

INTERACTION BETWEEN CONSTRUCTION SUPERINTENDENT AND HISPANIC  
WORKERS

By

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To my mother

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While it is known that there is a steady growth of Hispanic workers throughout the U.S. construction industry. The reasons that Hispanics have a higher incidence and fatality rate than any other ethnic group are not known. Ultimately it is the superintendent's responsibility to make sure that all workers on site are carrying out work in a safe and effective manner. This research analyzes the perspectives of non-Hispanic superintendents to determine if the language and or cultural barrier between non-Hispanic superintendent and Hispanic worker is a cause for the high incidence rate of Hispanic workers.

## CHAPTER 1 INTRODUCTION

“But the Lord came down to see the city and the tower that the men were building. The Lord said, “If as one people speaking the same language they have begun to do this then nothing they plan to do will be impossible for them. Come let us go down and confuse their language so they will not understand each other (Genesis 11:5-11:6).

### **Integration of Hispanics in the U.S. Economy**

The face of the workforce throughout many of the sectors in the U.S. economy is undergoing a steady integration of immigrant and minority workers that have limited or no English speaking skills. In addition many of these minorities and immigrants have different cultural backgrounds. Both language and cultural differences have proven to be quite challenging for several industries throughout the U.S. In order to address the challenges of a foreign workforce, many industries hire bilingual workers to communicate with workers that come from various backgrounds. The U.S. Census Bureau estimates that one in four persons in the United States will be of Hispanic origin by 2050, up from one in eight in 2002. Using U.S. census survey data, Natalia Siniavksa, an NAHB economist, discovered the following facts

- Mexicans constitute 54 percent of the immigrant construction workforce, a clear majority. An additional 25 percent come from other countries in the Americas.
- While only 4 percent of native born Americans work in the construction industry, 10 percent of immigrants from the Americas and 5 percent of European immigrants work in construction.
- One out of every eight Mexicans currently works in the construction industry. Of the Mexicans who have arrived in this country since 2000, 15 percent work in construction.
- More than one third of all construction workers are immigrants in California, Nevada, Texas, Arizona, and the District of Columbia. They account for more than a quarter of the construction workforce in New York, Florida, and New Jersey; and they are stepping up their presence in such states as Colorado, Georgia, Illinois and North Carolina.

- Thirty two percent of the construction laborers are foreign-born. Laborers and carpenters account for almost 30 of the overall U.S. construction employment.

### **Causes for growth of Hispanic Workforce in the U.S. Construction Industry**

Possible causes for the growth of the Hispanic population in the U.S. are social and economic instability in numerous Central and South American countries, legal migration increases, higher fertility rates, and higher wages and growing employment opportunities in the U.S. With an increased demand for labor and above average wages, the construction industry has been attractive to Hispanic immigrants. Another factor that will lead to more Hispanics or at least maintain the current number of Hispanics in the construction industry is President Bush's proposal to allow undocumented workers to keep their jobs and attain legal status. The implications behind this proposal are profound. Not only could this lead to more Hispanics entering the U.S. construction industry but it also means that the President believes Hispanic immigrants play a crucial role in mitigating the labor shortages throughout the U.S. economy. Other reasons for Hispanic immigrants entering the U.S. construction industry could be that these jobs are attainable with little or no English proficiency skills and minimal or no education. "In the United States construction has become the sector of the workforce with the highest percentage of Hispanic workers outside of agriculture, more than tripling during the last two decades "(Brunette 254).

### **Traits of the Hispanic Workforce in the U.S. Construction Industry**

Although, the integration of Hispanic immigrants into the U.S. construction industry may help meet the growing demand for labor in the construction industry, this is a double edged sword because this transition to an international workforce on could be difficult for U.S. construction companies. A recent study undertaken by the Bureau of Labor Statistics (BLS) found that although the fatal injury rate for non-Hispanic whites and African Americans in the

United States has steadily declined, it has actually increased for the Hispanic workforce in recent years.

Fatalities among the Hispanic workforce remain high and they have the highest rate of fatal work injuries among all racial/ethnic groups (Marin 3). “The *St.Petersburg Times* published an article on April 8, 2002, entitled “Dangerous jobs take a toll on Hispanics.” The article reported that Hispanic workers across Florida and across the country are dying on the job at rates that exceed their proportion of the workforce. Hispanic worker deaths more than doubled in Florida between 1992 and 2000. The toll reached 75 in 2000, which was 23 percent of worker deaths statewide, although Hispanic workers make up only 18 percent of the workforce “(Escobar, 3). In addition, productivity in the field is not only reduced by injuries and fatalities but it is also hindered by the language barrier and the lack of education and training among the Hispanic workforce in the construction industry.

### **Purpose and Objectives of Research**

The aim of this research has three objectives the first is to determine the gravity of the problem in regards to managing a Hispanic workforce. The second is to test the null hypothesis that a non-Hispanic superintendent’s exposure to Spanish courses does not influence their perspective on managing Hispanic workers. The third is to identify suggestions that will help Non-Hispanic superintendents overcome this communication gap, thus utilizing the Hispanic workforce in a safe and effective manner. In order for this research to successfully develop helpful suggestions for non-Hispanic supervisors, it is necessary to assess the needs, interests, and perspectives of predominantly Caucasian superintendents regarding the management of a Hispanic workforce. \While some Caucasian supervisors readily embrace the culture of this foreign workforce and make the effort to understand them, other Caucasian supervisors do not make this effort. The latter may believe it is the responsibility of the Hispanic worker to adapt to

the American culture. This is not a matter of who should or who should not adapt. The reality is that the construction industry could use the Hispanic workforce to meet the increasing demand for labor. The suggestions provided by this research will serve as an aide for the non-Hispanic contractor to be proactive and participate in the integration of the Hispanic culture into the industry.

## CHAPTER 2 LITERATURE REVIEW

### **Hispanic Workforce and the U.S. Construction Industry**

With the baby boomer generation on its way out of construction for retirement, a declining number of vocational programs in high schools, and a rapidly growing economy, the U.S. economy is faced with a severe shortage of construction workers. With the supply of workers diminishing and the demand for them increasing simultaneously, a daunting challenge is presented for construction firms throughout the U.S. The U.S. Census Bureau estimates that Hispanics account for 22 % of the construction labor force in this country. According to a July 2006 article in the Builder, land development costs and material prices are spiraling out of control. As result, labor is the only area of the construction equation where builders can apply effective financial controls. One way to accomplish this is with cheaper labor. From this article, it can be inferred that the influx of immigrants has kept labor prices from inflating as much as they normally would. This awareness of a labor shortage has even reached the White House. In 2006, President Bush announced an immigration proposal which would allow undocumented workers to keep their jobs and to attain to legal status. This proposal could ultimately alleviate the construction industry's labor shortage. While labor prices may have been reduced, managing Hispanic workers may prove to be a great challenge for the non-Hispanic supervisor..

### **Challenges of Managing a Hispanic Workforce in the Construction Industry**

In order to assess this challenge, an Iowa State University research team conducted a survey of 38 American supervisors, who represented 14 Iowa construction companies. Sixty-six percent of the survey participants worked in areas of heavy/highway construction and the remaining 34% worked in areas related to general commercial construction. Results of the survey confirm that communication is the main problem experienced by American supervisors at

the jobsite. It should also be noted that these survey results indicate that many American supervisors also use or depend on a link-person (an individual who interprets directions or instructions for the rest of the Hispanic crew) to communicate to the Hispanic workers. Research findings also showed that language differences adversely affected productivity and workplace safety in the construction industry. As a result of these findings, the Department of Civil, Construction and Environmental Engineering set out to develop Spanish as a second language course (SSL) for Caucasian supervisors. The intent of this course was to assist non-Hispanic supervisors in developing the ability to communicate in Spanish, thus diminishing the need of a link person to assign daily tasks to Spanish workers. According to this study, improved communication channels between non-Hispanic supervisors and Hispanic workers will strengthen the supervisor-worker relationship, resulting in increased work productivity and quality and a reduction of fatalities on the job site.

### **Supervisor-Worker Relationship and its affects on Construction Safety**

Dr. Jimmie Hinze (1979) reported on a study on the supervisor worker relationship and its affects on the injury rate on jobsites. Instead of examining the physical environment and how it affects the safety of a worker on the jobsite, Dr. Hinze's study examined the supervisor's management philosophy and how it affected the safety performance of construction workers. Two different studies with two different populations showed similar results. One population consisted of top managers from utility contracting firms from nine different metropolitan areas throughout the United States. The other population was a large petrochemical contractor in the in the Gulf Coast region.

Both studies involved the same method of gathering data, multiple superintendents on various projects were asked to answer a set of interview questions. Ultimately the purpose of these questions was to determine how the superintendent's would handle certain hypothetical

situations. For instance, the superintendent was asked how they handle problems that occur between a foreman and a worker. Another situation was where a worker had recently been promoted to foreman and was having trouble adjusting to the responsibilities and challenges that pertained to the new position. Whatever the situation was that presented to the superintendent in the study, the superintendent undertook one of two different strategies, one strategy would be a rigid and more structured approach when dealing with subordinate problems and the other approach would be to handle the situation with sensitivity and flexibility. Both studies showed that superintendents that listened to subordinates and sought a solution based on circumstances and not principle or rigid policy, had significantly lower worker injury rates in comparison with superintendents that applied a more rigid policy toward problems with subordinates.

It was concluded from the study that workers that feel valued have better safety performances.

Although that study did not involve Hispanic workers, it did illustrate the significance of the relationship between superintendent and worker. In order to be flexible, superintendents must be able to understand what is going on with their subordinates. How is this flexibility possible if the superintendent does not understand what the Hispanic worker is trying to say or suggest regarding a problem? It is not realistic to expect a non-Hispanic superintendent to learn Spanish but it is realistic to expect a non-Hispanic superintendent to make efforts to communicate to Hispanic workers in their language because this instills the thought that the Hispanic worker is valuable and this awareness of being valued could ultimately lead to an improved safety performance.

### **Injuries and Fatalities among the Hispanic Workforce in the Construction Industry**

According to the Bureau of Labor Statistics, Hispanic construction workers have the highest rate of fatal work injuries (4.5/100,000 Hispanic workers) the highest fatality rate of ethnic groups in the construction industry. "In general, Hispanic workers come to the United

States with a poor understanding of health and safety and little or no experience with governmental enforcement of safety regulations. Working conditions in their countries of origin also influence the Hispanic worker's level of safety awareness. Such conditions include working in unsafe physical environments; little or no safety and health training; being exposed to dangerous tools, machines, and equipment; abusive supervisors; lack of appropriate personal protective equipment and others”( Brunette 2004 p.258). Brunette also states that on average, Hispanic immigrants have lower levels of formal education than other groups. Fifty six percent have completed fewer than 12 years of school, and over half report speaking English not well or not at all. This could indicate that Hispanic workers may not have the literacy skills to grasp concepts that stem from traditional safety training. Verbal reinforcement in safety training from a supervisor may be necessary.

### **Background of Hispanic Workers**

In order to become effective at managing someone, it is necessary to understand their way of doing things. What traits does this person share with their ethnic group or fellow country men? These traits may help identify how they perceive their work, their boss, their co-workers, themselves in relation to the project, their personal life, etc. In order to achieve this kind of understanding of a subordinate, one may not only need a basic understanding of their language but in addition a basic understanding of their educational, occupational, economic and cultural background. The following are some factors that should be considered when it comes to managing a Hispanic workforce.

#### **Educational Background**

“In 2000 it was estimated that a total of seven million undocumented immigrants entered the United States and almost 70 percent of them are Mexican foreign-born. For the estimated number of foreign-born Mexicans who illegally entered the United States, the median

educational level was about eighth grade”(Vasquez 2005 p.15). This means that the majority of the Hispanic immigrants are limited to jobs that do not require a high school diploma. The main concern in regards to education is literacy skills among Hispanic immigrants. If an Hispanic cannot read then written signs that display directions for certain procedures or awareness of certain hazards are useless to an illiterate Hispanic. This makes verbal communication much more important because it may be the only way to manage some Hispanic workers.

### **Economic and Occupational Background of Hispanic Workers**

Hispanic workers may be accustomed to a different safety culture in their home countries. “In general Hispanic workers come to the United States with a poor understanding of health and safety, little or no participation in building, little or no governmental enforcement of safety regulations. Work related experiences may also play a role in this lack of safety awareness. These experiences may be working under poor physical environments, little or no safety and health training, being exposed to dangerous tools, machines and equipment, abusive supervisors and lack of appropriate personal protective equipment”( Brunette 2004 p.5). This may lead Hispanic workers to believe that they are dispensable and this attitude may carry over to the U.S. In addition, illegal immigrants will generally be willing to work for less pay and work in the most dangerous industries as long as they do not lose their jobs (Crockett 2004 p.70). Work related experiences and lack of safety enforcement are not the only factors that may condition Hispanic workers to behave a certain way on the job site. Other factors may be economic in nature. For example it may be very competitive to obtain jobs in Latin American countries. “Employers in Latin American countries often threaten to fire workers if they complain about organizational treatment and working conditions. In Latin America, Hispanic workers are taught to be thankful for their jobs. Seventeen million Latin American people are out of work as the unemployment rate in the region has shot up to its highest level since 1980. They are expected

to get the job done quickly, and move on to the next job. They receive little or no moral support from their employers (Marin 2002 p.16).

