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**What is This?**

# Immigrant Construction Workers and Health and Safety

## The South Florida Experience

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Immigrants are a growing percentage of the U.S. construction labor force, so the safety of their working conditions deserves study. This article reports on research surveying 283 immigrant construction workers in south Florida about their safety training, use of personal protective equipment, and employer safety practices. Potential impacts of unionized status and documented legal status are tested through regression analysis. Results show only a minor positive relationship of unionization with more training and safer conditions and essentially no relationship between documented legal status and training or safe conditions. Reasons for the weak results are discussed, and further research questions are posed.

**Keywords:** *safety and health; immigrant workers; construction workers; unions; legal documentation*

Immigrants compose an increasing percentage of the U.S. construction labor force. As of March 2006, almost 24 percent of all construction workers in the country were foreign born (U.S. Census Bureau 2006). Most immigrant construction workers are Hispanic, and many U.S.-born Hispanics also work in construction. In March 2006, a little more than 24 percent of the construction workforce was Hispanic, a fourfold increase since 1980 (U.S. Census Bureau 2006; Center for Construction Research and Training 2002, chart 16b). Seventy percent of the 1.4 million Hispanic construction workers in the United States in 2000 were born outside the United States, and 57 percent were not U.S. citizens (Center for Construction Research and Training 2002, section 16).

In Florida, immigrants and Hispanics are an even larger percentage of the construction workforce. As of March 2006, immigrants were 34.7 percent of construction workers, and Hispanics constituted 31.7 percent of the Florida construction workforce (U.S. Census Bureau 2006). The concentration of immigrant and Hispanic

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construction workers is still higher in south Florida, where about three-quarters of construction workers in Miami-Dade County (Miami area) are Hispanic.

The growth of immigrant and Hispanic workers in construction has implications for safety conditions in this industry. Government statistics show that Hispanic (and presumably immigrant) construction workers face especially dangerous working conditions. In 2000, Hispanics constituted less than 16 percent of the construction workforce yet suffered 23.5 percent of fatal job injuries. In that year, Hispanic construction workers were nearly twice as likely to be killed by occupational injuries as their non-Hispanic counterparts (Dong and Platner 2004).

Therefore it is important to investigate how safe the conditions are that immigrant construction workers labor under, both because they are an ever-growing and important component of this workforce and because their treatment increasingly affects all construction workers in the country. In particular, it is critical to attempt to discover what factors are associated with improved safety and health training and conditions for immigrant workers. This article does so, using the south Florida construction workforce as a source of evidence.

## Literature on the Topic

A previous pilot study of immigrant construction in 2004 surveyed fifty workers on safety and health issues (Nissen 2004). While the small sample size limits this study's generalizability, those surveyed were primarily Hispanic, and most were legal residents though not U.S. citizens. This study found that they labored under unsafe conditions, had limited 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 serious injury difficult. Only union membership and documented legal status were found to be consistently associated with positive safety conditions (measured by safety training, use of personal protective equipment, and safer employer policies and practices). Other factors potentially associated with better safety conditions, such as longer residence in the United States or longer tenure in the U.S. construction industry, were not found to be related to training or conditions, though the small sample size limited the certainty of these findings.

Some studies have compared injuries or illnesses of Hispanics versus other groups, such as non-Hispanic whites and blacks. Robinson (1989) surveyed California data and discovered that for all 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 et al. (1994) found that laborers and Hispanic workers were overrepresented among severe cases of injury. In their study of New Jersey construction workers, Sorock, Smith, and Goldoft (1994)

found that Hispanics had death rates more than 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 above 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 et al. (2005) surveyed fifty young Latino construction workers. This study was concerned with both their youth and their ethnic status, which previous research identified as being associated with higher risks of injury. The article concludes that these workers had received very little health and safety training, particularly those with less English language ability.

