.4%	58.2%
	24	59	35	164
Wear Protective Eyewear	1.8%	8.5%	7.4%	82.3%
	5	24	21	233
Use Guards on Cutting Tools	10.8%	11.6%	7.8%	69.8%
	29	31	21	187
Use Hearing Protection	25.4%	31.8%	13.2%	29.6%
	71	89	37	83
Use Respiratory Protection	23.4%	33.1%	12.9%	30.6%
	65	92	36	85

Combining "regularly use" with "always use" to signify consistent use of these types of protective equipment, and combining "never use" and "sometimes use" to signify either no use or inconsistent use, one obtains the following results for each type of equipment:

- Wearing Work Boots: **98.6% consistently do; 1.4% do not**
- Wearing a Hard Hat: **99.3% consistently do; 0.7% do not**
- Wearing Work Gloves: **70.6% consistently do; 29.4% do not**
- Wearing Protective Eyewear: **89.7% consistently do; 10.3% do not**
- Using Cutting Tool Guards: **77.6% consistently do; 22.4% do not**
- Using Hearing Protection: **42.8% consistently do; 57.2% do not**
- Using Respiratory Protection: **43.5% consistently do; 56.5% do not**

SAFETY POLICIES AND PRACTICES OF EMPLOYERS

The survey also asked about nine different employer safety policies and practices. Responses are summarized in Table 18.

Table 18
Percentages and Numbers of Immigrant Respondents Exposed to Various Employer Safety Policies and Practices

EMPLOYER PRACTICE	YES	NO	NO ANSWER OR EQUIVOCAL ANSWER
Weekly Safety Meeting	78% 222	22% 61	0 0%
Require Use of Body Harness	93% 263	4% 11	3% 9
Provision of Safety Program	77% 219	22% 63	0% 1
Provide Access to Material Safety Data Sheets (MSDS)	58% 163	38% 108	4% 12
Use of Ground Fault Electrical Outlets	83% 235	10% 28	7% 20
Use of Cut and Taped Electrical Cords	22% 62	77% 218	1% 3
Provision of Scaffold Hand Rails	87% 245	4% 11	10% 27
Provision of First Aid Kits	83% 236	16% 44	1% 3
Provision of Fresh Drinking Water	92% 260	8% 23	0 0%
Provision of Bathrooms	92% 260	8% 23	0 0%

For the 222 whose employer held safety meetings, one 175 (almost 79%) of the meetings were held in the worker's native language, while forty-four (almost 20%) were in English and three (about one and a half percent) were in English and translated. All of the respondents claimed to fully understand the contents of the meetings.

INJURIES, ILLNESSES, AND RELATED WORKERS COMPENSATION AND DISABILITY ISSUES

The survey also asked about injuries, work-related illnesses, workers compensation, and disability payments. Results are briefly summarized in the following tables. Table 19 reports on injury or work-related illnesses in the past three years.

Table 19
Percentage and Number of Immigrant Respondents Experiencing a Workplace Injury/Illness in Past 3 Years; Those Requiring Medical Attention from Same; and Those Losing Work Because of Same

CONDITION	YES	NO
Had Workplace Injury or Work-Related Illness in Past 3 Years	12% 34	88% 249
Had Workplace Injury or Work-Related Illness in Past 3 Years that Required Medical Attention	10% 28	90% 255
Had Workplace Injury or Work-Related Illness in Past 3 Years that Caused Day or More of Lost Work Time	9% 26	91% 257

Of the thirty-four who had lost work time due to workplace injury/illness, thirty (10.6% of the entire immigrant sample) had lost time due to an injury. Of these thirty, eighteen had experienced this only once, nine had experienced this twice, one had experienced it three times, and two had experienced it six times. This totals to fifty-one instances divided among thirty workers, making for an average of a little over one and a half instances for those experiencing lost time injuries. The total amount of time lost varied widely, from one day to one hundred eighty days. (Unusable responses include two who claimed no time lost and one who did not answer.) Most immigrant respondents who had lost work days due to injury (16 of 27 usable responses) reported a total of three days or less lost lost, and only one reported an injury that was serious enough to require prolonged absence from work: 180 days. In total, 310 days of work were lost. Averaged over the entire sample of immigrant respondents, this comes to a little over one day lost per respondent in a three year period, or less than half a day lost per year. Table 20 shows summary figures.

Table 20
Three Year Injury Statistics for the Sample Immigrant Population

SEVERE INJURY CAUSING LOSS OF WORK DAY	NUMBER OF TIMES INJURED CAUSING LOSS OF WORK DAY	NUMBER OF DAYS LOST DUE TO WORKSITE INJURY	LOST DAYS DIVIDED BY NUMBER OF RESPONDENTS IN SAMPLE	AVERAGE ANNUAL LOST DAYS PER RESPONDENT IN SAMPLE
11% (30)	51	310	1.1	0.4

Respondents who had been injured on the job were asked if they had reported it. Of the thirty-three usable answers, twenty-seven reported that they had. The six who had not were asked why they had not. Three gave evasive answers like “I don’t know” or “I forgot” or chose

not to answer. Two indicated that they did not think the injury serious enough to merit informing the boss ("not serious" and "I considered it not severe"). One stated that he was "reluctant to tell boss because of fear of missing work."

The twenty-seven who had reported their injury were asked what had happened after they reported it. Field notes from the surveyors indicate that in the vast majority of cases, medical treatment of one sort or another was the outcome. Seven were sent to a medical clinic; five to the hospital (three of the five mention the emergency room); two were sent to a doctor; two received unspecified "medical attention;" one got a "test, X-ray;" and four were given on-the-spot first aid of some sort. One stated that he was given (unspecified) compensation. Five indicated treatment that could be interpreted as less helpful or friendly: three were just "sent home" while one went to the hospital emergency room on his own, and another's treatment consisted of "drink water and rest."

Only nine respondents (3% of the overall immigrant sample) had lost work time in the past three years due to a work-related illness (not injury). Most had experienced this only once. A total of twenty-nine days was lost. Averaged over the entire sample of immigrant respondents, this comes to approximately one-tenth of a day lost per respondent in a three year period, or miniscule three one-hundredths of a day lost per year. Table 21 shows summary figures.

Table 21
Three Year Work Related Illness Statistics for the Sample Population

SEVERE ILLNESS CAUSING LOSS OF WORK DAY	NUMBER OF TIMES ILLNESS CAUSES LOSS OF WORK DAY	NUMBER OF DAYS LOST DUE TO WORK RELATED ILLNESS	LOST DAYS DIVIDED BY NUMBER OF RESPONDENTS IN SAMPLE	AVERAGE ANNUAL LOST DAYS PER RESPONDENT IN SAMPLE
3% (9)	14	29	.10	.03

WORKERS COMPENSATION ISSUES

Most immigrant respondents had not filed a workers compensation claim or received any payment from the workers compensation system. There is some discrepancy in the figures, as only nine stated that they had filed a workers compensation claim in the past three years, yet thirteen claimed to have received a workers compensation payment for work performed in those same three years. Of the nine who said they had filed a claim, eight stated that they had received payment; thus the thirteen receiving payment included five who state that they never filed a

claim. Probably those five had a claim filed for them (although the "filed a claim?" question explicitly asked about others filing for them); in any case, the figures are reported here exactly as they were given to the surveyors.

All nine applicants asked for medical expenses; seven asked for lost work time payments, and one asked for permanent disability. Four of the thirteen who said they had received a workers compensation payment did not state how much they had received. Payment to the nine who answered ranged between $120 and $30,000. All but two of the payments were under $2,000. The mean, or average payment was $4,750; the median (half more, half less) was $900. Table 22 gives a summary of filing and payment statistics.

Table 22
Workers Compensation Experiences of Immigrant Respondents Who Filed in the Past Three Years

FILED A CLAIM	FILED FOR MEDICAL EXPENSES	FILED FOR LOST WORK TIME	FILED FOR PERMANENT DISABILITY	RECEIVED W.C. PAYMENT	AVERAGE AMOUNT OF PAYMENT
3% (9)	9	7	1	13	$4750

The 274 respondents who had not filed a workers compensation claim were asked if their employer paid into the workers compensation system. Only 244 answered the question, making for an eighteen percent nonresponse rate. Of the remaining eighty-two percent, seventy-six percent indicated that they were covered and six percent that they weren't or did not know. It is difficult to interpret the high nonresponse rate, but if it is added to the numbers of those who don't have or don't know if they have coverage, up to twenty-four percent could be without workers compensation coverage.

Only four respondents (1.4%) had ever been asked to sign a waiver of workers compensation coverage. Indicating that the experience was not a product of working for a tiny "fly by night" contractor, all four indicated that the employer making this request employed more than ten employees. Table 23 gives summary stastistics concerning workers compensation.

Table 23
Workers Compensation Experiences of Immigrant Respondents Who Did Not File in the Past Three Years

HAVE COVERAGE	DON'T HAVE COVERAGE, OR DON'T KNOW	DIDN'T RESPOND ABOUT COVERAGE	ASKED FOR WORKERS COMPENSATION WAIVER
76% (185)	6% (15)	18% (44)	4 (employers employ >10 employees)

SELF ASSESSMENT OF HEALTH

Over a third of the immigrant respondents rated their own health as "excellent" and over half assessed it as either excellent or very good. Less than five percent rated their own health simply "fair," and none rated themselves as "poor." Table 24 shows results.

Table 24
Immigrant Respondents' Self-Assessment of their own Health.

EXCELLENT	VERY GOOD	GOOD	FAIR	POOR
35.3% (100)	20.5% (58)	39.6% (112)	4.6% (13)	0% (0)

A large majority thought their health had not changed appreciably in the past year. Almost seventy-one percent compared their present health with that of one year ago as "about the same"; and deviations from that rating tended to move in the direction of improvement. Table 25 shows details.

Table 25
Respondents' Assessment of Change in Their Own Health, Past Year

MUCH BETTER	SOMEWHAT BETTER	ABOUT THE SAME	SOMEWHAT WORSE	MUCH WORSE
12.8% (36)	11.7% (33)	70.8% (199)	3.9% (11)	0.7% (2)

SERIOUS INJURIES AND DEATHS AT WORK SITES

Immigrant respondents were asked if they had been working at a job site in the last year when a construction worker at the same site had to be taken to a hospital because of an injury. Thirty-nine percent (110) responded that they had. The total number of such incidents witnessed was 246, meaning that the "typical" witness had seen this a little over twice a year. Respondents were also asked if they had worked on a site since they started working construction when a

construction worker died in a work related accident. Eighteen percent (50) had. Table 26 shows details.

Table 26
Percentage and Number of Immigrant Respondents Witnessing Serious Accident Requiring Hospitalization in Past Year, and Witnessing Accidental Death at Work Site in Entire Time Working in Construction

	ACCIDENT REQUIRING HOSPITALIZATION (PAST YEAR)	ACCIDENT CAUSING DEATH (ENTIRE TIME WORKING IN CONSTRUCTION)
PERCENTAGE OF RESPONDENTS (#)	39% (110)	18% (50)
NUMBER OF INCIDENTS WITNESSED	246	Not asked.

OTHER EMPLOYER CHARACTERISTICS AND PRACTICES THAT MAY BE RELATED TO THEIR SAFETY PRACTICES

The survey also asked a number of other questions concerning employers and the relationships of the immigrant respondents with them. The information solicited was thought to be possibly related to employers' safety and health practices – for example, worse treatment in other respects may coincide with requiring employees to work in a less safe manner. Results will be briefly summarized here.

LENGTH OF TIME WITH CURRENT EMPLOYER

Respondents were asked how long they had been with their current employer. Over half had worked for their current employer less than a year, and almost seventy percent had less than two years in with their current employer. Table 27 shows details.

Table 27
Length of Time Immigrant Respondents had worked for their Current Employer

LESS THAN ONE MONTH	ONE MONTH TO LESS THAN ONE YEAR	ONE YEAR TO LESS THAN TWO YEARS	TWO YEARS TO LESS THAN FIVE YEARS	FIVE YEARS TO LESS THAN TEN YEARS	TEN YEARS OR MORE	NO ANSWER
6% (17)	48.4% (137)	15.5% (44)	18.7% (53)	6.7% (19)	3.9% (11)	0.7% (2)

NUMBER OF EMPLOYERS IN THE PAST YEAR

Most immigrant respondents had worked for only one construction employer in the past twelve months, and over eighty percent had worked for two or one. Table 28 shows details.

Table 28
Immigrant Respondents' Number of Construction Employers in the Past Twelve Months

ONE	TWO	THREE	FOUR	FIVE	SIX	SEVEN	TEN	ABOVE TEN	NO ANSWER
57.6% (163)	23.7% (67)	9.9% (28)	4.6% (13)	1% (3)	0.35% (1)	0.35% (1)	0.35% (1)	0.71% (2)	1% (3)

HOW CURRENT JOB WAS FOUND

Over half of immigrant respondents got their job either through "word of mouth" in general or through referral by a friend or family member. Other methods categorized as "other" such as a labor pool or temp agency referral (eleven cases) or simply walking onto a job site (forty seven cases) were also frequent. Table 29 has details.

Table 29
Numbers and Percentages of Respondents Who got their Job in Various Ways

Want ad in paper	4% (10)
Word of mouth	7% (21)
Friend or family member	47% (132)
Union hiring hall	9% (26)
Referred by prior employer	5% (15)
Moved with employer from previous job	5% (15)
Other (walked on job site, temp agency or labor pool referral, radio, internet, etc.)	23% (65)

TYPE OF FIRM WORKED FOR

Respondents were asked if they worked for a construction firm, a temp help firm, or "other". Ninety percent worked for a construction company (contractor or sub-contractor), while nine percent worked for a temp help firm and one percent (three people) worked for "other." The three "other" respondents reported that they worked for a "straw boss," a term whose meaning is not entirely clear. But it appears that a "straw boss" is equivalent to an extremely

small sub-contractor who delivers workers to a firm and pays them out of his own pocket (whether legally or as part of the underground economy is not clear) after collecting a fee from the construction contractor. All three reported being paid by the "straw boss," not the construction firm. Two reported working for their straw boss a half year and a year respectively; the third did not answer this question. Two reported preferring their current arrangement to working directly for the construction firm; the third was unsure of his preferences.

Table 30
Type of Firm Currently Working For

Construction firm	90% (255)
Temp help firm	9% (26)
Other	1% (3)

Of the twenty-six working for a temp help firm, over half (fourteen) had worked for this firm less than a year, and all had five years or less with the firm. All but two received their paycheck from the temp help firm rather than the construction firm. By a margin of fifteen to ten (with one not answering), these temp help employees would have preferred to get paid by the construction firm but were stuck with the temp firm for one reason or another.

EMPLOYEES ON CURRENT JOB SITE AND TOTAL EMPLOYMENT OF CURRENT EMPLOYER

Employment at the immigrant respondents' current job sites ranged from two to one thousand. The mean (average) was one hundred fifty six, while the median (half more, half less) was one hundred. In addition to working on rather large job sites for this industry, the immigrant respondents also tended to work for much larger than average employers. Sixty-six percent of them worked for an employer with one hundred employees or more, and more than a quarter had employers with five hundred or more employees. Details are in Table 31.

Table 31
Number of Employees at Current Job Site, and Total Employment of Employer*

RANGE	NUMBER OF EMPLOYEES AT CURRENT JOB SITE	TOTAL EMPLOYMENT OF EMPLOYER
Less than 10	4% (10)	2% (7)
10-14	9% (24)	5% (14%)
25-99	33% (93)	20% (57)
100-499	46% (128)	40% (113)
500-999	9% (24)	26% (74)
Don't know	0 (0%)	6% (16)

*Numbers do not always add up to 283 due to a few nonresponses to each question.

UNIONIZATION STATUS OF CURRENT EMPLOYER

Forty-five percent of the immigrant respondents stated that their employer was completely non-union; twenty percent stated that it was completely unionized. Most of the rest indicated some portion of the employer's workforce, but not all, was unionized. The unions mentioned most frequently as representing the employer's workers were the Carpenters, the Ironworkers, the Electricians, the Plumbers, and the Laborers. Table 32 summarizes unionization status.

Table 32
Immigrant Respondent Assessments of How Unionized Employers Are

ALL EMPLOYEES UNION	MOST EMPLOYEES UNION	SOME EMPLOYEES UNION	NO EMPLOYEES UNION	DON'T KNOW
20% (56)	11% (32)	22% (61)	45% (126)	3% (8)

AVERAGE DAYS WORKED PER WEEK IN CONSTRUCTION IN PAST YEAR

On average, respondents averaged 5.36 days of construction work per week, while working in construction. Over ninety-eight percent worked either five or six days a week. The mean number of hours worked was 44.48; the median (half more, half less) was 40 hours. Table 33 has details.

Table 33
Average Days Worked per Week and Average Hours Worked per Week in Past Year When Working in Construction

Average Days Worked per Week, While Working in Construction	3	0.7% (2)
(Average for all 283 Immigrant respondents is 5.36 days)	4	0.4% (1)
	5	61.8% (175)
	6	36.7% (104)
	7	0.4% (1)
Average Hours Worked per Week, While Working in Construction	Minimun: 24 hrs	
(Average for 282 Immigrant respondents who answered is 44.48 hrs.)	Maximum: 70 hrs.	
	Median: 40 hrs	

TYPES OF PAYMENT AND RATES OF PAY

Eighteen percent (51) of the immigrant respondents indicated that at some point (not necessarily with the current employer) they had been paid for construction work in cash. Of the fifty-one who had, twenty-nine indicated that the employer employed more than ten workers and twenty-one indicated a small employer with less than ten employees. In virtually all cases (47 of the 51 cases) the employer who had done this was nonunion.

Far fewer had been illegally asked to sign a "1099 form" declaring themselves independent contractors even though they were working by the hour: eight percent (23 respondents). Of the twenty-three who had been asked, nineteen were asked by employers of more than ten workers and four were employers of less than ten. Eighteen of the twenty-three were nonunion employers. Table 34 gives details.