### **Cultural Background**

“The Hispanic culture is considered to a collectivist culture instead of the individualist ways that resonates through out the culture of the United States. One that follows a collectivist culture would generally have tendencies of being high in uncertainty avoidance and distance from superiors (Romero 2004 p.63). Members of a collectivist culture prefer to engage in group activities. More specifically, Hispanics will look after the group’s interests rather than individual interests. The Hispanic culture also has a greater power distance, as there is much greater distance between the powerful and powerless. Leaders are viewed as absolute authority figures that delegate and rarely use teams, and they (leaders) are regarded with much respect. Hispanic subordinates rarely question or oppose figures of authority. This is due to their desire to avoid uncertainty. Hispanics find that it is better to remain silent to keep their job than report possible job site hazards or incidents that could create negative opinions from their employer. This characteristic could lead to more risk taking activities among the Hispanic workers on site (Vasquez 2005 16).

Another culture related concept that may influence both the work and safety performance of a Hispanic construction worker is “machisimo”. This is a term that identifies the masculinity of the typical Hispanic worker. Machismo can have a negative effect on a Hispanic worker because this can make one feel like they must prove their manhood to themselves and others around them. This can lead to reckless or unsafe behavior on the jobsite. Examples of machisimo at its worst would be a Hispanic worker refusing to wear personal protective equipment because it may be perceived as not being manly or another example would be if an Hispanic worker refused medical attention for a new injury that may need it. “The one-sided,

violent view of machismo is reinforced as much by the American culture as by Hispanic tradition, and may have the effect of encouraging Hispanic men to fit the violent, controlling image of masculinity portrayed by Hollywood” (Marin 2002 p17).

### **Relationship between English Proficiency and Injury Rates of Hispanic Workforce in the Construction Industry**

“The language barrier is one of the major factors behind the death rate among Hispanic workers. For instance in regards to traditional safety training, the transmission method is used to deliver it. Generally, in this method the trainer attempts to transmit the information to the student where the student is expected to receive, understand, and use the information. Also, the transmission method presumes a level of education on the part of the recipient that may not be the case for Hispanics. Transmission breaks down when there exists a language barrier and, in cases where the training including written instruction is provided in Spanish, the information may not be clearly understood due to literacy skills among Hispanics. The inability to communicate effectively can place Hispanic workers and their English speaking coworkers in unsafe situations that can be prevented with appropriate training. In order to define the relationship between a language barrier and injury rates, F. David Pierce conducted a case study on a company to determine if low English proficiency and an increase in injury rates were based on a causal or an associated relationship. With a transition to a predominately non-English speaking workforce, “A company experienced increases in injury rates among both non- and limited English speaking workers. Statistics showed that these workers were experiencing a higher percentage of injuries. Based on statistical inference of causality, the company launched an aggressive effort to increase English skills among its workers, deducing that this would help lower the injury rates” (Pierce 2003 p.41). In addition to rising injury rates; quality of work, performance of work, and worker utilization continued to erode. Initially the, firm in that case

study decided that taking “a fix the workers approach” would work. This method proved to be unsuccessful and eventually the firm took a new approach in addressing this problem.

According to Pierce, the firm implemented a new systems strategy plan. The results of this new approach proved to be satisfactory.

### **Communication and Productivity**

Many non-Hispanic speaking superintendents may rely on a link-person for communication with their Hispanic speaking workers or they (superintendents) may attempt to communicate with Hispanic subordinates themselves by using non-verbal communication including instance the use of visual aides, hand gestures, or mimicking activities. While this form of communication may work in a simple task or scenario such as asking for a hammer, this form of communication could be much less effective for something like telling a worker to make sure to drill holes in the exact center of certain wall studs to run wiring. The problem with this kind of communication is that it may leave directives or instructions unclear between the Hispanic worker and the non-Hispanic superintendent. The Hispanic workers may nod their heads to indicate that they understand and then proceed to carry out a task in the incorrect manner which could lead to injury, work that must be redone, loss of productivity, or several other complications. Clarity is crucial in communication between non- superintendents and Hispanic workers. Clarity may be achieved with the aide of a link person but this inevitably creates a dependence on that link person. This could lead to complications. For instance, a non-Hispanic superintendent may want give directives to a Hispanic laborer but is unable to make these directives because the person to translate the information one is not available. In such a situation productivity is halted until effective communication is made. This kind of complication is unacceptable on the jobsite. There are enough challenges already for a non-Hispanic superintendent.

Job site studies have shown that between forty and sixty percent of a typical construction work day is spent on non-productive efforts. Non productive time can be defined as time associated with workers waiting for instructions, doing redo work, waiting due to lack of proper supervision, etc “(Adrian 2004 p.85). “Hundreds of millions of dollars of non-productive work are performed each year that can be traced to poor communications. Feedback from subordinates is an important factor when managing them. This will certainly be lacking if the superintendent does not understand what the Hispanic worker is trying to say. Perhaps the worker may have a useful suggestion that could make a process more efficient or perhaps there is a problem that the superintendent is unaware of. In addition, the fact that the worker may be always told what to do rather than asked for ideas can lead to a worker attitude that may prove counter productive”(Adrian 2004 p.87).

Communication is crucial to all aspects on the job site. Communicating to a worker is by no means one way. “Effective communication entails listening as well as talking. All too often the supervisor only talks at the workers instead of asking the worker for ideas or listening to his concerns”(Adrian 2004 p.92). In addition differences in education/experience and site conditions make effective communication difficult enough between supervisor and worker. This communication problem discussed by Adrian does not include the challenge of a language barrier between Hispanic worker and non-Hispanic supervisor.

Adrian developed a ten step program for improving construction productivity. The scope of this paper does not discuss all ten of them but in fact only two of them. One step is improved communications. This step was already discussed above. The other step is productivity improvement through safety. “Regardless of the reasons for the many construction accidents that occur at job sites, the fact remains that they have an adverse affect on construction productivity.

In addition to the detrimental effect of the injury for the worker himself, accidents are likely to cause low worker morale, work disruptions related to identifying the cause of accident and higher insurance premiums” (Adrian 2004 p.98).

## CHAPTER 3 METHODOLOGY

### **Introduction**

The United States Department of Labor/Bureau of Labor Statistics reveal that 16 percent of the workforce within the United States construction industry is Hispanic and that Hispanic workers are more likely to suffer work-related injuries than any other ethnic group. This may be explained, in part by the communications and cultural barrier that exists between non-Hispanic superintendent and Hispanic worker. The objective of this research is to identify techniques and practices that will help non-Hispanic superintendents overcome this communication gap, thus utilizing the Hispanic workforce in a safe and effective manner. In order to identify these techniques and practices to mitigate the cultural and language barrier, this research evaluated the Non-Hispanic superintendent's perspective on the Hispanic workforce.

### **Rationale for the Research**

The rationale behind this research was to get a representative sample of the non-Hispanic superintendents within Florida. This sample was to enable some insight in regards to the high rate of fatal and non-fatal injuries among the Hispanic population and also methods used to prevent these incidents. In addition this sample of non-Hispanic superintendents would provide some insight on the gravity of challenge of managing Hispanic workers and possibly ways to improve the integration of the Hispanic workforce within the U.S. construction industry.

The objectives of this research were the following;

- To gather background, personal, and demographic information on the Hispanic population on job sites.
- To determine how much of an impact the cultural and language barrier has on the safety and productivity of the job site.
- To identify the non-Hispanic superintendent's position in regards to mitigating the cultural and language differences of the Hispanic workforce.

- To determine the non-Hispanic superintendent's attitude concerning the performance of the Hispanic workforce on the job site.
- To test the null hypothesis that a non-Hispanic superintendent's exposure to Spanish courses influences their perspective on managing Hispanic workers.

### **Source of Data**

In order to accomplish the objectives mentioned above it was necessary to develop a survey. The first step that was taken towards the development of the survey was to look at other surveys that used to conduct a similar study. This research looked at one of the surveys used to aid in the development of an effective construction training program for non-Hispanic supervisors with Hispanic craft workers, this research was conducted at Iowa State University. The second step in the development of the survey for this research was to extract questions from the Iowa State University survey that were considered relevant to this research and develop a survey from those questions that were extracted. The third step in the development of this survey was to carry out several revisions of the survey under development. During the third stage of development, some questions extracted from the Iowa State Study were kept in this survey and others were removed and replaced by other questions that were created from discussions between the principal investigator and the chair of this research in regards to the objectives of this research. This survey has gone through numerous revisions before we finalized and submitted it to the IRB (International Review Board) for approval. Each survey was filled out during the phone interviews or on site interviews. In other words the survey acted as a guide for questioning the participant during the phone or on site interview. The survey consists of 22 questions. These questions were broken down into the following categories.

- Gross volume of the construction firm.
- Demographics of workers on current project (subcontractors, Hispanics, etc.)
- Amount of exposure to Spanish language courses.
- General attitudes toward working with Hispanic workers.

- Experiences and developed methods from managing Hispanic workers.
- General educational and work background.
- Information on injury rates on current project

The sample population of respondents consisted of 2 superintendents from 15 different construction firms that operate in Florida, thus a total of 30 superintendents were interviewed. When it was necessary to determine sample size, the number 30 was established as the sample size with a confidence of 90%. “Most texts talk of large sample approximations, and they generally interpret “large” as meaning  $n > 30$  (Ostle & Malone 126)”. Points of contact for the 15 different companies were established at the University of Florida’s Building Construction Fall Career Fair of 2006. Companies were selected due to their willingness to participate in this study and their operations in Florida. This willingness to participate was based on impressions from project managers and marketing or human resource people from various companies at the career fair.

### **Method for Data Collection**

It was determined that phone interviews would be the most efficient way to obtain data from the superintendents. This logic was based on the method of data collection that would be most successful. For example a lower level of involvement by this researcher would be if the researcher would send out surveys in the mail thus completely relying on the respondent to both fill out the survey and return it. This splits the data generation and collection process thus reducing the likelihood of data retrieval and analysis in a timely manner for this study. The highest level of involvement would be through onsite interviews; this would be the best method for collecting data. Because of financial and time constraints that this study faced, it was decided to collect data by phone interviews. Even though this method is not as involved as on site interviews, it would still enable both data generation and collection to occur simultaneously thus

making this process streamlined. The goal was to obtain the participation of 15 different construction firms in addition each construction firm was to provide access to two superintendents that would participate in the study. Thus it was necessary obtain participation from thirty superintendents

Even though the initial goal was to conduct interviews with representatives from 15 companies at the career fair, instead phone interviews were using points of contact from the fall 2006 career fair. This deficiency in survey data was primarily due to difficulties resulting from the reluctance of some superintendent's/company's to participate in telephone interviews. As a result, other measures for collecting data were taken. The revised method to data collection involved the assistance of a day labor recruiter in the central Florida area. This day labor recruiter would recruit temporary (day) labor for several construction sites throughout central Florida. As a result of the day labor recruiter's day to day communications with various superintendents, the day labor recruiter had little difficulty in obtaining data from 10 different companies in the central Florida area by distributing the telephone interview surveys to their job superintendents. Two superintendents from each of these ten companies participated in this study. In other words the day labor recruiter was able to obtain 20 surveys that represented the involvement of ten companies in this study. In the end data were obtained from 30 different superintendents' that represented 15 different construction companies in the Florida area. Ten surveys were obtained from the principal investigator through phone interviews and 20 surveys were obtained from the day labor recruiter through questionnaires that were distributed to superintendents.

### **Data Analysis**

The data that were collected from these phone interviews and mailed surveys was entered in Microsoft Excel, to develop both standard charts and contingency tables so the data could be

processed, illustrated, and analyzed. The purpose of the analysis was to identify the existence of any relationships between the superintendent's exposure to Spanish courses and their perspective on managing Hispanic workers. In addition, this analysis aimed to provide descriptive characteristics of both the Hispanic population in the workforce and the superintendents that manage them. Finally this analysis was intended to shed some light on the magnitude of the cultural and language barrier between Hispanic workers and non-Hispanic superintendents.

## CHAPTER 4 DATA ANALYSIS AND RESULTS

### **Introduction**

Data collected from this survey served as the foundation for this research. All of the surveys were received from the sample population. The null hypothesis was that a Superintendent's exposure to a Spanish as second language (SSL) course did not influence their perspective on managing Hispanic workers. To test this hypothesis, the sample population was divided into those superintendents that had taken a Spanish as a second language course (SSL) and those superintendents that had not taken a Spanish as a second language course. Some of the survey questions were relevant to determining the superintendent's perspective on Hispanic workers. The responses that were considered relevant to testing the null hypothesis were placed in a Chi-square mode to compare the response of the superintendents that had and had not taken a Spanish language course. To test other relationships, the Chi-square test was also conducted on other responses that did not pertain to testing the null hypothesis. Chi-square tests that were conducted on any question in this study sought relationships that had a confidence of 95% or more.

### **Size of Company and Projects**

One characteristic that was used to determine the size of each construction firm that participated in this study was to look at their gross annual volume. The annual dollar volume of work of the respondents is displayed in Figure 4-1. Eighteen of the 30 respondents worked for construction firms that performed over 100 million dollars of work per year. Six of the 30 respondents worked for company's that generated 1 to 20 million dollars of work per year. These six companies were considered to be small while the 18 respondents that generated over

100 million dollars of work were considered large. The remainder of the respondents was placed in the category of medium sized construction firms (Figure 4-1).