Of course, not all Hispanic workers are immigrant workers. Very few studies have specifically examined health and safety conditions of immigrant construction workers in the United States, although there are some regarding immigrant workers in other or all occupations or in other countries (Gannagé 1999; Wu et al. 1997). Perhaps closest to the aim of the present study, Pransky et al. (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, 13 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 that industry's safety record were positively and statistically significantly related 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 and likely to be mediated by other activities that may be associated with unionization and union power. Dedobbeleer, Champagne, and German (1990) studied construction workers in the Baltimore area and found that union membership is significantly positively related to high safety performance. However, when the analysis controlled for age, no statistically significant relationship could be found, since union workers tended to be older. But there was a close relationship between union membership and workplace safety training. This association remained significant after controlling for all other variables. They also found that the differences in likelihood of being injured were in the expected direction (union worker injury rates were lower) but not statistically significant.

While this literature is suggestive of unique safety and health issues and problems for immigrant construction workers in the United States, none of the cited pieces,

apart from a coauthor's pilot study, directly attempts to discern factors that might influence the safety and health outcomes for this population. This study is an empirical attempt to discover the safety training and workplace conditions of immigrant construction workers in south Florida and to determine whether other factors are associated with improved safety training and/or workplace conditions for these workers.

In determining which factors or variables to examine in relation to safety training and conditions variables, we chose to look at union or nonunion status and documented or undocumented status. We did so because greater *empowerment* of workers should lead to, or be associated with, better safety outcomes. Richard Freeman and James Medoff's classic book, *What Do Unions Do?* (1984), documents the primary impact of unions in providing a "voice" to workers that they otherwise would not have, thus empowering them and leading to changed working conditions that are more in line with workers' desires. We assume that workers desire more safety training and a safer workplace (although the "white masculine" culture of much construction work in the United States may in fact mitigate this desire and endanger workers; see Paap 2006).

Virtually all of the literature on undocumented workers in the United States assumes that they are more vulnerable than others because of the danger (and fear) of deportation. Therefore, we also assume that a documented worker is likely to be more "empowered" on the job than is one who is in the country illegally, although this is a more speculative assumption than is the assumption that unionization in general empowers workers.

## Hypotheses

The research instrument was designed to test a series of hypotheses regarding the workers' safety training, practices, and conditions. Hypothesis 1 is that unionized status is associated with more safety training and safer workplace conditions than those experienced by nonunion workers among immigrant workers. Hypothesis 2 is that documented status is associated with more safety training and safer workplace conditions than those experienced by undocumented workers.

## Method

### Data Collection

We collected data about safety training and construction site workplace safety and health practices and behavior through face-to-face interviews in the field. Since no database is available with the names and contact information of workers on construction sites, it was impossible to obtain a random sample of workers. Nonetheless, sampling bias was reduced by creating a database of all Miami-Dade County construction projects costing more than \$10 million derived from the two reporting services on area construction projects, McGraw-Hill's Dodge Report and Industrial Information

Resources Report. Thus, the universe from which we sampled concentrated only on medium- and large-sized construction projects. We then randomly selected sites from this database and sent survey workers to them to contact workers before and after the workday.

At the sites, survey workers sampled construction workers either as they prepared to begin work or as they ended their workday. Through a “snowball” technique, participating workers often led us to other workers willing to participate in the survey. Thus individual respondent selection at the site was not entirely random but was as close as one can come to random selection without requiring the cooperation of contractors and subcontractors, which would have introduced a large “self-selection bias” between those employers willing to cooperate and those unwilling. Surveys were conducted outside project premises to avoid putting the workers at risk or in uncomfortable situations. Our survey workers contacted participants in adjacent parking lots or in routes that lead to and from public transportation sites.

The survey instrument had been tested in both English and Spanish in the previously noted pilot project. For all groups, we collected three safety training and worksite conditions variables: (1) having received (or not received) safety and health training, (2) use of (or nonuse of) personal protective safety equipment, and (3) employer use (or nonuse) of standard safety practices.