Table 34
Number of, and Characteristics of, Firms Paying Respondents in Cash or Requiring Dishonest Filling Out of Independent Contractor Form

EMPLOYER PRACTICE	YES	NO	KNOWN EMPLOYER CHARACTERISTICS FOR "YES" ANSWERS	NUMBER
Paid in Cash?	18% (51)	82% (232)	Less than 10 Workers	22
			More than 10 Workers	29
			Non-Union	47
Asked to Dishonestly Sign an Independent Contractor Form?	8% (23)	92% (260)	Less than 10 Workers	4
			More than 10 Workers	19
			Non-Union	18

All but eleven of the immigrant respondents indicated that they were usually paid by the hour. Five were paid by the day; four by the job (piece rate), and two by salary. Those working by the hour averaged $14.76 per hour, from a low of $5.15/hour to a high of $40.00/hour. Those paid by the day tended to make less; salaried were generally highly paid, while those paid by the job (piece rate) averaged about the same as hourly workers. Table 35 shows details.

Table 35
Type of Pay and Levels of Pay for Immigrant Respondents

	PAID BY THE HOUR	PAID BY THE DAY	PAID BY THE JOB	PAID BY SALARY
Percent (#)	96% (272)	2% (5)	1% (4)	1% (2)
Hourly Earnings	Average: $14.76	Average: $11.78/hr.	Average: $15.00/hr.	Average: $28.75/hr.
	Low: $5.15	Low: $10.00/hr.	Low: $10.00/hr.	Low: $25.00/hr.
	High: $40.00	High: $14.40/hr.	High: $25.00/hr.	High: $32.50/hr.
	Below $10: 11% (30)	$10.00 hourly: 40% (2)	$10.00 hourly: 25% (1)	$25.00 hourly: 50% (1)
	$10-$11.99 15% (41)	$12.00 hourly: 20% (1)	$12.00 hourly: 25% (1)	$32.50 hourly 50% (1)
	$12-$13.99 18% (49)	$12.50 hourly: 20% (1)	$13.00 hourly: 25% (1)	
	$14-$15.99 22% (59)	$14.40 hourly: 20% (1)	$25.00 hourly: 25% (1)	
	$16-$17.99 10% (28)			
	$18-$19.99 12% (33)			
	$20-24.99 6% (17)			
	$25 up 6% (15)			

PROVISION OF A RETIREMENT OR SAVINGS PLAN

Thirty-five percent (98) of the immigrant respondents indicated that their employer offered a retirement or savings plan. Of those with a plan, sixty-seven percent indicated that the employer contributed to it. Even though unionized respondents comprised less than thirty percent of the sample, sixty-nine percent of the retirement/savings plans were union, indicating the better retirement provisions available to union members. Table 36 provides details.

Table 36
Retirement or Savings Plan Provision and Types

	YES	NO	NO ANSWER
Offered a Retirement or Savings Plan?	35% (98)	63% (179)	2% (6)
For Yes Answers, Does the Employer Contribute?	67% (66)	30% (29)	2% (3)
For Yes Answers, Is it a Union Plan?	69% (68)	30% (29)	1% (1)

PROVISION OF A HEALTH INSURANCE PLAN

Almost fifty-six percent (158) of immigrant respondents indicated that their employer provided a health insurance plan but only a quarter of those indicating such a plan were able to state what percentage of the health insurance premium was paid by the employer. Table 37 provides details.

Table 37
Number of Immigrant Respondents Offered Health Insurance Coverage, and Percentage of Insurance Premiums Paid by the Employer

	YES	NO	NO ANSWER
Offered Health Insurance Coverage?	55.8% (158)	43.1% (122)	1.1% (3)
Percentage of Premium Paid by the Employer	100%: 7% (11) 99-75%: 9% (14) 74-50%: 8% (12) < 50%: 2% (3) Don't know: 75% (118)	NA	NA

PERCEPTIONS OF EMPLOYER ATTITUDES AND PRACTICES CONCERNING SAFETY

Immigrant respondents were asked to state if they "strongly agree", "agree", "disagree", or "strongly disagree" with a series of statements that indicate their assessment of their employers' attitudes and practices concerning safety. Overwhelmingly they felt that their employers were safety conscious, although sixty percent also stated that their work conditions were dangerous. Table 38 shows the percentages and numbers of each response for nine statements.

Table 38
Number and Percentage of Immigrant Responses Agreeing or Disagreeing with Evaluations of Employer Safety Attitudes and Practices

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
My foreman is concerned about worker safety	45.2% (126)	52.3% (146)	2.2% (6)	0.4% (1)
My contractor (employer) is concerned about worker safety	45.4% (128)	49.6% (140)	4.3% (12)	0.7% (2)
Unions lead to safer jobs	37.3% (98)	52.1% (137)	9.1% (24)	1.5% (4)
My work conditions are dangerous	16.7% (47)	43.3% (122)	34.8% (98)	5.3% (15)
My work area is kept clean	32.9% (92)	56.4% (158)	10.4% (29)	0.4% (1)
My work area is cluttered	1.8% (5)	14.2% (40)	72.0% (203)	12.1% (34)
My job site has a good safety program	34.4% (96)	57.7% (161)	7.2% (20)	0.7% (2)
I have too much to do to be able to follow safe work practices	2.5% (7)	18.1% (51)	66.3% (187)	13.1% (37)
Where I work, productivity is more important than worker safety	2.5% (7)	16.0% (45)	60.9% (171)	20.6% (58)

If we combine "strongly agree" with "agree" to signify general agreement and "strongly disagree" with "disagree" to signify disagreement with these statements, we obtain the following results:

- Foremen is concerned about worker safety: **97% agree; 3% disagree;**
- Employer is concerned about worker safety: **95% agree; 5% disagree**;
- Unions lead to safer jobs: **89% agree; 11% disagree;**
- My work conditions are dangerous: **60% agree; 40% disagree**;
- My work area is kept clean: **89% agree; 11% disagree;**
- My work area is cluttered: **16% agree; 84% disagree**
- My job site has a good safety program: **92% agree; 8% disagree**;
- I have too much to do to follow safe work practices: **21% agree; 79% disagree**;
- Where I work, productivity is more important than worker safety: **18.5% agree; 80.5% disagree**.

As a further test of respondent's assessment of their employer's commitment to safe policies and practices, respondents were asked whether they would report a safety violation to

their employers if they were aware of it. Ninety-six percent said yes, a further indication of their confidence that the employer was serious about safety. Table 39 shows results.

Table 39
Willingness of Respondents to Report a Safety Violation

	YES	NO	UNSURE
Would You Report a Safety Violation?	96% (271)	3% (8)	1% (4)

The twelve who answered no or were unsure were asked why they would not or might not. The surveyors' field notes about answers indicate that fear is a primary reason:

- "They would probably fire him"
- "Sometimes the employer can fire you"
- "He minds his own business"
- "Fear"
- "He is new, and does not know how to do it"
- "People may take it against him"
- "Someone else is in charge of that"
- "Someone else is in charge"
- "Work has to get done. (But, if safety inspector seees it, he will handle it.)"
- "He would avoid reporting it unless it was serious"
- "He would just call person's attention to it"
- "Talk to guys directly; they have to leave if I tell them to."

With the exception of the last response (which seems to be from a supervisor or safety person), these responses all seem to either explicitly or implicitly indicate fear or reticence because of possible negative consequences to them if they did report a safety violation. There is a high congruence between the expressions of fear (or reticence) stated above and the same respondent's negative assessment of their foremen's (and employer's) concern with safety. All except one either disagreed or strongly disagreed with the statement that their foreman was concerned about safety, and all but two felt the same way concerning their employer. So, despite general belief that foremen and employers were concerned with safety, a small minority (four percent) felt intimidated and fearful.

RELATIONSHIPS OF UNIONIZED STATUS AND DOCUMENTED STATUS WITH SAFETY OUTCOMES

Prior to testing relationships between variables within the group of immigrant respondents, comparisons were done between the immigrant group the "control group"of native born respondents working alongside them. Were there any differences of a systematic or significant nature between the two? No differences of any consequence were found between them on any of the three "safety outcome" variables (amount of training, use of personal protective equipment, and employer safety practices).[2] The control group had been included due to suspicion that the survey might uncover comparatively inferior safety outcomes for the immigrant group, but the finding of no difference is not really surprising, since all were working on the same projects and usually were working for the same employers.

It is expected that an immigrant worker's likelihood of receiving little or no safety training, working without much personal protective equipment, or working for an employer with less safe policies and practices will depend on the degree to which that immigrant is protected from unchecked employer power over him or her. A broad array of literatures and theories claim that union membership and documented legal status protect workers and give them more power to resist employer attempts to take advantage of them. Operationalized in terms of data collected in this research, an immigrant construction worker therefore should be less vulnerable if he or she (1) is a union member, and (2) is documented or naturalized rather than undocumented.

Therefore it is hypothesized that unionized and legally documented immigrant workers will experience more favorable outcomes. **Hypothesis #1** is that unionized status is associated with better safety outcomes (more training, more use of personal protective equipment, safer employer practices) than those experienced by non-union workers. **Hypothesis #2** is that documented status (citizen or documented non-citizen) for an immigrant worker is associated with better safety outcomes than those experienced by undocumented workers.

TESTS OF THE TWO MAJOR HYPOTHESES

This section will test Hypothesis #1 and Hypothesis #2: were there differences in safety outcomes according to union membership and according to documented or undocumented

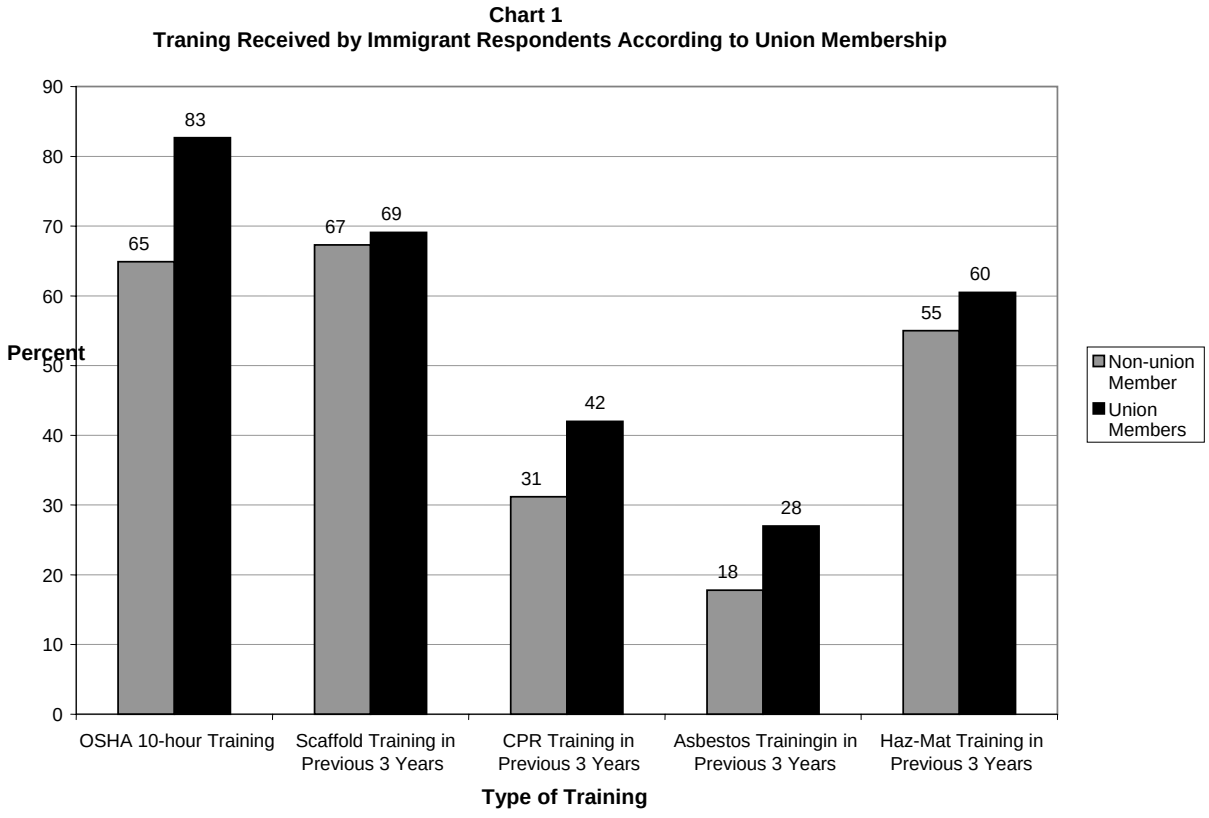
[2] To obtain the raw data from this study on this finding or any other finding, please contact the author.

status? First, Table 40 shows the differences between union members and non-members in reception of safety training (in this and following tables, reception of "other training" is omitted because it covered such a wide variety types of training and interpretations of what "training" meant that the results are not meaningful).

Table 40
Relationship between Union Membership and Training for Immigrant Respondents

TYPE OF TRAINING	UNION MEMBERS			NON-UNION WORKERS		
	# Yes	#No	% Yes	#Yes	# No	% Yes
OSHA 10-hr. Training	67	14	**83%**	131	71	**65%**
Scaffold Training	56	25	**69%**	136	66	**67%**
CPR/First Aid Training	34	47	**42%**	63	139	**31%**
Asbestos Training	22	56	**28%**	36	166	**18%**
Hazardous Training	49	32	**60%**	111	91	**55%**

Chart 1 demonstrates the same results graphically.



As expected, union membership among immigrants is associated with more training, particularly in the 10-Hour OSHA training where union members are eighteen percent more likely to have received training than are non-union members. Union membership also means an eleven percent

higher likelihood of having received CPR training and a ten percent higher chance of having received Asbestos training. Scaffold training is virtually identical in the two groups (only two percent higher for union members), and training in Hazardous Materials is slightly higher for union members, but only by five percentage points. (If this were a random sample, the differences in OSHA 10-hour would be highly significant [at the .01 level] and CPR training would be near significance [between .05 and .10] at the .05 level. The differences in Asbestos training would be just barely above the .10 level of significance.) These results are supportive of Hypothesis #1, which is that union members will receive better safety outcomes, specifically more safety training.

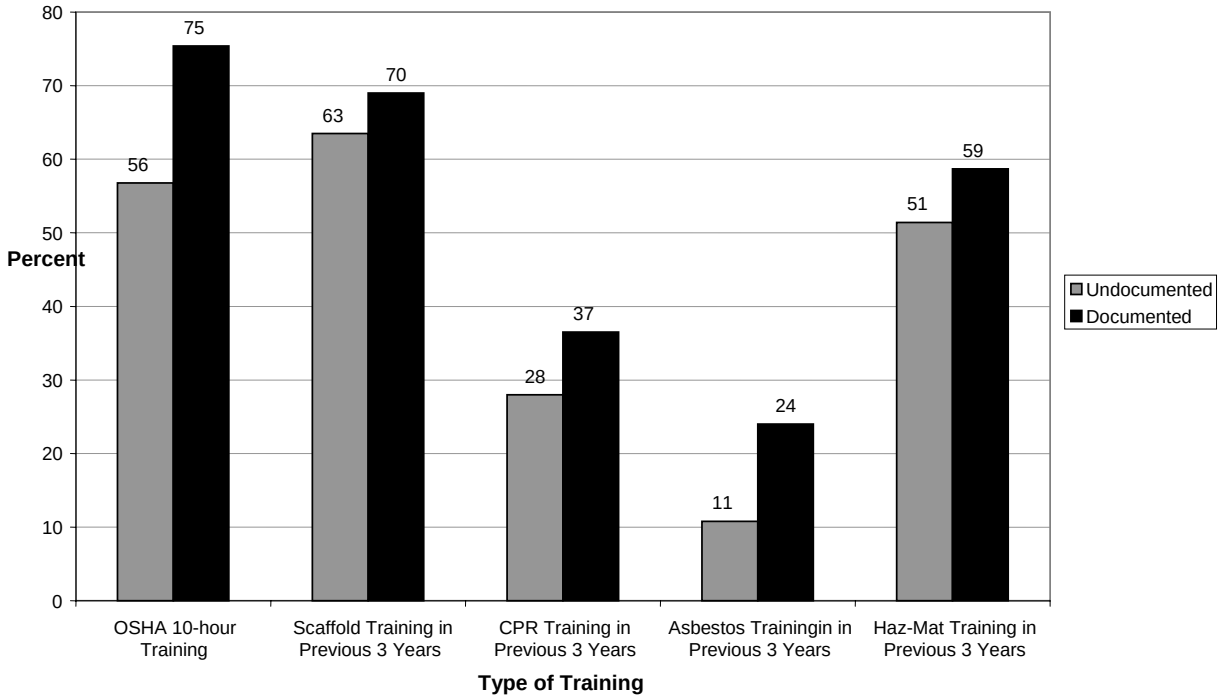
Similarly, our results indicate that documented status is associated with more training; differences in training reception between documented and undocumented workers are uniformly in the expected direction. Table 41 shows results.

Table 41
Relationship between Documented/Undocumented Status and Training

	Documented			Undocumented		
	# Yes	#No	% Yes	#Yes	# No	% Yes
OSHA 10-hr. Training	156	52	**75%**	42	33	**56%**
Scaffold Training	145	63	**70%**	47	28	**63%**
CPR/First Aid Training	76	132	**37%**	21	54	**28%**
Asbestos Training	50	158	**24%**	8	67	**11%**
Hazardous Training	122	86	**59%**	38	37	**51%**

Chart 2 shows the same results graphically.

Chart 2
Training Received by Immigrant Respondents According to Migratory Status



Differences are particularly stark for OSHA 10-hour training (nineteen percent more likely if documented) and Asbestos training (thirteen percent more likely if documented). (If this were a random sample, the OSHA and asbestos results would be highly significant at the .01 level, and the other three would not be significant, although all would be in the .10 to .20 range.) Again, initial results are mildly supportive of Hypothesis 2, that documented immigrants will experience superior safety outcomes, at least in the area of training.

Overall, results provide initial evidence supporting the hypotheses that union status and documented status are associated with more safety training for immigrant construction workers. This is more apparent for unionized status, but in general is true for both.