In order to obtain demographic information about the Hispanic population of the work force within in the construction industry, this research obtained an estimate of the total number of workers on each of the respondent's jobsites and an estimate of a number of Hispanic workers on the jobsite. This estimate of the number of workers included the subcontractors on the project. In order to simplify the information presented the overall average of the number of workers that ranged from small to large populations was compared with the overall average number of Hispanic workers. Of the overall average of all workers on this chart is compared it to the overall average of Hispanic workers on this chart, it is evident that roughly 61 percent of all workers accounted for on this the chart are Hispanic. A Chi-square test was conducted to determine if there is a relationship between the number of workers on each project and proportion of Hispanic workers on these projects. The results of the Chi-square test showed that there was a relationship at a 95% confidence level ( Figure 4-2 and Table 4-1).

This research also attempted to obtain demographic information on the number of undocumented Hispanic workers on projects. Because of the delicate nature of this issue, responses should be regarded as estimates at best. Twenty four of the 30 superintendents provided an estimate of the percentage of the Hispanic workers on these projects who are undocumented. Because this topic could be considered controversial, this is possibly one reason that this information was not provided by all 30 respondents. In order to determine if there was a relationship between annual company volume and the number of undocumented Hispanic workers, a Chi-square test was conducted. The results of the Chi-square test showed there was not a significant relationship between the number of undocumented Hispanic workers and annual

company volume. In addition another Chi-square test was conducted to determine if there is a relationship between the overall number of workers on each project and the number of undocumented workers. The results of this Chi-square test showed that there was not a significant relationship between the number of workers on each project and the number of undocumented Hispanic workers on each project ( Figure 4-3).

### **Spanish Language Course Exposure and Its Impact on the Respondents**

Superintendents were asked if they had ever taken a Spanish class. In total 37 percent of the respondents had some exposure to Spanish language courses and 63 %t of the respondents had not had any exposure to such courses. A Chi-square test was conducted to determine if there was a relationship between whether or not a superintendent had or not had taken a Spanish language course and the number of workers on their project. The results of this Chi-square test showed that there was not a significant relationship. Another Chi-square test was conducted to determine if there was a relationship between whether or not a superintendent had or had not taken a Spanish course and the annual income volume of the company that the superintendent worked for. The results of this Chi-square test showed that there is a significant relationship with a confidence at 99.5 % ( Figure 4-4 and Table 4-2).

Figures 4-5 to 4-10 apply to the 11 (37%) of the respondents that had taken a Spanish language course. In order to determine how many hours of experience respondents had with Spanish language courses, this research obtained a breakdown in hours of experience among respondents that have had Spanish language course. Of the 11 respondents that had taken Spanish language course, results showed that 45 % had between 10 to 40 hrs and 55 % had more than 40 hrs of Spanish language course. Since the sample size for their responses was eleven, no statistical test was conducted ( Figure 4-5).

Six (55%) of the respondents that had taken a Spanish language course, had taken this Spanish language course after High school. Taking post high school Spanish language course may indicate some self interest on the part of respondents to learn about speaking or understanding the Spanish language ( Figure 4-6).

In order to make a thorough assessment of the Spanish language course taken by the respondents it was necessary to find out if the course taken were related to construction. Nine of the 11 superintendents that had taken a Spanish course answered this question. Two of the nine respondents stated that they had taken a Spanish course that was related to construction ( Figure 4-7).

To find out if their exposure to Spanish language courses was useful or helpful when it came to actually managing Hispanic workers on the construction site, the superintendents were asked how useful these Spanish language courses were on the construction site. Most of the respondents stated that their experience with Spanish language courses was “average” or “good” for managing Hispanic workers on the jobsite ( Figure 4-8).

Another concern of the research when it came to assessing Spanish language course taken by the respondents was finding how well these courses fit their needs and expectations. This ties in with how practical the Spanish language course were. If the respondents were able to apply what they learned in the Spanish class on the jobsite, then this could mean that this course met their needs or expectations. Seven of the 11 respondents stated that their experience with Spanish language courses was average or better in terms of meeting their needs and expectations ( Figure 4-9).

Another question that was asked was about the level of difficulty of the Spanish language courses that they had taken. Most (82%) of the respondents noted that the Spanish language

course was of average difficulty the remainder (18%) of the respondents noted that the Spanish language courses were difficult. This could indicate that most superintendents have the aptitude to learn some or all of the Spanish language ( Figure 4-10).

The next question was directed toward those respondents who had never taken a course in Spanish. For 19 of the 30 respondents who had never had a Spanish course, a question was asked if they had any interest in taking a Spanish course. Fifty eight percent of the respondents stated that they were interested in taking a Spanish language course. A Chi-square test was conducted on the responses to this question to determine if there was a relationship between a superintendent's interest in taking a Spanish language course and whether or not the superintendent agreed or disagreed with the statement that Hispanic workers should learn English if they want to work in the construction industry. The results of the Chi-square test showed that there was no significant relationship between a superintendent's interest in taking a Spanish course and whether or not they agreed or disagreed that Hispanic workers should learn English if they want to work in construction ( Figure 4-11).

In addition to asking the superintendents if they would or would not like to take a Spanish class, they were asked if they considered improving communication capabilities with Hispanic workers a priority. Based on the Chi-square test that was applied to their responses, it was determined that there is a significant relationship at the 97.5 % confidence level, That is, superintendents who have taken a Spanish language course also expressed a desire to improve their communications with Hispanic workers. As a result of the Chi-square test, the null hypothesis was rejected ( Figure 4-12 and Table 4-3). The null hypothesis was that a superintendent's exposure to Spanish as a second language course had no influence on how important it is for them to improve their communication skills with Hispanic workers.

This research also wanted to determine if the superintendents had an interest in taking a more streamlined Spanish language course focused only on construction. The development of such a course is another issue. This question in the survey assumed that such a class existed and that it was available to all respondents. A Chi-square test was conducted to test the null hypothesis that a superintendent's exposure to a Spanish course does not influence their interest in taking a Spanish language course that is focused only on construction. The results of Chi-square test showed that there is a statistically significant ( $p=.95$ ) relationship between a superintendent's exposure to Spanish language course and their interest in taking Spanish language courses focused only on construction. The findings from the Chi-square test reject the null hypothesis. That is, the superintendent's exposure to Spanish language courses does influence their interest in taking a Spanish language course that focuses only on construction ( Figure 4-13 and Table 4-4).

### **General Educational and Professional Background of the Respondents**

In order to determine the overall aptitude of the sample population to learn a foreign language, the superintendents were asked the highest levels of education they had achieved. About two -thirds of the population either had some college or obtained a bachelors degree from a college. This may indicate that the superintendents prove the capabilities to learn another language ( Figure 4-14).

Superintendents were asked about their professional background in the construction industry. The first of these questions was if the superintendent every worked as a foreman. Over two-thirds of the respondents had worked as a foreman ( Figure 4-15).

Another question went asked the superintendents who had worked as a foreman how many years they had worked as foreman. About 40 percent of the superintendents had worked between one and five years as a foreman. Eighteen of the twenty-three respondents that have

worked as a foreman answered this question. A Chi-square test was conducted to determine if there was a relationship between the number of years of experience as a foreman and whether or not the superintendent agreed or disagreed that Hispanic workers should learn English if they want to work in construction. The results from the Chi-square test showed that there is not a significant relationship between these variables ( Figure 4-16).

The superintendents were asked the number of years that each respondent worked as a superintendent. The purpose of this question was to if there was a relationship between a superintendent's experience in the field and the attitude towards managing Hispanic workers. For instance, superintendents that have many years of experience may have worked through different times that may have influenced their perspective on Hispanic workers. Perhaps a superintendent who is new to the industry or who is a recent graduate of college may have a different view about Hispanic workers and be more open to new ideas. Roughly one third of the respondents had one to five years experience as a superintendent. A Chi-square test was conducted to determine if there was a relationship between the respondent's years of experience as a superintendent and whether or not the respondent agreed or disagreed that Hispanic workers should learn English if they want to work in construction. The analysis discloses not significant relationship ( Figure 4-17).

### **Respondent's Experiences and Perspectives on Working with Hispanic Workers**

Superintendents were asked about the number years that they had managed Hispanic workers. Most (66%) of the superintendents had supervised Hispanic workers from one to eleven years ( Figure 4-18). The superintendents were asked if they had someone on their jobsite to help them communicate with Hispanic workers. Seventy percent of the respondents stated that they had someone to help them communicate with Hispanic workers on their site. This indicates that there was some dependence on translators for communication. Results of the Chi-

square test showed that there is no relationship between the superintendent's exposure to Spanish language classes and whether or not they have someone on site to help them communicate with Hispanic workers ( Figure 4-19).

A related question was asked about the frequency with which assistance was needed by the superintendents to help them communicate with Hispanic workers on site. Eighty percent of the superintendents stated they "sometimes" to "very often" needed help when it came to communicating with Hispanic workers on their projects. Further analysis showed that there was no relationship between the superintendent's exposure to Spanish language courses and how often they used someone to help them communicate with Hispanic workers on their project ( Figure 4-20).

When it came to understanding the culture of Hispanic workers, roughly half of the superintendents stated that they had an average understanding of Hispanic culture. This development of understanding could have occurred through working with Hispanics on a day to day basis. Further analysis showed no relationship between the superintendent's exposure to Spanish language courses and their knowledge of Hispanic culture ( Figure 4-21).

Superintendents were asked about the performance of Hispanic workers. Specifically they how they thought the performance of Hispanic workers was compared to that of the performance of non-Hispanic workers. Nearly half of the superintendents indicated that the level of performance of Hispanic workers was about the same as non-Hispanic workers. Most of the remaining superintendents felt that Hispanic workers were better performers than non-Hispanic workers. A Chi-square test was conducted to determine if there was a relationship between whether or not a superintendent has had or has not had a Spanish language course and how they perceive the Hispanic workers' performance in comparison to the performance of non-Hispanic

workers. The results of the Chi-square test show that there is a significant relationship at the 97.5 % confidence level. That is, a superintendent's exposure to Spanish as a second language course does influence their perception of managing Hispanic workers was rejected ( Figure 4-22 and Table 4-5).

Superintendents were asked about the safety practices of Hispanic workers compared to non-Hispanic workers. More than three fourths of the superintendents felt that Hispanic workers were not as safe as the non-Hispanic worker. A Chi-square test was conducted to determine if there was a relationship between whether or not a superintendent has had or has not had a Spanish language course and how they perceived the safety practices of the Hispanic worker in comparison to the safety practices of non-Hispanic workers. The results were not significant ( Figure 4-23).

To get a better understanding of the challenges that come with managing Hispanic workers, superintendents were asked to state their perspective on how well Hispanic workers respond to directives compared to non-Hispanic workers. Over 40 % of the superintendents felt that Hispanic workers were about the same as non-Hispanics in following directives. The remainder was split between Hispanics being better or worse than non-Hispanics with slightly more indicating Hispanic workers were not as good ( Figure 4-24) further analysis showed no relationship between whether or not a superintendent has had or has not had a Spanish language course and how they perceive the s Hispanic worker's ability to respond to directives in comparison to the non-Hispanic worker's ability to respond to directives.

Superintendents were asked what language they used when they speaking with Hispanic workers. Over half of the superintendents communicated with Hispanic workers in English and the remainder communicated with Hispanic workers in an English/Spanish mix, broken Spanish,

and Spanish ( Figure 4-25). The results of Chi-square test showed that there is a significant relationship at 99.5 % confidence, between a superintendent's exposure Spanish as a second language course and what language they used when communicating with Hispanic workers ( Table 4-6).

Superintendents were asked to identify the greatest challenges associated with managing a Hispanic workforce. The biggest problem noted by nearly 60 % of the superintendents was “communication.” Over thirty percent mentioned that Hispanic workers take risks. Further analysis revealed no relationship between the type of problems and a superintendent's exposure to Spanish classes ( Figure 4-26)

Superintendents were asked to offer suggestions that might be useful to mitigate the language barrier with Hispanic workers. Over forty percent stated that the use of a translator was the best way to mitigate the language barrier. Other comments were that the Hispanic worker should learn English or that superintendents should learn Spanish, or that demonstrations and visual aides should be used ( Figure 4-27).

### **Safety Performance on Respondent's Projects**

Superintendents were asked if they knew the OSHA recordable injury rate for their project. Almost two thirds of the respondents did not know the OSHA recordable injury rate for their project. Of the twelve superintendents, eleven reported that they had incurred no injuries of their projects. With only one superintendent reporting a recordable injury rate that was not zero. Further analysis on the data appeared warranted. All though 18 superintendents did not know their recordable injury rate

Then superintendents were asked to report the number of injuries that occurred on the project. Of these, twelve reported no injury, three reported one injury and two reported two injuries.

## Summary of Results

Based on the analysis of the information that was obtained certain trends and observations can be discovered. The Hispanic workers are clearly a significant population within the construction workforce. Trends show that as the worker population increased on each project, the proportion of the Hispanic workers also increased, i.e. larger projects had a larger proportion of Hispanic workforce.

There is a significant relationship between a superintendent's exposure to a Spanish language course and the annual volume of the company that they work for. Compared to companies with annual volumes of less than \$60 million, larger companies with annual volumes >\$61 million had a higher proportion of superintendents that had not taken a Spanish language course. Of the thirty superintendents that were interviewed, eleven of them had some exposure to Spanish as a second language course and nineteen of the superintendents had no exposure to such courses. Six of the eleven respondents had taken this Spanish language course after high school which may indicate that they were self motivated to take this course since college unlike high school does not have a mandatory language requirement. Seven of the eleven respondents that took a Spanish language class stated that the Spanish class was useful on the job. Of the 19 respondents that had not taken a Spanish class, eleven of them stated that they would like to take a Spanish language course if given the chance.

