EXPLORING WHERE THE DRYWALL CONSTRUCTION WORKFORCE COMES FROM

A Thesis

by

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ABSTRACT

The labor shortage in construction is an unsolved, continued, and increasing problem in the United States and several other countries. The Associated General Contractor's national workforce survey results show that 83% of firms were having a hard time filling some craft worker positions. One of the most critical positions identified in this survey were drywall installers. The main objectives of this research are threefold: 1) examine the geographic origin of the drywall construction workforce, 2) determine if these locations have common characteristics, and 3) explore the background of the drywall construction workforce.

This study was completed through a researcher-designed questionnaire which was administered to drywall craft workers in three ways: a one-on-one face-to-face interview, a researcher-guided group interview, and a self-administered questionnaire. More than 76% of the workforce comes from urbanized areas where the major economic activity performed by the employed within that location is wholesale and retail trade. Factors that encourage workers to work in the drywall trade are obtaining relatively higher salary and the satisfaction of performing the work. The findings of this study provide construction professionals with necessary information to identify where promoting construction careers would be most effective overall to improve worker recruitment and retention strategies.

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NOMENCLATURE

NAICS	North American Industry Classification System
ACS	American Community Survey
AGC	Associated General Contractors of America
NAHB	National Association of Home Builders
USCB	United States Census Bureau
UA	Urbanized Area
UC	Urban Cluster
RA	Rural Area

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1. INTRODUCTION

1.1 Background

The construction industry is currently facing a significant shortage in labor supply and professionals predict this to worsen over time if solutions are not developed to address this problem (Chini, Brown, & Drummond, 1999). Professional associations such as the Associated General Contractors of America (AGC) and the National Association of Home Builders (NAHB) have found where the shortage of labors is most critical (Emrath, 2014). The AGC's national workforce survey results show that 83% of firms are having a hard time filling some craft worker positions (Associated General Contractors of America, 2014a). The positions identified in this survey and the percentage of firms who have difficulties finding workers are much higher in the state of Texas (Associated General Contractors of America, 2014b). For this and other reasons the recruiting of construction workers has become an important subject. And not only is the attraction of new talent important but also examining and considering ways to retain the existing workforce.

The construction industry in the United States overall is experiencing a shrinkage in the supply of skilled and unskilled workers. It would be beneficial for the industry to find ways of solving this issue. Information such as determining where the construction workforce typically comes from, where they were raised, or how were they guided into the industry can contribute knowledge to companies and recruiters in need of talent. This study explored the geographic origin and background of the construction workforce and

identified common characteristics among them to identify where promoting and recruiting efforts would most effectively be targeted.

1.2 Problem Statement

This study proposed to examine the geographic origin of the construction workforce, to determine if these locations have common characteristics, to examine the workforce's work history, and to determine what prompted them to their current workplace. The study addressed skilled and unskilled drywall installers performing work within Austin and Houston, Texas.

1.3 Purpose of the Study

The purpose of this study was to generate knowledge about the origin and demographic characteristics of the construction workforce in the cities of Austin and Houston, Texas. The findings of this study provide construction professionals with the necessary information to help them focus recruiting efforts where they can be most effective.

The following Research Questions were addressed:

1. What is the geographic origin of the construction workforce performing drywall installation?
2. How is the geographic origin classified regarding its land area, population size, and economic activities performed within each location?

3. What are the common characteristics within the location of origin of the drywall construction workforce?
4. What is the construction workforce's work background?
5. What prompted the workforce to their current construction trade?

1.4 Delimitations of the Study

This study was limited to accessible drywall specialty contractors and their workers performing on commercial projects within Austin and Houston, Texas. This study evaluated all skill levels of the workforce in the drywall construction trade.

1.5 Definitions

1. Geographic origin: any human settlement that can be classified as an urbanized area (UA), an urban cluster (UC), or a rural area (RA) as defined by the United States Census Bureau's (USCB) criteria (United States Census Bureau, 2010).
2. Urbanized areas: any human settlement with a population size of 50,000 or more people (United States Census Bureau, 2010).
3. Urban clusters: any human settlement with a population size of at least 2,500 and less than 50,000 people (United States Census Bureau, 2010).
4. Rural areas: any human settlements not included within an urbanized area or an urban cluster (United States Census Bureau, 2010).

1.6 Significance of the Study

Labor shortage is an issue that can potentially cause major increases in construction costs. This study is significant to construction professionals and researchers interested in avoiding increases of construction labor costs. The study will identify where promoting construction as a career is most effective. This study provides best practice solutions to the continuing problem of recruitment of drywall construction labor.

2. REVIEW OF RELATED LITERATURE

2.1 Overview

The workforce in general is a subject that many have researched. There are multiple studies pertaining to worker satisfaction responding to questions such as how a worker is motivated, how or what keeps them satisfied in their workplace, or what attracts them to their current job. Few studies answer questions regarding the composition of the construction workforce by specific place of birth or characteristics of the environment where they grew up. In this literature review the researcher highlights studies that have assessed the composition of the U.S. construction workforce previously. The researcher assessed opportunities and situations which have attracted workers into the construction industry. This section also contains research and information on how a city or a human settlement may be classified and how the United States categorizes urban and rural areas.

2.2 Literature on Composition of the Construction Workforce

The composition of the construction workforce in the Washington, D.C. area was investigated in an attempt to estimate the quantity of illegal construction workers in this location and out of the 808 surveyed participants almost 90% were born in Latin American countries (Golden & Skibniewski, 2009). The results were listed as follows: about 70% emigrated from El Salvador, 8.66% from Honduras, 4.83% from Mexico, and only 9.28% reported being born in the United States. The findings of their research are

grounds for consideration when speaking of immigration reforms within this area. After examining a dramatic Hispanic population growth in five southern metropolitan statistical areas (MSAs): Atlanta-Sandy Springs-Marietta, GA; Birmingham-Hoover, AL; Charlotte-Gastonia-Concord, NC-SC; Knoxville, TN; and New Orleans-Metairie-Kenner, LA, there are two reasons attributed to the populace increase (Gleave & Wang, 2013). One of the reasons that attracted foreign-born Latinos into these regions was having the opportunity to work on development-related jobs like construction and landscaping. These are jobs that do not require a high-skill level. Another attribute of growth is the availability of affordable housing, which was the case in the New Orleans region following Hurricane Katrina in year 2005. The New Orleans construction industry sector was studied in two different periods, pre- and post-Hurricane Katrina. There is enough evidence to suggest that Latino immigrants respond to the demand of low-skill jobs in the construction industry (Sisk & Bankston III, 2014). Their findings show that overall the Latin-born construction workforce increased in New Orleans from 2,200 to 9,600 across the two periods, and other groups of workers (white, black, and other categories) remained the same. The origin of these workers was not determined in the study.

The NAHB examined where construction workers were coming from with the analysis of the 2011 American Community Survey (ACS). The ACS shows that the United States labor force is composed 22% of immigrant workers and in the state of Texas it is composed 39.3% of immigrant workforce (National Association of Home Builders, 2013). In a report that characterized the construction labor supply by

evaluating the composition of the workforce by race, age, educational attainment, union membership, and employer type, it has been found that the most notable change in the construction labor force is a rapid Hispanic population growth, and most probably a Hispanic population dominated by foreign-born workers (Gilbert, 2012).

2.3 United States Census Bureau (USCB) and DataFerret

As part of the U.S. Department of Commerce and overseen by the Economics and Statistics Administration (ESA), the U. S. Census Bureau (USCB) is an organization that provides quality data about the United States population and economy. DataFerret is a versatile and customizable extraction software of information kept within the USCB database (DataFerret, 2015). There are unlimited spreadsheet configurations about that population and economy of the U.S. that users can create using this tool, as well as turn this data into figures, graphs, and maps. The researcher gathered key existing information regarding composition of the drywall construction workforce in the state of Texas, information that could only be obtained through the use of this software. This data is discussed in the following section.

2.4 DataFerret and the Construction Workforce in Texas

The DataFerret tool allowed the researcher to extract information on the composition of the construction workforce in Texas. According to the American Community Survey (ACS), which is a survey that collects demographic and socioeconomic data from the U.S. population (Griffin, Fischer, & Morgan, 2001), and its

Public Use Microdata Sample (PUMS) database from 2011, the construction workforce in Texas was comprised of 756,451 people, 2.5% being female and 97.5% being male. Furthermore, the construction population in Texas by nativity, as shown by the ACS, registers 45% of the population to be foreign-born and 55% to be native U.S. born.

The researcher also created tables to gather information on the ethnic composition of the construction workforce in Texas. Table 1 shows the Hispanic Ethnicity. At least 61% of the workforce is of Hispanic ethnicity according to Table 1, with a predominance of Mexican ethnicity of 54.67%. A 38.06% is reflected as the proportion of Not Spanish/Hispanic/Latino population.

Table 1: Texas Construction Industry by Hispanic Ethnicity (2011)

Hispanic Ethnicity	Construction Industry	
Not Spanish/Hispanic/Latino	295,251	38.06%
Mexican	424,123	54.67%
Puerto Rican	2,134	0.28%
Cuban	1,433	0.18%
Dominican	88	0.01%
Costa Rican	276	0.04%
Guatemalan	5,996	0.77%
Honduran	13,065	1.68%
Nicaraguan	1,258	0.16%
Salvadoran	17,151	2.21%
Other Central American	417	0.05%
Argentinean	77	0.01%
Chilean	21	0.00%
Colombian	798	0.10%
Ecuadorian	288	0.04%
Peruvian	271	0.03%
Venezuelan	381	0.05%
Spaniard	1,944	0.25%
All other Spanish/Hispanic/Latino	10,881	1.40%
Total	775,853	100.0%

Finally, Table 2 reflects the educational level attained by the construction industry workforce. Most of the population, 56.4%, has gotten into high school (9th grade up to 12th grade) or graduated from high school. 18.2% show having Some College credits or Associates degrees, 14.4% have gotten to Middle School and 7.5% have an Elementary School education or less.

Table 2: Texas Construction Industry by Educational Level Attained (2011)

Elementary School (Grades 1 - 5) or less	58,463	7.5%
Middle School (Grades 6 - 8)	111,958	14.4%
High School (Grades 9 - 12)	437,405	56.4%
Some College	141,470	18.2%
University Graduate	26,557	3.4%
Total	775,853	100.0%

2.5 DataFerret and the Drywall Construction Workforce in Texas

A similar approach as the previously described was used to gather data on the drywall only construction workforce of Texas. According to the American Community Survey (ACS) and its Public Use Microdata Sample (PUMS) database from 2011, the drywall construction workforce in Texas was comprised of 21,145 people, 0.5% being female and 99.5% being male. In regards to the drywall population by nativity, it is registered as being 68.6% foreign-born and 31.4% native U.S. born.

At least 80% of the drywall workforce is of Hispanic ethnicity according to Table 3 below, with a predominance of Mexican ethnicity of 73.90%. A 19.87% is reflected as the proportion of Not Spanish/Hispanic/Latino drywall population. The information

extracted here is of great value as it helped compare the yielded results of this research study.

Table 3: Texas Drywall Construction Workforce by Hispanic Ethnicity (2011)

Hispanic Ethnicity	Drywall Construction	
Not Spanish/Hispanic/Latino	4,202	19.87%
Mexican	15,626	73.90%
Puerto Rican	226	1.07%
Honduran	186	0.88%
Salvadoran	847	4.01%
All other Spanish/Hispanic/Latino	58	0.27%
Total	21,145	100.00%

Finally, Table 4 reflects the educational level attained by the drywall industry workforce. Most of the population, 56.5%, has gotten into high school (9th grade up to 12th grade) or graduated from high school. 10% show having Some College credits or Associates degrees, 25.0% have gotten to Middle School and 7.3% have an Elementary School education or less.

Table 4: Texas Drywall Construction Workforce by Educational Level Attained (2011)

Elementary School (Grades 1 - 5) or less	1,549	7.3%
Middle School (Grades 6 - 8)	5,277	25.0%
High School (Grades 9 - 12)	11,954	56.5%
Some College	2,110	10.0%
University Graduate	255	1.2%
Total	21,145	100.0%

2.6 Urban-Rural Classification in the United States

As defined in previous sections, this study will identify the type or size of a city as the geographic origin of the construction labor force. The United States Census Bureau (USCB) developed a classification criteria for urban and rural areas. Human settlements can be classified as an urbanized area (UA) with a population size of 50,000 or more people, an urban cluster (UC) with a population size of at least 2,500 and less than 50,000 people, or a rural area (RA) which is any area not included within an urbanized area or an urban cluster (United States Census Bureau, 2010). In Tables 5 and 6 below, the 2010 urban and rural classification percentages of the United States and Texas, respectively, is reflected.

Table 5: Percent Urban and Rural in 2010: United States (*N*=308,745,538)

Area	**Population**	**Percentage of Population**
Urbanized Areas	219,922,123	71.20%
Urban Clusters	29,331,148	9.50%
Rural	59,492,267	19.30%

Table 6: Percent Urban and Rural in 2010: Texas (*N*= 25,145,561)

Area	**Population**	**Percentage of Population**
Urbanized Areas	219,922,123	75.35%
Urban Clusters	29,331,148	9.35%
Rural	59,492,267	15.30%

2.7 Classification of Cities by Economic Activity

Also, cities can be classified by the type of industries or services the labor force performs within each city. There are nine major economic activities or services a city

performs: mining; manufacturing; transportation and communication; wholesale trade; retail trade; finance, insurance and real estate; personal service; professional service; and public administration (Nelson, 1955). The North American Industry Classification System (NAICS) in its official 2012 standard identifies and defines twenty main economic activities performed by business establishments throughout the United States (North American Industry Classification System, 2012). These sectors will be key in order to classify the types of cities where the construction workforce is coming from. See Table 7 below for the list of activities which are relevant to the findings of this study.