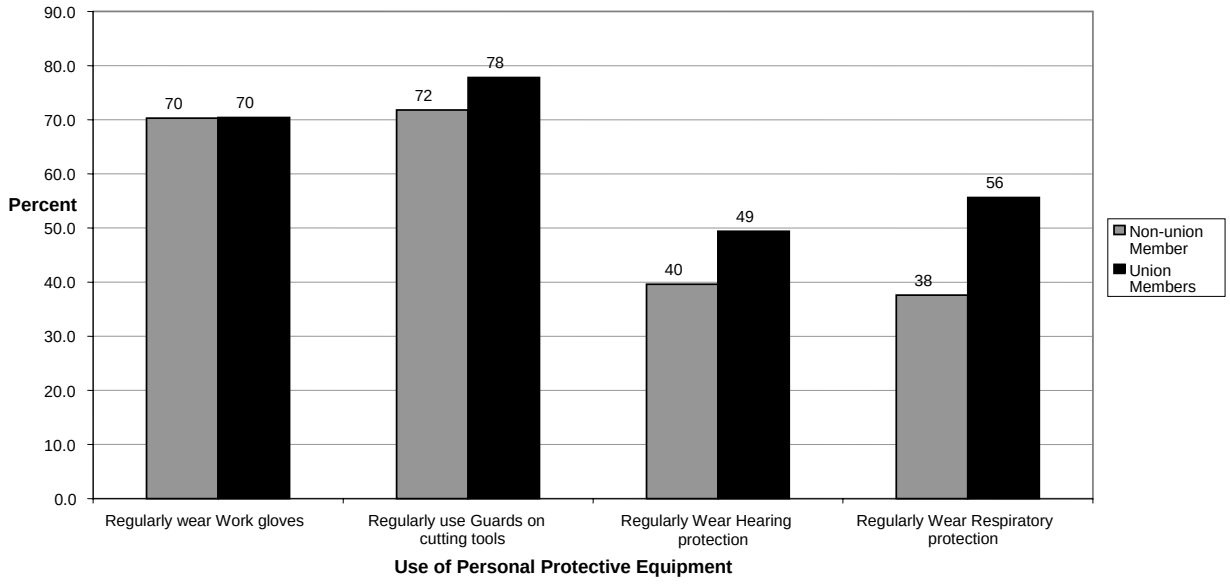
Immigrant respondents' use of personal protective equipment (indicated by "regular use" or "always use" responses) is examined next. Table 42 shows differences between union members and non-members on this dimension.

Table 42
Relationship between Union Membership and Use of Protective Safety Equipment for Immigrant Respondents

	UNION MEMBERS			NON-UNION WORKERS		
	# Yes	#No	% Yes	#Yes	# No	% Yes
Wear Work Boots	81	0	**100%**	198	4	**98%**
Wear a Hard Hat	80	1	**99%**	201	1	**100%**
Wear Work Gloves	57	24	**70%**	142	60	**70%**
Wear Protective Eyewear	74	7	**91%**	180	22	**89%**
Use Guards on Cutting Tools	63	18	**78%**	145	57	**72%**
Use Hearing Protection	40	41	**49%**	80	122	**40%**
Use Respiratory Protection	45	36	**56%**	76	126	**38%**

It is apparent that wearing work boots, wearing a hard hat, and use of eyewear are virtually universal, and that there is no difference between the groups on these measures. Putting these aside, Chart 3 graphically shows the same results given in Table 42.

Chart 3
Use of Personal Protective Equipment of Immigrant Respondents by Union Membership



Regular wearing of work gloves is identical for both groups, and the regular use of guards on cutting tools is only six percent more likely among union workers than among non-union workers. But by much larger margins union workers are more likely to regularly wear hearing protection (nine percent higher) or regularly wear respiratory protection (eighteen percent higher). (If this were a random sample, the respiratory protection difference would be highly

significant [at the .01 level of confidence], and the hearing protection difference would have a confidence level of .145 while the difference in use of tool guards would have only a .189 level of confidence.). This lends some support for Hypothesis #1, that unionization is associated with greater use of personal protective equipment, but only weakly.

Differences between documented and undocumented respondents in the use of personal protective equipment are examined next. Table 43 shows differences along this dimension.

Table 43
Relationship between Documented/Undocumented Status of Immigrant Respondents and Use of Protective Safety Equipment on the Job

	Documented			Undocumented		
	# Yes	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
Wear Work Boots	207	1	**100%**	72	3	**96%**
Wear a Hard Hat	206	2	**99%**	75	0	**100%**
Wear Work Gloves	136	72	**65%**	63	12	**84%**
Wear Protective Eyewear	187	21	**90%**	67	8	**89%**
Use Guards on Cutting Tools	146	62	**70%**	62	13	**83%**
Use Hearing Protection	91	117	**44%**	29	46	**39%**
Use Respiratory Protection	94	114	**45%**	27	48	**36%**

Again omitting areas where usage is almost universal (work boots, hard hart, and protective eyewear), Chart 4 shows the same results graphically.

Chart 4
Use of Personal Protective Equipment of Immigrant Respondents According to Migratory Status

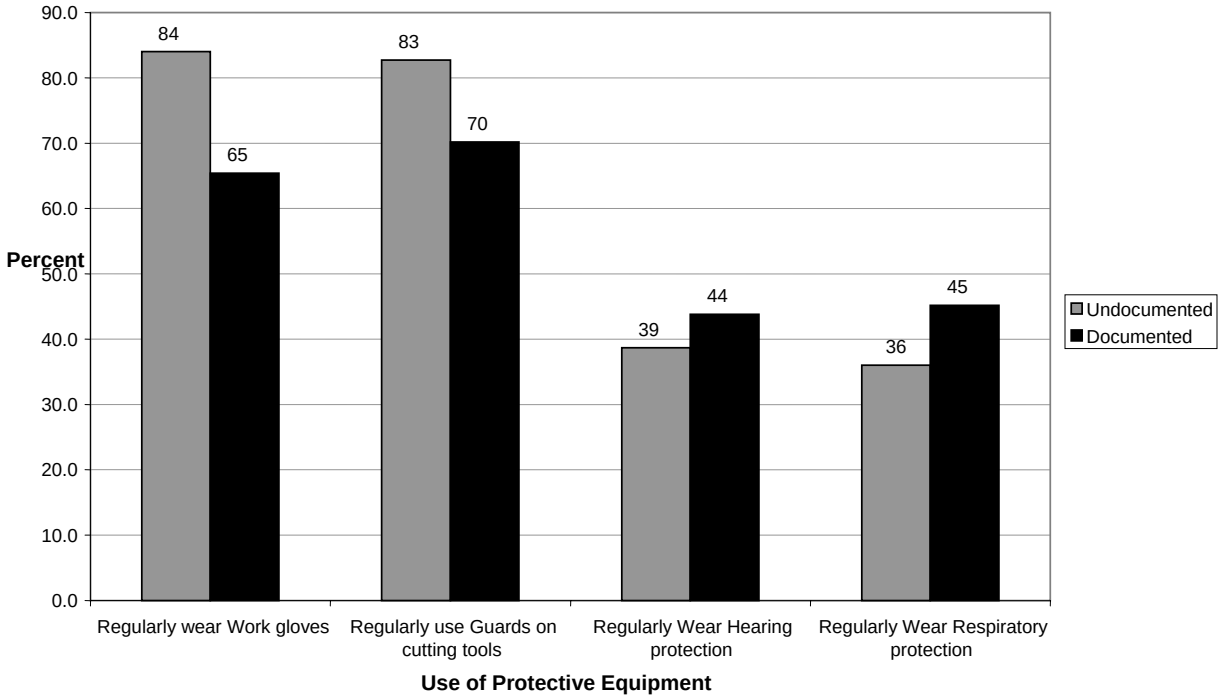


Chart 4 shows mixed results, with two of the differences in the expected direction and two in the opposite direction. Hearing and respiratory protection use are more associated with documented status, but regular use of work gloves and use of guards on cutting tools are more associated with undocumented status, and the differences are much larger when the difference is in the unexpected direction. (If this were a random sample, the unexpected greater use of work gloves and cutting tool guards by the undocumented would be significant at the .05 level, while the expected greater use by the documented of hearing protection and respiratory protection would not be statistically significant.) In general, no pattern of support for hypothesis 2 in the area of use of personal protective equipment usage is apparent; if anything, results tend to show the opposite.

Next, differences between the safety practices of union and non-union employers are examined. Table 44 shows different experiences of non-union and union members on this dimension.

Table 44
Relationship between Union Membership and Employer Safety Policies/Practices

	UNION MEMBERS			NON-UNION WORKERS		
Policy/Practice	**# Yes**	**# No**	**% Yes**	**#Yes**	**# No**	**% Yes**
Weekly Safety Meetings	65	16	**80%**	157	45	**78%**
Require Body Harness	73	6	**92%**	190	5	**97%**
Provide Copy of Safety Program	69	12	**85%**	150	51	**75%**
Provide MSDS Sheet for Chemicals	53	26	**67%**	110	82	**57%**
Provide Electrical Ground Faults	74	5	**94%**	161	23	**88%**
Use of Taped-up Electrical Cords	12	68	**15%**	50	150	**25%**
Provide Handrails on Scaffolds	72	2	**97%**	173	9	**95%**
Provide First Aid Kit	71	8	**90%**	165	36	**82%**
Provide Fresh Drinking Water	75	6	**93%**	185	17	**92%**
Provide Bathroom	76	5	**94%**	184	18	**91%**

If we eliminate practices with over ninety percent adoption overall (body harness, handrails, drinking water and bathroom provision), and looking only at practices with more than a five percentage point difference between union and non-union respondents, Chart 5 shows the same results graphically.

Chart 5
Employer Safety Practices of Immigrant Respondents according to Union Membership

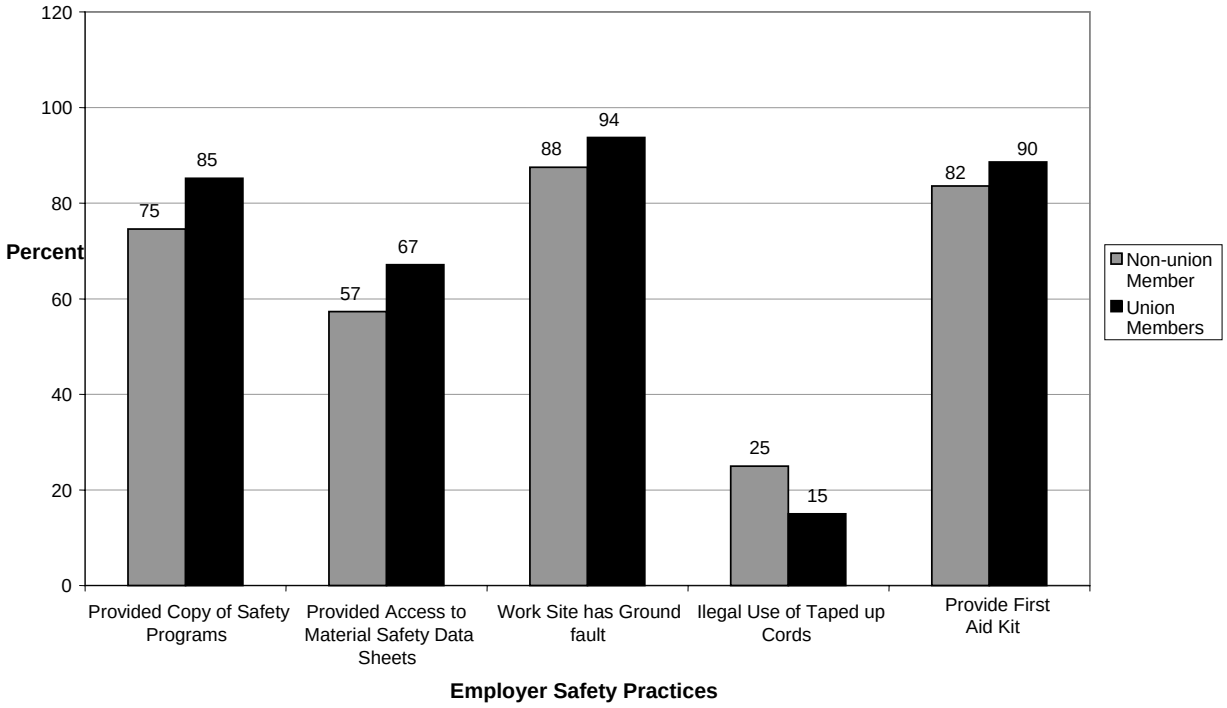


Chart 5 shows that all differences between union and non-union members are in the expected direction, lending some support to Hypothesis 1. For at least three of the five practices, the difference is ten percent, making the association robust although less stark than for some of the training variables. (If this were a random sample, safety program provision and use of taped up cord differences would be near significance at the .05 level and the other three differences all register between the .10 and .20 level.) Since these differences obtain for five of the six practices surveyed that have less than ninety percent adoption, overall the figures give at least mild support to Hypothesis #1.

Responses concerning employer safety practices are next compared between documented and undocumented immigrants. Table 45 shows results.

Table 45
Relationship between Documented/Undocumented Status of Immigrant Respondents and Safety Policies and Practices of their Employers

	Documented			Undocumented		
Policy/Practice	**# Yes**	**# No**	**% Yes**	**# Yes**	**# No**	**% Yes**
Weekly Safety Meetings	163	45	**78%**	56	16	**78%**
Require Body Harness	193	10	**95%**	70	1	**99%**
Provide Copy of Safety Program	169	38	**82%**	50	25	**67%**
Provide MSDS Sheet for Chemicals	136	63	**68%**	27	45	**38%**
Provide Electrical Ground Faults	175	19	**90%**	60	9	**87%**
Use of Taped-up Electrical Cords	28	128	**18%**	24	61	**28%**
Provide Handrails on Scaffolds	184	5	**97%**	61	6	**91%**
Provide First Aid Kit	175	30	**85%**	61	14	**81%**
Provide Fresh Drinking Water	190	18	**91%**	70	5	**93%**
Provide Bathroom	194	14	**93%**	66	9	**88%**

Again eliminating practices with ninety percent or more adoption rates, and looking only at practices with more than a five percentage point difference between documented and undocumented respondents, Chart 6 shows the same results graphically.

Chart 6
Employer Safety Practices of Foreign Born According to Migratory Status

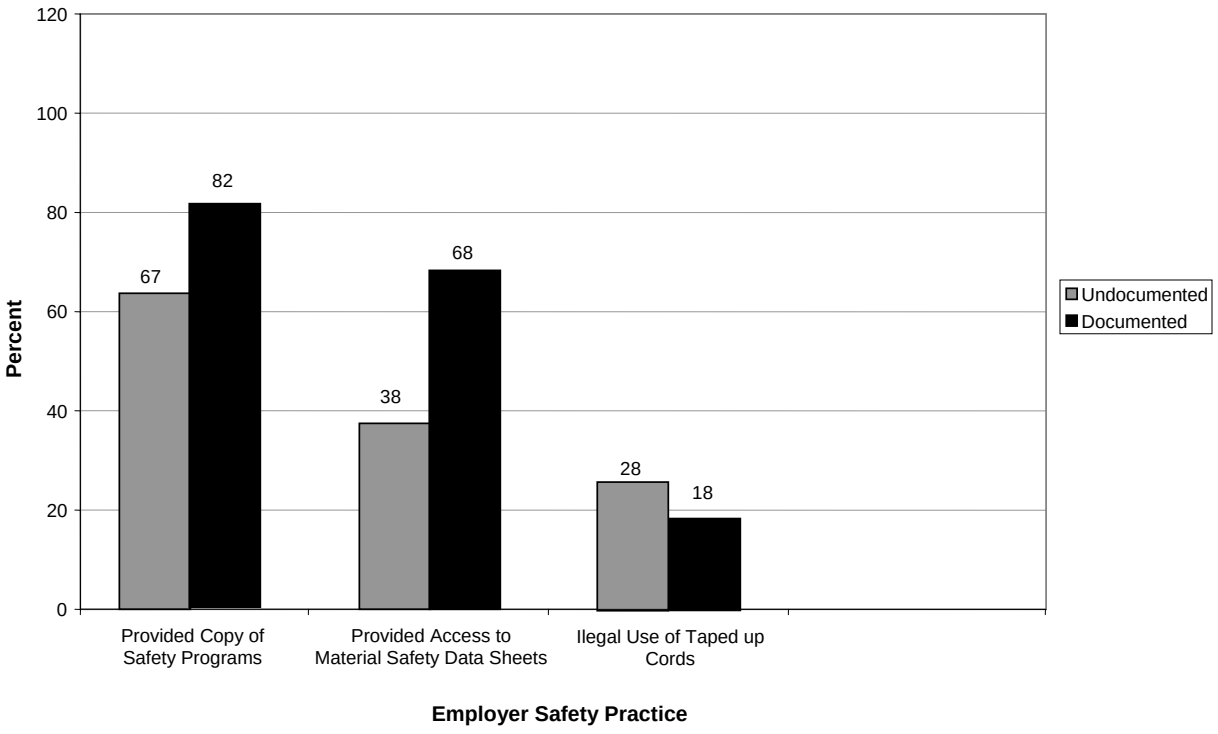


Chart 6 shows that the larger differences regarding employer safety practices are all in the expected direction: better practices for the documented than for the undocumented. This lends initial support for Hypothesis 2, although only mildly since a high positive association only holds for three practices. The association is especially large in the areas of providing access to safety programs and MSDS sheets. (If this were a random sample, the use of taped-up cords would be near significance at the .05 level, and the other two would be significant at that level.)

Summary of Preliminary Results on Hypotheses #1 and #2

The general results reported above can be summarized in one table indicating the degree of relationship between the unionization and documented legal status variables and the three "safety outcome" variables (reception of safety training, use of personal protective equipment, and employer use of safety practices). Table 46 shows the relationship, positive or negative, between these variables.