When the thirty superintendents were asked if it was important to improve their communication skills with Hispanic workers, 13 of them stated that it was important or really important. On the other hand, nine stated that it was not important. The rest were neutral on the subject. Evidently, superintendents that have had a Spanish language course appear to show a greater interest in improving their communication skills than those superintendents that had not

taken a Spanish language course. Taking a Spanish language course does not influence a superintendent's interest in improving their communication skills with Hispanic workers.

There was limited support in taking a Spanish language course that was focused only on construction, the superintendents who were in favor of taking a Spanish class with a focus on construction were those who had already taken a Spanish class of some type. Most superintendents agreed that Hispanic workers should learn English if they want to work in construction. Nearly half of the superintendents felt that the best way to mitigate the language barrier with Hispanic worker was through the use of a translator.

Communication problems are the main problems on the job site as they relate to Hispanic workers. Risk taking by the Hispanic workers is also a problem that is of concern. Ultimately, 26 of the 30 respondents believed that risk taking and or communication has been the main problem with the Hispanic workforce on the job site.

Most superintendents stated that Hispanic workers were good at responding to directives perform tasks. When asked about the Hispanic worker's job safety practices in comparison to the job safety practices of non-Hispanic workers. Most respondents stated that the job safety practices of Hispanic workers are worse than non-Hispanic workers. Most of the unfavorable comments towards the safety practices of Hispanic workers came from superintendents that had taken a Spanish course. This research is not able to explain this.

When asked about the performance of Hispanic workers compared to the performance of non-Hispanic workers, 93 percent of the respondents stated that the performance of Hispanic workers is the same or better than non-Hispanic workers. A superintendent's exposure to Spanish language courses influences their perspectives on the performance of Non-Hispanic workers. All eleven of the superintendents that had a Spanish language course stated that

Hispanics workers were as good as or better performers than non-Hispanic workers. The compiled data from this analysis indicate that the Hispanic population is a component of the construction workforce in Florida. Most superintendents m satisfied with the productivity with the Hispanic workforce. Poor safety practices appear to be a considerable concern regarding the Hispanic workforce. .Regarding the language barrier, most superintendents agree that Hispanics should learn English but in the meantime they m satisfied with having a translator as a way to mitigate the language barrier with Hispanic workers.

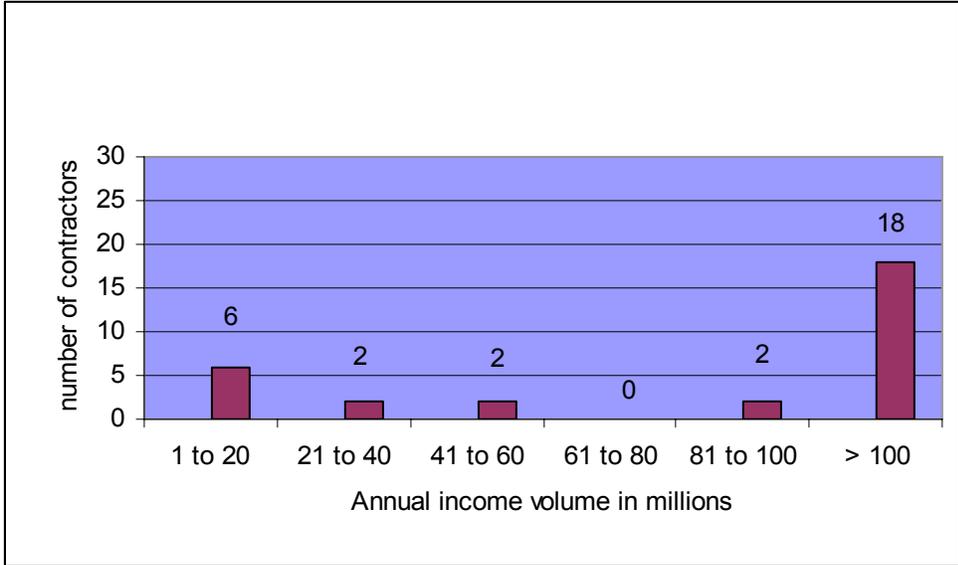


Figure 4-1. Annual volume of income (N=30)

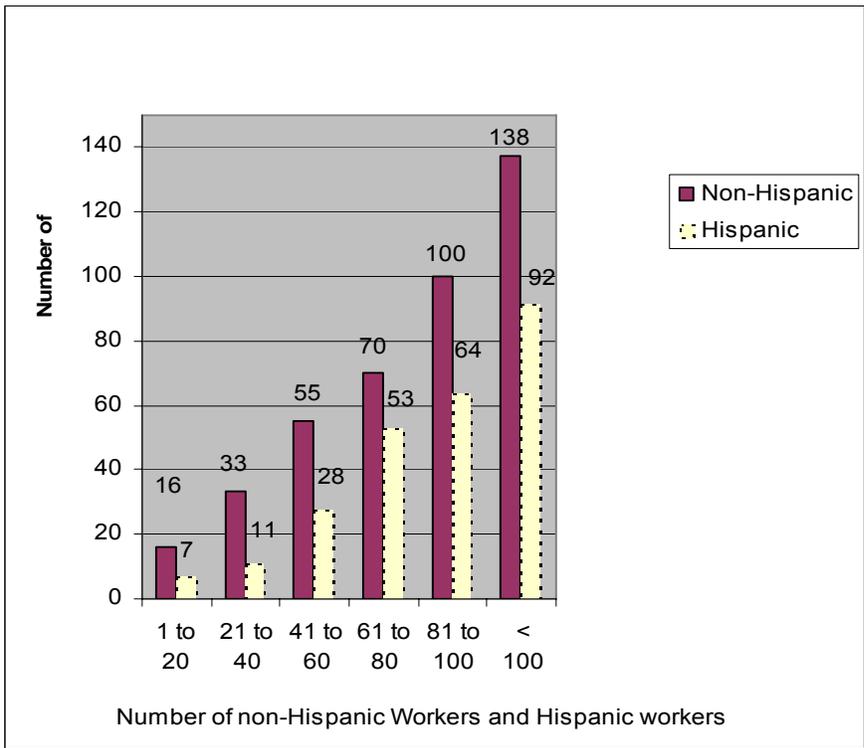


Figure 4-2. Average number of non-Hispanic and Hispanic workers on projects (N=30)

Table 4-1. Project Relationship between the total number of workers and the number of Hispanic workers (N=30)

	small population	large population	Total
Total number of workers	104	308	412
Number of Hispanic workers	46	209	255
Total	150	517	667
X <sup>2</sup> value			4.68
Critical value @ 95 percent confidence @ 1 D.F.			3.84

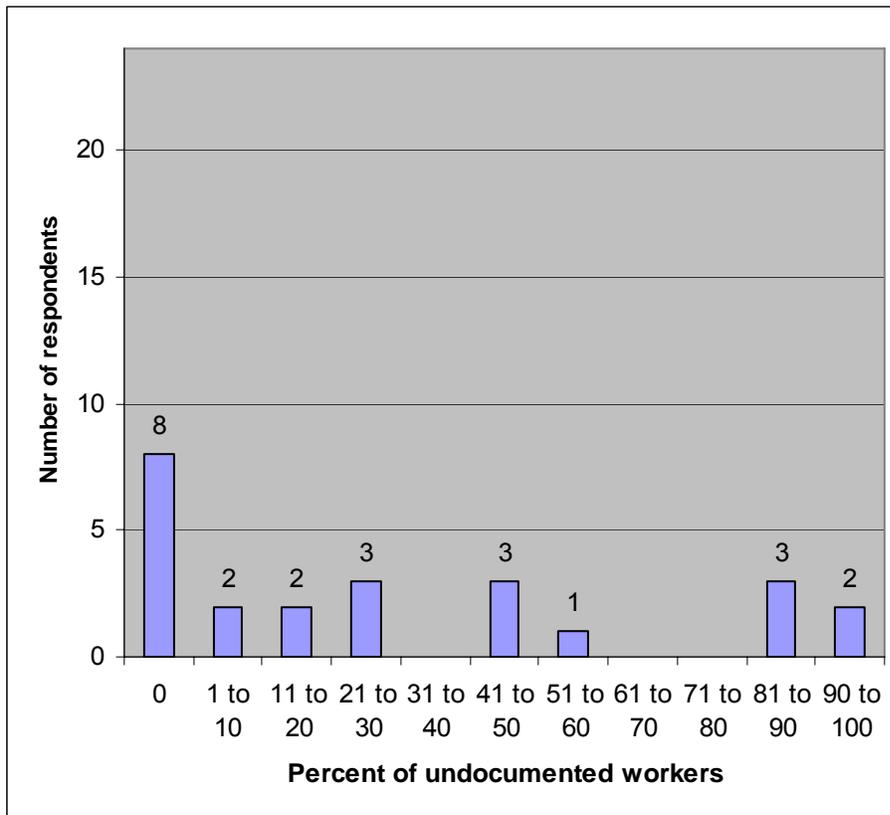


Figure 4-3. Estimation of percentage of undocumented Hispanic workers among Hispanic workers overall on the project (N=22)

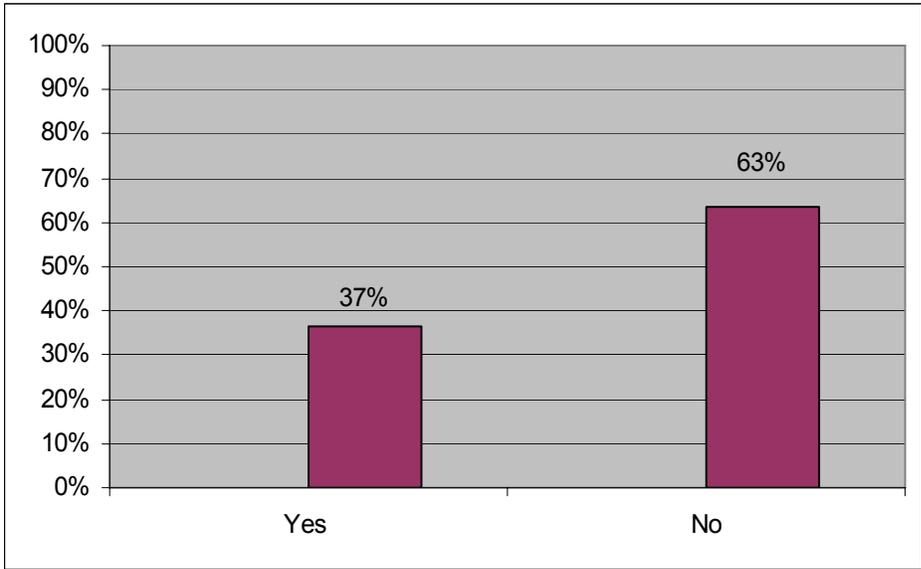


Figure 4-4. Respondents that have or have not had a Spanish class (N=30)

Table 4-2. Relationship of taking Spanish as a second language (SSL) course and annual income volume of company (N=30)

Annual income volume of company	Had a SSL course	Yes	no	total
< \$ 60 million	Small to medium annual volume (millions)			
		4	6	10
≥ \$ 60 million	large annual volume (millions)			
		4	16	20
		8	22	30
X <sup>2</sup> value				10
Critical value @ .995 confidence @ 1 D.F.				7.88

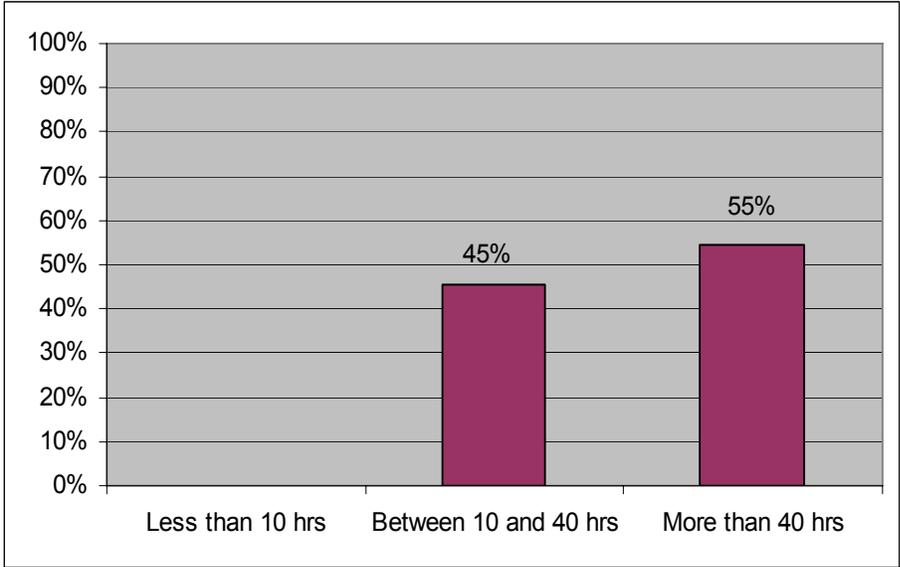


Figure 4-5. Hours of Spanish language instruction that respondents had taken (N=11)