Survey workers attempted to reach as many construction workers as possible from each site, and there is no record of the ratio of those who declined or accepted to participate. For many workers, taking the time to participate in the survey was particularly hard after a long day of work, posing one of the bigger challenges to participation. In many cases, participants referred their coworkers to the survey workers, making the success rate higher. For the most part, survey workers worked in teams of two or more in order to increase the number of workers interviewed at a given time. This was particularly helpful as workers leave work in shifts, leaving construction sites empty within five to ten minutes. The number of workers varied from site to site; this occurred mainly because some sites made access to workers difficult. In many cases, parking lots were inside project grounds and were far from public transportation facilities, so most workers hitched rides into and out of the sites. In these difficult cases, our survey workers moved on to the next site.

We aimed to have no more than twenty workers from any one site to ensure a large and representative set of sites; however, since the local construction workforce is less than 5 percent unionized, we oversampled an “all-union” project to ensure a large enough number of union workers to have sufficient statistical power to test the relationship between unionization and safety training and practices. We aimed to include 20 percent union members in our sample, which would enable us to make meaningful comparisons. Our final sample contained a 28.6 percent foreign-born rate even in the union subsample. Additionally, on one site, we sampled twenty-six workers because this site had several building projects in a single area under different contractors and construction employers but was listed in our project list as a single site.

The survey workers for this research project were Florida International University graduate research assistants and personnel with previous training in social science methodology. All survey workers were given additional training specific to the use of this particular survey instrument, which required the collection of answers to both closed and open-ended questions in face-to-face interviews that were recorded by hand.<sup>1</sup> Informed consent was obtained in accordance with the research protocols of Florida International University. All survey respondents were given a nominal sum of twenty dollars as a token of appreciation for their cooperation.

## Sample

For the current research, we set out to survey 400 construction workers in Miami-Dade County during the summer months of 2006. Our total sample consisted of 283 immigrant workers and 117 nonimmigrant workers employed alongside them as a control group.

An initial question was whether there was a difference in safety training or workplace conditions between the immigrant and native-born respondents. An initial investigation (not shown here) showed that there were no differences of a systematic or numerically meaningful nature between the immigrants and the native born. All differences were extremely small and randomly distributed. Given this, we turned our attention to the immigrant portion of the overall sample—283 foreign-born respondents—and looked at the potential role of unionized or documented status within this group only. The remainder of this article refers only to the sample of 283 immigrant respondents, not the entire sample of 400 construction workers.

The 283 immigrants were mostly from Cuba and Central America and Mexico. Four countries account for 209 of the 283, including 75 from Cuba, 50 from Nicaragua, 42 from Mexico, and 42 from Honduras. The remaining 74 were from South America (23), Central America (20), Haiti (11), Spanish-speaking Caribbean countries (9),<sup>2</sup> English-speaking Caribbean countries (9), and Canada (2).

Table 1 shows the number of sampled sites, gender status, legal status, union membership, time in the industry, and mean age of our immigrant sample. The sample contained eighty-one union members. The number of workers who reportedly had no legal documents to work or live in the United States was seventy-five; however, we believe that this number may be underreported because of fear of exposure. All but two of the sampled immigrant workers were male, and the mean age of our foreign born sample was thirty-six. All of our participants came from well-established sites or employers, and there is no evidence of day laborers' being included in our sample.

## Variables

*Safety variables.* The survey provided information about sixteen practices in three general categories: (1) training (ten-hour Occupational Safety and Health Administration

**Table 1**  
**Characteristics of Immigrant Respondents According**  
**to Sampled Project (N = 283)**

Projects Sampled	Males Sampled	Undocumented	Union Members	Mean Years in Industry	Mean Age
23	281	75	81	7.35	36

[OSHA] training, scaffolding use, cardiopulmonary resuscitation [CPR], asbestos awareness, and hazardous materials awareness [hazmat]), (2) use of personal protective equipment (work gloves, protective eyewear, guards on cutting tools, hearing protection, and respiratory equipment), and (3) worksite practices (weekly meeting, use of body harnesses at heights, distribution of the company's safety program, ground fault protection, and the nonuse of taped electric cords). The dichotomous responses to these questions were used as safety variables.