Table 46
Association between Unionization and Documented Legal Status with Safety Outcomes among Immigrant Construction Workers

	Unionized Status	**Documented Status**
Safety Outcome		
Reception of Safety Training	Positive Association	Positive Association
Use of Personal Protective Equipment	Weak Positive Association	Mild Negative Association
Employer Use of Safety Practices	Mild Positive Association	Mild Positive Association

Table 46 shows that unionization has the overall most consistent positive relationship with the three safety outcomes, although the relationship is weakest in the area of personal protective equipment use. Documented legal status has a positive relationship with training, and a mildly positive relationship with improved employer safety practices, but a mildly negative relationship with use of personal protective equipment.

The initial results provide general confirmation of Hypothesis #1 that unionized immigrant construction workers experience better safety outcomes in all areas (training, use of personal protective equipment, and employer use of safety practices) than do their non-union immigrant counterparts. They provide initial partial confirmation of Hypothesis #2 in that documented legal status is associated with more training and mildly associated with safer employer practices, but not with greater use of personal protective equipment.

Deeper Analysis and Interpretation of the Data

Although this report previously only referred to the relationship between safety outcomes and the unionized or documented status variables as an "association," it is clear that causality could only flow in one direction: from unionization or documented status to the safety outcomes and not the other way. For example, it makes no sense that safety training leads to unionization or that it leads to documented legal status, but it makes perfect sense to assert the reverse. Therefore, the initial results can be interpreted to provide some evidence that unionization leads to, or has a positive impact upon, training and use of personal protective equipment and employer safety practices. Likewise, documented legal status leads to, or has a positive impact upon, likelihood of receiving safety training or improved employer safety practices.

However, these conclusions could be spurious if variables like unionization or documented legal status are only proxies for other factors that are the "real" cause of the improved safety outcomes. For example, they may be "standing in" for variables such as length of time in the construction industry, length of time in the country, or skill (craft or trade).

To test for these possibilities, the researcher checked for differences between union/non-union and documented/undocumented workers in their employment longevity in the U.S. construction industry and for differences in their length of residency in the U.S. An attempt was also made to control for skill (craft) by analyzing the one craft with sufficient numbers to compare union/non-union or documented/undocumented status.[3]

First, regarding length of time in either the industry or the country, there are in fact significant differences. Table 47 shows the differences between union members and their counterparts, and documented workers and their counterparts on average industry and U.S. residence longevity.

Table 47
Average Length of U.S. Construction Experience and U.S. Residency by Unionization and Documented Status, of South Florida Immigrant Construction Workers

Status	Length of time in industry (years)	Length of time in U.S. (years)
Union Member	9.38	14.2
Not a Union Member	6.5	11.2
Documented	8.0	13.2
Undocumented	2.0	4.0

[3] The one craft (trade) with a good number of respondents was carpentry. There were100 carpenters in the sample, with 81 non-union workers and 19 union members. Sixty eight were documented and 32 were undocumented.

Table 47 shows that unionization to a small degree and documented status to a very large degree are associated with longer work experience in the U.S. construction industry and longer residence in the country. Thus, one cannot immediately rule out the possibility that any unionization or documented status impacts found earlier are merely proxies for longer construction experience or longer U.S. residency.

To test this possibility, the immigrant construction respondents were divided into groups of longer and shorter tenure in the industry, and longer and shorter residency in the U.S. For the "union" variable, longer and shorter were divided by the midpoint between the union and non-union numbers in Table 47.[4] Those in the industry longer than this are categorized "longer term workers" while those with less years of experience "shorter term workers." If unionization is merely a proxy for industry experience, longer term workers should be associated with the improved safety outcomes found for unionized workers. If not, unionization is not acting as a proxy for length of time in the industry.

The same procedure is followed for length of residency in the U.S., using the midpoint between average union and non-union residency as the dividing point between "longer residency workers" and "shorter residency workers." This is the midpoint between 14.2 years and 11.2 years, or 12.7 years. Again, if unionization is merely a proxy for longer U.S. residency, longer residency should be significantly related to the improved safety outcomes we earlier measured for unionization impacts. If there is no such association, it is safe to conclude that unionization is not acting as a proxy for length of U.S. residency. But if there is an association, one cannot rule out the possibility that length of U.S. residency is what is really being measured by the unionization outcomes noted earlier.

The identical procedure was planned along the documented/undocumented divide, but there were so few undocumented in the "longer term" category that comparisons were impossible. Thus, this procedure could only be done along the union/non-union dimension.

Table 48 shows the relationship between length of employment in the U.S. construction industry with safety outcomes and length of residency in the United States with those same safety outcomes. (Results with ninety percent or more overall adoption are eliminated from this table).

[4] For example, the midpoint between the average industry experience of union and non-union workers is 7.94 years, midway between 9.38 years and 6.5 years.

Table 48
Relationship of U.S. Construction Industry Tenure and U.S. Residency Length with Various Safety Outcomes

	Length in Industry		Residency in U.S.	
	Short	**Long**	**Short**	**Long**
Safety Training				
OSHA 10-hour Training	65.2	80.2	65.7	77.5
Scaffold Training in Previous 3 Years	68.8	65.6	69.4	65.8
CPR Training in Previous 3 Years	31.2	39.6	33.9	35.1
Asbestos Training in Previous 3 Years	16.8	28.1	18.7	23.4
Haz-Mat Training in Previous 3 Years	58.1	54.2	58.8	53.2
Personal Use of Protective Equipment				
Regularly wear Work gloves	73.1	64.6	79.1	67.6
Regularly use Guards on cutting tools	74.7	71.9	71.9	75.7
Regularly Wear Hearing protection	40.9	44.8	37.4	50.5
Regularly Wear Respiratory protection	47.5	42.7	38	50.5
Employer Safety Practices				
Weekly Safety Meetings	78.1	21.9	78.9	21.1
Provided Copy of Safety Programs	75.7	81.3	74.3	82.7
Provided Access to Material Safety Data Sheets	53.9	71.7	54	69.7
Work Site has Ground Fault	88.3	91.2	88	91.3
Use of Taped up Cords	20.1	26.3	23.1	20.9
Provide First Aid Kit	86.1	13.9	90.1	9.9

Overall, Table 48 shows mixed relationships between longer industry employment or longer U.S. residency and improved safety outcomes. OSHA 10-hour training shows a sizeable association in that direction for both measures of longevity. So does access to Material Safety Data Sheets. But for ten of the thirty measures of safety outcomes, differences are in the unexpected direction.

For example, for six of the fifteen results, working longer in the industry is actually associated with a worse safety outcome than being a shorter term worker. And for four of the fifteen results, being in the country longer is associated with a worse safety outcome than being in the country a shorter period of time.

Because of the research design, it is not possible to completely isolate the "idependent" impact of unionized status free of influences from longer industry experience or longer U.S. residency for each of the safety variables.[5] But a simple illustration of the fact that the union impact is larger than the impact of either longer work experience or longer residency can be

[5] A logical procedure would be to simply run a regression equation on the variables, to get a sense of the independent impact of unionization. But this was not done for a variety of reasons. First, the sample is not a random one, making regression analysis problematic. Second, there are fifteen dependent variables, and there is no easy way to combine them into one dependent variable such as a meaningful "index." Third, this report is written in a way to be easily understandable to the lay reader, and complicated regression analysis would defeat that goal. Regression analysis would be very difficult to interpret.

done. Taking the union impact on each safety variable and subtracting the impacts of longer industry experience (and likewise subtracting longer U.S. residency impacts) shows whether union impacts surpass those of the other two types of impact: a positive "residual" indicates a larger union impact. Consistent positive residual impacts would suggest that the union impact is not likely to be merely a proxy for longer time in the industry or in the country.[6]

Again omitting variables with more than ninety percent adoption, Table 49 shows (1) union impact, (2) longer industry experience impact, and (3) longer U.S. residency impact on all safety variables. The final two columns subtract (2) and (3) from (1) to discern differences between the magnitude of the union impact and the impacts of longer work history and longer U.S. residency. The final two columns, where results are **bolded**, indicate the union impact after industry experience and U.S. residency length impacts have been subtracted.

Table 49
Impacts of Unionization, Longer Industry Experience, Longer U.S. Residency, and Union Impacts after the Other Two Impacts have been Subtracted

Safety Varible	Union Impact	Longer Term Industry Experience Impact	Longer U.S. Residency Impact	Union Impact Minus Industry Experience Impact	Union Impact Minus Residency Length Impact
Safety Training					
OSHA 10-hour Training	+18%	+15%	+11.8%	**+3%**	**+6.2%**
Scaffold Training (Past 3 Years)	+2%	-3.2%	-3.6%	**+5.2%**	**+5.6%**
CPR Training (Past 3 Years)	+11%	+8.4%	+1.2%	**+2.6%**	**+9.8%**
Asbestos Training (Past 3 Years)	+10%	+11.3%	+4.7%	**-1.3%**	**+5.3%**
Haz-Mat Training (Past 3 Years)	+5%	-3.9%	-5.6%	**+8.9%**	**+10.6%**
Use of Personal Protective Equipment					
Regularly wear Work gloves	0%	-8.5%	-11.5%	**+8.5%**	**+11.5%**
Regularly use Guards on cutting tools	+6%	-2.8%	+3.8%	**+8.8%**	**+2.2%**
Regularly Wear Hearing protection	+9%	+3.9%	+13.1%	**+5.1%**	**-4.1%**
Regularly Wear Respiratory protection	+18%	-4.8%	+12.5%	**+22.8%**	**+5.5%**
Employer Safety Practices					
Weekly Safety Meetings	+2%	+0.8%	-2.9%	**+1.2%**	**+4.9%**
Provide Copy of Safety Programs	+10%	+5.6%	+8.4%	**+4.4%**	**+1.6%**
Provide Access to Material Safety Data Sheets	+10%	+17.8%	+15.7%	**-7.8%**	**-5.7%**
Work Site has Ground Fault	+6%	+2.9%	+3.3%	**+3.1%**	**+2.7%**
Non-use of Taped up Cords (reversed)	+10%	-6.2%	+2.2%	**+16.2%**	**+7.8%**
Provide First Aid Kit	+8%	+4.0%	+6.8%	**+4.0%**	**+1.2%**

[6] It is understood that this is merely suggestive evidence, not definitive, because interaction effects between variables not captured in this analysis could complicate any attempt to definitely conclude that unionization has a particular independent impact.

The final two (**bolded)** columns are virtually all positive (twenty-six out of thirty), showing that positive union impacts on safety outcomes for these immigrant workers outpace any positive impacts from longer work experience and longer U.S. residency. It is therefore unlikely that the union impacts discovered earlier were simply proxies for longer time working in the industry or living in the country longer.

To further test the union impact in relation to length of industry experience or length of U.S. residency, where sizable union impact was found previously the investigator tested for union impact within each of the "shorter term" and "longer term" groups. Table 50 shows results. Instances where there is a positive union impact of ten percent or more are highlighted by being **bolded** (look in second, fourth, sixth, and eight numbered columns for union results showing this ten percent or greater advantage).[7]

[7] While it varies from question to question, usually differences would have to be at least ten percentage points or greater to be found to be significant or near significant at the .05 level of significance, had this been an entirely random sample.

Table 50
Union Impacts within Shorter Term and Longer Term Workers and Shorter and Longer Term U.S. Residents

Safety Training Received	**Shorter term workers (less than 7.94 yrs)**		**Longer term workers (more than 7.94 yrs)**		**Shorter Residency workers (less than 12.7 yrs)**		**Longer Residency workers (more than 12.7 yrs)**	
	Non-union	**Union**	**Non-union**	**Union**	**Non-union**	**Union**	**Non-union**	**Union**
OSHA 10-hour Training	61	**79.1**	75.9	**86.8**	62.1	**78.4**	71	**86.4**
Scaffold Training in last Three Years	66.2	**79.1**	70	57.9	67.7	75.7	67.2	63.6
CPR Training in the Last Three Years	26.6	**46.5**	41.4	36.8	29.9	**48.6**	34.3	36.4
Asbestos Training in the Last Three Years	15.5	20.9	24.1	**34.2**	17.3	24.3	19.4	**29.5**
Hazardous Material Training in Last Three Years	53.5	**74.4**	60.3	44.7	55.6	**70.3**	53.7	52.3
Personal use of Protective equipment	**Shorter term workers (less than 7.94 yrs)**		**Longer term workers (more than 7.94 yrs)**		**Shorter Residency workers (less than 12.7 yrs)**		**Longer Residency workers (more than 12.7 yrs)**	
	Non-union	**Union**	**Non-union**	**Union**	**Non-union**	**Union**	**Non-union**	**Union**
Regularly wear Work gloves	72	76.7	65.5	63.2	73.9	64.9	62.7	**75**
Regularly use Guards on cutting tools	72	**83.7**	72.4	71.1	70.1	78.4	74.6	77.3
Regularly Wear Hearing protection	38.5	**48.8**	41.4	50	37.3	37.8	44.8	**59.1**
Regularly Wear Respiratory protection	36.4	**62.8**	39.7	47.4	33.6	**54.1**	46.3	**56.8**
Employer Safety Practices	**Shorter term workers (less than 7.94 yrs)**		**Longer term workers (more than 7.94 yrs)**		**Shorter Residency workers (less than 12.7 yrs)**		**Longer Residency workers (more than 12.7 yrs)**	
	Non-union	**Union**	**Non-union**	**Union**	**Non-union**	**Union**	**Non-union**	**Union**
Employer Provided Copy of Safety Programs	71.8	**88.4**	81	81.6	72.4	81.1	78	**88.6**
Received Material Safety Data Sheets	49.3	**69**	76.4	64.9	50.4	**66.7**	71.2	67.4
Work Site has Ground fault	86	95.2	90.7	91.9	86	94.6	90.3	92.9
Use of Taped cords	22.5	**11.9**	31.6	**18.4**	24.2	18.9	26.9	**11.6**
Scaffolds have hand rails	93.8	97.6	98.1	97	94.2	97.1	96.7	97.4

Table 50 shows that union membership has a very strong positive impact on most safety outcomes for shorter term workers. Four of the five safety training outcomes show union workers' likehood of training increasing over ten percent; three of the four protective personal

equipment usage measures show an increase of over ten percent; and three of the five employer safety practices measures show an increase of over ten percent (with a fourth one over nine percent). The uniformity of the results and the magnitude of most of them is strong evidence that unionization has a very powerful impact on immigrant construction workers who have worked in the industry a relatively short period of time. For longer term workers, unionization has much less of an impact: at best, very small gains in safety outcomes are apparent. No clear pattern is apparent here.

Regarding length of residency in the country, the pattern is more mixed: while most differences are in the expected direction, less are of a magnitude of over ten percent, and union impacts tend to be as great among longer term residents as among those living here for a shorter period of time. All of the differences in safety training for shorter term residents are in the expected direction, and three of the five are over ten percent. Only two of the five are for longer term residents.

Concerning use of personal protective equipment, all of the differences but one for both short term and long term residents are in the expected direction, but the size of the positive difference is large much more often for the long term residents (three out of four compared to only one out of four for the short term residents).

Regarding employer safety practices, unionization shows a positive impact on all five measures for shorter term residents, and for three of the five the difference is substantial. For longer term residents, four of the five differences are in the expected direction, and two of the four differences are substantial.

In general, the impact of unionization is substantial and positive for shorter term workers in all three areas measuring safety outcomes: safety training, use of personal protective equipment, and employer safety practices. For longer term workers, the union impact is much less substantial, although it still tends to be positive. Regarding residency, positive union impacts are less strong and appear to be about equally strong for both shorter term and longer term residents.

The general conclusion to be drawn from attempts to determine union impacts when we manipulate variables on the length of time in the industry or in the country is that Hypothesis #1 is still supported: unionization still has a likely positive impact on safety outcomes, especially

among those with less time in the industry. "Greenhands" with less industry experience receive the greatest safety benefit from unionization.

As noted above, it was impossible to duplicate the above tests to determine the independent impact of documented legal status because the number of "longer term workers" and "longer term residents" with undocumented status was so low that reliable comparisons could not be made.

A final test of possible conflation of factors concerns the trade of the respondent. The only trade with a large enough number of respondents to do reliable comparisons was the carpentry trade, so it was used as a sample to test if unionized status and documented status had an impact in this one craft. Identical tests to those done above were performed only on the group of immigrant respondent carpenters. Chart 7 shows the differences among the immigrant respondent carpenters according to union membership and migratory status.