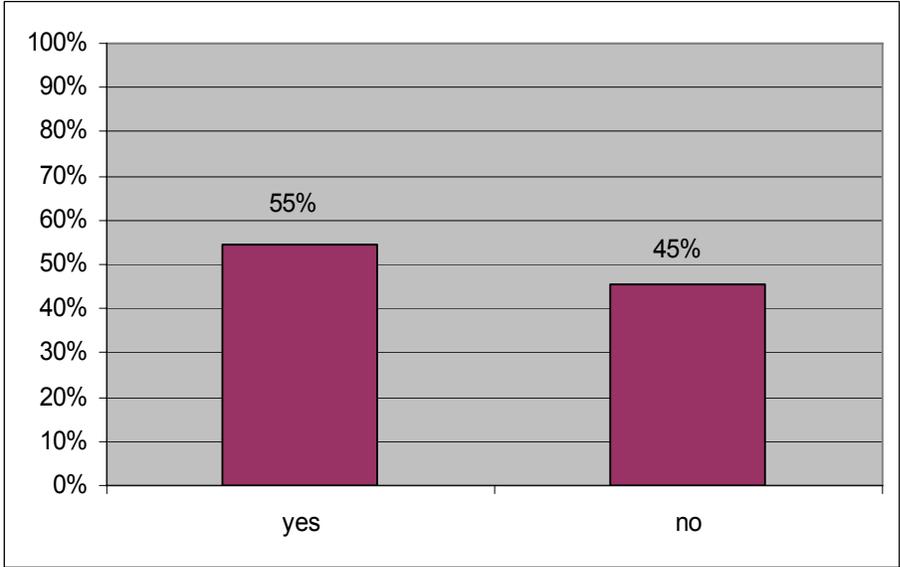


Figure 4-6. Respondents that had a Spanish language course after high school (N=11)

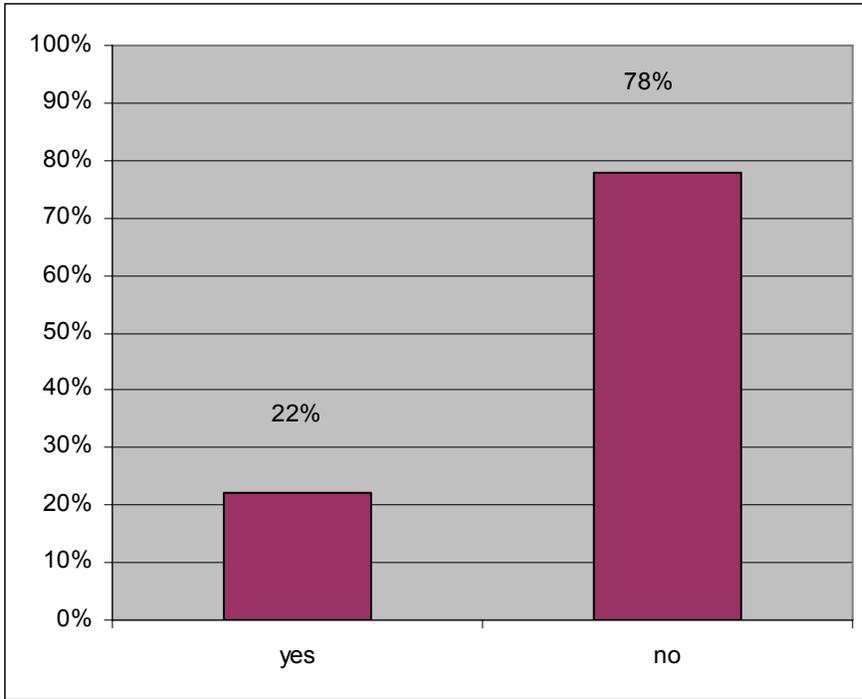


Figure 4-7. Respondents that had a Spanish language course related to construction (N=9)

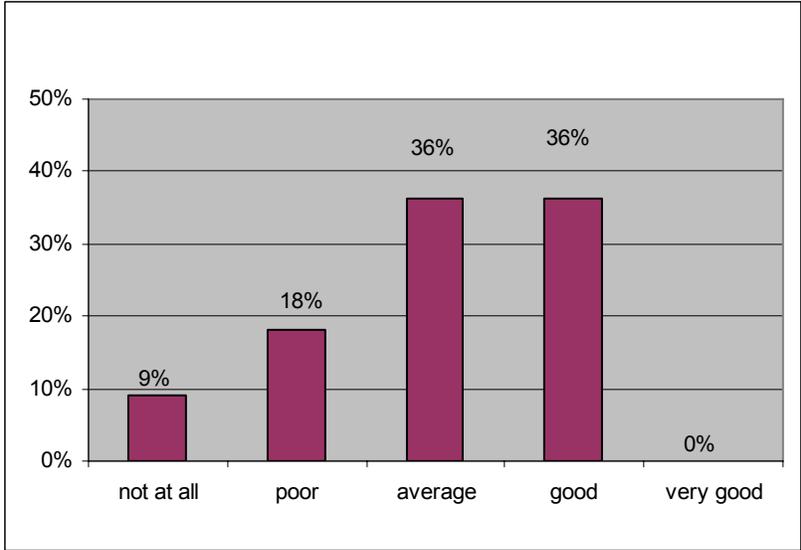


Figure 4-8. Usefulness of Spanish language courses on the construction site (N=11)

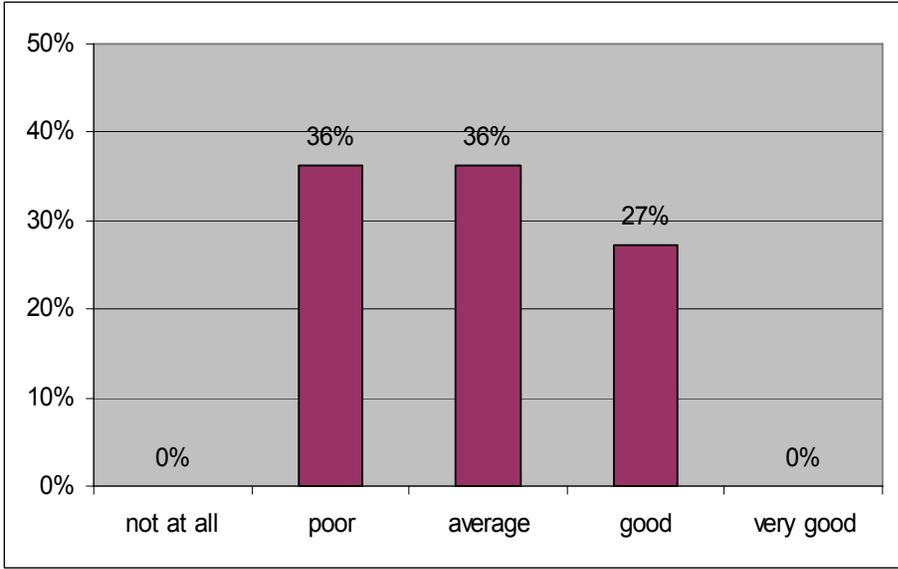


Figure 4-9. How well the Spanish language courses met respondent's needs and expectations (N=11)

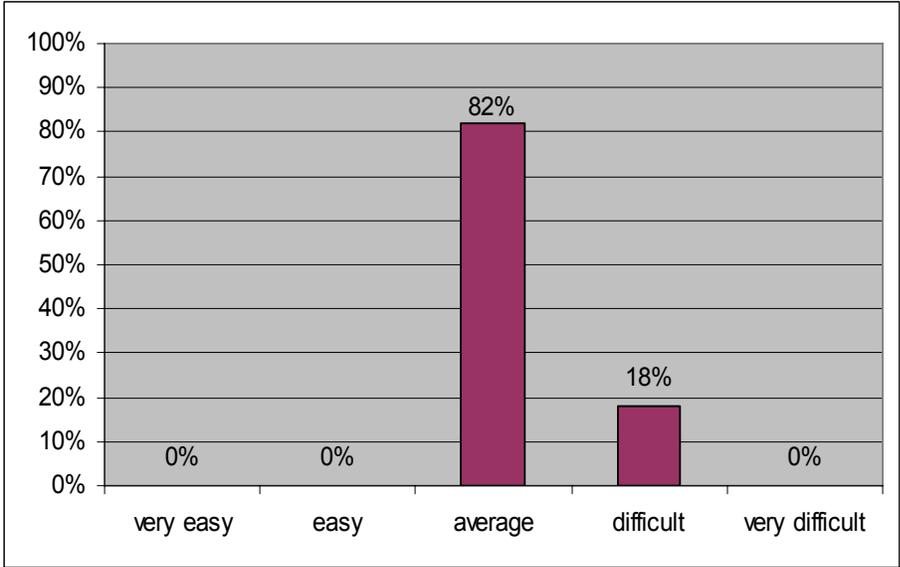


Figure 4-10. Difficulty of Spanish language course that had been taken (N=11)

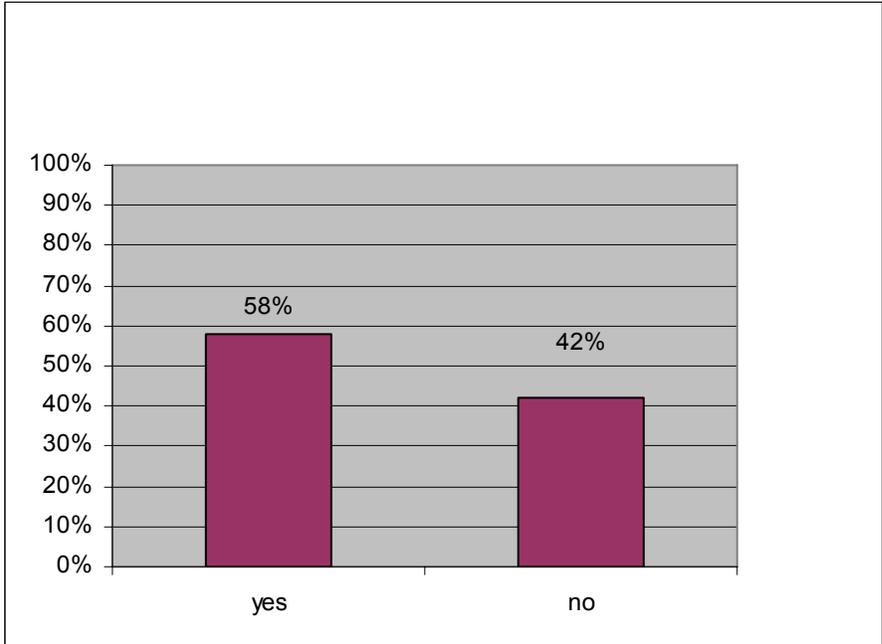


Figure 4-11. Respondents that would or would not take a Spanish class (N=19)

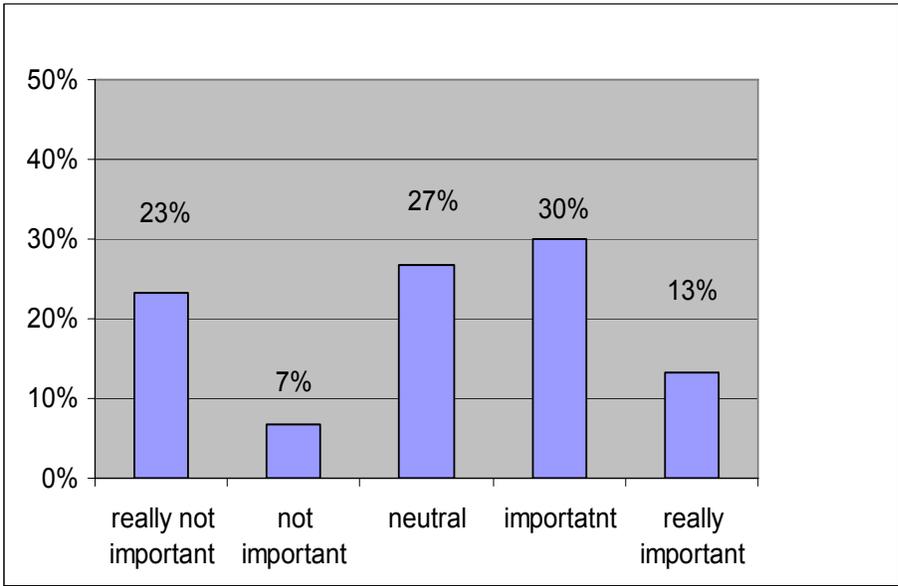


Figure 4-12. Rating of the importance of improving communication skills with Hispanic workers (N=30)

Table 4-3. Relationship between whether or not the respondent had a Spanish as a second language course (SSL) and how important it is to improve their communication skills with Hispanic workers (N=30)

Importance of Communication with Hispanic workers	Not important	Important	Total # of responses
Has had a SSL course	4	7	11
Has not had a SSL course	15	4	19
Total # of responses	19	11	30
X <sup>2</sup> value			5.440122708
Critical value @ 1 D.F. @ .975 confidence			5.02

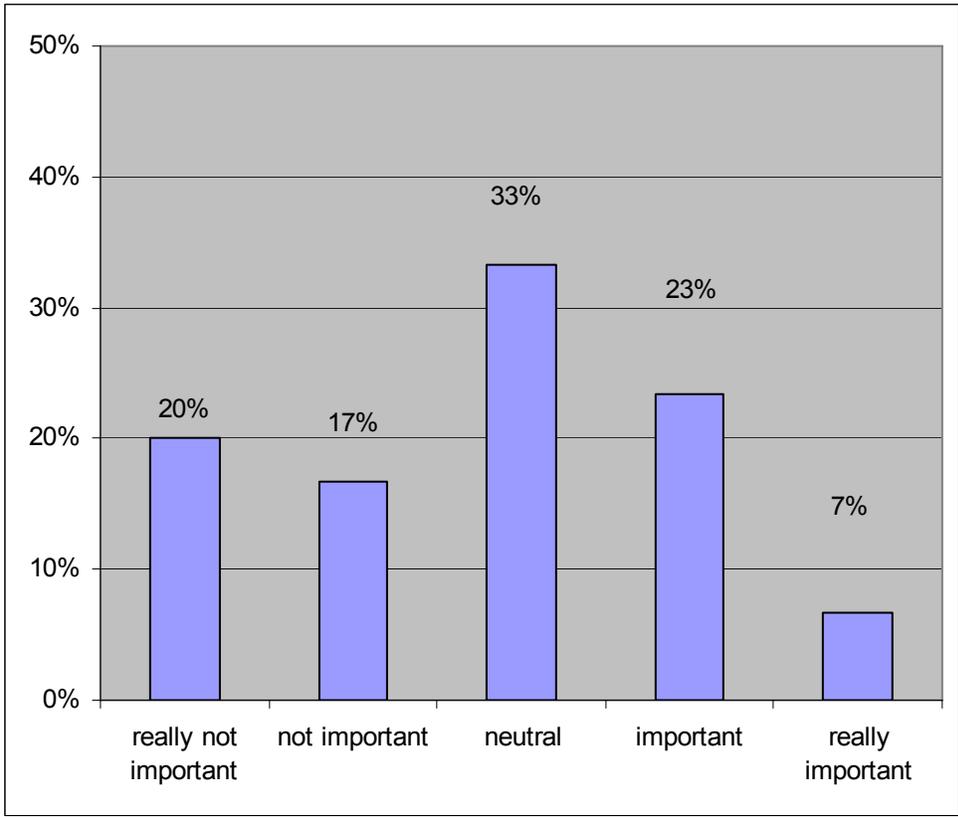


Figure 4-13. Level of importance for respondent's to take Spanish language course focused only on construction. (N= 30).