*Nonsafety variables.* In the multivariate analysis that follows, age and number of years in the industry were used as control variables. To measure the relationship between unionization and workplace safety practices, a dummy variable denoting union membership was used; this variable was coded 1 for union members and 0 for nonmembers. To measure the impact of documentation status on the dependent variables, *documented* was a dichotomous variable, coded 1 for immigrants with legal working status and 0 for undocumented status.

## Results

### Safety Training and Workplace Conditions

Table 2 shows the percentage of respondents receiving various types of safety training, using different types of personal protective equipment, and experiencing various employer safety practices, cross-tabulated by union membership and documentation status.

More than 50 percent of the workers in the sample received OSHA ten-hour training, scaffold safety training, and hazmat training. Less than half of those sampled received asbestos awareness training and CPR training in the past three years. In all training categories, a higher frequency of union members received training than their nonunion counterparts. Similarly, documented workers had higher frequency of training in all areas than undocumented workers.

Regarding personal protective equipment, the survey results revealed almost universal use of hard hats and gloves. High frequency of utilization was found for protective eyewear and guards on cutting tools. Less than 50 percent utilization was found for hearing protection and respiratory protection. The utilization of personal

**Table 2**  
**Training Received, Use of Personal Protective Equipment, and Employer Safety Practices According to Union Membership and Documentation Status of Immigrant Respondents (in percentages)**

	Nonunion <i>n</i> = 202	Union <i>n</i> = 81	Undocumented <i>n</i> = 75	Documented <i>n</i> = 208	Total <i>N</i> = 283
<b>Training</b>					
OSHA ten hours	65.5	82.7	56.8	75.4	70.1
Scaffold safety	67.7	69.1	63.5	69.7	67.5
CPR in past three years	31.2	42.0	28.0	36.5	34.4
Asbestos awareness in past three years	17.9	27.2	10.8	24.0	19.9
Hazmat in past three years	55.2	60.5	51.4	58.7	56.5
<b>Regular use of personal protective safety equipment</b>					
Work boots	98.0	100.0	96.0	99.5	98.4
Hard hat	99.5	98.8	100.0	99.0	99.3
Gloves	70.3	70.4	84.0	65.4	72.5
Eyewear protection	89.1	91.4	89.3	89.9	89.9
Guards on cutting tools	71.8	77.8	87.7	70.2	76.9
Hearing protection	39.6	49.4	38.7	43.8	42.9
Respiratory protection	37.6	55.6	36.0	45.2	43.6
<b>Employer safety practices</b>					
One weekly meeting	77.7	80.2	78.7	78.4	78.8
Body harness when above 6 ft.	97.4	92.4	98.6	95.1	95.9
Offered copy of safety programs	74.6	85.2	66.7	81.6	77.0
Access to MSDS	57.3	67.1	37.5	68.3	57.6
Grounded electrical outlets	87.5	93.7	87.0	90.2	89.6
Taped-up electric cords	24.8	14.8	32.0	18.3	22.5

Note: OSHA = Occupational Safety and Health Administration; CPR = cardiopulmonary resuscitation; hazmat = hazardous materials; MSDS = material safety data sheets.

protective equipment was generally higher among union workers, but there appears to be little differences in utilization between documented and undocumented immigrant workers, though this will be more systematically explored in the multivariate analysis below.

The results are more varied in the area of employer safety practices. More than three-quarters of the sample reported weekly safety meetings and grounded electrical outlets. Except for undocumented workers, approximately the same percentage was offered copies of the company's safety program. Lower access to material safety data sheets (MSDS) was also found among the undocumented respondents. The survey also found that nearly one-quarter of the sample used electrical cords that had been cut and then "taped up" with electrical tape (a poor safety practice), but the frequency of utilization of this unsafe practice was lower among union and undocumented workers.