Chart 7
Training Received by Foreign Born Carpenters According to Union Membership and Migratory Status

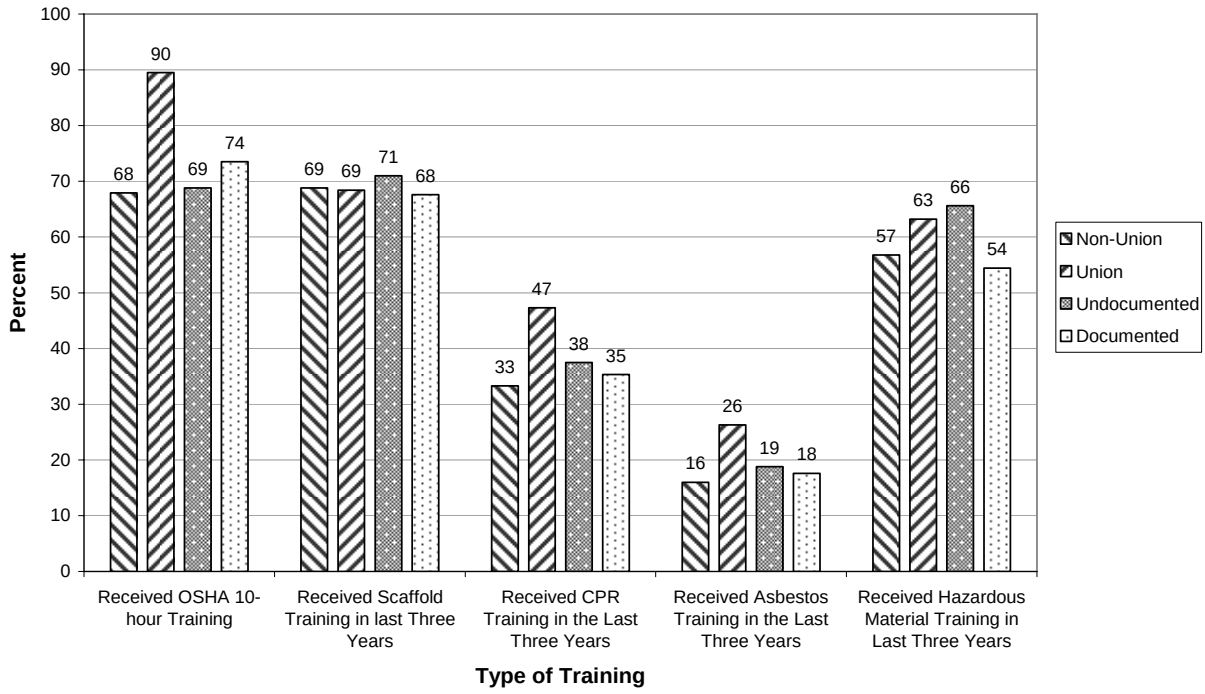


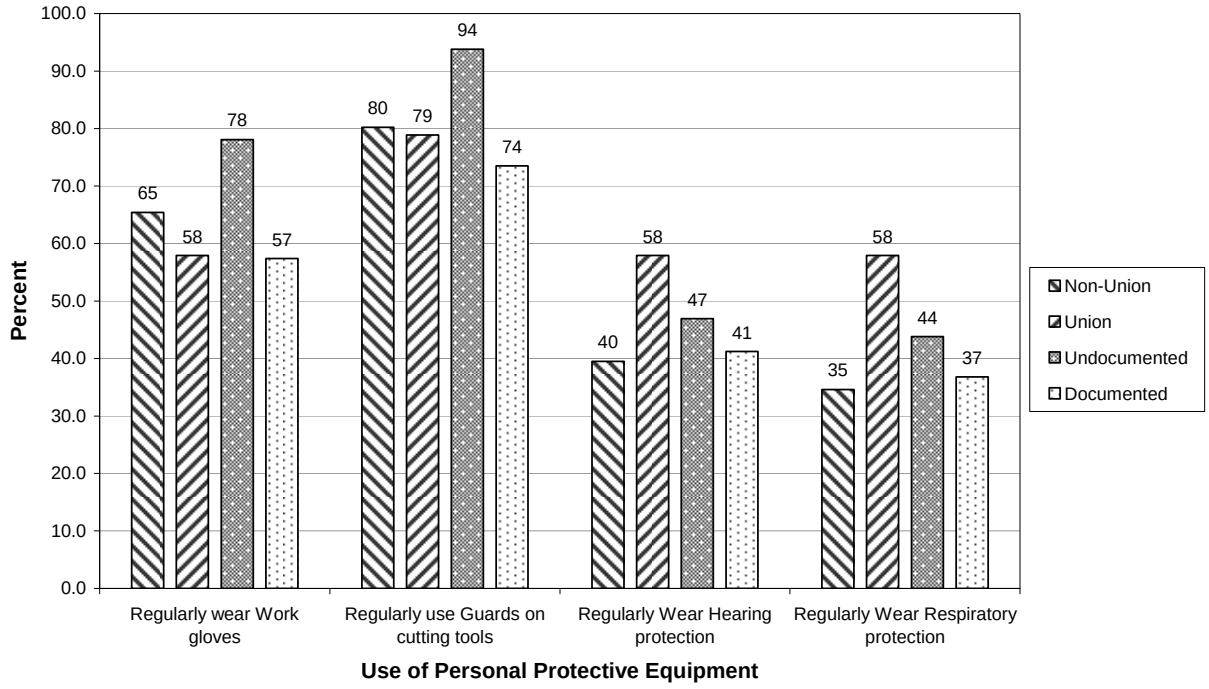
Chart 7 shows that union membership among the carpenters is associated with more training, especially 10-Hour OSHA training. A union carpenter has a more than twenty percent greater likelihood of receiving this training than does a non-union carpenter. Union membership

also means a ten to fifteen percent higher likelihood of receiving CPR training or Asbestos training. The union advantage in Hazardous Materials training is smaller and is nonexistent in Scaffold training, but in general unionization brings more safety training to these workers.

But within the carpentry trade, documented legal status shows no such association; in fact, most associations are in the reverse direction although differences are usually slight. The reason for these unexpected differences is unclear. Because most differences are so small, it may signify little but it does refute the expectation that documented immigrant carpenters would have received more training.

Chart 8 shows differences in the use of personal protective equipment among the immigrant carpenter respondents according to union membership and migratory status. The use of work boots, hard hats, and eyewear is omitted because of their close proximity to one hundred percent use by all respondents.

Chart 8
Use of Personal Protective Equipment of Foreign Born According to Union Membership and Migratory Status

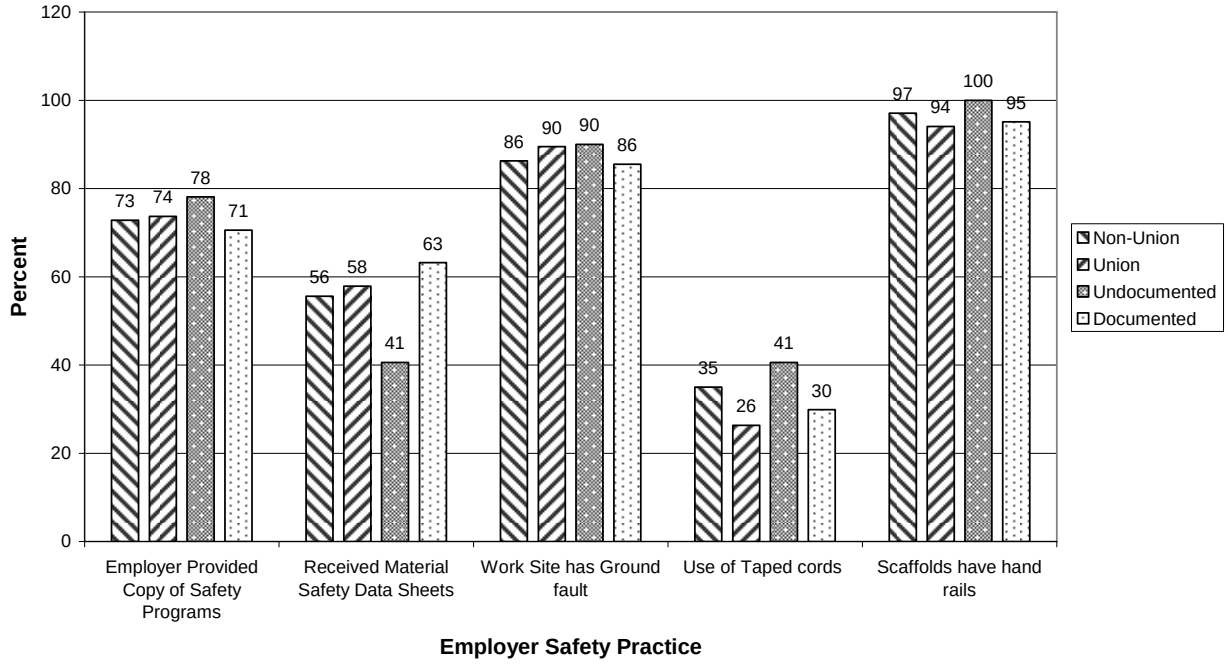


As Chart 8 shows, the regular use of hearing and respiratory protection moves strongly in the expected direction for union members but not for wearing of work gloves or regular use of guards on cutting tools. Among the documented/undocumented group, the relationship is

consistently in the unexpected direction, with the difference being over twenty percent in two instances. The undocumented are more diligent in use of personal protective equipment.

Chart 9 shows the differences in employer safety practices as reported by the immigrant respondent carpenters according to union membership and migratory status.

Chart 9
Employer Safety Practices of Foreign Born Carpenters According to Union Membership and Migratory Status



Regarding unionization, four of the five differences are in the expected direction, although the differences are all so small as to be virtually meaningless. In general, no impact of any size is discerned. Regarding documented legal status, results are mixed. Two practices (provision of material safety data sheets and not using taped cords) are in the expected direction, but the other three are in the unexpected direction, although to a very small degree.

The results for immigrant carpenters can be summarized in a manner similar to our summary earlier for the entire immigrant group. Table 51 shows the relationship of unionization and documented legal status with the three dependent safety variable solely for carpenters.

Table 51
Association between Unionization and Documented Legal Status with Safety Outcomes among Carpenter Immigrant Construction Workers

	Unionized Status	Documented Status
Safety Outcome		
Reception of Safety Training	Positive Association	No association
Use of Personal Protective Equipment	Mildly Positive Association	Negative Association
Employer Use of Safety Practices	No Association	Mixed results

Table 51 shows that the generally positive impact of unionization on safety outcomes continues to hold even when only one particular craft (carpentry) is studied, although the positive impact on employer safety practices essentially disappears. However, all positive impacts of documented legal status disappear when we consider only the carpentry trade.

Testing for one other potential "contaminant" to union result: age

One study (see Dedobbeleer, Champagne, and German, 1990) found that a union impact toward greater safety may be simply a proxy for older age. Therefore, it is worth determining if the union impacts discovered above may be due to greater age for the union segment of our sample. However, the age difference is rather small: union member respondents averaged thirty-nine years old while non-union member respondents averaged thirty-five years old. It is unlikely that age differences contaminated the results.

Final and ultimate test of safety: Injury rates

Of course the ultimate test of safety is avoiding injuries; perhaps the most important safety outcome is whether or not workers are injured on the job. An analysis of differences between union and nonunion immigrant respondents about having had a job injury severe enough to cause a day or more of lost work in the past three years reveals that union workers also have far fewer injuries than their nonunion counterparts, and that when they are injured the injury is far less severe. Table 52 shows results.

Table 52
Union and Non-union Respondent Injury Rates and Severity of Injury, last Three Years

	Number in Sample*	Number of Persons Injured	Injury rate	Number of days lost due to worksite injury	Average days lost per worker
Union	29	2	6.9%	5	2.5
Non-Union	125	12	9.6%	236	19.7

*The sample numbers include only workers who have worked construction for three or more years who were also union members or nonmembers for the entire three years.

The union numbers in Table 52 are quite small, so caution should be exercised in interpreting results. But, given that limitation, Table 52 shows that nonunion immigrant respondents were thirty-nine percent more likely to have been injured sufficiently to lose a day's work in the past three years than were union members: (9.6% chance vs. 6.9% chance). Also, the injuries sustained by nonunion respondents were much more severe. On average, a nonunion respondent who was injured lost almost 20 days of work due to the injury, while union respondents who were injured lost only two and a half days of work, an enormous difference. This is perhaps the strongest evidence of all that unionization has a major positive impact on the safety of these immigrant construction respondents (although, again, small numbers make results only suggestive).

A similar analysis was done for documented and undocumented respondents. The results show the unexpected result that documented respondents are much more likely to be injured, and that their injuries tend to be more severe. Table 53 shows results.

Table 53
Documented and Undocumented Respondent Injury Rates and Severity of Injury, last Three Years

	Number in Sample*	Injuried Person	Injury rate	Number of days lost due to worksite injury	Average days lost per worker
Documented	160	17	10.6%	273	16.1
Undocumented	27	2	7.4%	2	1.0

* The sample numbers include only workers who have worked construction for three or more years who were (1) undocumented the entire three years or (2) documented by the end of that three year period.

Again, small numbers call for caution in interpreting results. But the actual injury experience of the documented appears to be much worse than that of the undocumented: both higher injury rates and much greater severity of injury (evidenced by more lost days of work) fall to the documented. There is no obvious explanation for this result.

Summary of results after performing a variety of checks regarding other influences on safety

Results consistently suggest that unionization generally has a positive impact on safety outcomes, no matter which type of alternate test is done. A positive impact on employer safety practices disappears when only the carpentry trade was analyzed, but otherwise unionization consistently has positive impacts of a greater or lesser magnitude depending on the particular variable being measured. Unionization is also associated with dramatically fewer injuries on the job and with less severe injuries when they do occur, if small sample results can be believed.

Results also suggest that unionization has its greatest positive safety impacts on immigrants who have more recently entered the construction industry and perhaps those who more recently entered the country. This is an important finding, because immigrant newcomers to the industry and most recent immigrants are precisely the group most in need of greater safety training and related safe working conditions.

Tests comparing the documented and the undocumented at different lengths of work experience or U.S. residence were impossible because so few of the undocumented in the sample had been in the country or the industry long enough to create a "longer term" comparison group to the numerous undocumented with short industry experience and short residency tenure. Looking only at carpenters, any positive impacts of documented status disappeared, and even reversed in some instances. Documented legal status is associated with <u>less</u> use of personal protective equipment, not more for both the entire immigrant sample and the carpenter sub-sample. And initial evidence is that the documented have <u>more</u> injuries and <u>more severe</u> injuries than do the undocumented. Thus, the results do not suggest that documented legal status has a consistent positive impact on safety outcomes for immigrant respondents. If anything, it may be associated with less safe outcomes, for unknown reasons.

RELATIONSHIPS OF OTHER VARIABLES WITH SAFETY OUTCOMES

Previous literature has also indicated that the unskilled, such as general laborers, generally face more dangerous conditions and are injured at a higher rate. Therefore it is hypothesized that the general laborers in this sample will face inferior safety conditions.

Hypothesis #3 is: **An immigrant construction worker who works as a general laborer is more likely than a skilled or semi-skilled counterpart to have received little or no safety training, use little or no personal protective equipment, or to work for an employer with less safe policies and practices.**

Test of Hypothesis #3: Hypothesis #3 postulates that a general laborer is less likely than a skilled or semi-skilled counterpart to have received safety training, use protective safety equipment, and experience safer employer policies and practices. Table 52 shows that the hypothesized relationship holds for all types of training other than scaffold safety training.

Table 52
Relationship between Skill and Training

	Unskilled (General Labor)			Skilled or Semi-Skilled (Some Craft)		
	# Yes	#No	% Yes	#Yes	# No	% Yes
OSHA 10-hr. Training	20	16	**56%**	178	69	**72%**
Scaffold Training	25	11	**69%**	167	80	**68%**
CPR/First Aid Training	7	29	**19%**	90	157	**36%**
Asbestos Training	3	33	**8%**	55	192	**22%**
Hazardous Training	16	20	**44%**	144	103	**58%**

However, the relationship does not hold for use of personal protective equipment. To the extent there are any differences, they show that the unskilled general laborer is more likely to use a couple of types of protective equipment (work gloves and respiratory protection). This could be a function of the "rougher" types of work general laborers are required to perform. Results are shown in Table 53.

Table 53
Relationship between Skill and Use of Personal Protective Equipment

	Unskilled (General Labor)			Skilled or Semi-Skilled (Some Craft)		
	# Yes	#No	% Yes	#Yes	# No	% Yes
Wear Work Gloves	32	4	**89%**	167	80	**68%**
Use Guards on Cutting Tools	25	11	**69%**	183	64	**74%**
Use Hearing Protection	16	20	**44%**	104	143	**42%**
Use Respiratory Protection	19	17	**53%**	102	145	**41%**

Results on employer safety practices provide very weak evidence in support of Hypothesis #3. All differences are in the expected direction, but are under ten percent difference. (If this were a random sample, none of the differences would be significant or near significant at the .05 level). Table 54 shows results.

Table 54
Relationship between Skill and Employer Safety Practices

	Unskilled (General Labor)			Skilled or Semi-Skilled (Some Craft)		
Policy/Practice	**# Yes**	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
Weekly Safety Meetings	26	10	**72%**	196	51	**79%**
Provide Copy of Safety Program	26	10	**72%**	193	53	**78%**
Provide MSDS Sheet (Chemicals)	18	16	**53%**	145	92	**61%**
Provide Electrical Ground Faults	30	4	**88%**	205	24	**90%**
Use of Taped Electrical Cords	5	31	**14%**	57	187	**23%**
Provide First Aid Kit	29	6	**83%**	207	38	**84%**

In general, Table 54 provides consistent but very weak evidence that general laborers experience inferior employer safety practices compared to others with a specific skill or craft.

Hypothesis #3 receives only partial support: immigirant respondents with some skill are more likely to have received various kinds of safety training. But do do not use personal protective equipment more, and their employer's safety practices appear to perhaps be slightly better than those of unskilled general labor employers.

The survey asked for a great deal of information regarding employer treatment of workers in areas other than workplace safety and health practices. This was done because the investigator considered it likely that employers treating workers in an inferior manner in other ways were also likely to fail to provide safety training and to have less safe policies and practices. Therefore, a fourth hypothesis guiding this research was as follows: **Hypothesis #4: Respondents experiencing irregular and inferior employer treatment in non-safety spheres will also receive less health and safety training and/or experience less safe employer safety policies and practices.** This could be called the "bad employer" hypothesis, because it posits that employers treating workers badly on one area will also do so in the safety arena.

Test of Hypothesis #4: This hypothesis was formulated loosely because the investigator was uncertain about what links would be found. Largely, the research would be exploratory, and would search for significant differences in safety outcomes for those experiencing "better" and "worse" conditions in other areas. The following relates evidence found from this preliminary investigation.

Immigrant employees who had ever been paid in cash did indeed receive less safety training, and their employers also engaged in less safe practices. Tables 55 and 56 show very large differences in both areas.

Table 55
Differences in Safety Training between Immigrant Respondents Paid in Cash and Others

	Never Paid in Cash			Paid in Cash		
Type of Training	**# Yes**	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
OSHA 10-hr. Training	174	58	75%	24	27	47%
Scaffold Training	164	68	71%	28	23	55%
CPR/First Aid Training	87	145	38%	10	41	20%
Asbestos Training	53	179	23%	5	46	10%
Hazardous Training	140	92	60%	20	31	39%

The difference in every type of training is large, ranging from a thirteen percent higher likelihood of training for those never paid in cash up to twenty eight percent higher likelihood. (If this were a random sample, all differences would be significant at the .05 level, and three would be significant at the .01 level.)