Table 7: Structure of the North American Industry Classification System (NAICS)

Description
Agriculture, Forestry, Fishing and Hunting
Mining, Quarrying, and Oil and Gas Extraction
Construction
Manufacturing
Wholesale Trade
Retail Trade
Transportation and Warehousing
Information
Finance and Insurance
Real Estate and Rental and Leasing
Professional, Scientific, and Technical Services
Educational Services
Health Care and Social Assistance
Arts, Entertainment, and Recreation
Accommodation and Food Services
Public Administration

2.8 Summary

After carefully reviewing the existing body of knowledge, while there is considerable data regarding race and ethnicity it is evident that there are few studies regarding the geographical origin of construction workers and characteristics of the location where they come from or were raised in. Also, there has been little to no research on the background information such as the social environment where they grew up in, construction influence they might have had while growing up, prior working experience on other construction trades or other industries, and reasons for choosing their current trade. This is the gap where the study fits-in and the focus of this research.

3. METHODOLOGY

3.1 Introduction

This study falls under the general category of a descriptive quantitative research since no cause-and-effect relationships were intended to be determined but rather the purpose was to examine the characteristics and associations of the phenomenon (Leedy & Ormrod, 2012). Specifically, this was survey research.

The instrumentation for this study was a researcher-designed questionnaire which was administered in three ways: a one-on-one face-to-face interview, a researcher-guided group interview, and a self-administered questionnaire. The participating companies had different accessibility requirements as to when and how to approach their employees; the researchers designed the questionnaire to be applicable for the three scenarios previously mentioned. Respondents in this study were drywall construction workers from two major drywall specialty contractors working in projects located in Houston and Austin, Texas. The total number of recorded responses was 230, however not all participants answered all questions so a pairwise deletion process was implemented. The pairwise deletion process enabled researchers to take advantage of the available data by recording all answered responses even if participants did not answer the questionnaire completely.

In this section the researchers will describe the selected sample for the study and the sampling procedure used. Also, the investigators will discuss specifics on the data collection strategy, data analysis procedure, variables, measurement, instrumentation

details, as well as the reliability and validity of data to be collected. Likewise, this study complied with Texas A&M University's Institutional Review Boards' (IRB) requirements and procedures.

3.2 Sample

Participants considered for the study were comprised of drywall construction craft workers from two different firms. The specialty firms were drywall contractors with projects located in Austin and Houston, Texas. These companies are considered two of the major drywall specialty contractors within the state of Texas. Table 8 displays the number of participants from each of the firms that participated in this study.

Table 8: Sample Size of Drywall Construction Workers

Construction Firms	Sample
Company 1	138
Company 2	92
Total	230

The participants were currently working in the drywall trade performing drywall installation, including drywall framing, drywall painting, drywall finishing, acoustic ceilings, and related drywall specialties. This was an appropriate sample because this study was specifically focused on the findings within this location. The participants were involved on different types of projects and in different locations. Participants from different skill level, age, gender, ethnicity, educational attainment, and years of experience were considered for the study. The sampling procedure was a nonprobability

convenience sampling technique. This procedure gave the investigator a convenient access to the participants allowing for the conservation of time, resources, and effort (Creswell, 2012).

3.3 External Validity

External validity refers to the extent in which the study conclusions could be generalized to other contexts. Studies performed in real-life settings may yield results replicable to other real-world contexts (Leedy & Ormrod, 2012). This study was focused on the construction trade of drywall installation in Texas, the representative sample selected strengthens external validity with this characteristic. The researchers gathered information from drywall workers of two of the major specialty drywall contractors in the two cities (Houston and Austin) from the state of Texas on a real life setting; this implies that the results can be applicable to other similar settings. However, given that the sample only represents workers from two sources in Texas, the results should be interpreted with caution. The research study was not externally funded so there were limited resources to invest into the process of data collection, this situation also potentially limits the generalizability of this study. Additional resources would have given the researchers more time to collect data, allowed investigators to incentivize and reach more participants, and in general extend the scope of this study.

3.4 Measurement

The instrumentation used for this study was a researcher-designed questionnaire administered in a one-on-one face-to-face interview, a researcher-guided group interview, and a self-administered questionnaire. The questionnaire's structure was comprised of five major sections with twenty four questions. The English and Spanish versions of the questionnaires can be found in Appendix A and B respectively. Below is a description of each section.

3.4.1 Questionnaire Section 1

Included questions regarding participant's general background and demographics. This section was composed of eight categorical and binary questions: age; gender; ethnicity; educational level attained; geographic origin; years of experience in the construction industry; and construction trade currently working in.

3.4.2 Questionnaire Section 2

Included questions addressing factor of construction career attraction and motives to joint to industry. This section included five questions consisting of a multiple choice question, binary, open ended, and Liker scaled questions that addressed the following factors: factors that attracted participants to work in the construction industry and in their trade; other work experience; construction as a first choice career; and if the participants left and re-entered the construction industry.

3.4.3 Questionnaire Section 3

Included questions with topics on training consisting of multiple choice and binary questions with the following themes: type of training received; who financed their training; training recommendations; and if training will motivate workers to remain working in their trade

3.4.4 Questionnaire Section 4

Included questions about career awareness and motivation. All motivational, training, and career awareness factors considered in the interviews were extracted from the literature review. This section included seven open-ended, binary, and multiple questions with the following subjects being addressed: knowledge on job opportunities; perceptions of a successful future and a long term career in construction; desire to remain working in their trade; skills and qualifications needed; perception over encouraging a construction career to their children

The results of a pilot test allowed the researchers to assure that the instrument was easy to understand and guarantee that it will help achieve the purpose of the study (Leedy & Ormrod, 2012). The wording and format of some of the questions in the Spanish and English version of the interviews was modified thanks to the pilot study. Again, refer to Appendix A & B respectively for the interviews.

The instrument was designed for two studies addressing the construction labor shortage in the drywall installation trade. The overlap of the studies was done in the methodology section only. The purpose of this was to allow the researchers to reach

more participants and gather enough responses to draw powerful conclusions and yield more accurate results given limited resources. Given the high number of Spanish speaking employees in this area, the investigators made the interview questionnaire available in English and Spanish giving participants the option to answer in their preferred language.

In this segment, the three different interview procedures are described. The one-on-one face-to-face interview and the researcher-guided group interview were administered at project locations where the participating companies were working. The researchers visited four projects that were approved by the companies to perform the interviews in person. The types and location of the projects included: a commercial high-rise building in Houston, Texas, two commercial high-rise buildings in Austin, Texas, and a residential high-rise building in Austin, Texas. For the self-administered questionnaire the companies distributed the questionnaires to their personnel and after completed, they sent them by mail to the researchers.

This research included human subjects, therefore it was submitted to the Institutional Review Board (IRB) from Texas A&M University for approval. The IRB approved the study in March 2015. Refer to Appendix C for the IRB Approval Letter. Furthermore, authorization e-mails approving participation in the study for each company are attached in Appendix E.

3.5 Internal Validity

Internal validity refers to how the study's collects data that the researchers can use to draw accurate conclusions about cause-and effect and other relationships (Leedy & Ormrod, 2012). The study aimed to achieve internal validity by first implementing a pilot study and then by triangulating the data. The initial pilot study was performed with five construction workers in which both the English and Spanish versions of the questionnaires were tested. This allowed the investigators to ensure that the instrument yielded the desired results and that it was easy to understand. After the pilot study, the questionnaire's format and wording was revised in order to improve internal validity.

3.6 Data Collection

The data collection procedure comprised four steps: 1) completion of a pilot study and revision of the interview questionnaires, 2) creation of a database of potential companies and projects to visit, 3) coordination and schedule of appointments, 4) execution of the face-to-face interviews, researcher-guided group interviews, and self-administered questionnaires, and 5) data entry. There were 230 total responses gathered from construction drywall workers. The interviews were performed during the spring 2015 semester. The interviews were appropriately coordinated and scheduled with each project's representative for access, approval, and to save time and resources. A description of each step is written further below. Researchers first coordinated collection of data with a representative from each company that agreed to participate in the study. This main company contact arranged a meeting with a job site company representative.

The latter asked the general contractor to give access to the investigators and to conduct the surveys on site. Investigators were required to wear proper construction personal protective equipment (PPE). The time, date, and location of the appointments were scheduled as the company representatives deemed convenient. The study yielded a total of 230 responses gathered from construction drywall workers. The interviews were performed during the spring 2015 semester. The interviews were coordinated and scheduled with each project's representative for access approval and to save time and resources.

3.6.1 Data Collection Step 1

A pilot study was performed to five construction workers employed by specialty drywall subcontractors located in the Bryan/College Station (B/CS) area, Texas. Both the English and Spanish questionnaires were tested. The results of the pilot test allowed the researchers to assure that the instrument was easy to understand and guarantee that it will help achieve the purpose of the study (Leedy & Ormrod, 2012). The pilot study was conducted using a one-on-one face-to-face approach. In the end, the wording and format of some of the questions in the Spanish and English version of the interviews was modified but the content remained unchanged.

3.6.2 Data Collection Step 2

The researchers created a database with ongoing construction projects, construction contractors, and subcontractors located in nearby Texas locations. The first

company recruitment approach was a personal visit to local commercial projects in B/CS. The researchers established contact successfully with project managers and superintendents within these local projects and provided them with an information sheet, which can be found in Appendix D. Initially, these representatives expressed interest in participating in the study yet, after following up with e-mails (refer to Appendix E) and telephones calls, all denied to be part of the investigation. The second company recruitment approach was done by contacting other local and statewide specialty contractors in person and by e-mail. This method was not feasible because they were small sized companies with few workers, the firms expressed non-willingness to participate, and there was a zero percent response rate through e-mail communication. The third approach was by contacting Construction Industry Advisory Council (CIAC) members from the Texas A&M University Department of Construction Science. This was a successful strategy. There were two specialty drywall contractors members of the CIAC contacted and all agreed to participate. Their contact information was found through the website www.aggienetwork.com. Likewise, the online professional network "LinkedIn" served as another source of contact information.

3.6.3 Data Collection Step 3

The company representatives were contacted in person, via e-mail, and telephone for approval to perform the interviews with their personnel. A recruiting e-mail was sent to each representative (refer to Appendix E). The investigators visited with the first company that agreed to participate in order to establish a communication line, to perform

the pilot study, and to coordinate the logistics of when and how to conduct the interviews on a project site. The researchers provided company representatives with a clear explanation of the study objectives, the interviews in English and in Spanish, and an explanation on how the interviews could have been conducted. Participation was encouraged but was voluntary. Once the project representatives agree, a convenient date, time (during workdays), duration (fifteen minutes at most), and location to meet with the participants was scheduled as an appointment. The researchers scheduled as many appointments as necessary and performed as many interviews as possible within a given appointment. The researchers sent project representatives a reminder of the appointment at least one week in advance. No time conflicts arose during the scheduled appointments, therefore there was no need to schedule an alternative time for the interviews (Leedy & Ormrod, 2012).

3.6.4 Data Collection Step 4

Prior to the interviews, project representatives informed their employees of the study. For the interview, the researchers met with the participants in a convenient location within each project and tried to avoid external distractions. When the researchers arrived at the project sites, the method in which the interviews were coordinated was that a company representative would select a group of either 10, 15, or 20 members, then momentarily separate them from their current working activity and gather them to perform the interviews. The one-on-one face-to-face interviews were conducted to personnel that needed assistance due to their poor reading and writing skills

or expressed difficulty in understanding the questions. There were approximately ten one-on-one face-to-face interviews administered. The researcher-guided group interviews were administered indoors when available and outdoors. A project site office was established as a meeting area to perform such interviews and when this was not available, the investigators gathered all participating personnel in an outdoor environment surrounding the site office trailers. The researchers explained the study and its objectives to each group prior to responding to the questions. In general, participants took approximately fifteen minutes to complete the questionnaire. For the self-administered questionnaire the companies distributed the questionnaires to their personnel and after completed, they sent them by mail to the researchers.

The researchers provided the participants with a brief introduction and explanation of the research study and its objectives. Participation was encouraged but was voluntary. This study did not required a waiver of documentation of consent. The participants were given an information sheet with the study's overall information that includes study objectives, interview procedure, duration, and a clear explanation that the study involved no risk, giving employees the voluntary will to decide to participate or not. Those who agreed to participate, proceeded to answer the interview questions. The researchers guaranteed the confidentiality of the participants' responses. There was no audio recording instrument needed to record the interviews.

3.6.5 Data Collection Step 5

Once questionnaires were completed, the researchers used Survey Monkey to collect data. Survey Monkey is an online tool that allowed researchers to input all responses into a secured account. This software was used in the process of data entry, storage, analysis and representation. All data entry was made in English. The researchers translated all Spanish responses given that Spanish is their native language and they have English language proficiency. Special attention was given to translating all responses accurately, within context, and avoiding bias and misinterpretation. Illegible handwritten responses, especially on open-ended questions, were not considered as part of the findings to avoid misinterpretation.

After each session of interviews, the investigators thanked the participants and the company representatives for their collaboration and support in the study. Company representatives were asked some additional information about the companies that significantly strengthened the study. For each company the following information was requested: number of drywall workers employed, the different specialties in drywall installation available, the career path for a new drywall hire, the requirements or qualifications for employee advancement, the required and provided training, and information on the recruitment process.

3.7 Data Analysis

This research comprised nominal, multiple choice, and open-ended questions, as well as Likert-scaled responses. Prior to the analysis, data was filtered in order to avoid

irrelevant information and focus only on responses that were significant to the study. The first data-filtering criteria was to include only drywall installers from all skill level but not management-level personnel. This study did not address or ask for any sensitive information from the participants such as name, address, date of birth, migratory status, or any other personal identifying information. Likewise, if participants intentionally or unintentionally provided sensitive information, this data was disregarded as it was of no use for this study.

The data was analyzed using descriptive statistics, which included averages, percentages, graphs, and tables. Survey Monkey was used as the tool to analyze this type of data. The statistical software used for quantitative analysis was JMP Pro 11. Section 1 of the questionnaire included eight categorical and binary questions that were analyzed using descriptive statistics. These demographic questions were used to describe the sample population. The questionnaire also included eight open-ended questions. Responses for these questions where analyzed by organizing the data into concepts, coding it and through a content analysis for repetitive words or phrases. Answers received a weight and data was statistically examined and interpreted. The researcher also included observations made while collecting the data in order to complement the data analysis.

The questionnaire also included two nominal scale questions that enabled the researchers to determine the mode, percentage values, or chi-square. The interval scale allowed to determine the mean, standard deviation, and product moment correlation (Leedy & Ormrod, 2012). Finally, since not all participants answered the entire

questionnaire, pairwise deletion was implemented to use all available responses for each particular question. Consequently, when calculating the study's descriptive statics, each question had a different sample size (*n*).