Table 4-4. Relationship between Respondent's exposure to Spanish language courses and their interest to take Spanish as a second language course (SSL) focused only on construction (N=30).

Superintendent's interest in taking a Spanish course focused only on construction.	Not important	Important	Total # of responses
Has had a SSL course	6	5	11
Has not had a SSL course	17	2	19
Total # of responses	23	7	30
X <sup>2</sup> value			4.11
Critical Value @ .95 confidence interval @1 D.F.			3.84

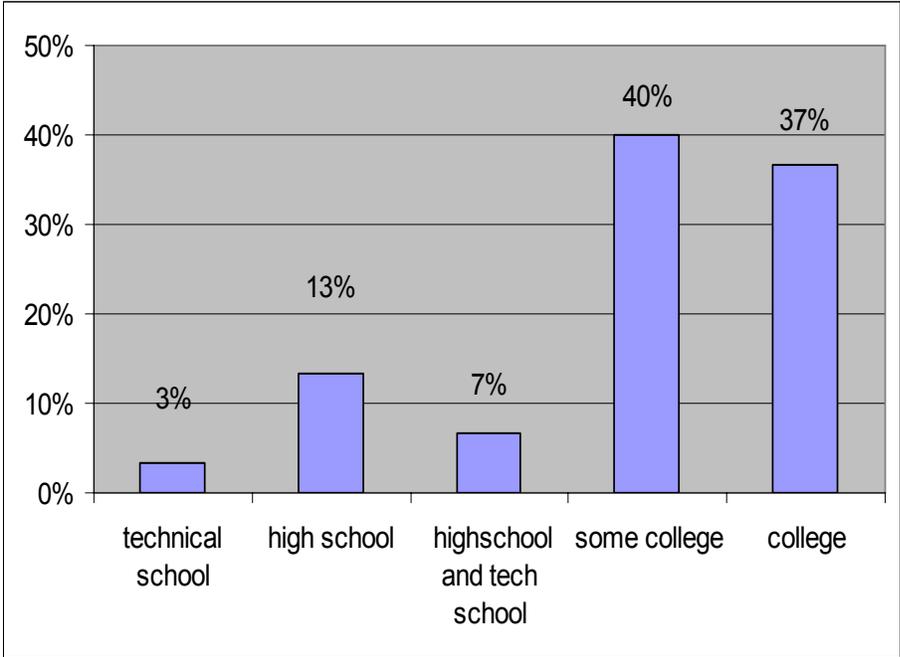


Figure 4-14. Highest levels of education completed by respondents (N=30)

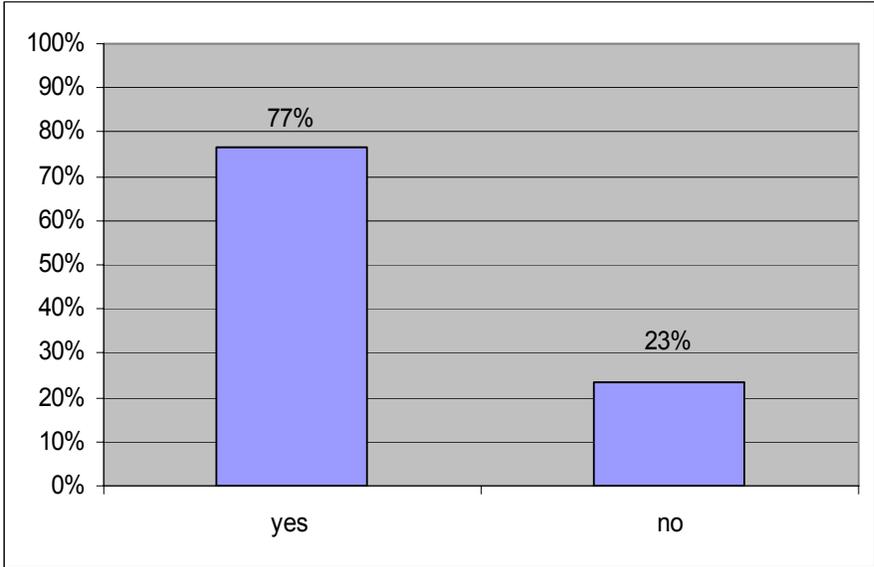


Figure 4-15. Respondents that worked as a foreman (N=30)

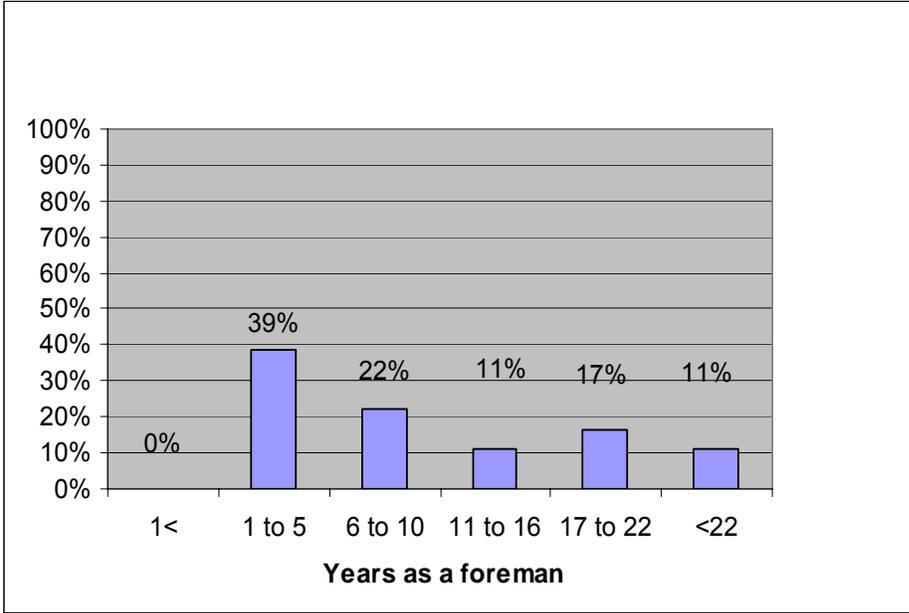


Figure 4-16. Number of years that each respondent worked as a foreman (N=18)

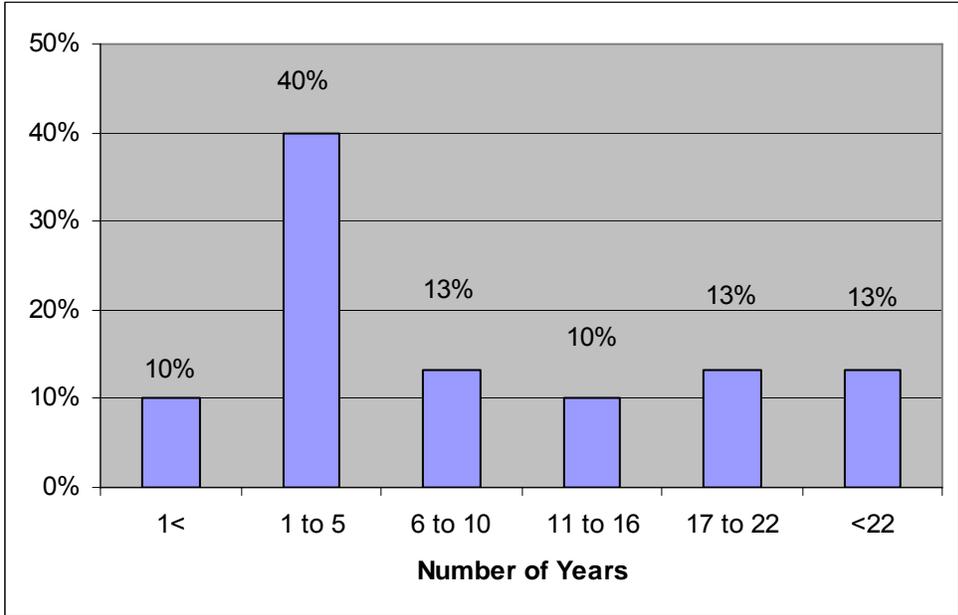


Figure 4-17. Number of years that each respondent has been a superintendent (N=30)

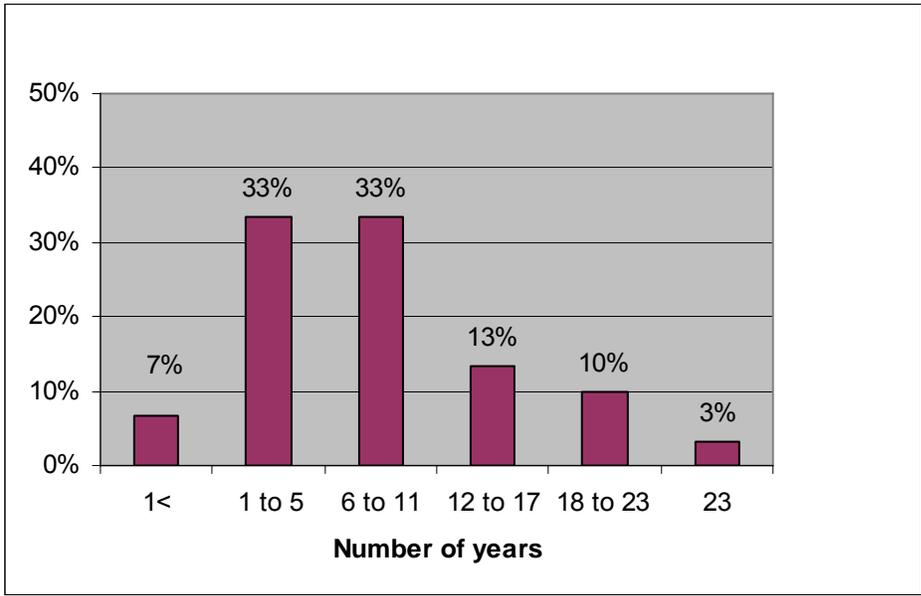


Figure 4-18. Number of years that each superintendent has supervised Hispanic workers (N=30)

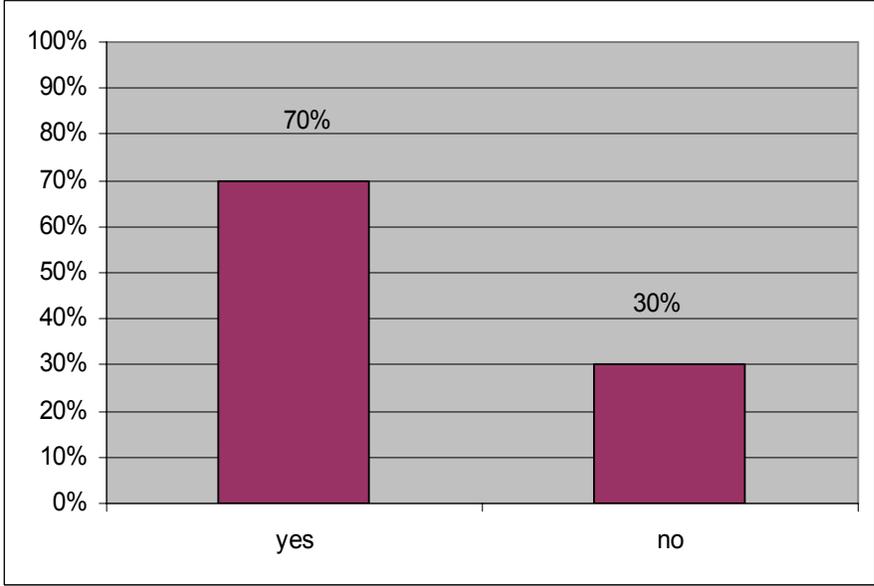


Figure 4-19. Respondents that have someone on site to help them communicate with Hispanic workers (N=30)