### Multivariate Analysis

To test hypotheses 1 and 2 regarding the impact of unionization and documentation status on various safety outcomes, we used a multivariate logistical analysis to measure the independent effects of union and legally documented status, controlling for age and experience in the industry.

Table 3 provides the results for various types of training. In these analyses, union members were statistically significantly ( $p < .05$ ) more likely to have received the basic OSHA ten-hour course than nonunion members. Although the cross-tabulations in Table 2 indicate higher safety training levels among union and documented immigrant workers for other types of training, these differences were not statistically different from levels of nonunion and undocumented workers.

**Table 3**  
**Logistic Regression Analysis of Training Received by**  
**Immigrant Workers (N = 283)**

	OSHA Ten Hours	Scaffold	CPR in Past Three Years	Asbestos Awareness in Past Three Years	Hazmat in Past Three Years
Union	.721** (.351)	-.011 (.308)	.384 (.291)	.265 (.328)	.088 (.287)
Documented	.431 (.331)	.355 (.333)	.132 (.339)	.689 (.452)	.240 (.314)
Age	-.004 (.014)	.021 (.014)	.009 (.013)	.006 (.016)	.010 (.013)
Years in industry	.033 (.024)	-.041** (.020)	.004 (.019)	.017 (.021)	-.006 (.019)
Constant	.853* (.475)	.219 (.457)	-.961** (.445)	-1.865*** (.534)	-.045 (.426)
Log likelihood	324.34	346.37	356.39	276.64	380.40
Model $\chi^2$	15.31***	5.28	4.48	9.04*	2.03

Note: Standard errors in parentheses. OSHA = Occupational Safety and Health Administration; CPR = cardiopulmonary resuscitation; hazmat = hazardous materials.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

Table 4 provides the results for the logistic regression analyses examining the utilization of personal protective equipment. In these analyses, unionization is positively related at a statistically significant level to greater utilization of guards on cutting tools and use of respiratory equipment. This is consistent with hypothesis 1. Surprisingly, documented status was negatively related to the use of work gloves and guards on

**Table 4**  
**Logistic Regression Analysis of Use of Personal Protective**  
**Equipment by Immigrant Workers (*N* = 283)**

	Work Gloves	Protective Eyewear	Guards on Cutting Tools	Hearing Protection	Respiratory Protection
Union	.315 (.308)	.284 (.482)	.546* (.327)	.370 (.284)	.684** (.287)
Documented	-1.397*** (.389)	.031 (.505)	-.911** (.339)	-.038 (.319)	.116 (.322)
Age	.040** (.015)	.014 (.022)	-.011 (.040)	-.001 (.013)	.010 (.013)
Years in industry	-.022 (.021)	-.029 (.030)	.024 (.022)	.017 (.019)	-.011 (.019)
Constant	.056 (.308)	1.953*** (.699)	1.637*** (.488)	-.332 (.426)	-.447 (.428)
Log likelihood	323.74	185.31	313.55	370.51	375.12
Model $\chi^2$	19.06***	1.32	8.39*	3.43	8.42*

Note: Standard errors in parentheses.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

cutting tools. In a separate analysis, not shown, where we controlled for specialization (i.e., electricians), these anomalous results remained statistically significant.

Table 5 provides the results of the multivariate analysis examining employer safety practices. This analysis finds no significant union relationship with any of these six practices. There was, however, a difference between documented and undocumented workers. Documented workers had statistically significantly greater access to MSDS and were less likely to work on sites with taped-up electrical cords.