3.8 Summary

A researcher-designed questionnaire was administered to drywall construction workers of two specialty drywall firms located in Texas. The main objectives of this research were threefold 1) examine the geographic origin of the drywall construction workforce, 2) determine if these locations have common characteristics, and 3) explore the background of the drywall construction workforce.

4. DATA AND ANALYSIS

4.1 Introduction

The purpose of this study is to generate knowledge about the origin and demographic characteristics of the construction workforce in the cities of Austin and Houston, Texas. The findings of this study will provide construction professionals with the necessary information to help them focus recruiting efforts where they can be most effective.

The Research Questions for this study are:

1. What is the geographic origin of the construction workforce performing drywall installation?
2. How is the geographic origin classified regarding its land area, population size, and economic activities performed within each location?
3. What are common characteristics within the location of origin of the construction workforce?
4. What is the construction workforce's work background?
5. What prompted the workforce to their current construction trade?

4.2 Sample Characteristics

The following section describes the sample characteristics. First, Table 9 provides the sample size, number of construction workers from each of the two companies that participated in this study.

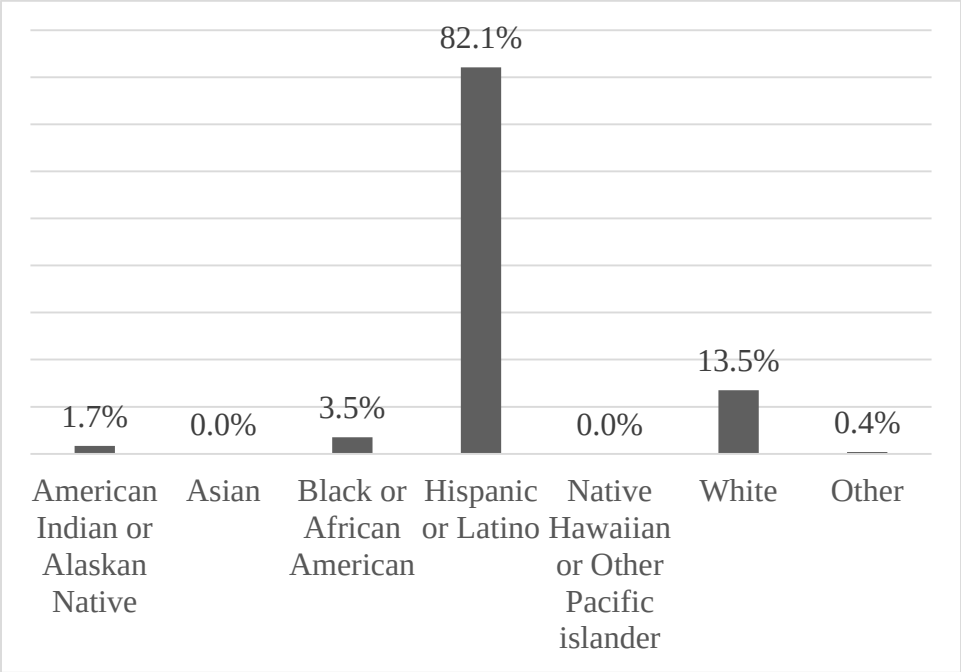
Table 9: Sample Characteristics: Drywall Construction Workers

Construction Firms	*n*
Company 1	138
Company 2	92
Total	230

Participants are from different age groups, ethnicities, and educational levels. The largest representation of the sample in gender was males (97.8%). This finding is consistent with literature indicating that the general majority of construction workers and drywall workers are males (97.5% - 99.5% respectively) and a very low proportion are females (0.5% - 2.5% respectively) (DataFerret, 2015).

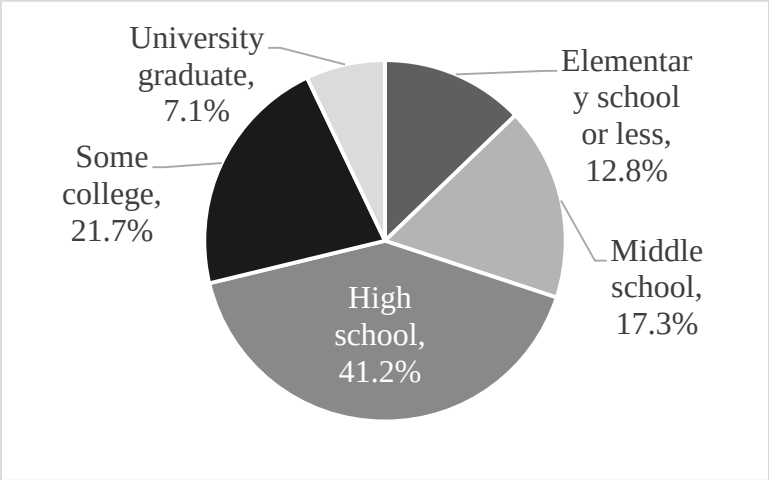
In addition, the largest ethnic representation was Hispanic or Latino (82.1%), as seen in Figure 1. This finding is also consistent with literature indicating that the majority of construction workers and drywall workers are of some Hispanic ethnicity (61.94% - 80.13% respectively) (DataFerret, 2015). The average age of the participants (n=225) was 37.5 years. Refer to Appendix J for the complete list of ages responded by the participants.

Figure 1: Sample Characteristics: Ethnicity (*n*= 229)



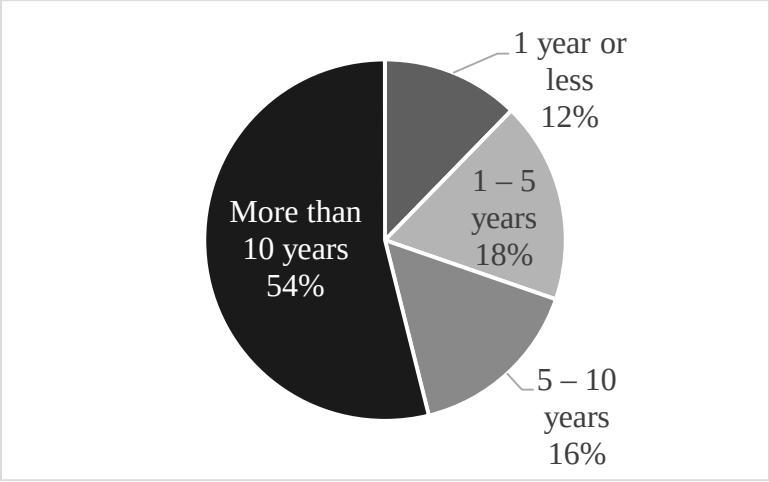
There were 12.8% of workers that attained an educational level of elementary school or less, 17.3% that went up to middle school, 41.2% attained a high school degree, 21.7% attended some college time, and 7.1% are university graduates as reflected in Figure 2. This findings are relatively consistent with literature indicating that majority (56.4% and 56.5%) of the general construction labor force and drywall workforce respectively have an educational level of high school (DataFerret, 2015). It is important to note that the most (80%) of the university graduates found are Hispanics coming from other countries. Perhaps, the means by which they came from their countries does not allow them to exercise their professional degrees in the U.S. and they preferred to work in an occupation that does not require a university degree such as drywall installation.

Figure 2: Sample Characteristics: Educational Level Attained (*n*=226)



There were 54% of workers with more than 10 years of experience working in the construction industry, 18% with 1 – 5 years of experience, 16% with 5 – 10 years of experience, and 12% with 1 year of experience or less as reflected in Figure 3.

Figure 3: Sample Characteristics: Years of Experience in the Construction Industry (*n*=228)



Overall the sample was comprised of mostly male Hispanic drywall construction workers, the majority having a high school level education at most and more than 10 years of experience working in the construction industry. Also, the mean age of the sample is of 37.5 years. As discussed earlier, these findings are consistent with the existing literature from the USCB, the ACS, and the DataFerret extraction tool of population and economic data from the United States.

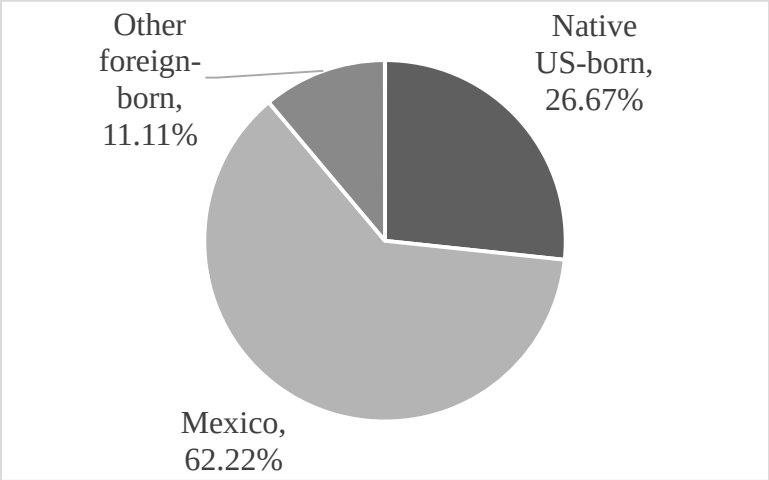
4.3 Data Analysis

4.3.1 Research Question 1: What is the geographic origin of the construction workforce performing drywall installation?

The researcher explored this question through determining the city and country where the participant was born and raised until the age of 18 years. The researcher tabulated the locations of origin which arose from the open-ended questions 6 and 7 (*Question 6: Where were you born? Question 7: Were you raised there (until 18 years of age)?*). A complete list of the locations of origin can be found in Appendix F. If a participant was born but not raised in the city of birth, then this location was not considered for the analysis because then the major influence of the participant while growing up was not originated from the location where they were born. Data displayed in Appendix F is a list where respondents were either born but not raised or born and raised within this location until the age of 18. The results yield a total of 98 different locations within 10 countries. 163 participants, out of 230, responded to this question appropriately.

Out of the 163 respondents, comprised of 64 from Company 2 and 99 from Company 1, there were a total of 135 respondents raised within the location they were also born. The remaining did not respond to the question correctly or were raised elsewhere. Refer to Appendix G for the summary list of locations where participants were born and raised. Currently, all participants live in the United States; the majority of them live within the city and state where the projects they are working in are located. The list of locations where the workforce was born and raised resulted in 69 different locations within 9 countries. The 9 countries which were found are Cuba, El Salvador, Guatemala, Honduras, Kenya, Mexico, Nicaragua, United States, and Venezuela. Figure 4 below reflects how most of the workforce found is comprised of people coming from cities or municipalities in Mexico (84) and cities in the United States (36). The proportional numbers of the origin of the drywall workforce (n=135) was the following: 26.67% was from native U.S. cities, 62.22% was born in Mexican municipalities and 10.37% came from other Hispanic countries (Cuba, El Salvador, Guatemala, Honduras, Nicaragua, and Venezuela); the remaining 0.74% came from Kenya. This data is consistent with the literature found in the ACS database which indicates that 68.6% of the drywall workforce was foreign-born and 31.4% was native U.S. born. It is also important to note that the percentage of total Hispanic workforce from the research sample was 72.59% and the percentage of the U.S. born workforce was 26.67%. This information is closely related to what was determined in the literature as well, in which the ACS indicates that 80.13% of the drywall workforce is of Hispanic ethnicity, predominantly Mexican (73.90%).

Figure 4: Geographic Origin of the Drywall Construction Workforce (*n*=135)



4.3.2 Research Question 2: How is the geographic origin classified regarding its land area, population size, and economic activities performed within each location?

The researcher explored this question after determining the city and country where the participant was born and raised until the age of 18 years. The tabulated locations of origin which arose from the open-ended questions 6 and 7 were used in this analysis. The drywall construction workforce comes from diverse locations, both foreign and native. There are 69 different places within 9 countries where the workforce which was born and raised comes from, as seen in Appendix G. The countries which were found are Cuba, El Salvador, Guatemala, Honduras, Kenya, Mexico, Nicaragua, United States, and Venezuela. The researcher obtained the land area and size of population of each location through an extensive online literature survey finding available online official governmental and statistical database of each country (Direccion General de Estadistica y Censos, 2015; Instituto Nacional de Estadistica, 2015; Instituto Nacional de Estadistica y Geografia, 2015; Sistema Nacional de Informacion Municipal, 2015;

United States Census Bureau, 2015). These databases are very similar to the USCB database. Information from the Cuban, Guatemalan, and Venezuelan online databases were ones that could not be gathered because their web sites presented some faults when searching for information. The land area and population size of all locations resulted quite variable. Appendix G reflects the quantity of respondents, land area in square kilometers, and size of population in the locations where the participants were born and raised.

Descriptive statistics were used to analyze the land area and size of population of locations found. Figures 5 and 6 show the distribution of both variables respectively. As seen below, both distributions have significant outliers. The maximum and minimum areas found were 3,575.19 mi^2 and 1.60 mi^2 respectively. The median surface area of all the locations was of 398.69 mi^2. The areas as well as the population sizes of the sample was highly variable, as the standard deviations were very large. The median population size was of 552,156 people. The largest populated location was Mexico City with 8,851,080 people, the reason being this is a very large city comprised of multiple smaller municipalities. The smallest location was one of the 7 rural areas and had 148 inhabitants. The standard deviations of both area and population size resulted bigger than the mean, therefore these provide no value for this analysis.