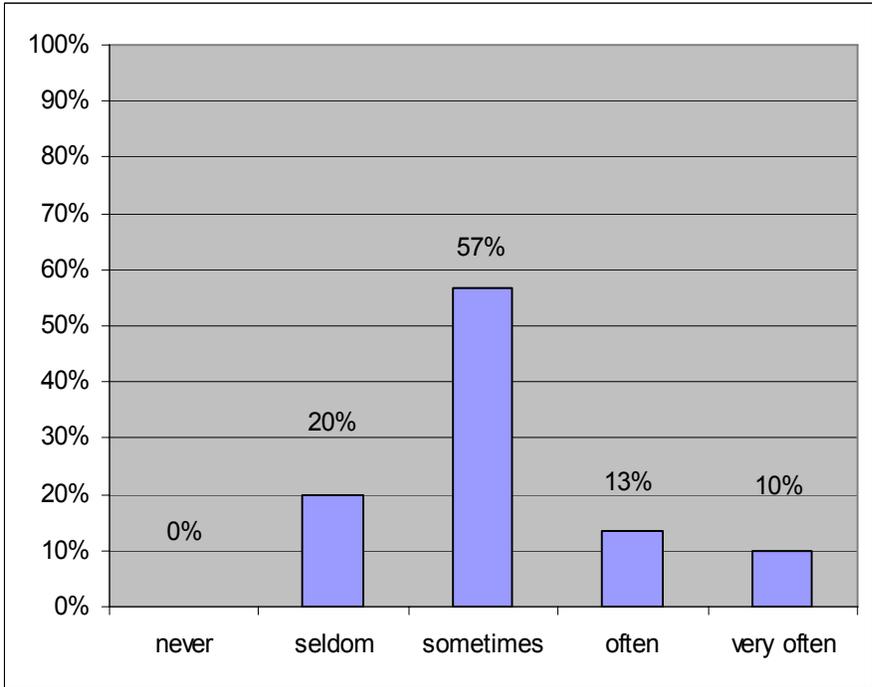
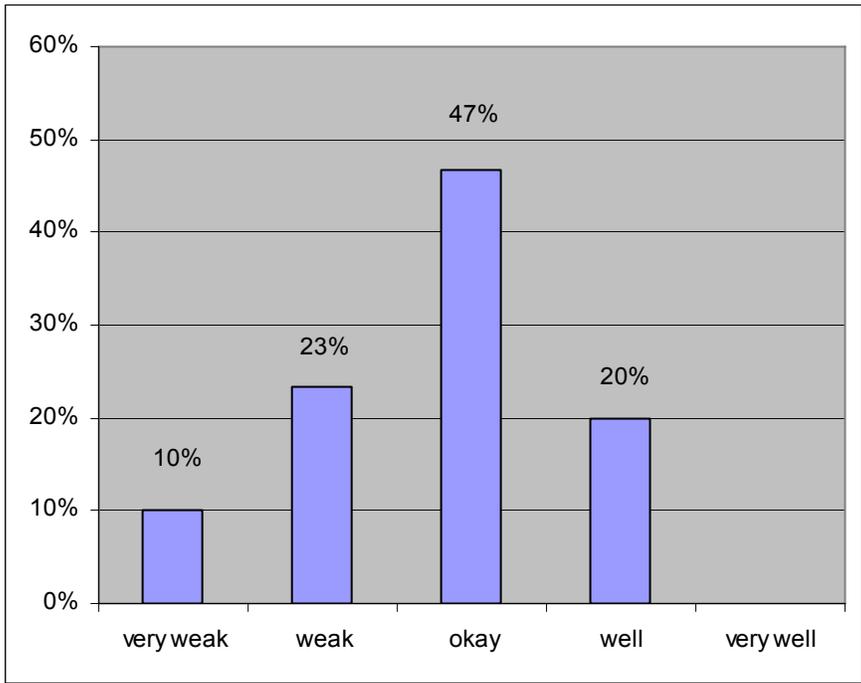


Figure 4-20. Frequency that superintendent used someone to help them communicate with Hispanic workers on their project (N=30)



4-21. Respondent's knowledge of Hispanic culture (N=30)

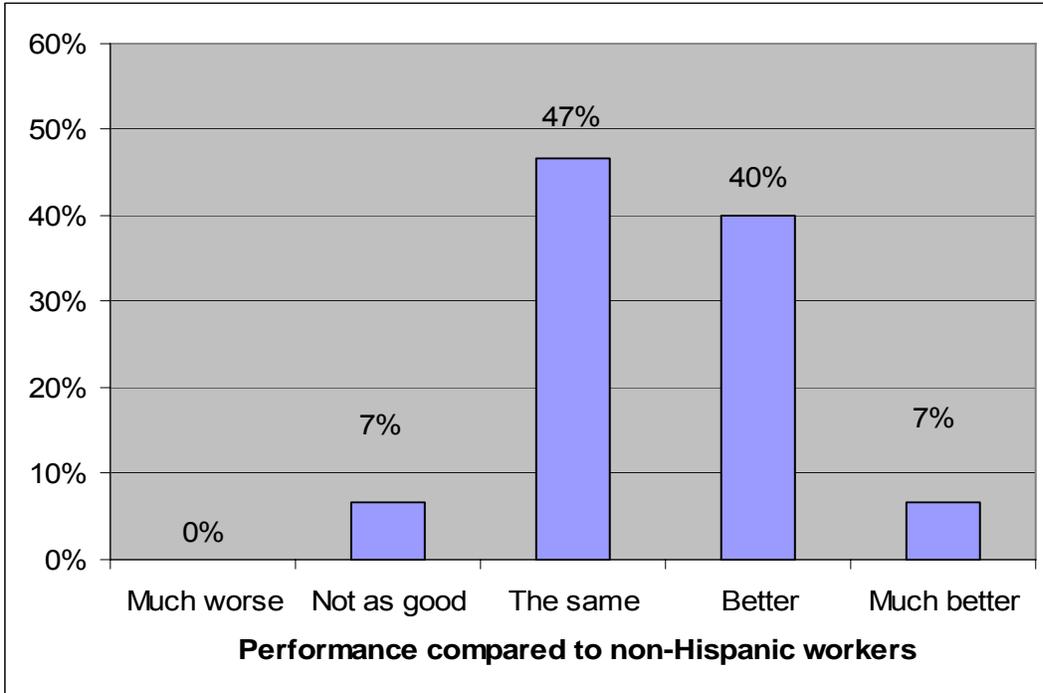


Figure 4-22. Respondent's description of the performance of Hispanic workers compared to Non-Hispanic workers (N=30)

Table 4-5. Relationship between whether or not Superintendent had taken a Spanish as a second language course(SSL) and their perception of Hispanic workers' performance compared to the performance non-Hispanic workers (N=30)

How Hispanic Workers Performed compared to non-Hispanic workers	Worse	Better	Total # of responses
Has had a SSL course	0	11	11
Has not had a SSL course	2	17	19
Total # of responses	2	28	30
$X^2$ value			5.09
Critical Value@ 97.5% confidence@ 1 D.F.			5.02

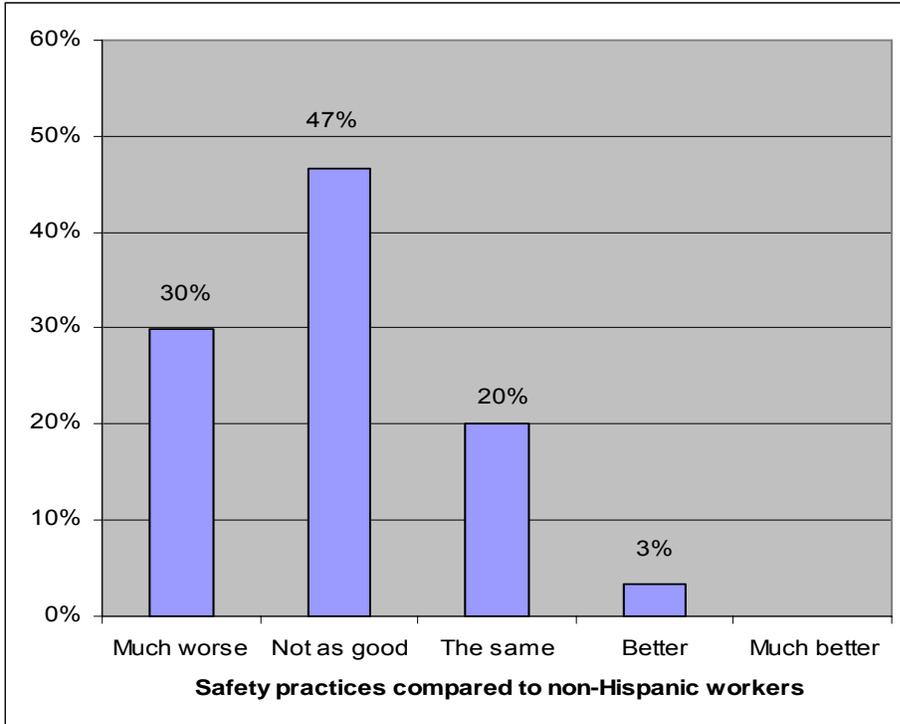


Figure 4-23. Respondent's description of the safety practices of Hispanic workers (N=30)

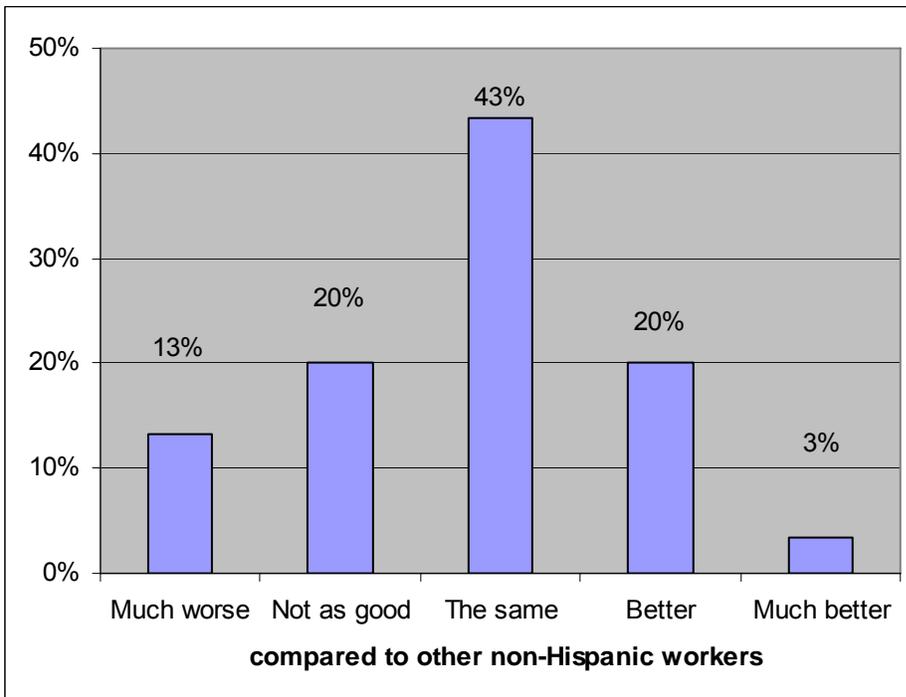


Figure 4-24. Respondent's perspectives on how well Hispanic workers respond to directives (N=30).

Table 4-6. Relationship between what Language that Superintendents use when communicating with Hispanic workers and the respondent's exposure to Spanish as a second language course (SSL) (N=30).