Table 56
Differences in Employer Safety Practices between Immigrant Respondents Paid in Cash and Others

	Never Paid in Cash			Paid in Cash		
Policy/Practice	**# Yes**	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
Weekly Safety Meetings	191	41	82%	31	20	61%
Provide Copy of Safety Program	188	43	81%	31	20	61%
Provide MSDS Sheet for Chemicals	144	76	65%	19	32	37%
Provide Electrical Ground Faults	195	20	91%	40	8	83%
Use taped electrical cords	51	178	22%	11	40	22%
Provide First Aid Kit	201	30	87%	35	14	71%

Aside from the two electrical practices variables, the differences are again very large, ranging from a sixteen percent greater likelihood of a better employer safety practice up to a twenty-eight percent greater likelihood. (If this were a random sample, all four of the differences other than than those concerning electrical practices would be significant at the .01 level.)

Immigrant respondents who were offered a retirement plan also experienced more training and better employer safety practices than did those without a retirement plan. Tables 57 and 58 show the details.

Table 57
Differences in Safety Training between Immigrant Respondents with a Retirement Plan and Those Without

	HAVE RETIREMENT PLAN			NO RETIREMENT PLAN		
Type of Training	**# Yes**	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
OSHA 10-hr. Training	81	17	**83%**	14	65	**18%**
Scaffold Training	71	27	**72%**	118	61	**66%**
CPR/First Aid Training	51	47	**52%**	46	133	**26%**
Asbestos Training	33	65	**34%**	25	154	**14%**
Hazardous Training	61	37	**62%**	98	81	**55%**

With the exceptions of scaffold training and hazardous materials training, the differences are quite large, ranging from a twenty percent greater likelihood of receiving training up to a sixty-five percent greater likelihood. (If this were a random sample, the three large differences would all be significant at the .01 level.)

Table 58
Differences in Employer Safety Practices between Immigrant Respondents with a Retirement Plan and Those Without

	No Plan			Have plan		
Policy/Practice	**# Yes**	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
Weekly Safety Meetings	136	43	76%	83	15	85%
Provide Copy of Safety Program	132	46	74%	82	16	84%
Provide MSDS Sheet for Chemicals	96	77	55%	65	28	70%
Provide Electrical Ground Faults	138	23	86%	91	5	95%
Use taped electrical cords	48	130	27%	14	82	15%
Provide First Aid Kit	145	33	81%	88	8	92%

Again, the differences are relatively large, ranging from nine percent greater likelihood of safer employer practices for those with a retirement plan up to fifteen percent greater likelihood. (If this were a random sample, all the differences except those for weekly safety meetings would be significant at the .05 level, and that one is near significance.)

The differences between those with a health insurance plan and those without show the same pattern. Health insurance accompanies more safety training and safer employer practices. Table 59 and 60 show the details.

Table 59
Differences in Safety Training between Immigrant Respondents with a Health Plan and Those Without

	No Health Insurance Coverage			Have Health Insurance Coverage		
	# Yes	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
OSHA 10-hr. Training	74	48	61%	121	37	77%
Scaffold Training	73	49	60%	116	42	73%
CPR/First Aid Training	34	88	28%	62	96	39%
Asbestos Training	22	100	18%	36	122	23%
Hazardous Training	62	60	51%	96	62	61%

Once again, with one exception (Asbestos Training), differences are rather large: those with a health insurance plan have between a ten percent and sixteen percent higher likelihood of receiving safety training. (If this were a random sample, three of the four large differences are significant at either the .01 percent level [OSHA 10-hr training] or the .05 level [Scaffold and CPR/First Aid Training]. Hazardous training is near significance at the .05 level.)

Table 60
Differences in Employer Safety Practices between Immigrant Respondents with a Health Plan and Those Without

	No Health Insurance Coverage			Have Health Insurance Coverage		
Policy/Practice	**# Yes**	**#No**	**% Yes**	**#Yes**	**# No**	**% Yes**
Weekly Safety Meetings	89	33	73%	131	27	83%
Provide Copy of Safety Program	85	36	70%	131	27	83%
Provide MSDS Sheet for Chemicals	60	58	51%	100	50	67%
Provide Electrical Ground Faults	91	18	83%	141	10	93%
Use taped electrical cords	31	89	26%	30	127	19%
Provide First Aid Kit	93	27	78%	141	16	90%

Yet again, with one exception (use of taped electrical cords) differences are rather large: an immigrant respondent with a health insurance plan has between a ten percent and sixteen percent greater likelihood of experiencing safer employer practices. (If this were a random sample, the provision of weekly safety meetings would be significant at the .05 level, and the other four large differences would all be significant at the .01 level.)

It was thought that perhaps smaller employers would deliver less training or have less safe practices, but no systematic differences were detected between employees of smaller (less than 100) employers and larger ones on these measures. Likewise, immigrant respondents who had been asked to falsely sign an "independent contractor" form (a "1099 form") did not experience less training or less safe employer practices. Comparisons between those employed

by a construction firm and those employed by a temporary help firm showed slightly more training and slightly better employer safety practices for the former, but the differences were quite small. Results (not printed here) did show that those who had stayed with their present employer two or more years experienced substantially more training and substantially safer employer safety practices, reinforcing the intuitive belief that employees tend to remain longer with a "good" employer than a "bad" one.

Overall, the results are clear: "bad" practices across both safety and non-safety forms of treatment tend to cluster together. Employers who "cut corners" in other ways tend to also cut corners in the safety realm. Immigrant employees who have been paid in cash, or who have no retirement plan, or who lack a health insurance plan receive decidedly less safety training and experience less safe employer practices. Hypothesis #4 is strongly supported: inferior conditions in other areas are strongly associated with inferior provision of safety training and employer safety practices.

SUMMARY AND CONCLUSIONS

This research has provided the most comprehensive picture of immigrant construction workers in south Florida and their safety conditions known to date by the researcher. It reveals them to be primarily migrants from Latin America and the Caribbean who are relatively low paid and often relatively recent entrants to the U.S. construction industry. They work in a dangerous industry, and comprise an increasingly larger percentage of the workforce in this industry. Therefore an examination of their safety conditions and what might improve them is an important undertaking.

The study has examined "safety outcomes" for these workers, operationalized in three areas: (1) degree of safety training they have received; (2) degree of use of personal protective equipment; and (2) degree of employer adoption of safe policies and practices. An underlying assumption of the research is that workers desire safer working conditions. Therefore workers with more power vis-à-vis their employers will experience superior safety outcomes to those experienced by workers more at the mercy of their employers. Two initial hypotheses grow from this assumption: (1) Unionized immigrant construction workers will experience superior safety outcomes compared to non-union workers; and (2) Immigrant construction workers with a documented legal status will experience superior safety outcomes compared to the undocumented.

Simple cross-tabulations gave results that supported both hypotheses. However, after performing a number of operations to determine whether associations between union status or documented status and better safety outcomes might simply be proxies for other factors like length of time in the industry, length of residence in the country, or specific skill (craft), it became apparent that only unionized status consistently led to superior safety outcomes. In fact, in a number of instances, documented legal status is actually associated with inferior safety outcomes.

Finally, a look at the serious injury rates of these workers again indicated that unionization greatly improves their safety, while documented legal status does not. The results are consistent that unionization improves safety. (While an association is not proof of a causal relationship, in this instance imputation of causality is probably justified, because while it is intuitively implausible or impossible for something like training or personal work habits or employer safety practices to cause, or lead to, unionization, the reverse is not at all implausible.)

A third hypothesis was that the unskilled (general laborers) would receive inferior safety outcomes compared to those either semi-skilled or skilled. Results generally support this hypothesis, although not for use of personal protective equipment and only weakly regarding employer practices.

Finally, a fourth hypothesis was that inferior working conditions in other areas (lack of health insurance, lack of a pension plan, being paid in cash, etc.) would be associated with inferior safety outcomes. The results strongly support this "bad employer" hypothesis that inferior treatment is clustered in particular employers across safety and non-safety lines. It appears that a very strong variable leading to safer or less safe conditions for these workers is an employer who "cuts corners" in the pursuit of profit compared to one who does not.

At least two public policy implications can be drawn from this research. They are the following:

(1) Unionization should be encouraged if the aim of public policy is to improve the safety conditions of these relatively vulnerable workers in a very dangerous industry; and

(2) Public policies that encourage or require better treatment in areas like employer-provided healthcare and pension plans may improve the safety of these workers, either through the mechanism of "weeding out" the "bad" employers who skimp in these areas and in the area of safety or by forcing employers to develop a more responsible attitude toward employee treatment in general. Similarly, perhaps stronger enforcement of wage and

hour laws to ferret out illegal cash payments in the underground economy would lead to safer work for these immigrant construction workers. Safety results of this nature are not certain, however, because the research only uncovered an association between the non-safety and the safety outcomes, not a causal link.

The research presented in this report has a number of limitations. First, it is confined only to the geographical location of south Florida, which may differ from other areas in ways that limit generalizability. Second, the sample is not entirely random, although this is unavoidable in research of this nature, and the sample was made as random as possible. Third, a larger sample size would have been desirable, although this one is larger than many that can be done within a reasonable budget. Fourth, only medium large and large construction sites were surveyed, meaning that results cannot be generalized to the residential and smaller commercial sector. Fifth, results are in general suggestive rather than definitive, because statistical tests of significance could not be applied and procedures to "disentangle" variables were incomplete and indirect. This means that "pure" or completely "independent" impacts cannot be proven given the necessary research design, and the analysis is forced to rely on consistency of results and size of results to impute impacts.

APPENDIX A – RESEARCH INSTRUMENT (SURVEY) IN ENGLISH

RESEARCH INSTRUMENT -- SURVEY

(Before beginning the survey, find out if the person you are talking to (a) is 18 years of age or older, (b) was born in a foreign country to parents who were not U.S. citizens, and (c) is working in the construction industry. If the answer to ALL THREE of (a), (b), and (c) is "yes", proceed. Otherwise, do not survey this person.)

Opening statement: This is a survey of about 50 adults 18 years of age or older who were not born in the United States and who work in the construction industry in this country. This survey is part of a research project being done by a professor at Florida International University. The questions will mostly be about your experiences working in the construction industry in this country, especially on issues of health and safety. A few questions will also be about background information. Replying to the survey should take about 45 minutes. As a participant in this survey you will assist other construction workers by providing information on current safety and health practices and training on construction work sites. This anonymous information will be shared with policy makers who will hopefully develop future policies that improve working conditions and training for all construction workers. There are no known risks to you from answering these questions beyond that which would be encountered in daily life. If you have any questions about this research, feel free to contact Dr. Bruce Nissen, at Florida International University, at 305-348-2616. You are free to not answer any question you do not wish to answer. You will be paid $25 for your participation if you complete the survey – or whatever percentage of $25 corresponds to the percentage of the survey you answer. The information gathered will be used only for research reports and scholarly articles. You will not be asked your name, and you will not be identified in any reports or other writings that come from this research. Do you give permission to be surveyed on this topic? (Obtain verbal consent)

Questions:

GENERAL DEMOGRAPHICS AND INFORMATION

(0) Record gender by observation _____male _____female (Ask if necessary)

(1) What is the country and town or village (or closest town or village) where you were born?

(2) What is your date of birth? Month_____ Day_____ Year_____

(3) What year did you come to live in the United States? _____

(4) How many years have you worked as a construction worker in the United States? _____years (If construction work has been interrupted by other types of work, have them add up the total number of years, not counting the periods when they were not in the construction industry. You can use fractions, such as 1 ½ years, 2 3/4 years, ½ year, etc.)

(5) What trade do you work most often? _____carpenter _____general laborer _____iron worker _____carpet layer _____drywall _____electrician _____heavy equipment operator _____insulation _____painter _____iron worker _____plumber or pipefitter _____sheet metal worker _____bricklayer or mason _____roofer _____heating, ventilation, or air conditioning installer ____glass worker or glazier _____other (specify)_____

(6) What other trades have you worked? _____carpenter _____general laborer _____carpet layer _____drywall _____electrician _____heavy equipment operator _____insulation _____painter _____iron worker _____plumber or pipefitter _____sheet metal worker _____bricklayer or mason _____roofer _____heating, ventilation, or air conditioning installer _____glass worker or glazier _____other (specify)_____

(6a) For each trade marked above, how long did you work in this trade?

Trade	Length of time worked in this trade
_____	_____
_____	_____
_____	_____
_____	_____

TRAINING

(7) Have you received any "OSHA 10 hour training"? ("OSHA" means "Occupational Safety and Health Act", a law concerning workplace safety) _____yes _____no _____don't know

If training received, **(7a)** how soon did you receive it after you began working in construction? _____ (circle which: days, months, years)

(7b) Was the training in English, or was it in your original language?
_____in English _____in original language

(7c) Could you understand the training well? _____yes _____no

(7d) Were you asked to sign a statement that you received this training?
_____yes _____no

(7e) Who provided the training? _____employer _____union apprenticeship program _____union but not through an apprenticeship program
____other (specify) _____

(8) Have you received any scaffold safety training? _____yes _____no
_____don't know

If yes, **(8a)** Was the training in English, or was it in your original language?
_____in English _____in original language

(8b) Could you understand the training well? _____yes _____no

(8c) Were you asked to sign a statement that you received this training?
_____yes _____no

(8d) Who provided the training? _____employer _____union apprenticeship program _____union but not through an apprenticeship program ____other (specify)_____

(9) In the past three years (or as long as you have worked in construction if less than three years), have you participated in any CPR or first aid training? ____yes ____no ____don't know

If yes, **(9a)** how many programs like this have you participated in? _____programs

(9b) How many hours did the longest of those programs last? _____hours

(9c) Was the training in English, or was it in your original language? _____in English _____in original language

(9d) Could you understand the training well? _____yes _____no

(9e) Were you asked to sign a statement that you received this training? _____yes _____no

(9f) Who provided the training? _____employer _____union apprenticeship program _____union but not through an apprenticeship program ____other (specify)_____

(10) In the past three years (or as long as you have worked in construction if that is less than three years), have you participated in any asbestos awareness training? _____yes _____no _____don't know

If yes, **(10a)** how many programs like this have you participated in? _____

(10b) How many hours did the longest of those programs last? _____hours

(10c) Was the training in English, or was it in your original language?
_____in English _____in original language

(10d) Could you understand the training well? _____yes _____no

(10e) Were you asked to sign a statement that you received this training?
_____yes _____no

(10f) Who provided the training? _____employer _____union apprenticeship program _____union but not through an apprenticeship program
____other (specify) _____

(11) In the past three years (or as long as you have worked in construction if that is less than three years), have you participated in any hazardous materials or hazardous location training?
_____yes _____no _____don't know

If yes, **(11a)** how many programs like this have you participated in? _____

(11b) How many hours did the longest of those programs last? _____hours

(11c) Was the training in English, or was it in your original language?
_____in English _____in original language

(11d) Could you understand the training well? _____yes _____no

(11e) Were you asked to sign a statement that you received this training?

_____yes _____no

(11f) Who provided the training? ____employer _____union apprenticeship program

_____union, but not through an apprenticeship program

_____other (specify)_____

(12) In the past three years (or as long as you have worked in construction if that is less than three years), have you participated in any other safety training program? _____yes _____no _____don't know

If yes, **(12a)** Would you describe what it was about, how long it lasted, and whether you found it useful in making your work safer? [open ended question]

If the person is an ironworker, **(12b)** Have you had any structural steel safety training (also known as "sub-part R" training)? _____yes _____no

PERSONAL PROTECTIVE EQUIPMENT

(13) We are interested in your use of various equipment and procedures in your work. Do you

NEVER	SOMETIMES	REGULARLY	ALWAYS	
				(a) wear work boots
				(b) wear a hard hat
				(c) wear work gloves
				(d) wear protective eyewear
				(e) use guards on cutting tools
				(f) use hearing protection
				(g) use respiratory protection

PRACTICES OF CONSTRUCTION EMPLOYERS

(14) In your experience, do the construction employers you work for have one meeting per week on safety issues? (These are sometimes also known as "tool box talks" or "tail gate safety meetings") _____generally yes _____generally no

If yes, **(14a)** Are these meetings in English, or in your original language?
_____in English _____in original language

(14b) Can you understand well what is being said at these meetings?
_____yes _____no

(15) For any work six or more feet above the ground, do your construction employers require you to use a body harness? _____generally yes _____generally no
_____not applicable

(16) Have your construction employers shown you or given you a copy of their safety programs?
_____generally yes _____generally no _____(if volunteered) don't know

(17) Have you been given access to Material Safety Data Sheets for any chemicals you work with?
_____generally yes _____generally no _____(if volunteered) don't know

(18) Have your construction employers used "ground fault" electrical outlets on your jobs, which turn off the electricity if there is a short?
_____generally yes _____generally no (if volunteered) _____don't know

(19) When doing construction work have you often been given electrical extension cords that are taped up because they have been cut?

_____yes _____no _____not applicable

(20) Would you report a safety violation to your employer if you were aware of it?

_____yes _____no ____(if volunteered) unsure

If no or unsure, **(20a)**: Why not? [open ended answer here]

If yes, **(20b)**: What usually happens (or would happen) when you do that? [open ended answer here]

(21) When you work on scaffolds, do the scaffolds have hand rails? _____generally yes _____generally no _____not applicable, because I never work on scaffolds

(21a) Are there usually other safety features, and if so, would you describe what they are?

(22) Does your employer allow you to keep the work site clean during the day while you're on the job, or do you have to wait until the end of the day to clean up? (open ended answer)

(23) Have your employers supplied first aid kits? _____generally yes _____generally no

(24) Have your employers supplied fresh drinking water on the job site?

_____generally yes _____generally no

(25) Have your employers supplied a number of places to go to the bathroom?

_____generally yes ____generally no

(26) Have you ever worked on a high rise building? _____yes _____no

If yes, **(26a)** Did your employer have safety rails or cables to prevent you from falling off, or was it possible to just walk off the edge?