Figure 5: Distribution of Area in mi² (*n*=135)

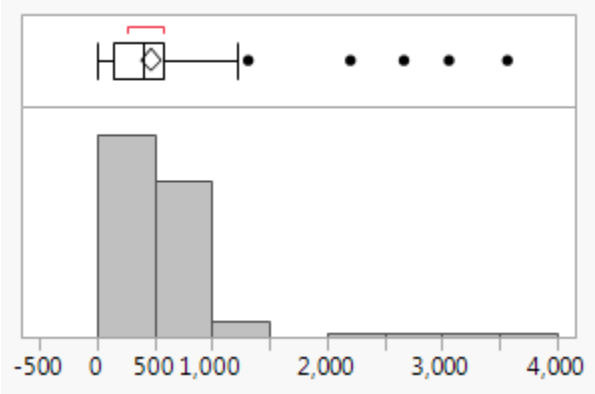
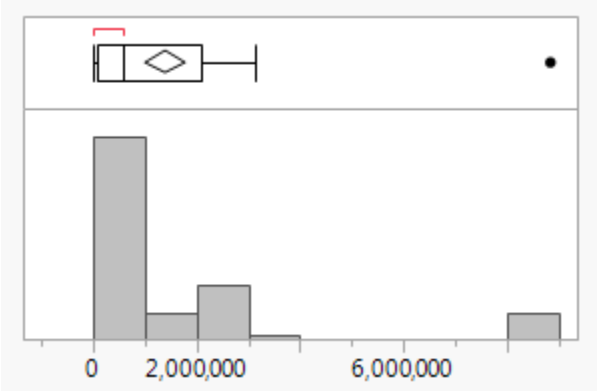


Figure 6: Distribution of Size of Population (*n*=135)



The locations were classified using their population size according the USCB criteria (United States Census Bureau, 2010). In Appendix G, locations classified as urbanized areas (UA), urban clusters (UC), and rural areas (RA) can be seen. There were a total of 103 UA, 25 UC, and 7 RA. Table 10 categorizes the number of locations by UA, UC, and RA. This suggests that the data found relatively mirrors the general U.S. and Texas population distribution. This fact is explained in the following research question analysis.

Table 10: USCB Population Classification of Locations (*n*=135)

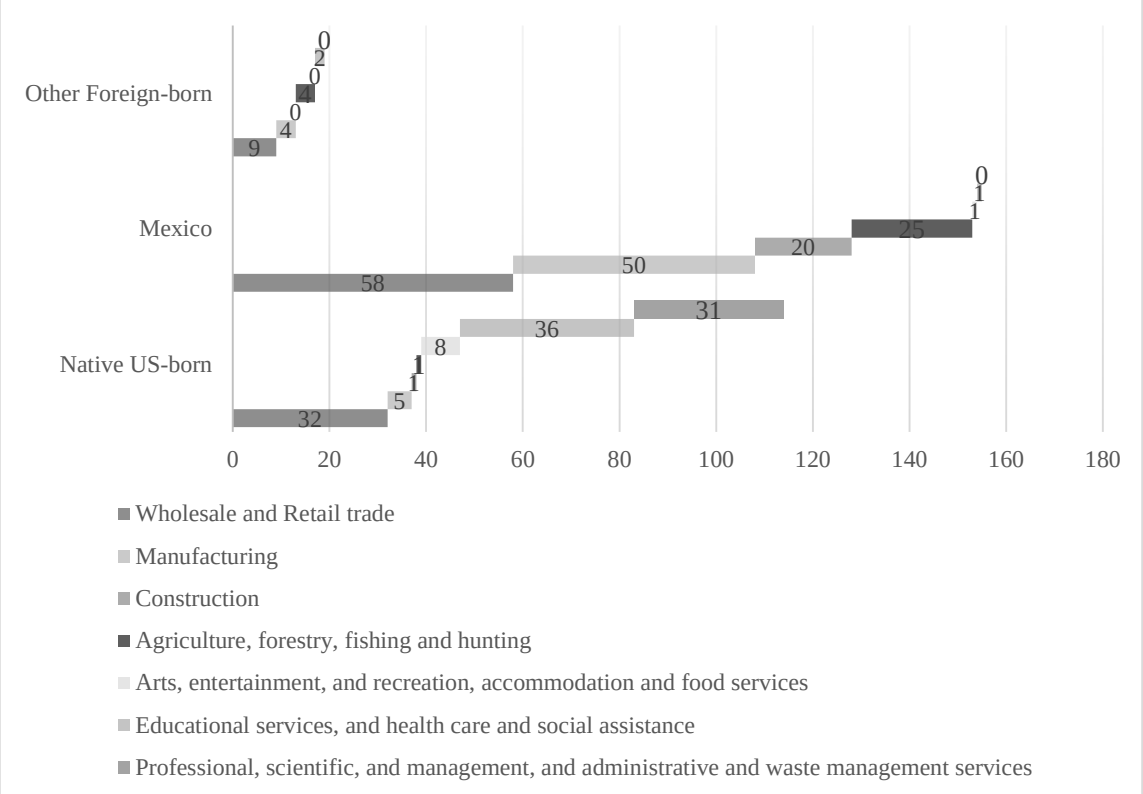
Classification	Native US-born	Mexico	Other Foreign-born
UA	31	63	9
UC	3	16	6
RA	2	5	0
Total	36	84	15

Regarding the economic activities performed by the employed within each location, the researcher found the following major activities to be the most significant: "Wholesale and retail trade", "Manufacturing", "Construction", "Agriculture, forestry, fishing, and hunting", "Arts, entertainment, and recreation, and accommodation and food services", "Educational services, and health care and social assistance", "Professional, scientific, and management, and administrative and waste management services." Table 11 displays the number of locations in which these major economic activities were performed. It is known that there is no specific methodology to classify locations by economic activities and it is an unsolved problem (Nelson, 1955). After reviewing the activities in each location, it was observed that using less than 10% as a percentage to identify major activities yielded a non-manageable number of activities to compare and using more than 10% yielded very few number of activities. Therefore, 10% was chosen as an adequate percentage which encompasses a suitable number of activities to analyze for this first research-type study. The researcher defines major economic activities as the ones that more than 10% of the employed perform within each location. Figure 7 reflects the numbers from Table 11.

Table 11: Number of Locations where Economic Activity is a Major Activity (*n*=129)

NAICS Economic Activity	Native US-born	Mexico	Other Foreign-born	Total
Wholesale and Retail trade	32	58	9	99
Manufacturing	5	50	4	59
Construction	1	20	0	21
Agriculture, forestry, fishing and hunting	1	25	4	30
Arts, entertainment, and recreation, accommodation and food services	8	1	0	9
Educational services, and health care and social assistance	36	1	2	39
Professional, scientific, and management, and administrative and waste services	31	0	0	31

Figure 7: Number of Locations where Economic Activity is a Major Activity (*n*=129)



4.3.3 Research Question 3: What are common characteristics within the location of origin of the construction workforce?

The researcher explored this question through analyzing and comparing the data obtained after the online literature survey on each of the locations that were identified in the previous research question. As described earlier, the distribution of area (mi^2) and population have multiple outliers. These resulted with a high level of variability among the sample. The maximum and minimum areas are 3,575.19 mi^2 and 1.60 mi^2 respectively. The average population size is of 1,382,615 people with a standard deviation of 2,362,958.9. The largest populated size was of 8,851,080 people and the smallest location had 148 people. A relationship or common characteristic between these numbers cannot be established. Nevertheless, when categorizing this data by type of settlement in regards to size of the population, a different and comparable result is obtained. Figure 8 reflects the proportion of UA, UC, and RA in U.S. locations. According to this, 86% of the U.S. locations (n=36) can be classified as UA. Figure 9 and Figure 10 also show that the majority of Mexican- and Other Foreign-locations respectively can be classified as UA. 75% of Mexico's locations (n=84) are UA, 19% are UC, and 6% are RA. Other Foreign-locations (n=15) reflect having 60% UA and 40% UC, with no RA found.

Figure 8: U.S. Proportion of Type of Human Settlement by Size (*n*=36)

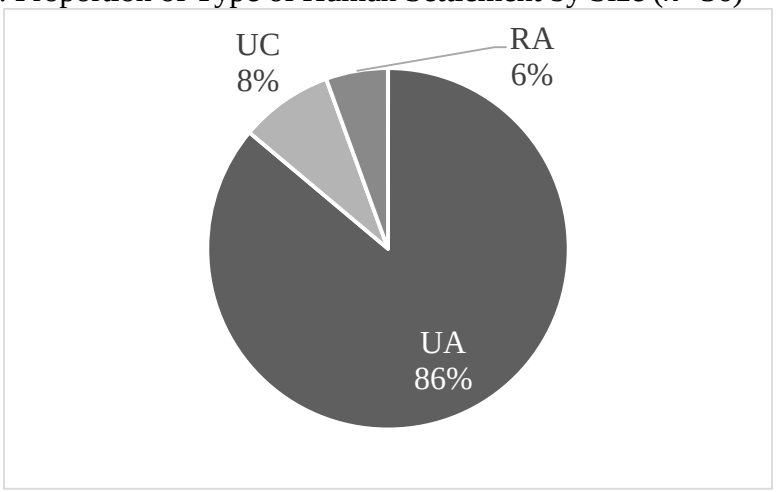


Figure 9: Mexico Proportion of Type of Human Settlement by Size (*n*=84)

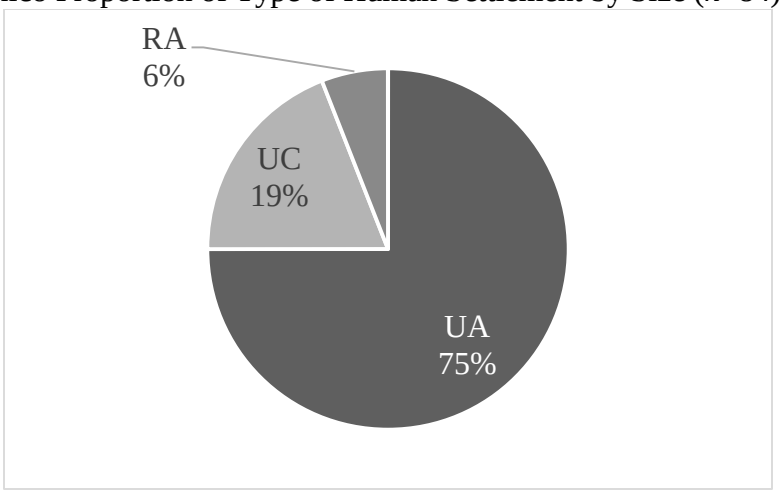
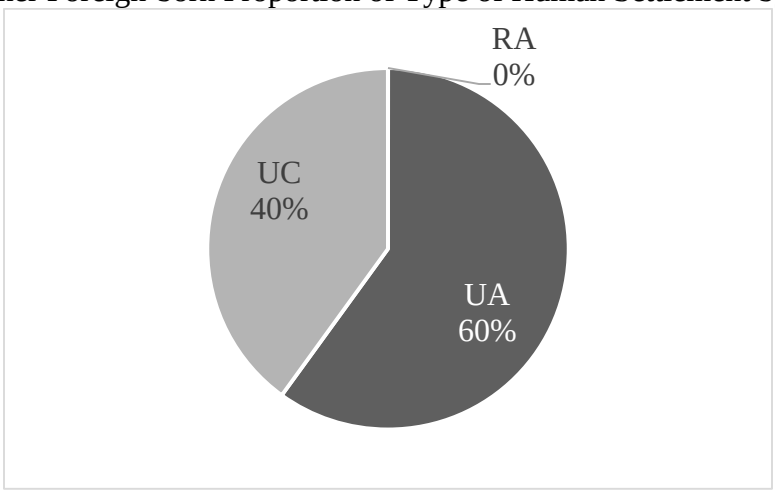
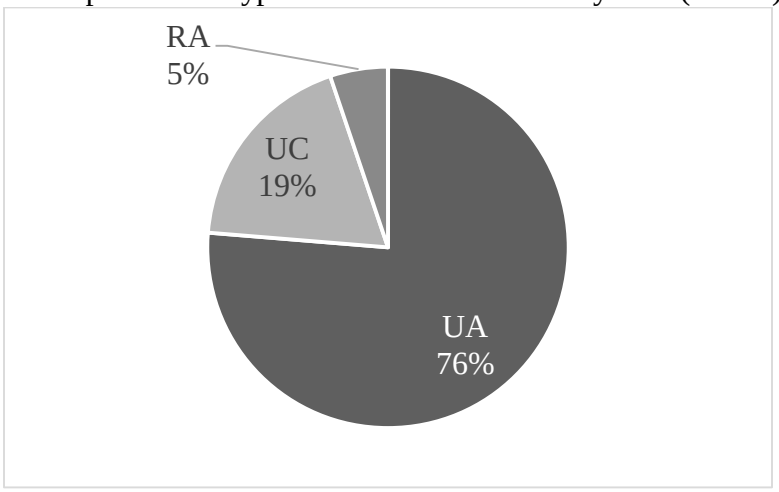


Figure 10: Other Foreign-born Proportion of Type of Human Settlement by Size (*n*=15)



The total proportional value of locations (*n*=135), shown in Figure 11, which combines U.S-, Mexico-, and Other Foreign-locations, reflects that 76% of them are UA, 19% are UC, and 5% are RA.

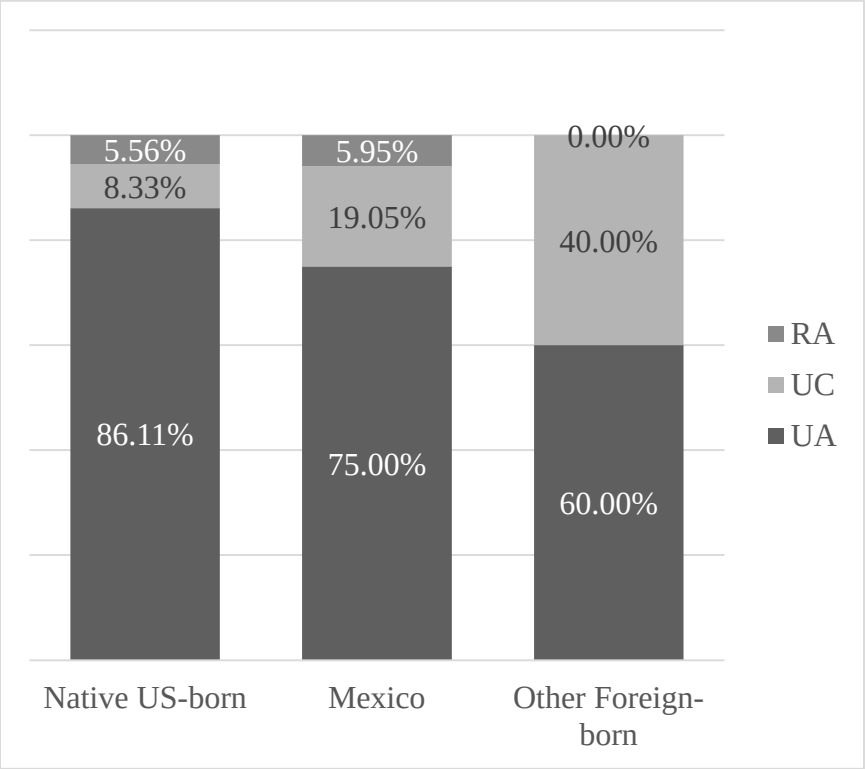
Figure 11: Total Proportion of Type of Human Settlement by Size (*n*=135)



There is a relative tendency that may lead the researcher to believe that most of the workers are coming from UA. Figure 12 is a graphical representation of all the proportions of discussed locations (*n*=135). These numbers are relatively inconsistent with the percentages of the U.S. population as well as the population in the state of Texas that live in UA, UC, and RA. According to the 2010 U.S. census, 71.2% of the U.S. population live in UA, 9.5% live in UC, and 19.3% live in RA. A similar classification exists in the state of Texas where 75.35% of the state's population lives in UA, 9.35% live in UC, and 15.3% live in RA. The percentages found differ in RA locations. It would seem as less workers are coming from RA locations, in contrast with what the general and Texas urban-rural distribution indicate.