## Discussion

In simple cross-tabulations, virtually all of the differences in safety training and conditions for union and nonunion workers were in the expected direction. This was less true for documented workers compared to the undocumented, but nevertheless a majority of results were still in the expected direction. However, the multivariate analysis was able to confirm statistically significant differences in only a few areas. Unionization had a statistically significant relationship only with reception of basic ten-hour OSHA training and use of respiratory protection at the .05 level of statistical significance. At the .10 level of significance, unionization was positively related to the use of cutting tool guards. Given the many types of training reception measured and the many types of personal protective equipment use measured, these are not very robust results. Coupled with the lack of any statistically significant findings of

**Table 5**  
**Logistic Regression Analysis of Employer Safety Practices**  
**for Immigrant Workers (N = 283)**

	Weekly Meeting	Body Harness	Copy of Safety Program	Access to MSDS	Ground Fault	Taped-up Electrical Cords
Union	.200 (.353)	-.919 (.660)	.440 (.379)	-.056 (.310)	.654 (.544)	-.463 (.381)
Documented	.218 (.387)	-.698 (1.161)	.487 (.356)	1.148*** (.334)	.234 (.508)	-.787** (.364)
Age	-.041*** (.015)	.052 (.042)	-.007 (.015)	-.007 (.014)	.024 (.024)	-.008 (.016)
Years in industry	.016 (.022)	-.088** (.045)	.036 (.036)	.035 (.022)	-.042 (.031)	.040* (.023)
Constant	2.678*** (.530)	9.98* (1.214)	1.265** (.511)	.160 (.469)	1.768** (.737)	-1.236** (.527)
Log likelihood	283.50	83.91	288.60	337.86	169.44	284.95
Model $\chi^2$	7.95*	8.21*	9.97**	23.73***	4.17	10.12**

Note: Standard errors in parentheses. MSDS = material safety data sheets.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ .

union impact on any employer safety practice, the multivariate analysis shows rather small independent union association with these safety outcomes. Support for hypothesis 1 is positive but weak.

Documented status was even less consistently associated with more training or safer workplace practices at statistically significant levels. No forms of training showed significantly higher association with documented status, which was actually significantly associated with less use of two types of personal protective equipment. These results were observable in our preliminary analysis and held true in the logistic regression analysis. We tested to see if there is a predominance of undocumented workers in areas that require higher uses of such equipment and found that these results persist even when controlling for trade; we believe these results merit further analysis. Documented status was statistically associated with greater access to MSDS (.01 level of significance), but this may mean little given that MSDS sheets are virtually always in English and the undocumented workers are likely to be more recent arrivals and therefore less conversant in English. Avoidance of use of taped-up electrical cords is statistically significantly (.05 level) associated with documented status, but this isolated result provides limited insight. The overall pattern for documented–undocumented differences after multivariate analysis gives essentially no support to hypothesis 2.

There are a number of possible explanations for the failure of this research to support hypothesis 2 and for it to give only weak support for hypothesis 1. We discuss the union versus nonunion question first.

## Unionized Status

The consistency of results prior to multivariate analysis showing more safety training and safer workplace conditions for union members may mean that we simply did not have a large enough sample to achieve statistical significance—perhaps unionization does have a consistent positive relationship, but a small enough one that large numbers would have to be surveyed to capture those differences at a statistically significant level.

Second, we are concerned that our measurement of training may be contaminated by a failure of many (particularly nonunion) workers to understand what actually constitutes training. Union training programs are formal, substantial programs that include both classroom learning and hands-on practice, whereas some workers, according to reports from our field researchers, considered simple demonstrations lasting well under an hour of how to do a job as “training,” even though this is qualitatively different and likely to be less effective than the more structured training union members receive. In future research, we recommend that questions related to training for this population of workers be more precise in distinguishing formal training programs from cursory on-the-job demonstrations. Importantly, the one statistically significant difference we found was for OSHA ten-hour training, which could not be confused with simple on-the-job training or short demonstrations.