_____had protection _____no protection

INJURIES

I am going to ask you some questions about injuries and work-related medical problems which may have affected your work in the last three years. If you have worked in construction for less than three years, please give answers only to the period during which you were working in construction.

(27) In the last three years, have you been injured or had a work-related medical condition which affected you at work while working as a construction worker?

_____yes _____no

(28) If you had an injury on the job, did you report it? _____yes _____no _____not applicable

If no, **(28a)**, why not? [open ended answer]

If yes, **(28b)** what happened when you did report it? [open ended answer)

(29) In the last three years, have you required medical attention from a nurse, paramedic, doctor or other medical worker because of an injury or work related medical condition which affected your work while working as a construction worker? _____yes _____no

(30) In the last three years, have you missed a day of work because of an injury or work related medical condition which affected your work while working as a construction worker? _____yes _____no

(31) How many times have you been injured severely enough on the job to miss a day of work in the last three years? _____times

If the answer to (31) is more than zero, **(31a)** About how many days of work have you missed because of a construction injury in the last three years? _____ days

(31b) What was the longest period you were away from work because of a construction injury in the last three years? _____ (CIRCLE UNIT) 1. DAY(S) / 2. WEEK(S) / 3. MONTH(S) / 4. YEAR(S)

(31c) What type of work were you doing when that injury occurred?

(31d) Could you describe that injury?

(31e) When you first returned to work after recovering from that injury, did you work in construction? _____yes _____no

(31f) How long did it take for you to return to working in construction?
_____ (CIRCLE UNIT) 1. DAYS / 2. WEEKS / 3. MONTHS / 4. YEARS

(32) How many times have you been absent from work because of a work related <u>illness other than an injury</u> which affected your work in the last three years? (An example might be getting sick due to exhaustion, too much heat, etc.) _____ times

(33) About how many days of work have you missed because of a work related illness other than an injury in the last three years? _____days

(34) Have you filed for, or has someone filed on your behalf, for workers compensation for an injury or work related medical condition which you sustained in the last three years?

_____yes _____no _____don't know

If yes in #34, **(34a)** Was this for medical expenses? _____yes _____no

(34b) Was this for lost work time? _____yes _____no

(34c) Was this for a permanent disability? _____yes _____no

If no in #34, **(34d)** Have your employers almost always paid into the workers compensation system so you can receive benefits if you are injured or made sick because of your job? _____yes ____no _____don't know

(35) Have you ever been asked to sign a waiver of workers compensation coverage? _____yes _____no

If yes, **(35a)** would you tell me if the employer asking you to do this: (check)

_____employed less than 10 workers _____employed more than 10 workers

_____was non-union _____was union

_____paid in cash _____paid by check

(36) Have you received a workers compensation payment or benefit for injuries or work related medical condition you suffered while working construction in the last three years? _____yes _____no

If yes, **(36a)** Was this for medical expenses? _____yes _____no

(36b) Was this for lost work time? _____yes _____no

(36c) Was this for a permanent disability? _____yes _____no

(36d) How much did you receive? _____dollars

(37) Have you received compensation from an employer, other than workers compensation, for injuries or work related medical condition you suffered while working construction in the last three years? _____yes _____no

If yes, **(37a)** Was this for medical expenses? _____yes _____no

(37b) Was this for lost work time? _____yes _____no

(37c) Was this for a permanent disability? _____yes _____no

(37d) Was this for anything else? _____yes (if yes, what for?

_____

_____

(38) In general would you say your health is excellent, very good, good, fair, poor?

_____excellent _____very good _____good _____fair _____poor

(39) Compared to one year ago, would you say your health is much better, somewhat better, about the same, somewhat worse, much worse? _____much better ____somewhat better ____about the same ____somewhat worse ____much worse

(40) In the last year, have you been working on a site when a construction worker had to be taken to a hospital because of an injury? _____yes _____no

If yes, **(40a)** How many times has this occurred in the last year? _____times

(41) Since you started working construction, have you worked on a site when a construction worker died in a work related accident? _____yes _____no

EMPLOYER AND JOB CHARACTERISTICS

Now I'm going to ask you some questions about the construction jobs you have had, and the employers you have worked for.

(42) How long have you been continuously employed by your current employer?

_____ (CIRCLE UNIT) 1. DAYS / 2. WEEKS / 3. MONTHS / 4. YEARS

(43) How many different employers have you worked for while working in construction in the last 12 months? _____employers

(44) How did you find your current job? DO NOT READ; CIRCLE ALL THAT APPLY.

want ad in paper……. 01

word of mouth……. 02

friend or family member recruited me……... 03

union hiring hall……. 04

referred by prior employer……. 05

training program directed me to this employer… 06

current employer (moved from other project)…. 07

other (specify)…… ……..…. … 08

(45) Is your current employer a construction firm, a temporary help firm, or some other type of firm? _____construction _____temporary help firm _____other (please specify) _____

If temporary help firm, **(45a)** How long have you worked for this temporary help firm? _____ CIRCLE UNIT 1. DAYS / 2. WEEKS / 3. MONTHS / 4. YEARS

(45b) Does your paycheck come from the temporary help firm, or the construction firm? _____temporary help firm _____construction firm

(45c) Would you prefer to work directly for the construction firm that is currently employing you (rather than working for the temporary help firm)? _____yes

_____no (if volunteered)_____unsure, or don't know

(46) About how many people, including yourself, were on your job site today, or the last day you worked construction? _____ people

(46a) How many employees does your employer have at all locations -- please include all employees, not only construction workers but sales workers, secretaries, and other employees? Is it: _____less than 10 _____10 to 24 _____25 to 99

_____100 to 499 _____500 to 999 _____1000 or more?

(if volunteered)_____don't know

(47) How many of the construction employees of your current employer are represented by a union – would you say all, most, some, or none?

_____all _____most _____some _____none

(48) What union or unions represent the employees of your current employer?

(49) During the past year, <u>when you are working in construction</u>, how many days per week have you worked, on average?

____one ____two ____three ____four ____five ____six ____seven

(49a) On average, how many hours <u>per week</u> while working construction?

_____hours

(50) Have you ever been paid for construction work in cash, rather than by check?

_____yes _____no

If yes, **(50a)** would you tell me if the employer asking you to do this: (check all that apply)

_____employed less than 10 workers _____employed more than 10 workers

_____was non-union _____was union

_____required you to sign a waiver of worker's compensation coverage

_____required you to sign a "tax form" (also known as a "1099")

(51) Have you ever done construction work where you were paid by the hour and were asked to sign a "tax form" (also known as a "1099"), so that taxes would not be deducted from your paycheck? _____yes _____no

If yes, **(51a)** would you tell me if the employer asking you to do this: (check all that apply)

_____employed less than 10 workers _____employed more than 10 workers

_____was non-union _____was union

_____required you to sign a waiver of worker's compensation coverage

_____paid you in cash, instead of by check

(52) When you did construction work during the past year, were you usually paid by the hour, by the piece, or by the job? _____by the hour _____by the piece _____by the job

If by the hour, **(52a)** On average, how much did you make per hour? $_____per hour

If by the piece, **(52b)** On average, at that piece rate, how much did you end up making in each hour you worked? $_____per hour

If by the job, **(52c)** On average, at that rate per job how much did you end up making in each hour your worked? $_____per hour

(53) At your present construction job, do you have any kind of retirement or savings plan?

_____yes _____no

If yes, **(53a)** does the employer contribute to it? _____yes _____no

(53b) Is this a union plan? _____yes _____no

(54) At your present construction job, does your employer offer any kind of health care coverage? _____yes _____no

If yes, **(54a)** what percentage of its cost does the employer pay, and what percentage of its cost do you have to pay? Employer percentage is _____%. My percentage is _____% (if volunteered) _____I don't know

(55) How much do you agree or disagree with each of the following statements. Please tell me whether you strongly agree, agree, disagree or strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
a. My foreman is concerned about worker safety				
b. My contractor (employer) is concerned about worker safety				
c. Unions lead to safer jobs				
d. My work conditions are dangerous				
e. My work area is kept clean				
f. My work area is cluttered				
g. My job site has a good safety program				
h. I have too much to do to be able to follow safe work practices				
i. Where I work, productivity is more important than worker safety				

FURTHER DEMOGRAPHICS AND BACKGROUND INFORMATION

(56) Do you currently belong to a union? _____yes _____no

If yes, (56a) which union do you belong to?

_____ ENTER CODE FROM LIST BELOW

1 Asbestos workers	11 Operating Engineers
2 Boiler Makers	12 Painters
3 Bricklayers	13 Plasterers
4 Carpenters	14 Plumbers and Pipefitters
5 Cement Masons	15 Roofers
6 Electrical Workers	16 Sheet Metal Workers
7 Elevator Constructors	17 Teamsters
8 Glaziers	18 Tile, Marble and Terrazo Helpers
9 Ironworkers	19 OTHER
10 Millwrights	

(56b) Have long have you belonged to the union? _____years (or _____months)

(57) About what was your total <u>family</u> income last year? $_____

PROBE IF NECESSARY: Was it less than $30,000? _____yes _____no

Was it more than $45,000? _____yes _____no

Was it more than $60,000? _____yes _____no

Was it less than $20,000? ____yes _____no

(58) About what was your total <u>personal</u> income last year? $_____

(59) What is the highest school grade you have completed? _____

(Try to get grade number, but if that does not work, prompt and ask if it was:

_____less than high school (8th grade or less) _____some high school (9th-12th grade)

_____high school degree _____vocational or technical school

_____some college (no degree) _____college or graduate degree

(60) Are you a citizen of the United States? ____yes ____no ____doesn't want to answer

If no, **(60a)** is your legal status _____documented, or _____undocumented?

(_____doesn't want to answer)

That is all the questions that I have. Thank you for your time.

APPENDIX B – RESEARCH INSTRUMENT (SURVEY) IN SPANISH

INSTRUMENTO DE INVESTIGACION-ENCUESTA

(Antes de comenzar esta encuesta, averigüe si la persona con quien habla (a) ha cumplido ó es mayor de 18 años de edad, (b) nació en una nación extranjera de padres que no eran ciudadanos americanos, y (c) trabaja en la industria de la construcción. Proceda si la respuesta a TODAS LAS TRES preguntas (a), (b) y (c) es "sí", Si la respuesta es "no", no la entreviste).

Declaración de apertura: Esta es una encuesta de aproximadamente 50 adultos que han cumplido ó son mayores de 18 años que no nacieron en los Estados Unidos de Norteamérica, y trabajan en la industria de la construcción en este país. Esta encuesta es parte de un proyecto de investigación que está siendo hecho por un profesor de la Universidad Internacional de la Florida/Florida International University (FIU). Las preguntas le serán hechas en su mayoría sobre sus experiencias en su trabajo en la industria de la construcción en este país, especialmente sobre asuntos de salud y seguridad en el trabajo. También se le harán unas cuantas preguntas de información sobre su persona. Le llevará alrededor de 45 minutos el contestar esta encuesta. Al participar en ella, usted ayudará a otros trabajadores de la construcción en proveer información sobre las prácticas y entrenamiento de la salud y seguridad laboral actual que se efectúan en lugares donde hay obras de construcción. Esta información anónima será compartida con los que establecen las políticas en quienes confiamos puedan desarrollar normas futuras para mejorar las condiciones y entrenamientos laborales de todos los trabajadores de la construcción. No conocemos de riesgos que pueda usted correr al contestarnos estas preguntas más allá de los que podría encontrar en su vida diaria. Si usted tiene alguna pregunta sobre esta investigación, siéntase libre para comunicarse con el Dr. Bruce Nissen en la Universidad Internacional de la Florida (FIU), al teléfono (305) 348-2616. Usted está en libertad de no contestar cualesquiera de las preguntas si no desea hacerlo. Se le pagarán $ 25 por su participación si contesta la encuesta completa – o el por ciento de los $ 25 que corresponda al por ciento de la encuesta que usted conteste. La información recopilada será utilizada solamente para preparar reportes sobre la investigación y artículos académicos. No se le preguntará su nombre, y no será identificado en ninguno de los reportes o escritos que resulten de esta investigación. Nos da su autorización para hacerle esta encuesta sobre este tópico? (Obtenga consentimiento verbal).

Preguntas:

DEMOGRAFIA E INFORMACION GENERAL

(0) Anote el sexo por observación _____ masculino _____ femenino (Pregunte si es necesario)

(l) En qué país, pueblo o villa (o pueblo o villa más cercano) nació usted?

(2) Cuál es su fecha de nacimiento? Mes _____ Día _____ Año _____

(3) En qué año vino a vivir para Estados Unidos de Norteamérica? _____

(4) Cuántos años ha trabajado en la construcción en los Estados Unidos de Norteamérica?
_____ años
(Si su trabajo en la construcción quedó interrumpido por otros tipos de labor, sume el total del número de años sin contar los períodos en los que no estuvo trabajando en la industria de la construcción. Puede usar fracciones tales como 1 ½ años, 2 ¾ años, ½ año, etc.).

(5) En qué oficio trabajó usted más? _____ carpintero _____trabajador general
_____ herrero _____ ponedor de alfombras _____ paneles (drywall)
_____ electricista _____ operador de equipos pesados _____ aislamiento
_____ pintor _____ plomero o montador de tuberías
_____ chapistero _____ albañil/mamposterero _____ techador
_____ instalador de calefacción, ventilación o aire acondicionado
_____ vidriero _____ otro (especifique) _____

(6) En cuáles otros oficios ha trabajado?
_____ carpintero _____trabajador general
_____ herrero _____ ponedor de alfombras _____ paneles (drywall)
_____ electricista _____ operador de equipos pesados _____ aislamiento
_____ pintor _____ plomero o montador de tuberías
_____ chapistero _____ albañil/mamposterero _____ techador
_____ instalador de calefacción, ventilación o aire acondicionado
_____ vidriero _____ otro (especifique) _____

(6a) Cuánto tiempo trabajó en cada uno de los oficios arriba indicados?

Oficio	Tiempo trabajado en el oficio
_____	_____
_____	_____
_____	_____

ENTRENAMIENTO

(7) Ha recibido usted algun “entrenamiento de 10 horas OSHA”? (OSHA significa “Acta de Salud y Seguridad Ocupacional”, una ley relacionada con la seguridad en el trabajo) _____ sí
_____ no _____ no lo se

Si recibió entrenamiento, **(7a)** cuán pronto lo recibió después de haber comenzado a trabajar en la construcción? _____ (marque un círculo alrededor de cuál: días, meses, años)

(7b) Recibió el entrenamiento en inglés, o en su idioma nativo?
_____ en inglés _____ en el idioma nativo

(7c) Pudo entender bien el entrenamiento? _____ sí _____ no

(7d) Le pidieron firmar una declaración después que recibió el entrenamiento?
_____ sí _____ no

(7e) Quién le proveyó el entrenamiento? _____ empleador _____ programa de aprendizaje del sindicato _____ sindicato fuera de un programa de aprendizaje
_____ otro (agencia de gobierno) (especifique) _____

(8) Ha recibido alguna vez entrenamiento de seguridad en los andamios?
_____ sí _____ no _____ no se

Si sí, **(8a)** Recibió el entrenamiento en inglés, o en su idioma nativo?
_____ en inglés _____ en el idioma nativo

(8b) Pudo entender bien el entrenamiento? _____ sí _____ no

(8c) Le pidieron firmar una declaración después que recibió el entrenamiento?
_____ sí _____ no

(8d) Quién le proveyó el entrenamiento? _____ empleador _____ programa de aprendizaje del sindicato _____ sindicato fuera de un programa de aprendizaje
_____ otro (agencia de gobierno) (especifique) _____

(9) En los últimos tres años (o durante el tiempo que ha trabajado en la construcción si es menos de tres años), ha usted participado en algun entrenamiento de CPR o de primeros auxilios? _____ sí _____ no _____ no se

Si sí, **(9a)** en cuántos programas como éste ha participado? _____ programas

(9b) Cuántas horas duró el más largo de ellos? _____ horas

(9c) Recibió el entrenamiento en inglés, o en su idioma nativo?
_____ en inglés _____ en el idioma nativo

(9d) Pudo entender bien el entrenamiento? _____ sí _____ no

(9e) Le pidieron firmar una declaración después que recibió el entrenamiento?
_____ sí _____ no

(9f) Quién le proveyó el entrenamiento? _____ empleador _____ programa de aprendizaje del sindicato _____ sindicato fuera de un programa de aprendizaje ____otro (agencia de gobierno) (especifique) _____

(10) En los últimos tres años (o durante el tiempo que ha trabajado en la construcción si es menos de tres años) ha participado en algun entrenamiento para conocimiento sobre asbestos? _____ sí _____ no _____ no se

Si sí, **(10a)** en cuántos programas como éste ha participado? _____ programas

(10b) Cuántas horas duró el más largo de ellos? _____ horas

(10c) Recibió el entrenamiento en inglés, o en su idioma nativo?
_____ en inglés _____ en el idioma nativo

(10d) Pudo entender bien el entrenamiento? _____ sí _____ no

(10e) Le pidieron firmar una declaración después que recibió el entrenamiento?
_____ sí _____ no

(10f) Quién le proveyó el entrenamiento? _____ empleador _____ programa de aprendizaje del sindicato _____ sindicato fuera de un programa de aprendizaje **_____** otro (agencia de gobierno) (especifique) _____

(11) En los últimos tres años (o durante el tiempo que ha trabajado en la construcción si es menos de tres años) ha participado en un entrenamiento sobre materiales o lugares peligrosos? _____ sí _____ no _____ no se

Si sí, **(11a)** en cuántos programas como éste ha participado? _____ programas

(11b) Cuántas horas duró el más largo de ellos? _____ horas

(11c) Recibió el entrenamiento en inglés, o en su idioma nativo?
_____ en inglés _____ en el idioma nativo

(11d) Pudo entender bien el entrenamiento? _____ sí _____ no

(11e) Le pidieron firmar una declaración después que recibió el entrenamiento?
_____ sí _____ no

(11f) Quién le proveyó el entrenamiento? _____ empleador _____ programa de aprendizaje del sindicato _____ sindicato fuera de un programa de aprendizaje **_____** otro (agencia de gobierno) (especifique) _____

(12) En los últimos tres años (o durante el tiempo que ha trabajado en la construcción si es menos de tres años) ha participado en algun otro programa de entrenamiento sobre seguridad en el trabajo? _____ sí _____ no _____ no se

Si sí, **(12a)** Podría describirnos sobre qué trató, cuánto duró, y si usted lo encontró útil para crear un lugar de trabajo más seguro? (pregunta abierta a respuesta).