Also, in regards to the Mexico origin and the Mexico distribution, there were major differences found. The researcher gathered data on the 2010 census of Mexico to build the urban-rural distribution of locations in Mexico. The results showed that 16.4% of the Mexico population live in UA, 68.5% live in UC, and 15.1% live in RA. The percentages found differ in all three types of settlements, more significantly in the UC proportion.

Figure 12: Proportion of Type of Human Settlement by Size and by Location (*n*=135)



In regards to determining if the locations have any common economic activities among them, the results shown in Figure 13 reflect the U.S. proportion of major economic activities within each U.S. location (*n*=36). This is telling the researcher that in all (100%) U.S. cities the activity of "Educational services, and health care and social assistance" is being performed. In addition, in 88.89% and in 86.11% of the U.S. locations the activities of "Wholesale and Retail trade" and "Professional, scientific, and management, and administrative and waste management services" respectively are also being performed. Few of the U.S. cities deal with activities such as "Manufacturing" (13.89%), "Construction" (2.78%), "Agriculture, forestry, fishing and hunting" (2.78%), and "Arts, entertainment, and recreation, accommodation and food services" (22.22%).

Figure 13: U.S. Proportion of Major Economic Activities within Location (*n*=36)

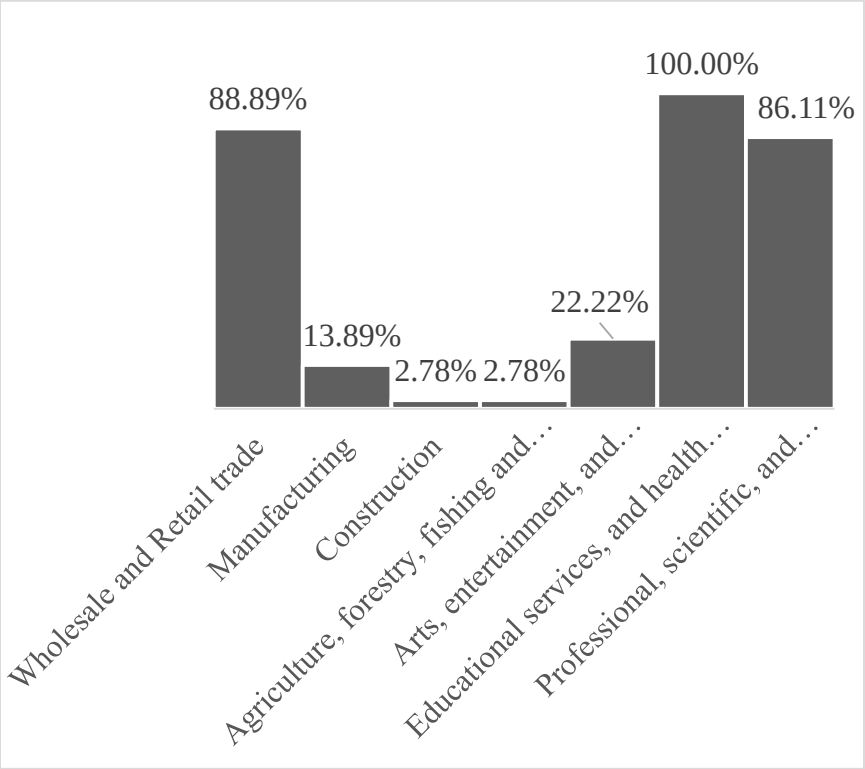


Figure 14 shows the Mexican proportion of major economic activities within each Mexican location (*n*=84). This figure suggests that the major activities being performed within Mexican municipalities are “Wholesale and Retail trade” with a 69% proportion and “Manufacturing” with a 59.52% proportion. “Construction” and “Agriculture, forestry, fishing and hunting” follow in proportional value with 23.81% and 29.76% respectively. “Educational services, and health care and social assistance” (1.19%), “Arts, entertainment, and recreation, accommodation and food services” (1.19%), and “Professional, scientific, and management, and administrative and waste management services” (0%) represent a very low to zero value.

Figure 14: Mexico Proportion of Major Economic Activities within Location (*n*=84)

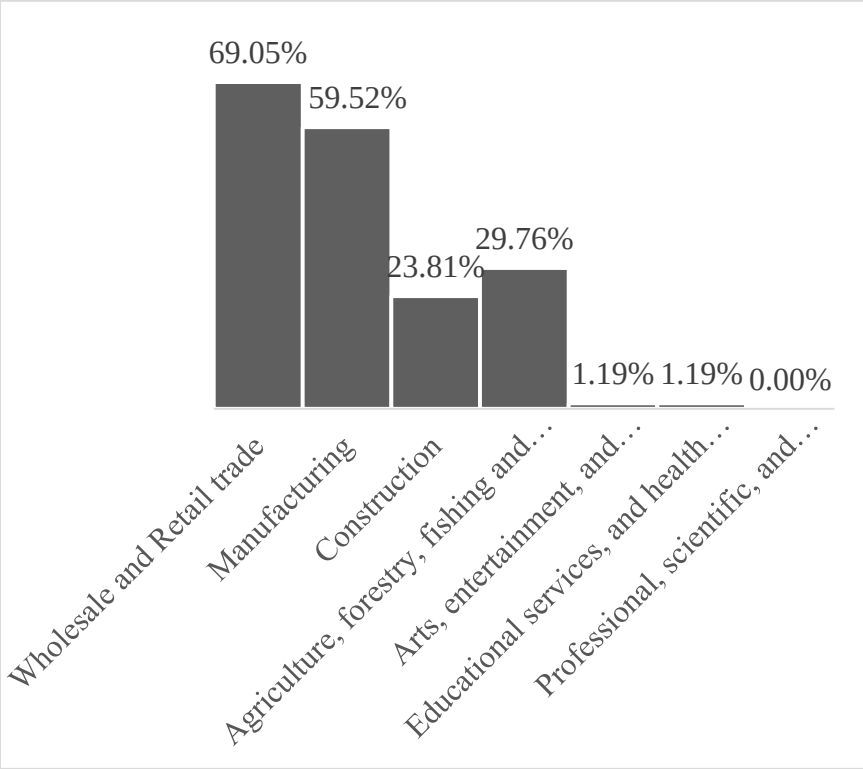
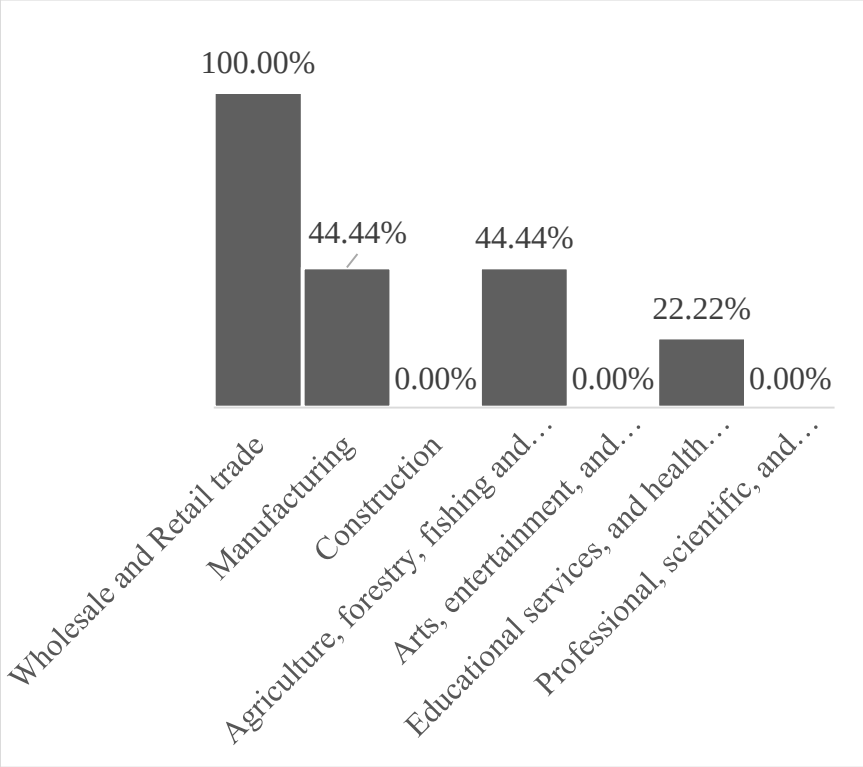


Figure 15 shows the Other Foreign proportion of major economic activities within each location (*n*=9). Only four of the seven major economic activities identified are being performed in Other Foreign locations. “Wholesale and Retail trade” is in 100% of the locations, “Manufacturing” is in 44.44% of locations, “Agriculture, forestry, fishing and hunting” is also in 44.44 of locations, and “Educational services, and health care and social assistance” is in 22.22%.

Figure 15: Other Foreign Proportion of Major Economic Activities within Location (*n*=84)



There is not a defined tendency seen by analyzing these figures separately that may lead the researcher to believe if an economic activity is a common characteristic among the locations of origin of the workers. The total proportional value of economic activities being developed among all locations (*n*=129) is shown in Figure 16. This figure combines U.S-, Mexico-, and Other Foreign-locations' economic activities. Here the major economic activity seen again is "Wholesale and Retail Trade" (76.74%), followed by "Manufacturing" (45.74%), "Educational services, and health care and social assistance" (30.23%), "Professional, scientific, and management, and administrative and waste management services" (24.03%), "Agriculture, forestry, fishing

and hunting" (23.26%), "Construction" (16.28%), and finally "Arts, entertainment, and recreation, accommodation and food services" (6.98%).

Figure 16: Total Proportion of Major Economic Activities within Locations (*n*=129)

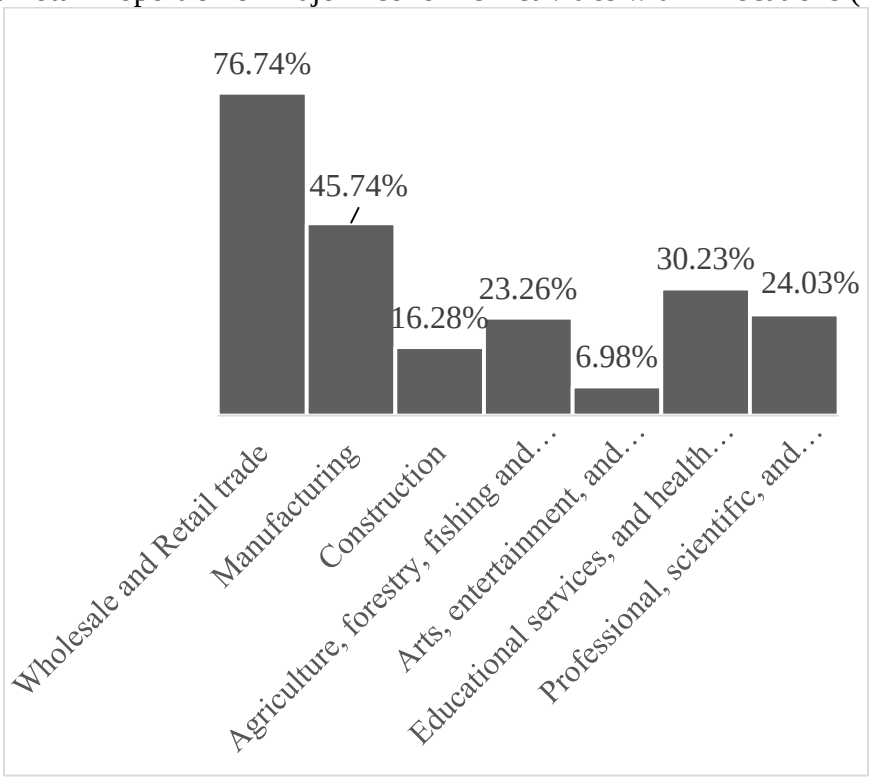


Table 12 reflects the total proportional numbers of all discussed economic activities within all locations (*n*=129). It has been shown that the major geographic origins in the U.S. (86%), Mexico (75%), and other foreign countries (60%) are categorized as UA. Nevertheless, when considering the economic activities performed within each country, these differ from country to country. In U.S. locations "Educational services, and health care and social assistance" (100%) is an essential activity developed and "Professional, scientific, and management, and administrative and waste management

services" (86.11%) is also highly frequent, whereas in Mexico and other foreign country this percentage is relatively low or inexistent. This result could be because Mexico and the other foreign countries found are underdeveloped or developing countries in which socio-economic priorities are different than those of developed countries like the U.S. This idea can be supported by the fact that the activity of "Manufacturing" has a greater incidence on Mexico and other foreign countries where labor costs are lower than labor costs in the U.S. Nonetheless, "Wholesale and Retail trade" appears as a major activity in all locations.

Table 12: Proportion of Economic Activities by Location (*n*=129)

NAICS Economic Activity	U.S.	Mexico	Other Foreign
Wholesale and Retail trade	88.89%	69.05%	100.00%
Manufacturing	13.89%	59.52%	44.44%
Construction	2.78%	23.81%	0.00%
Agriculture, forestry, fishing and hunting	2.78%	29.76%	44.44%
Arts, entertainment, and recreation, accommodation and food services	22.22%	1.19%	0.00%
Educational services, and health care and social assistance	100.00%	1.19%	22.22%
Professional, scientific, and management, and administrative and waste management services	86.11%	0.00%	0.00%

4.3.4 Research Question 4: What is the construction workforce's work background?

The researcher explored this question through determining the years of construction experience of each respondent, by identifying other working experiences the respondents had, and by asking the participants if they had left and reentered the construction industry at some point. As seen earlier in the section of sample characteristics, Table 13 reflects the years of construction working experience the

sample had. The majority of the participants responding in this study (*n*=228) were a highly experienced group since 53.9% of the workforce had been working in the construction industry for more than 10 years. The remaining 46.1% had between 1 and 10 years of experience in the construction industry. The average age of the participants (*n*=225) was 37.5 years.