Language Superintendent used to communicate with Hispanic workers	English	English & Spanish	Broken Spanish or Spanish	Total
Has had a SSL course	1	4	6	11
Has not had a SSL course	16	2	1	19
Total # of responses	17	6	7	30
X <sup>2</sup> Value				16.51
Critical value @ .9995% confidence @ 2 D.F.				15.2

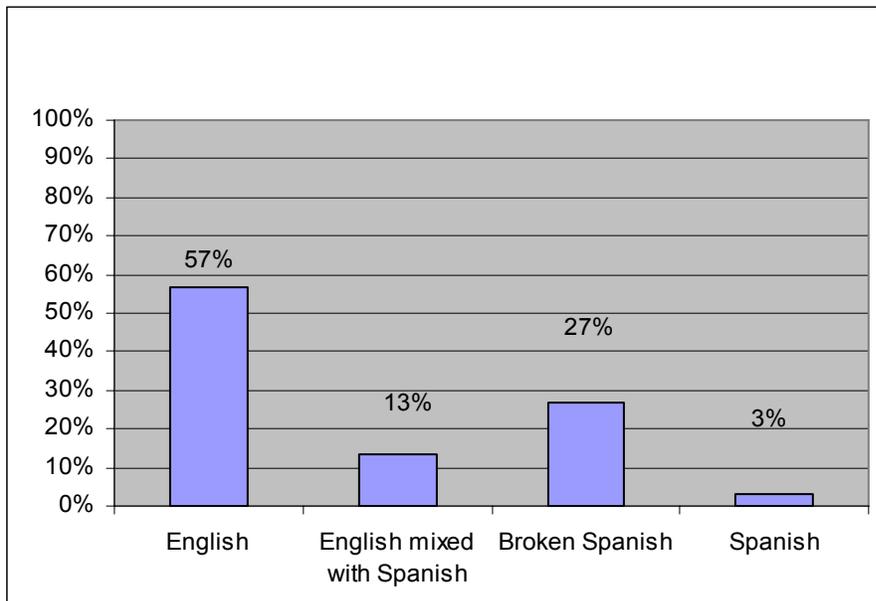


Figure 4-25. Language used by respondent when communicating with Hispanic workers (N=30)

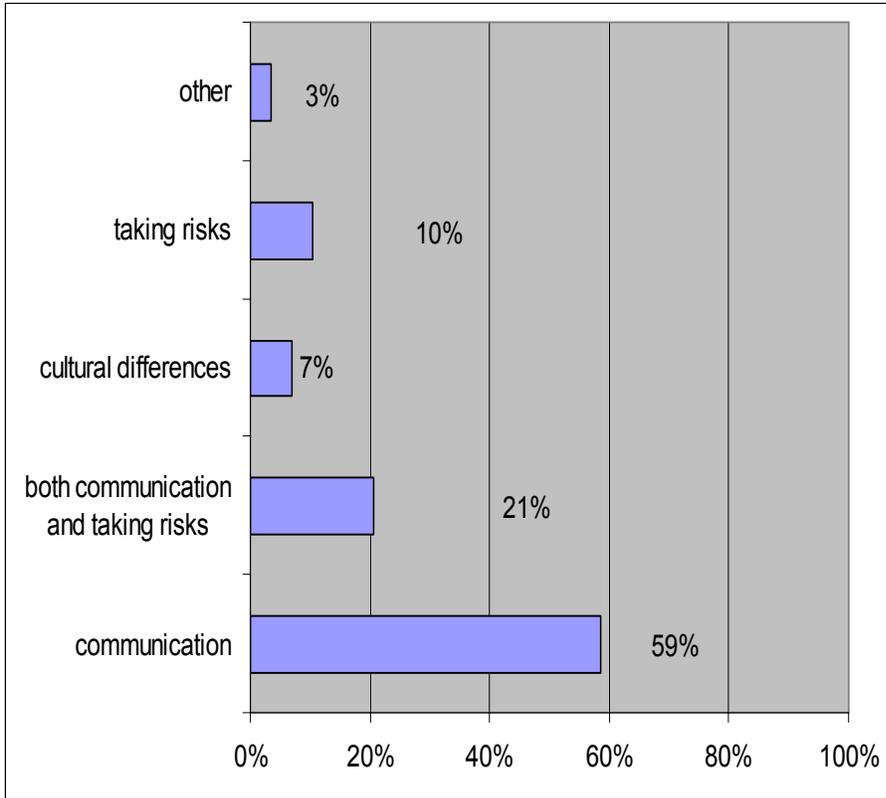


Figure 4-26. what respondents consider to be the main problems that relate to Hispanic workers (N=29)

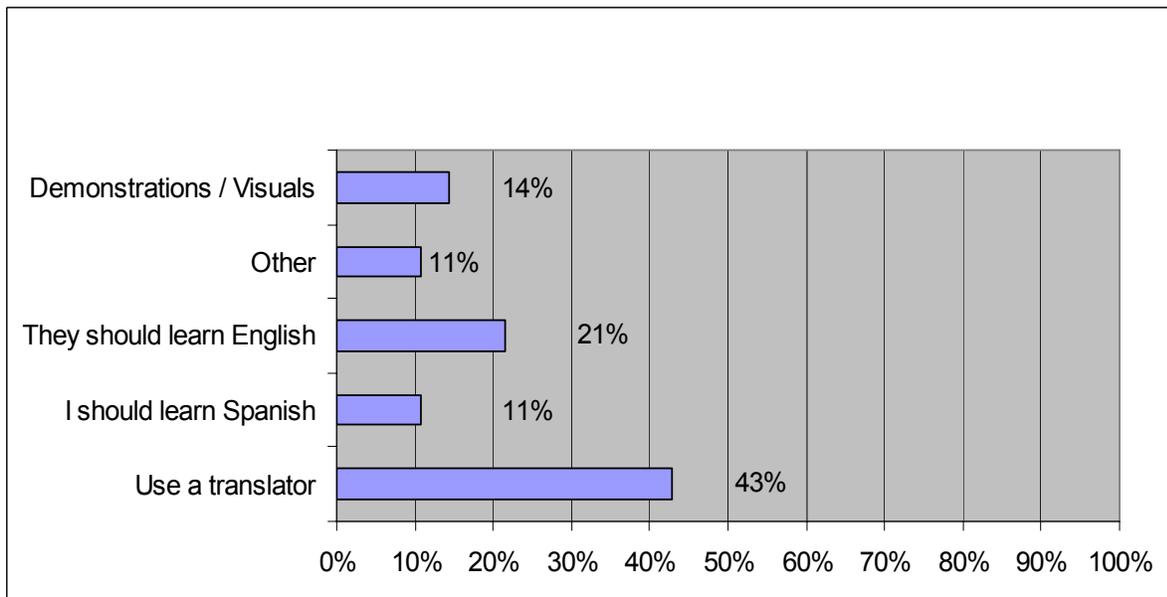


Figure 4-27. Respondent's opinion on what is the best way to mitigate the language barrier (N=28)

## CHAPTER 5 CONCLUSION

With the face of the construction industry undergoing a steady transition towards a predominantly Hispanic workforce, there is some concern on what challenges this will bring to a non-Hispanic superintendent who is supposed to manage them. The research objective was to find out what qualities were necessary for a superintendent to have in order to effectively manage a Hispanic workforce that has a different language and comes from a different culture. Initially the position of this research was that if a superintendent had some exposure to Spanish language courses then they would get better productivity and better safety practices from a Hispanic workforce than a superintendent that has not had any exposure to Spanish language courses.

The findings from this research show that a non-Hispanic superintendent's exposure to Spanish language courses has minimal impact on productivity or safety. All though other studies have indicated injuries or loss of productivity are problems that are associated with a language barrier. Most non-Hispanic superintendents rely on a translator for communication with Hispanic workers. Relying on translators appears to be an adequate approach to managing a Hispanic workforce. Non-Hispanic superintendents that rely on translators for communication still get productivity from Hispanic workers that is generally equal to or better than productivity from non-Hispanic workers. Although most of the Hispanic workers were considered equal to or better in productivity when compared to non-Hispanic workers, the Hispanic workforce was considered to have much worse safety practices when compared to non-Hispanic workers. This study and other studies have indicated that Hispanic workers have poor safety practices.

This research does not assert that the language barrier is not significant when regarding injury rates and productivity on job sites. Instead this research asserts that the cultural barrier

appears to play a bigger role in injury rates and productivity on job sites. It is concluded from this study that the cause of poor safety practices among Hispanic workers is not from the language barrier but it is from misuse of the translator on the job site and cultural differences between Hispanic worker and the non-Hispanic superintendent.

## CHAPTER 6 RECOMENDATIONS

### **Recommendations for the Construction Industry**

It was concluded that misuse of the translator on the job site and cultural differences between a non-Hispanic superintendent and a Hispanic worker were factors that led to poor safety practices among Hispanic workers. Misuse of the translator occurs when the superintendent has not fully utilized the translator. The translator should not only be used for giving directives but the translator should be used to instill value in the Hispanic worker. Studies have shown that workers that feel valued by their supervisors generally have better safety practices. Non-Hispanic superintendents can instill value in Hispanic workers by making it clear through the translator that the Hispanic worker's feedback is important, that this worker's safety is more important than the job or company or that this worker is a very important investment to the company. These things can instill value in a worker thus improving the safety practices of this worker. Finally the non-Hispanic superintendent should use the translator to learn as much as they can about the ways, perspectives or culture of the Hispanic workers.

### **Recommendations for Future Studies**

Additional research on this topic is warranted. For example, one approach would be to utilize the AGC (American General Contractors) database and randomly select about 500 companies throughout Florida. Then this research suggests that one should contact these companies and randomly select about two Hispanic workers from each company. These workers would then be surveyed. The survey should be designed to find out cultural issues of the Hispanic workers. For instance the survey could ask the workers about their responses to hypothetical situations. That is they would be given an order to carry out in unsafe conditions to determine how important their views are in comparison to the company or their superiors.

Another possible survey question could ask about the worker's thought on death, God, or masculinity. The purpose of the survey should be to identify cultural issues that could be causes for poor safety practices. From there one could determine ways to correct these cultural issues thus improving the safety practices of Hispanic workers.

APPENDIX A  
SURVEY QUESTIONNAIRE COVER LETTER

**Statement to be Read to Participants**

October 1, 2006

To: Potential Study Participants

Subject: Examination of Construction Superintendent Perspective concerning Hispanic workers

We, the M. E. Rinker, Sr. School of Building Construction at the University of Florida, are conducting a study in the state of Florida on safety among Hispanic workers. The focus of the study is to assess the various aspects of the construction environment that may impact the productivity and safety performances of Hispanic workers.

The study will be conducted through personal interviews in which a variety of questions will be asked about your background, your experience in the construction industry, and your relationship with your employer. There are no risks associated with participating in this study and the interview can be completed in about ten minutes. Naturally, you are asked to answer only those questions that you feel comfortable in answering. We regret that there are no direct benefits or compensation to you for participating in this study.

Your individual responses will be kept strictly confidential to the extent provided by law. Research data will be summarized so that the identity of individual participants will be concealed. You have my sincere thanks for participating in the valuable study.

Additional Content information will be provided:

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Ph.D., Professor

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P.S. For information about participant rights, please contact the University of Florida Institutional Review Board at (352) 392-0433 or Email: [IRB2@ufl.edu](mailto:IRB2@ufl.edu).

APPENDIX B  
SURVEY FOR SUPERINTENDENTS

1) What is the approximate annual volume of your company? \$ \_\_\_\_\_ million

2) How many workers are on your project (including employees of subcontractors?)

\_\_\_\_\_ workers

2A) How many of the workers are Hispanic? \_\_\_\_\_

3) Have you ever taken a course to help you learn Spanish?  yes  no  
(If No, go to question 4)

(If Yes, answer the following questions)

3A) How many total hours of training have you had in Spanish? \_\_\_\_\_ hrs

3B) Did you take this class after you graduated from high school?  yes  no

3C) Was this Spanish course related to construction?  yes  no

3D) How well were you able to use this information on the job

not at all  poor  average  good  very good

3E) How well did the Spanish course meet your needs and expectations?

not at all  poor  average  good  very good

3F) How would you rate the degree of difficulty of the Spanish class?

very easy  easy  average  difficult  very difficult

(Go to question 5)

4) If No, would you like to take a Spanish class?  yes  no

5) Consider this statement. "Hispanic workers should be required to learn English if they want to work in construction. What is your reaction to this statement?"

Comments: \_\_\_\_\_

- 6) How long have you supervised projects with Hispanic workers in the workforce?  
 \_\_\_\_\_ yrs.
- 7) Do you have someone to help you communicate with Hispanic workers on your project?  
 yes  no
- 8) How well do you understand the culture of Hispanic workers?  
 very weak  weak  okay  well  very well
- 9) How do you describe the overall performance of Hispanic workers?  
 1= Much worse than other workers  
 2= Not as good as other workers  
 3= The same as other workers  
 4= Better than most workers  
 5= Much better than most workers
- 10) How would you describe the job safety practices of Hispanic workers?  
 1= Much worse than other workers (they take many risks)  
 2= Not as good as other workers  
 3= The same as other workers  
 4= Better than most workers  
 5= Much better than most workers (they are very safe)
- 11) How do the Hispanic workers respond to directives to perform tasks?  
 1= Much worse than other workers (they seldom understand directives)  
 2= Not as good as other workers  
 3= The same as other workers  
 4= Better than most workers  
 5= Much better than most workers (they have a “can do” attitude)
- 12) How often have you asked someone to translate for you on your project?  
 never  seldom  sometimes  often  very often
- 13) What language do you use when you speak to the Hispanic workers on your project?  
 English  English mixed with Spanish  Broken Spanish  Spanish
- 14) How important is it for you to improve your communication skills with the Hispanic workers on your project?  
 really not important  important  neutral  important  really important

15) How important is it to receive Spanish training that is focused only on construction?

really not important    important    neutral    important    really important

16) Did you ever work as a foreman?    yes    no: \_\_\_\_\_ years

17) How long have you been a construction superintendent? \_\_\_\_\_ years

18) What is the highest level of education you completed?

1= elementary school

2= middle school

3= technical school

4= high school

5= some college

6= college

19) What do you consider to be your main problem(s) on the job site as they relate to Hispanic workers?

communication    tardiness    cultural differences    taking risks

other \_\_\_\_\_

20) In your experience, what is the best way to mitigate the language barrier with Hispanic workers?  
\_\_\_\_\_

21) Many people have said that the construction industry will fold if all undocumented immigrants went back to their home countries. How many workers on your job might be undocumented immigrants? \_\_\_\_\_

22) Do you know the OSHA recordable injury rate for your project?    yes    no

If no, do you know the IR? \_\_\_\_\_

If no, approximately how many worker injuries have occurred on this project that required the treatment of a physician? \_\_\_\_\_ injuries

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## BIOGRAPHICAL SKETCH

Alexander C. Curry was born on January 27, 1981 in Orlando, Florida. He has one older brother and one younger brother. He received his high school diploma from Countryside High in 1999. He received his Associate of Arts degree from the University of Central Florida in 2002; that same year, he moved to Tallahassee and enrolled at Florida State University. In 2004, he received his Bachelor of Fine Arts degree. In 2005, he moved to Gainesville and was accepted into the graduate program of the M.E. Rinker, Sr., School of Building Construction at the University of Florida, to pursue a Master of Science of Building Construction.