Third, we believe that the overwhelmingly nonunion nature of the local construction labor force may limit any potential union relationship or impact compared to other areas of the country where unions have higher density rates. Florida has a union membership rate of 3.1 percent among private construction workers, and a foreign-born workforce estimated at 23 percent, conditions that vary dramatically from other areas of the country. South Florida is an even more extreme outlier: In Miami-Dade County, the foreign-born population is more than 50 percent, and the private union membership rate for construction workers in the Miami-Ft. Lauderdale-Palm Beach Metropolitan area is only 2.5 percent. With such low union density, the nonunion sector controls the labor market almost completely, giving unions very little power and little opportunity to empower workers within their ranks. Certainly in the areas of union wages and benefits, compared to more unionized areas of the country, construction unions in south Florida have very little “clout,” and it is likely that their impact in the area of safety and health is likewise attenuated. Finally, of course, it could simply be that construction unions have a less positive relationship with safety training and safe workplace conditions than we originally believed.

## Documented Status

As for the virtual absence of any support for the hypothesis that documental legal status would be associated with better safety outcomes, here too there are possible explanations. First, this hypothesis was always more speculative than the one

concerning union impact. While documented legal status is likely to empower individuals in their lives in general, the mechanical application of this to the workplace may be overstated. A documented immigrant construction worker may feel safer walking the streets or passing a policeman in a car, but that may not make his undocumented counterpart any less safe in a labor market with employers hungry for manpower, which was the state of the construction labor market during the construction boom when this survey was conducted. The tight labor market may have considerably lessened any increased vulnerability of the undocumented at that time.

Second, we strongly suspect there were a large number of undocumented workers who self-reported to be documented in our survey. This is impossible to verify, but it is well known that there is a tendency for undocumented workers to be underreported in surveys. This may have affected results. Third, the same confusion about what actually constitutes “training” mentioned earlier in our discussion of union impact may be present here—in fact, we think even much more likely to be present with undocumented workers.

Finally, the overwhelmingly immigrant nature of the local workforce in south Florida may lessen the vulnerability of undocumented workers, potentially eviscerating any workplace empowerment that documentation may provide. Undocumented workers in the Miami area can blend in easily; raids by immigration officials are rare to almost nonexistent, and local attitudes toward immigrants are much more positive than is the case in the country as a whole. The “majority minority” status of Miami has been noted as making the city somewhat unique (Portes and Stepick 1993). In more average areas of the country, where immigrants are still a small part of the population, one might find larger empowering impacts of documented legal status.

## Conclusion

In this article, we set out to test the hypotheses that union membership for immigrant construction workers is associated with more safety training and safer workplace conditions than those experienced by nonunion counterparts and that documented status for immigrant workers is likewise associated with more training and safer conditions than those experienced by undocumented workers. Safer workplace conditions were measured by greater use of personal protective equipment and safer employer practices. To our knowledge, no one has previously attempted a study of this magnitude about immigrant workers in the construction industry of the United States.

Our results show only a very minor positive relationship of unionization with more training and safer conditions for south Florida immigrant construction workers and essentially no relationship between documented legal status and training or safe conditions. In the previous section, we discuss reasons for these weak results.

In general, we feel that further research is needed in other areas of the country with higher (more average) levels of unionization and lower (more average) levels of

immigration. This would enable us to determine if our results are influenced by factors specific to the Miami area or whether the results have greater generalizability. We also believe that more sensitive measures of what constitutes training would be advisable in future research. If possible, a larger sample would also be advisable.

Further research along these lines would provide insight into factors leading to a safer construction workplace for immigrant construction workers. This will continue to be an increasingly important topic, as immigrants become an ever-larger proportion of the construction workforce across the nation. Investigations into other potential factors, such as craft, size of firm, years in the country, and the like, are also needed.

## Notes

1. A copy of the research instrument in both English and Spanish is available from the authors upon request.

2. We classify the five respondents from Puerto Rico as “immigrants” from a Spanish-speaking Caribbean country, even though Puerto Rico is technically a U.S. territory and thus they are not legally classified as immigrants.

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