Table 13: Years of Working Experience of the Sample (*n*=228)

Answer Options	Response Percent	Response Count
1 year or less	12.3%	28
1 – 5 years	18.0%	41
5 – 10 years	15.8%	36
More than 10 years	53.9%	123

Previous working experiences among the participants (*n*=168) varies. There were multiple construction occupations identified such as painting, landscaping, framing, bricklaying, carpentry, tie steel, pool installation, glass and glazing, concrete, HVAC mechanic, electrician, ironworker, and welding. Another significant important past experience includes the food and restaurant industry. The researcher ranked and grouped these occupations according to their frequency. Table 14 identifies the major ranked and grouped occupations in which participants were involved prior to entering the drywall construction trade. Before working in the drywall construction industry (*n*=168), the major frequent occupations workers had experience in are: food and restaurant (12.5%), carpentry (8.9%), painting (9.5%), auto-mechanic (6%), landscaping (4.2%), and other construction occupations (29.2%). The complete list of occupations can be found in Appendix I.

Table 14: Frequent Previous Working Occupations Identified in the Sample (*n*=168)

Other Construction Trade	49	29.2%
Food and Restaurant	21	12.5%
Painting	16	9.5%
Carpentry	15	8.9%
Mechanic	10	6.0%
Landscaping	7	4.2%

It has been shown that more than half (53.9%) of the sample has been working in this industry for more than 10 years. When asked if they had left and reentered the construction industry at some point, 70.1% of the sample said no and 29.9% said yes.

4.3.5 Research Question 5: What prompted the workforce to their current construction trade?

The researcher explored this question through answers which arose from an open-ended question. (*Question: What attracted you to work in your current trade?*). The participants identified factors that motivate or attract them into the drywall construction trade. The complete list can be found in Appendix K. The set of responses by the participants (*n*=208) to this question was expected by the researcher. Four major factors from the set were identified and grouped, reflected in Table 15. Money or a relative higher salary (25.48%) was the most important factor that motivates workers into the drywall construction trade. The following important factor was the liking of the work (22.11%). The two final significant factors were opportunity (14.90%) and family/friend reference (15.38%). Opportunity can be defined as the industry and companies having a high level of availability of jobs and work.

Table 15: Factors that Attracted Workers to the Drywall Construction Trade (*n*=208)

Factor	Frequency	Proportion
Money or Salary	53	25.48%
Liking or Satisfaction	46	22.11%
Opportunity	31	14.90%
Reference by a Family Member or a Friend	32	15.38%

5. CONCLUSIONS AND RECOMMENDATIONS

This section will be comprised of three segments. First, a restatement of the problem; second, conclusions based on the data gathered; and third, recommendations for future research.

5.1 Restatement of the Problem

The Associated General Contractor's national workforce survey results show that 83% of firms were having a hard time filling some craft worker positions. One of the most critical positions identified in this survey were drywall installers. The available construction skilled labor is not sufficient due to an increasing demand for skilled labor (Hodges & Crowley, 2014).

The results and information yielded from this study serve as a baseline to researchers and construction professionals by giving them a detailed look into some characteristics of the drywall construction workforce. This study accomplished three objectives: 1) examined where the drywall construction workforces comes from, 2) determined whether these locations share common characteristics, and 3) explored the work background of the drywall construction workforce. The findings of this study provide construction professionals with necessary information to identify where promoting construction is most effective and overall improve worker recruitment and retention strategies.

5.2 Conclusions

5.2.1 Conclusions for Research Question 1: What is the geographic origin of the construction workforce performing drywall installation?

The locations where the workforce was born and raised resulted in 69 places within 9 countries. The countries found include: Cuba, El Salvador, Guatemala, Honduras, Kenya, Mexico, Nicaragua, United States, and Venezuela. Most of the drywall workforce found is comprised of people coming from Hispanic countries (72.5%). The proportion of the origin of workers found was the following: 26.67% was native U.S.-born, 62.22% was born in Mexico, and the remaining 11.11% were from other foreign countries.

Again, it can be seen that these findings are consistent with the literature indicating that the majority of the drywall workers in Texas are of Hispanic ethnicity (80.13%). It is safe to suggest that both the data obtained in the study as well as the statistics gathered by the USCB and the ACS are accurate. It can be concluded that the mentioned official institutions are reliable sources of socioeconomic and demographic information of the United States.

It would seem that people of Mexican ethnicity and origin play a significant role in the labor force by providing stability to the U.S. drywall construction industry in terms of filling workforce positions. Over time, studies have proven that some of the reasons for the Mexican migration is to improve the individual's standard of living by gaining access to a better education, health care, and social services (Massey, Durand, & Malone, 2002). Results are suggesting that if it were not for such high number of

Mexicans composing the U.S. drywall workforce, production and performance of the trade would be greatly affected because the availability of labor would be much less. For the sake of the drywall construction industry's stability, it seems very important that construction is not only promoted to the general population but maybe drive a specific message to the families and descendants of the foreign migrants as they are a large and essential portion of the workforce and they have good standards of living. An immigrant Mexican employed in the United States in average dramatically enhances his living standards given that he would roughly increase his income three times (Massey et al., 2002). Workers of Mexican ancestry born in the U.S. has grown rapidly in the past twenty years and it will continue to grow (Borjas & Katz, 2007). In the following sections, further interpretation and conclusions on the Mexican, other foreign, and U.S. born workers will be given.

5.2.2 Conclusions for Research Question 2: How is the geographic origin classified regarding its land area, population size, and economic activities performed within each location?

The first three research questions are related to one another, therefore there may be repeated facts and findings in the concluding remarks. 69 different locations within 9 countries were found as geographic origins of the workforce. The researcher obtained the land area and size of population of each location through the available online official and statistical databases of each country. A land area classification could not be made due to the high degree of variability (the standard deviation was higher than the mean)

within the data obtained. The size of the population variable also resulted with a very high variance, nevertheless the researcher was able to classify this information according to the official USCB urban-rural classification. Out of the sample of born and raised respondents within location of origin (n=135), 103 locations were classified as UA, 25 were UC, and 7 were RA.

The majority of the workforce, whether they are from the U.S., Mexico, or other foreign country, is coming from locations categorized as UA. The U.S. born workers origin distribution is 86.1% UA, 8.3% UC, and 5.6% RA. These numbers slightly differ with the U.S. population (N=308,745,538) urban-rural distribution (71.2% UA, 9.5% UC, and 19.3% RA) and Texas population urban-rural distribution (75.35% UA, 9.35% UC, and 15.3% RA) as well. Note the major differences in UA locations and RA locations. Lesser U.S. workers have come from RA (5.6%) locations, in contrast with what the general and Texas urban-rural distribution indicate (19.3% and 15.3 respectively). This evidence could suggest that a percentage of the U.S. and Texas population currently living in RA are more interested in pursuing economic activities more typical of a rural population such as agriculture instead of getting involved in the construction industry. The proportion of UC locations is also very low when compared to the proportion of UA locations. Given this result, it would be wise and more effective to concentrate the promotion and recruitment efforts of a drywall construction career in U.S. UA locations, whereas promoting this occupation in U.S. RA and UC locations should be limited. It is very much less likely to find workers from UC and RA locations. Companies, hiring managers, and recruiters should be able to use this information to

develop effective recruitment strategies and planning. The urban-rural distribution evidence yielded from the workers originated from Mexico was 75% UA, 19.05% UC, and 5.95% RA. It is important to note that the percentages of Mexican locations and other foreign locations could not be compared to existing urban-rural distributions. It can be seen that the major quantity of Mexican workers is coming from UA, similar to the U.S. proportion. Workers of Mexican origin can more effectively be found in UA locations, therefore recruiters' strategies should also focus targeting UA locations if wanting to promote the industry in Mexico or in a population of Mexican ethnicity. It is less wise to promote the industry in Mexican UC or RA locations, similarly a suggestion was made for U.S. settlements. Other foreign locations follow the pattern of higher number of UA origins (60% UA and 40% UC), but the sample size (n=15) was relatively low to draw any conclusions. Also, it is important to note that the percentages of Mexican locations and other foreign locations could not be compared to existing their existing urban-rural distributions because they have no such classification.

Regarding the economic classification of the locations, the major economic activities performed by the employed population within each location include: "Wholesale and retail trade", "Manufacturing", "Construction", "Agriculture, forestry, fishing, and hunting", "Arts, entertainment, and recreation, and accommodation and food services", "Educational services, and health care and social assistance", and "Professional, scientific, and management, and administrative and waste management services."

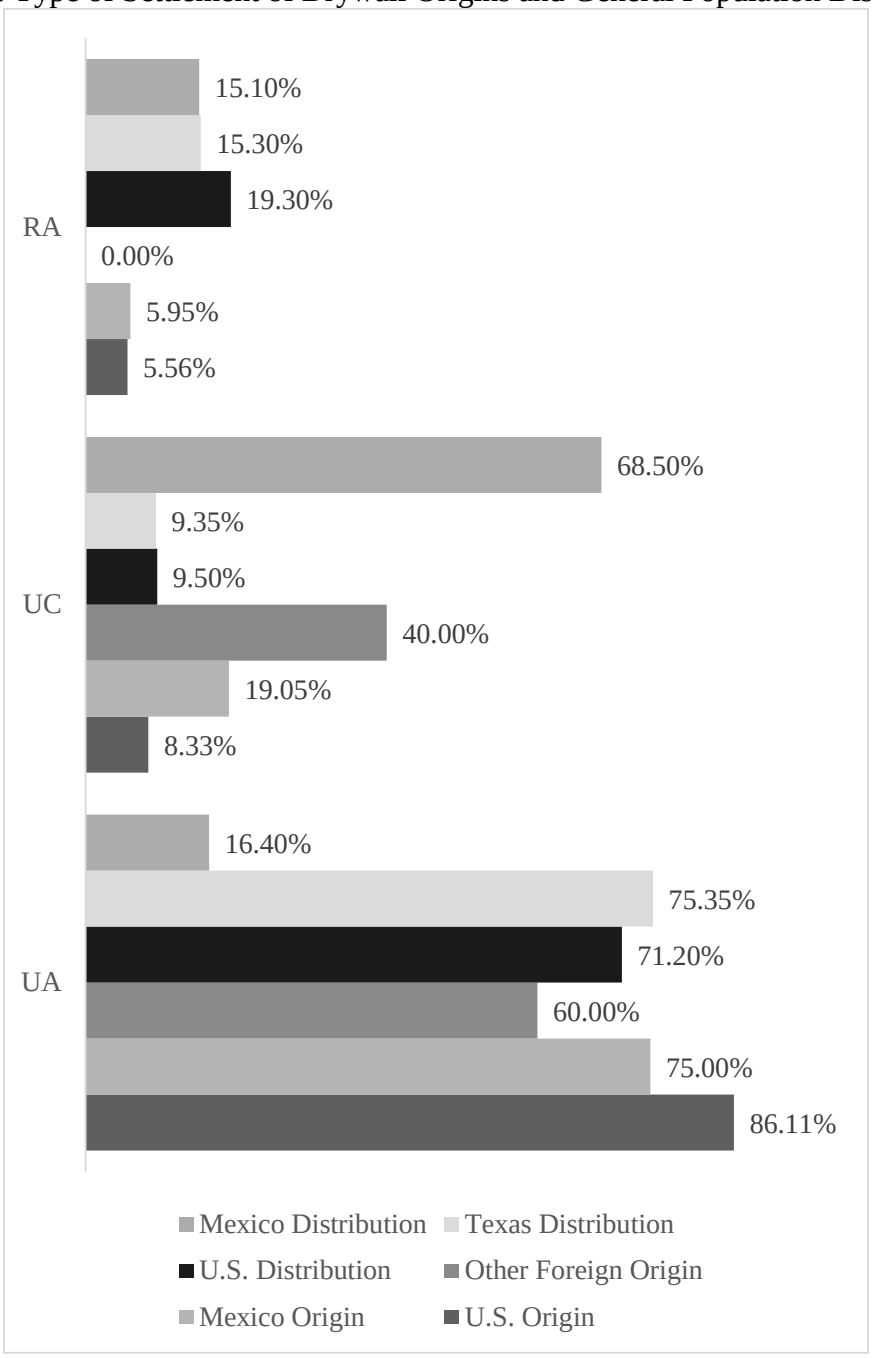
When looking at U.S. locations only, major activities found include "Educational services, and health care and social assistance" (100%), "Wholesale and retail trade" (88.89%), and "Professional, scientific, and management, and administrative and waste management services" (89.11%), whereas these percentages were significantly less or nonexistent in Mexican and other foreign locations. The definition of a developed country has not been set in stone but it is commonly referred to as a country where there is economic growth, economic security, industrialization, health care services, and educational services. The activities found in U.S. locations are consistent with the activities of an organized and developed society. All U.S. locations enjoy having educational services, which means there are establishments where training and instruction is provided. This is also constant with having 89.11 of locations with professional and other services, in which a high degree of expertise and training is required from the people in order to perform this activity. In contrast, these activities have little or no impact in Mexican or other foreign locations. This can be a result of the underdevelopment that exists in these locations. The major economic activities within Mexican and foreign locations can be interpreted as activities performed by a population which does not require a high degree of training or expertise. Foreign locations found lack major important and developed activities such as art and entertainment services, professional services, educational services, and health services being carried out by the population. The researcher also found that a large proportion of the sample of foreign workers had attained less than a high school educational level, which corroborates the lack of development in their location. This reflects how underdeveloped foreign

locations are and how important it is to promote education among them. In general, results indicate while most of the workforce has gotten influence from urbanized areas, these locations cannot necessarily be interpreted as having an increased socioeconomic development.

5.2.3 Conclusions for Research Question 3: What are common characteristics within the location of origin of the construction workforce?