Si la persona es un herrero, **(12b)** Ha recibido usted algun entrenamiento de seguridad sobre acero estructural (también conocido como entrenamiento "sub-part R")? _____ sí _____ no

EQUIPO DE PROTECCION PERSONAL

(13) Estamos interesados en su uso de varios equipos y procedimientos en su trabajo. Usted

NUNCA	ALGUNAS VECES	REGULAR-MENTE	SIEMPRE	
				(a) usa botas de trabajo
				(b) usa casco protector
				(c) usa guantes de trabajo
				(d) usa protectores de ojos
				(e) usa cubiertas para herramientas de cortar
				(f) usa protección auditiva
				(g) usa protección respiratoria

PRACTICAS DE LOS EMPLEADORES EN LA CONSTRUCCION

(14) En su experiencia, tienen los empleadores de la construcción para los que usted trabaja reuniones semanales sobre seguridad industrial? (También a veces son conocidas como "charlas de caja de herramientas", o "reuniones de seguimiento")
_____ generalmente sí _____ generalmente no

Si sí, **(14a)** se celebran estas reuniones en inglés o en su idioma nativo?
_____ en inglés _____ en mi idioma nativo

(14b) Puede usted entender bien lo que se dice en estas reuniones? _____ sí _____ no

(15) Le requieren sus empleadores de la construcción que use arreos corporales para trabajos que se realicen a seis o más pies sobre el nivel del piso? _____ generalmente sí _____ generalmente no _____ no aplica

(16) Le han enseñado sus empleadores en la construcción una copia de sus programas de seguridad? _____ generalmente sí _____ generalmente no _____ no se (si responde voluntariamente)

(17) Se le ha dado acceso a las Hojas con Datos sobre Seguridad de Materiales sobre cualquiera de los químicos conque usted trabaja?
_____ generalmente sí _____ generalmente no _____ no se (si responde voluntariamente)

(18) Han usado los empleadores de la construcción conque usted trabaja tomacorrientes eléctricos con "tierra" en sus trabajos, que apagan la electricidad si hay un corto circuito? _____ generalmente sí _____ generalmente no _____ no se (si responde voluntariamente)

(19) Cuando usted realiza trabajo de construcción, le han ofrecido a menudo extensiones de cordones eléctricos que están parchadas con cinta adhesiva (tape) porque han sufrido cortaduras?
_____ sí _____ no _____ no aplica

(20) Reportaría usted una violación de seguridad en el trabajo a su empleador si se diera cuenta de ello? _____ sí _____ no _____ no estoy seguro (si responde voluntariamente)
Si no o no está seguro, **(20a):** Por qué no? (Pregunta abierta a respuesta)

Si sí, **(20b):** Qué usualmente ocurre (u ocurriría) si lo hace (o lo hiciera)? (pregunta abierta a respuesta)

(21) Cuando usted trabaja en los andamios, tiene pasamanos? _____ generalmente si _____ generalmente no _____ no aplica, porque nunca trabajo en andamios.

(21a) Hay usualmente otras medidas de seguridad? Y si las hay, descríbalas

(22) Le deja su empleador mantener el sitio de su trabajo limpio durante el día mientras que usted está trabajando, o tiene que esperar hasta el final del día para poder limpiar? (pregunta abierta a respuesta)

(23) Tiene su empleador suficientes botiquines de primeros auxilios? _____ generalmente sí _____ generalmente no

(24) Tiene su empleador suficiente agua fresca para beber en el lugar de trabajo? _____ generalmente si _____ generalmente no

(25) Tiene habilitados su empleador suficientes lugares para ir al baño?
_____ generalmente sí _____ generalmente no

(26) Ha trabajado alguna vez en un rascacielos? _____ sí _____ no
Si sí, **(26a)** Tenía su empleador railes o cables de seguridad para prevenir que usted se cayera o era posible dar un paso en falso? _____ tenía protección
_____ no había protección

LESIONES

Le voy a hacer algunas preguntas sobre heridas o problemas médicos relacionados con el trabajo que puedan haberle afectado su empleo en los últimos tres años. Si usted ha trabajado en la construcción por menos de tres años, por favor sólo conteste con respecto al período de tiempo durante el cual usted estuvo trabajando en la construcción.

(27) En los últimos tres años, ha resultado usted herido o ha tenido un padecimiento médico relacionado con su trabajo que le haya afectado en su labor mientras ha estado trabajando en la construcción? _____ sí _____ no

(28) Si usted se lesionó en el trabajo, lo reportó? _____ sí _____ no _____ no aplica
Si no, **(28a)** por qué no? (pregunta abierta a respuesta)

Si sí, **(28b)** qué pasó cuando lo reportó? (pregunta abierta a respuesta)

(29) En los últimos tres años, ha requerido usted atención médica de una enfermera, paramédico, doctor u otro trabajador médico a causa de una lesión o condición médica relacionada con el trabajo que ha afectado su trabajo mientras laboraba en la construcción? _____ sí _____ no

(30) En los últimos tres años, ha perdido un día de trabajo a causa de una lesión o condición médica relacionada con el trabajo que le ha afectado su empleo mientras trabajaba en la construcción? _____ sí _____ no

(31) Cuántas veces en los últimos tres años ha resultado herido con severidad lo suficiente como dejar de trabajar un día? _____ veces

Si la respuesta a (31) es más de cero, **(31a)** Cuántos días de trabajo en los últimos tres años ha perdido por una lesion en la construcción ? _____ días

(31b) Cuál fue el período más largo de tiempo en los últimos tres años que estuvo fuera de su trabajo a causa de una lesión en la construcción? _____ (PONGA UN CIRCULO ALREDEDOR DE LA UNIDAD). 1. DIA(S) / 2.SEMANA(S) / 3.MES(ES) / 4.AÑO(S)

(31c) Qué tipo de trabajo estaba haciendo cuando resultó lesionado?

(31d) Podría describir la lesión?

(31e) Trabajó en la construcción al regresar por primera vez después de recobrarse de la lesion? _____ sí _____ no

(31f) Cuánto le llevó poder regresar a su trabajo en la construcción?

_____ (PONGA UN CIRCULO ALREDEDOR DE LA UNIDAD)
1. DIA(S) / 2.SEMANA(S) / 3.MES(ES) / 4.AÑO(S)

(32) Cuántas veces en los últimos tres años ha estado ausente del empleo por una enfermedad (no lesión)causada por su trabajo que le ha afectado su empleo en los últimos tres años? (Un ejemplo podría ser enfermarse a causa de agotamiento, demasiado calor, etc.) _____ veces

(33) Cuántos días de trabajo ha perdido de su empleo en los últimos tres años por una enfermedad (no lesión) relacionada con su trabajo? _____ días

(34) Ha usted solicitado (o alguien lo ha representado) compensación por una lesion o condición médica relacionada con su trabajo sostenida durante los últimos tres años?
_____ sí _____ no _____ no se

Si sí en # 34, **(34a)** Fue por gastos médicos?_____ sí _____ no

(34b) Fue por tiempo perdido de trabajo? _____ sí _____ no

(34c) Fue por estar incapacitado permanentemente? _____ sí _____ no

Si no en #34, **(34d)** Han casi siempre sus empleadores contribuído al sistema de compensación laboral para que usted pueda recibir beneficios si resulta lesionado o se enferma a causa de su empleo? _____ sí _____ no _____ no se

(35) Se le ha pedido alguna vez que firme una renuncia a la cobertura de compensación laboral? _____ sí _____ no

Si sí, **(35a)** podría decir si su empleador que se lo pide: (marque cuál)
_____ emplea menos de 10 trabajadores _____ emplea más de 10 trabajadores
_____ no pertenece al sindicato _____ pertenece al sindicato
_____ le pagó en efectivo _____ le pagó con cheque

(36) Ha recibido pago o beneficio de compensación laboral por lesiones o condición médica relacionada con su empleo mientras trabajaba en la construcción en los últimos tres años? _____ sí _____ no

Si sí, **(36a)** Fue por gastos médicos? _____ sí _____ no

(36b) Fue por tiempo de trabajo perdido? _____ sí _____ no

(36c) Fue por incapacitación permanente? _____ sí _____ no

(36d) Cuánto recibió? _____ dólares

(37) Ha recibido una compensación de un empleador distinta de compensación laboral, por lesiones o condiciones médicas relacionadas con el trabajo que realizaba en la construcción en los últimos tres años? _____ sí _____ no

Si sí, **(37a)** Fue por gastos médicos? _____ sí _____ no

(37b) Fue por tiempo de trabajo perdido? _____ sí _____ no

(37c) Fue por incapacitación permanente? _____ sí _____ no

(37d) Fue por cualquier otra cosa? _____ sí (si sí, por qué?)

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(38) Diría usted que en general su salud es excelente, muy buena, buena, regular, pobre?
_____ excelente _____ muy buena _____ buena _____ regular _____ pobre

39) Comparándola con hace un año, diría usted que su salud es mucho mejor, algo mejor, igual, algo peor, mucho peor?_____ mucho mejor _____ algo mejor
_____ igual _____ regular _____ algo peor _____mucho peor

(40) Ha estado trabajando en el último año en un lugar en donde un trabajador de la construcción ha tenido que ser llevado al hospital a causa de una lesión?____sí ____no

Si sí, **(40a)** Cuántas veces ha ocurrido esto en el último año? _____ veces

(41) Desde que trabaja en la construcción, ha trabajado en un lugar en donde un trabajador de la construcción murió en un accidente relacionado con el trabajo?
_____ sí _____ no

CARACTERISTICAS DEL EMPLEADOR Y DEL TRABAJO
Ahora le voy a hacer algunas preguntas sobre los trabajos en la construcción que usted ha tenido, y los empleadores para los que ha trabajado.

(42) Por cuánto tiempo ha estado seguidamente trabajando para su empleador actual? _____ (PONGA UN CIRCULO ALREDEDOR DE LA UNIDAD)
1. DIA(S) / 2.SEMANA(S) / 3.MES(ES) / 4.AÑO(S)

(43) Para cuántos empleadores diferentes ha trabajado usted mientras ha estado empleado en la construcción en los últimos 12 meses? _____ empleadores

(44) Cómo encontró su empleo actual? NO LEER; PONGA UN CIRCULO ALREDEDOR DE LO QUE APLIQUE.

Anuncio en el periódico	01
Por boca de otra persona	02
Un amigo o familiar me reclutó	03
Sala de contratación del sindicato	04
Referido por un empleador anterior	05
El programa de entrenamiento me refirió a este empleador	06
Del empleador actual (mudado de otro proyecto)	07
Otro (especifique)	08

(45) Es su empleador actual una firma constructora, una firma temporal de ayuda, o algun otro tipo? _____ construcción _____ firma de ayuda temporal _____ otra (favor de especificar)

Si es una firma de ayuda temporal, **(45a)** Por cuánto tiempo ha trabajado para esta firma? _____ PONGA UN CIRCULO ALREDEDOR DE LA UNIDAD. 1. DIA(S) / 2.SEMANA(S) / 3.MES(ES) / 4.AÑO(S)

(45b) Viene su cheque de nómina de la firma de ayuda temporal, o de la firma constructora? _____ firma de ayuda temporal _____ firma constructora

(45c) Preferiría usted trabajar directamente con la firma constructora que actualmente le emplea (mejor que la firma de ayuda temporal?) _____ sí _____ no
(si lo ofrece voluntariamente _____ no está seguro, o no sabe).

(46) Cuántas personas había incluyéndose usted en su lugar de trabajo hoy, o el último día que trabajó en la construcción? _____ personas

(46a) Cuántos empleados tiene su empleador en todos sus lugares de trabajo– por favor incluya todos los empleados, no sólo los trabajadores de la construcción sino también de ventas, secretarias y otros empleados? Es: _____ menos de 10 _____10 a 24 _____ 25 a 99 _____ 100 a 499 _____ 500 to 999 _____ 1000 ó más? (Si lo ofrece voluntariamente) _____ no se

(47) Cuántos trabajadores de la construcción de su empleador actual están representados por un sindicato – diría usted que todos, la mayoría, algunos o ninguno?
_____ todos _____la mayoría _____algunos _____ninguno

(48) Qué sindicato o sindicatos representan a los trabajadores de su empleador actual?

(49) Cuántos días por semana como promedio trabajó el pasado año <u>en la construcción?</u>
____uno ____dos ____tres ____cuatro ____cinco ____seis ____siete

(49a) Cuántas horas por semana como promedio durante esos días que trabajo en construccion? ____ horas

(50) Se le ha pagado alguna vez en efectivo, en lugar de con cheque?
_____ sí _____ no

Si sí, **(50a)** me podría decir si el empleador le pidió que hiciera esto (marque lo que aplique)
_____ empleó menos de 10 trabajadores _____ empleó más de 10 trabajadores

_____ no era del sindicato _____ era del sindicato

_____ le requirió que firmara una renuncia a la cobertura de compensación laboral por accidente del trabajo

_____ le requirió que firmara una “forma de impuestos” (también conocida como una “1099”)

(51) Ha hecho alguna vez trabajo de construcción en el que se le pagó <u>por hora</u> y se le pidió que firmara una “forma de impuesto” (también conocida como una “1099”), para que no se dedujeran impuestos de su cheque? _____sí _____ no

Si sí, **(51a)** podría decirme si el empleador que le pidió esto: (marque lo que aplique)
_____ empleó menos de 10 trabajadores _____ empleó más de 10 trabajadores

_____ no era del sindicato _____ era del sindicato

_____ le requirió que firmara una renuncia a la cobertura de compensación laboral por accidente del trabajo

_____ le pagó en efectivo en lugar de con cheque

(52) Cuando realizó trabajo para la construcción durante el año pasado, fue usualmente pagado por hora, por la pieza, o por el trabajo? _____ por hora _____ por pieza _____ por trabajo

Si por hora, **(52a)** De promedio, cuánto hizo por hora? $ _____ por hora

Si por pieza,**(52b)** De promedio, al costo por pieza, cuánto terminó haciendo en cada hora de trabajo? $ _____ por hora

Si por trabajo, **(52c)** De promedio, a ese valor por trabajo, cuánto terminó haciendo por cada hora que trabajó? $ _____ por hora

(53) En tu lugar de trabajo de la construcción actual, tienen algun tipo de plan de retiro o de ahorros? _____ sí _____ no

Si sí, **(53a)** contribuye el empleador a él? _____ sí _____ no

(53b) Es éste un plan del sindicato? _____ sí _____ no

(54) En su trabajo actual de la construcción, ofrece su empleador algun tipo de cobertura de cuidado de la salud? _____ sí _____ no

Si sí, **(54a)** qué por ciento de su costo paga el empleador, y cuál por ciento de su costo tiene que pagar usted? Porcentaje del empleador es_____%. Mi porciento es _____%(Si lo ofrece voluntariamente) _____ No lo se

(55) Cuánto está de acuerdo o desacuerdo con cada una de las siguientes declaraciones. Dígame si usted esta muy de acuerdo, de acuerdo, en desacuerdo o muy en desacuerdo.

	Muy de acuerdo	De acuerdo	En desacuerdo	Muy en desacuerdo
a.Mi capataz se preocupa por la seguridad en el trabajo.				
b. Mi contratista (empleador) se preocupa por la seguridad en el trabajo.				
c. Los sindicatos llevan hacia condiciones en el trabajo más seguras.				
d. Mis condiciones en el trabajo son peligrosas.				
e. Mi área de trabajo es mantenida limpia.				
f. Mi área de trabajo está en desorden.				
g. Mi lugar de trabajo tiene un buen programa de seguridad en el trabajo.				
h. Tengo demasiado quehacer para poder seguir prácticas de seguridad en el trabajo.				
i. En mi empleo, la productividad es más importante que la seguridad del trabajador.				

MAS DEMOGRAFIA Y DATOS SOBRE EL INFORMANTE

(56) Es usted miembro de un sindicato actualmente? _____ sí _____ no

Si sí, **(56a)** a cuál pertenece?
_____ ENTRE EL CODIGO DE LA LISTA QUE SIGUE

1 Trabajadores de asbestos	11 Ingenieros operadores
2 Caldereros	12 Pintores
3 Albañiles	13 Enmasilladores
4 Carpinteros	14 Plomeros, montadores de tuberías
5 Mampostereros	15 Techadores
6 Electricistas	16 Chapisteros
7 Constructores de elevadores	17 Camioneros
8 Vidrieros	18 Marmoleros/loseteros
9 Herreros	19 Otros
10 Mecánicos de molino	

(56b) Por cuánto tiempo ha pertenecido al sindicato? _____ años (o _____ meses)

(57) Cómo cuánto fue su entrada familiar el año pasado? $ _____

SONDEE SI ES NECESARIO: Menos de $ 30,000? _____ sí _____ no
Más de $ 45,000? _____ sí _____ no
Más de $ 60,000? _____ sí _____ no
Menos de $ 20,000? _____ sí _____ no

(58) Como cuánto fue su entrada personal el año pasado? $ _____

(59) Cuál fue el grado superior de secundaria que completó? _____

(Trate de obtener el grado, pero si no funciona, pregúntele si fue:
_____ menos de secundaria (8vo o menos) _____ alguna secundaria (9-12 grado)
_____ licenciatura o maestría
_____ diploma de secundaria _____ escuela técnica o vocacional
_____ alguna universidad (no se graduó).

(60) Es ciudadano de los Estados Unidos de Norteamérica? _____ sí _____ no

Si no, **(60a)** es su status legal _____ documentado _____ indocumentado?
(_____ no quiere contestar)

Estas son todas las preguntas que tenía. Muchas gracias por su tiempo.

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