The findings indicate that there may exist common characteristics among the geographic origin of the workforce mainly in the type of settlement by size of population and economic activities performed within each location. It has been shown that individually, 86% of the U.S. locations (*n*=36), 75% of Mexico locations (*n*=84), and 60% of other foreign locations (*n*=15) are UA. Proportionally, UA locations are common and consistently found among the identified locations. Figure 17 represents the total proportional classification of settlements by population size. The total percentage of UA discovered is 76.3% (*n*=135). The common characteristic in regards to population size is that most of the workers are coming from UA. As interpreted in the previous research questions, these results indicate that recruitment planning and conduction of recruiting activities should be focused in UA locations instead of UC or RA locations. The findings indicate this would be a more effective approach than to do so in UC or RA locations. Again, it is important to note that the results obtained show that most of the workforce has gotten influence while growing up from urbanized areas.

Figure 17: Type of Settlement of Drywall Origins and General Population Distribution

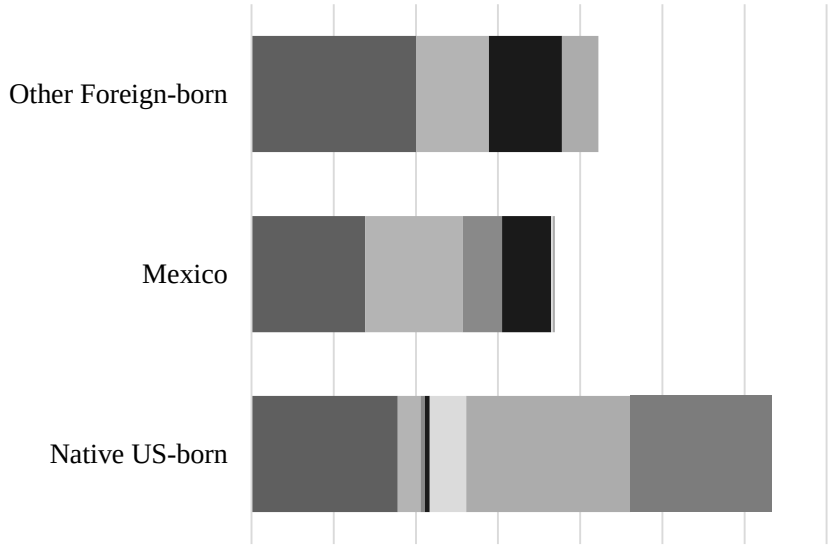


The figures clearly displays inconsistency among the percentages of the U.S. population and the Texas population compare to the sample of U.S. origins found. The

percentages found differ in RA locations. It would seem as less workers are coming from RA locations, in contrast with what the general and Texas urban-rural distribution indicate. The Mexico origin and the Mexico distribution are different as well. Major differences were found in the UC locations proportion. Workers from Mexico mostly come from UA, nevertheless most of the locations in Mexico are UC.

From the data collected, a relationship among economic activities and locations cannot be established. Figure 18 reflects the major activities performed within each location and the proportion of the employed population in each. A major economic activity, and the most frequent, seen among all locations is “Wholesale and Retail Trade”, having 88.9% impact in U.S. locations, 69.05% in Mexico locations, and 100% in other foreign. Aside from this activity, no other economic activity is relatively frequent among all locations. Nevertheless, it can be said from looking and the figure below that U.S. locations reflect activities from a developed society and economy in terms of what is commonly known as a developed country. On the other hand, major economic activities within Mexican and foreign locations are ones that can be performed by a population which does not require a high degree of training or expertise. This is consistent with what the high percentages of less than high school education attained by foreign workers. This could be interpreted as a reflection of being raised and influenced by an underdeveloped settlement.

Figure 18: Major Economic Activities Performed by Location (*n*=135)



	Native US-born	Mexico	Other Foreign-born
Wholesale and Retail trade	88.89%	69.05%	100.00%
Manufacturing	13.89%	59.52%	44.44%
Construction	2.78%	23.81%	0.00%
Agriculture, forestry, fishing and hunting	2.78%	29.76%	44.44%
Arts, entertainment, and recreation, accommodation and food services	22.22%	1.19%	0.00%
Educational services, and health care and social assistance	100.00%	1.19%	22.22%
Professional, scientific, and management, and administrative and waste management services	86.11%	0.00%	0.00%

5.2.4 Conclusions for Research Question 4: What is the construction workforce's work background?

The set of respondents (n=228) was a very skilled group since 53.9% of them had been working in the construction industry for more than 10 years. Besides the skill level that the workforce has, this also suggests a long permanence of experienced people working in the industry. 70.1% of the sample said has never left the industry and 29.9% have left and reentered. This means there is a level of trust, satisfaction, and commitment from the workforce to the drywall trade that leads the researcher to believe they will remain working for the long term. However, this trust and commitment depends on some factors, as defined by the respondents, such as the salary, the need and availability of work, and the satisfaction with the company and this kind of work. Previous working experiences among the participants (n=168) varies. Frequent occupations among the responses could result in helpful information for recruiters to make better informed decisions and know who and where to target new hires. Major frequent occupations workers had experience in before working in the drywall construction industry (n=168) were the food and restaurant industry (12.5%), carpentry (8.9%), painting (9.5%), auto-mechanic (6%), landscaping (4.2%), and other construction occupations (29.2%).

It is important to note that at least 51% of the workers had other construction experience, therefore at least half of the sampled workforce chose drywall construction over other construction trades. The identified occupations do not require a high degree of education in order for a user to learn and have a good performance as a worker. This could be a common characteristic between these professions.

5.2.5 Conclusions for Research Question 5: What prompted the workforce to their current construction trade?

There are four major factors that motivate and attract workers into the drywall construction trade. As anticipated by the researcher, money or a relatively higher salary (25.48%) was the most important influence. The next most important factor was the liking of the work (22.11%). This can be interpreted as workers experiencing a level of satisfaction with the type of work being performed and with the company where they belong. Other significant factors were opportunity (14.90%) and family/friend reference (15.38%). Good salaries and satisfaction in daily work would motivate people to keep up the good work and remain working in this construction trade. It is important to note that most of the workers who declared these factors of motivation were experience workers. Table 16 below supports this argument, in which the longevity of the workforce by each of the given factors can be observed.

Table 16: Years of Experience in Construction by Factor of Motivation

	Money or Salary	Liking or Satisfaction	Reference by Family or Friend	Opportunity
1 year or less	5.9%	15.9%	9.1%	13.5%
1 – 5 years	15.7%	15.9%	21.2%	24.3%
5 – 10 years	13.7%	6.8%	24.2%	21.6%
More than 10 years	64.7%	61.4%	45.5%	40.5%

5.2.6 Summary: Creation of a U.S. and Mexico Drywall Worker Profile

The researcher produced summary profiles as a result of all interpretation of the findings. After analyzing the data in detail, the researcher created two profiles of the

type of drywall construction worker from the U.S. and Mexico. These two countries were chosen given that most of the workers come from these locations. The profiles shown below represent not only the type of worker that currently exists but also the type of worker that recruiters should be targeting in order for them to be more effective.

The U.S. drywall worker profile can be seen in Table 17 and the Mexico drywall worker profile is reflected in Table 18. Both worker profiles have similar average ages. The average age of the U.S. and Mexico drywall worker is 37.8 and 38.25 years respectively. The majority of the workforce is male with a predominance of white ethnicity (45.9%) for U.S. workers and, as expected, a predominance of Hispanic or Latino (99%) for Mexico workers. In general, the U.S. worker has attained higher educational levels when compared to the levels attained by the Mexican worker. This is consistent with what has been discussed about U.S. locations versus foreign locations, in which U.S. locations have major economic activities related to a developed economy whereas foreign locations do not. U.S. workers' most frequent previous occupations include food and restaurant, retail, and general construction. The most frequent previous occupations from Mexico workers are food and restaurant, carpentry, and other general construction trades.

Regarding construction experience, U.S. workers reflect highest populations have less than 5 years of experience (43.2%) and more than 10 years of experience (48.6%). On the other hand, the highest proportion of Mexico workers have 5 or more years in the industry (77.9%). This could mean that, at this time, the U.S. worker is more likely to be attracted to the drywall construction industry than the Mexico worker. This can be an

opportunity to construction professionals and recruiters to develop strategies than can inform and motivate the U.S. young society into pursuing a career in this trade.

Finally, the worker profiles say that workers for the drywall trade, whether in Mexico or the U.S., are more frequently found in UA. The workers are highly motivated by the salary the industry is paying and satisfaction with the type of work or company. Perhaps this information could be used for important construction marketing campaigns. Most of the workforce is already experienced, the profiles indicate many of the U.S. and Mexico workers come from other construction trades.

Table 17: U.S. Drywall Worker Profile

Average age (*n*=36)	37.81 years
Gender (*n*=36)	97.2% Male 2.8% Female
Ethnicity (*n*=37)	45.9% White 35.1% Hispanic or Latino 16.2% Black or African American
Educational level attained (*n*=37)	54.1% High School 37.8% Some college 8.1% University graduate
Construction experience (*n*=37)	18.9% 1 year or less 24.3% 1 - 5 years 8.1% 5 - 10 years 48.6% More than 10 years
Worker's origin classification (*n*=36)	86.1% UA 8.3 UC 5.6 RA
Major factors that motivate them (*n*=51)	25.5% I like it 17.6% Money 15.7% Opportunity 15.7% Family or friend
Most frequent work background (*n*=32)	18.18% Food and restaurant 18.18% Retail and warehouse 30.30% Other construction

Table 18: Mexico Drywall Worker Profile

Average age (*n*=101)	38.25 years
Gender (*n*=103)	100.0% Male
Ethnicity (*n*=104)	99% Hispanic or Latino
Educational level attained (*n*=102)	15.7% Elementary school or less 25.5% Middle school 40.2% High school
Construction experience (*n*=104)	10.6% 1 year or less 11.5% 1 - 5 years 20.2% 5 - 10 years 57.7% More than 10 years
Worker's origin classification (*n*=84)	75.0% UA 19.1 UC 5.9 RA
Major factors that motivate them (*n*=133)	27.1% I like it 27.1% Money 12.0% Family or friend 7.5% Opportunity
Most frequent work background (*n*=69)	14.49% Food and restaurant 14.49% Carpentry 8.70% Landscaping 7.25% Painting 26.09% Other construction

5.3 Recommendations for Future Research

There are multiple research related opportunities related to this topic. First of all, this was a first of its kind study. It is the first attempt to examine the location of origin of the drywall construction workforce and develop the profile of a drywall worker. The construction industry would benefit if other trades were examined to see if similar or different results are found. This study was performed with the participation of two companies only, perhaps it would be interesting to address this topic to a larger extent. Also, increasing the sample size, with enough resources, would give a future study more strength and potentially allow the investigators to draw industry-wide generalizable

conclusions. A deeper look into the conformation of cities in Mexico and other foreign countries where the labor comes from versus U.S. locations is also recommended.

This study can be reproduced in other cities, states, or countries in which a shortage of labor exists. Further research analyzing additional demographic and socioeconomic factors that influence societies while growing up could prove to be beneficial. The study only looked at three variables (land area, population size, and economic activities performed within) of the locations where the drywall craft workers comes from. Understanding the needs and wants of the Hispanic workers is also an important topic to develop in order to find information that helps to retain them and maintain industry-wide stability. Again, there are endless opportunities for future research related to this topic since it has not been done before.

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APPENDIX A

ENGLISH QUESTIONNAIRE

1. How old are you? _____
2. What is your gender? _____ Male _____ Female
3. What is your ethnicity? (Select all that apply)
   - ____ American Indian or Alaska Native
   - ____ Asian
   - ____ Black or African American
   - ____ Other
   - ____ Hispanic or Latino
   - ____ Native Hawaiian or Other Pacific Islander
   - ____ White
4. What educational level have you attained? (Select one)
   - ____ Elementary school or less
   - ____ Middle school
   - ____ High school
   - ____ Some college
   - ____ University graduate
5. Where were you born?
   Town or City: _____
   Region or Country: _____
   Were you raised there (until 18 years of age)? _____ Yes _____ No
   If not, in what place(s) have you lived while growing up (until 18 years of age). List from most recent to oldest:
   _____
6. Where do you currently live?
   Town or City: _____
   Region or Country: _____
7. How long have you been working in the construction industry? (Select one)
   - _____ 1 year or less
   - _____ 1 – 5 years
   - _____ 5 – 10 years
   - _____ More than 10 years
8. In what construction trade are you currently working?
   - _____ Drywall installer
   - _____ Plumber
   - _____ Roofer
   - _____ Other(s) Specify: _____
   - _____ Ironworker
   - _____ Bricklayer
9. What attracted you to work in the construction industry? _____
   _____
   What attracted you to work in your current trade? _____
   _____
10. List other working experience you have from most recent to oldest: _____
    _____
11. Was construction your first choice career? _____ Yes _____ No
12. Have you left and re-entered the construction industry? _____ Yes _____ No
    If yes, why did you re-entered?
    _____
    _____

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13. How did the following factors influence your decision to work in the construction industry?

	Highly Negative	Slightly Negative	No Influence	Slightly Positive	Highly Positive
Career advising	O	O	O	O	O
Family influence	O	O	O	O	O
Salary	O	O	O	O	O
Industry image	O	O	O	O	O
No other working opportunities	O	O	O	O	O
Career Opportunities in construction	O	O	O	O	O
Available training	O	O	O	O	O

14. What type of training have you received on your current trade? (Select all that apply)

_____ On-the-job training
_____ Previous work experience
_____ Vocational certificate (Apprenticeship)
_____ Other(s) Specify: _____
_____ Associate's degree
_____ Some college

15. Who financed your training? (Select one)

_____ Self-financed _____ Employer _____ Both

16. For a new hire interested in your trade, what type of training would you recommend?

_____ On-the-job training
_____ Previous work experience
_____ Vocational certificate (Apprenticeship)
_____ Other(s) Specify: _____
_____ Associate's degree
_____ Some college

17. Will training motivate you to remain in your trade? _____ Yes _____ No
18. What kind of job opportunities does your trade offer? _____
_____
19. Do you think your job has a successful future? _____ Yes _____ No
Why? _____
20. Do you plan to remain working in your current trade? _____ Yes _____ No
21. Do you see construction as a long-term career? _____ Yes _____ No
Why? _____
22. Will you recommend your children to pursue a career in construction? _____ Yes _____ No
Will you recommend them to pursue a career in your trade? _____ Yes _____ No
23. What skills and qualifications do you think are required to be successful in your trade? _____
_____
24. Would any of the following factors motivate you to remain working in your trade?

	Yes	No	N/A
Career advising	O	O	O
Personal growth or development opportunities	O	O	O
Professional development opportunities	O	O	O
Salary or wage increase	O	O	O
Better leadership (i.e. managers, supervisors, etc.)	O	O	O
Additional training (i.e. professional certification, apprenticeship, etc.)	O	O	O
Non-monetary incentives	O	O	O

Specify others: _____

APPENDIX B

SPANISH QUESTIONNAIRE

1. ¿Cuántos años tiene? _____
2. ¿Cuál es su género? _____ Masculino _____ Femenino
3. ¿Cuál es su etnicidad? (Seleccione todas las que aplican)
   - ____ Indio Americano o Nativo de Alaska
   - ____ Asiático
   - ____ Negro o Afroamericano
   - ____ Otro
   - ____ Hispano o Latino
   - ____ Nativo de Hawai u otras islas del Pacífico
   - ____ Blanco
4. ¿Qué nivel de educación ha alcanzado? (Seleccione una)
   - ____ Escuela primaria o menos (Elementary school - 1ro a 5to grado)
   - ____ Escuela intermedia (Middle school - 6to a 8vo grado)
   - ____ Escuela secundaria (High school - 9no a 12vo grado)
   - ____ Algo de universidad
   - ____ Graduado de universidad
5. ¿Dónde nació?
   Pueblo o Ciudad: _____
   Región y/o País: _____
   ¿Usted se crio ahí (hasta los 18 años de edad)? _____ Sí _____ No
   Si su respuesta fue no, ¿en qué lugar(es) ha vivido usted mientras crecía hasta los 18 años de edad?
   _____
6. ¿Dónde vive actualmente?
   Pueblo o Ciudad: _____
   Región y/o País: _____
7. ¿Por cuánto tiempo ha estado trabajando para la industria de la construcción? (Seleccione una)
   - _____ 1 año o menos
   - _____ 1 – 5 años
   - _____ 5 – 10 años
   - _____ Más de 10 años
8. ¿En qué oficio de la construcción está trabajando actualmente?
   - _____ Instalador de paneles de yeso (Drywaller)
   - _____ Plomero (Plumber)
   - _____ Techador (Roofer)
   - _____ Otro (s) Especifique: _____
   - _____ Herrero (Ironworker)
   - _____ Albañil (Bricklayer)
9. ¿Qué lo/a motivo a trabajar en la industria de la construcción? _____
   _____
   ¿Qué lo/a motivo a trabajar en su actual oficio? _____
   _____
10. Indique en qué otras áreas tiene experiencia laboral: _____
    _____
11. ¿Usted eligió trabajar en el área de la construcción como primera opción? _____ Sí _____ No
12. ¿Usted se ha retirado y ha vuelto a ingresar en la industria de la construcción? _____ Sí _____ No
    Si su respuesta fue si, ¿por qué reingresó?
    _____
    _____

IRB NUMBER: IRB2015-0160
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IRB EXPIRATION DATE: 03/15/2016

13. ¿Cómo influenciaron su decisión de traajar en la construcción los siguientes factores?

	Altamente Negativo	Ligeramente Negativo	Ninguna Influencia	Ligeramente Positivo	Altamente Positivo
Asesoramiento de las profesiones disponibles	O	O	O	O	O
Influencia de familiares	O	O	O	O	O
Salario	O	O	O	O	O
Imagen de la industria	O	O	O	O	O
No habían otras oportunidades de trabajo	O	O	O	O	O
Habían oportunidades de hacer una carrera en la construcción	O	O	O	O	O
Había entrenamiento disponible	O	O	O	O	O

14. ¿Qué tipo de entrenamiento ha recibido usted en su posición actual? (Seleccione todas las que apliquen)
    _____ Entrenamiento significativo en el trabajo _____ Grado de asociado (Associate's degree)
    _____ Experiencia laboral previa _____ Algo de universidad
    _____ Certificado profesional (Apprenticeship)
    _____ Otro(s) Especifique: _____
15. ¿Quién financió su entrenamiento? (Seleccione una)
    _____ Autofinanciado _____ Empleador _____ Ambos
16. Para un nuevo empleado interesado en su oficio, ¿qué tipo de entrenamiento le recomendaría?
    _____ Entrenamiento significativo en el trabajo _____ Grado de asociado (Associate's degree)
    _____ Experiencia laboral previa _____ Algo de universidad
    _____ Certificado profesional (Apprenticeship)
    _____ Otro(s) Especifique: _____
17. ¿Recibir entrenamiento lo motivaría a permanecer en su oficio actual? _____ Sí _____ No
18. Indique las oportunidades laborales que ofrece su oficio:
    _____
    _____
19. ¿Cree que su trabajo tiene un futuro exitoso? _____ Sí _____ No
    ¿Por qué? _____
20. ¿Piensa permanecer trabajando para su oficio actual? _____ Sí _____ No
21. ¿Ve usted a la construcción como una carrera de largo plazo? _____ Sí _____ No
    ¿Por qué? _____
22. ¿Recomendaría usted a sus hijos que ejerzan una carrera en la construcción? _____ Sí _____ No
    ¿Recomendaría que ejerzan una carrera en su oficio actual? _____ Sí _____ No
23. ¿Qué habilidades requiere una persona para ser exitoso en su oficio actual? _____
    _____
24. ¿Alguno de los siguientes factores le motivaría a permanecer trabajando en su oficio actual?

	Si	No	No Aplica
Asesoramiento de las oportunidades disponibles en su oficio	O	O	O
Oportunidades de crecimiento personal	O	O	O
Oportunidades de crecimiento profesional	O	O	O
Incremento salarial	O	O	O
Mejor liderazgo (ej. supervisores, gerentes, etc.)	O	O	O
Recibir entrenamiento adicional (ej. certificaciones profesionales)	O	O	O
Incentivos no monetarios	O	O	O

Especifique otros: _____

IRB NUMBER: IRB2015-0160
IRB APPROVAL DATE: 03/27/2015
IRB EXPIRATION DATE: 03/15/2016

APPENDIX C

IRB APPROVAL LETTERS

DIVISION OF RESEARCH

Research Compliance and Biosafety

TEXAS A&M UNIVERSITY

DATE: March 27, 2015

MEMORANDUM

TO: Ben Bigelow
TAMU - College Of Architecture - Construction Science

FROM: Dr. James Fluckey
Chair
Institutional Review Board

SUBJECT: Expedited Approval

Study Number: IRB2015-0160

Title: Exploring where the construction work force comes from and construction craft workers' career awareness

Approval Date: 03/16/2015

Continuing Review Due: 02/15/2016

Expiration Date: 03/15/2016

Documents Reviewed and Approved:

Submission Components			
Study Document			
Title	Version Number	Version Date	Outcome
Interview Spanish V2	Version 2.0	03/11/2015	Approved
Interview English V2	Version 2.0	03/11/2015	Approved

Document of Consent: Waiver approved under 45 CFR 46.117 (c) 1 or 2/ 21 CFR 56.109 (c)1

This research project has been approved. As principal investigator, you assume the following responsibilities:

1. **Continuing Review:** The protocol must be renewed by the expiration date in order to continue with the research project. A Continuing Review application along with required documents must be submitted by the continuing review deadline. Failure to do so may result in processing delays, study termination, and/or loss of funding.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB.
3. **Unanticipated Problems and Adverse Events:** Unanticipated problems and adverse events must be reported to the IRB immediately.

750 Agronomy Road, Suite 2701
1186 TAMU
College Station, TX 77843-1186
Tel. 979.458.1467 Fax. 979.862.3176
http://rcb.tamu.edu

4. **Reports of Potential Non-compliance:** Potential non-compliance, including deviations from protocol and violations, must be reported to the IRB office immediately.
5. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB for review. The Amendment must be approved by the IRB before being implemented.
6. **Consent Forms:** When using a consent form or information sheet, you must use the IRB stamped approved version. Please log into iRIS to download your stamped approved version of the consenting instruments. If you are unable to locate the stamped version in iRIS, please contact the office.
7. **Audit:** Your protocol may be subject to audit by the Human Subjects Post Approval Monitor. During the life of the study please review and document study progress using the PI self-assessment found on the RCB website as a method of preparation for the potential audit. Investigators are responsible for maintaining complete and accurate study records and making them available for inspection. Investigators are encouraged to request a pre-initiation site visit with the Post Approval Monitor. These visits are designed to help ensure that all necessary documents are approved and in order prior to initiating the study and to help investigators maintain compliance.
8. **Recruitment:** All approved recruitment materials will be stamped electronically by the HSPP staff and available for download from iRIS. These IRB-stamped approved documents from iRIS must be used for recruitment. For materials that are distributed to potential participants electronically and for which you can only feasibly use the approved text rather than the stamped document, the study's IRB Protocol number, approval date, and expiration dates must be included in the following format: TAMU IRB#20XX-XXXX Approved: XX/XX/XXXX Expiration Date: XX/XX/XXXX.

1. **FERPA and PPRA:** Investigators conducting research with students must have appropriate approvals from the FERPA administrator at the institution where the research will be conducted in accordance with the Family Education Rights and Privacy Act (FERPA). The Protection of Pupil Rights Amendment (PPRA) protects the rights of parents in students ensuring that written parental consent is required for participation in surveys, analysis, or evaluation that ask questions falling into categories of protected information.
2. **Food:** Any use of food in the conduct of human subjects research must follow Texas A&M University Standard Administrative Procedure 24.01.01.M4.02.
3. **Payments:** Any use of payments to human subjects must follow Texas A&M University Standard Administrative Procedure 21.01.99.M0.03.

This electronic document provides notification of the review results by the Institutional Review Board.

DIVISION OF RESEARCH

Research Compliance and Biosafety

TEXAS A&M UNIVERSITY

DATE: March 16, 2015

MEMORANDUM

TO: Ben Bigelow
TAMU - College Of Architecture - Construction Science

FROM: Dr. James Fluckey
Chair
Institutional Review Board

SUBJECT: Expedited Approval

Study Number: IRB2015-0160

Title: Exploring where the construction work force comes from and construction craft workers' career awareness

Approval Date: 03/16/2015

Continuing Review Due: 02/15/2016

Expiration Date: 03/15/2016

Documents Reviewed and Approved:

Submission Components			
Study Document			
Title	Version Number	Version Date	Outcome
Information Sheet V2	Version 2.0	03/13/2015	Approved
questionnaire - spanish	Version 1.0	02/26/2015	Approved
questionnaire - english	Version 1.0	02/26/2015	Approved

Document of Consent: Waiver approved under 45 CFR 46.117 (c) 1 or 2/ 21 CFR 56.109 (c)1

Comments: This study is approved for 120 participants. Stamped forms can be found in iRIS.

This research project has been approved. As principal investigator, you assume the following responsibilities:

1. **Continuing Review:** The protocol must be renewed by the expiration date in order to continue with the research project. A Continuing Review application along with required documents must be submitted by

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the continuing review deadline. Failure to do so may result in processing delays, study termination, and/or loss of funding.

2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB.
3. **Unanticipated Problems and Adverse Events:** Unanticipated problems and adverse events must be reported to the IRB immediately.
4. **Reports of Potential Non-compliance:** Potential non-compliance, including deviations from protocol and violations, must be reported to the IRB office immediately.
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6. **Consent Forms:** When using a consent form or information sheet, you must use the IRB stamped approved version. Please log into iRIS to download your stamped approved version of the consenting instruments. If you are unable to locate the stamped version in iRIS, please contact the office.
7. **Audit:** Your protocol may be subject to audit by the Human Subjects Post Approval Monitor. During the life of the study please review and document study progress using the PI self-assessment found on the RCB website as a method of preparation for the potential audit. Investigators are responsible for maintaining complete and accurate study records and making them available for inspection. Investigators are encouraged to request a pre-initiation site visit with the Post Approval Monitor. These visits are designed to help ensure that all necessary documents are approved and in order prior to initiating the study and to help investigators maintain compliance.
8. **Recruitment:** All approved recruitment materials will be stamped electronically by the HSPP staff and available for download from iRIS. These IRB-stamped approved documents from iRIS must be used for recruitment. For materials that are distributed to potential participants electronically and for which you can only feasibly use the approved text rather than the stamped document, the study's IRB Protocol number, approval date, and expiration dates must be included in the following format: TAMU IRB#20XX-XXXX Approved: XX/XX/XXXX Expiration Date: XX/XX/XXXX.

1. **FERPA and PPRA:** Investigators conducting research with students must have appropriate approvals from the FERPA administrator at the institution where the research will be conducted in accordance with the Family Education Rights and Privacy Act (FERPA). The Protection of Pupil Rights Amendment (PPRA) protects the rights of parents in students ensuring that written parental consent is required for participation in surveys, analysis, or evaluation that ask questions falling into categories of protected information.
2. **Food:** Any use of food in the conduct of human subjects research must follow Texas A&M University Standard Administrative Procedure 24.01.01.M4.02.
3. **Payments:** Any use of payments to human subjects must follow Texas A&M University Standard Administrative Procedure 21.01.99.M0.03.

This electronic document provides notification of the review results by the Institutional Review Board.

APPENDIX D

INFORMATION SHEET

Information about the study

1. Introduction

Howdy! We are Construction Management students at Texas A&M University. We are conducting a study that will try to find where the construction workforce comes from, what types of training have workers received, and overall construction worker's career awareness.

2. Voluntary participation

Even though your employer let us contact you and potentially interview you. It is important that you know that your participation is voluntary. If you decide not to participate there will be no consecuences. We are trying to reach at least 100 construction workers and your cooperation will help us reach our goal. If you are interested and agree to take part of the study, please continue to read the information below.

3. Logistics

If you are willing to partcipate in this study, please attend the following appointment we have scheduled with your employer:

Date: mm/dd/yyyy **Time:** hh:mm **Location:** XXYYZZ

The questionnaire will take you no longer than **8-15 minutes** to complete. There are two different methods of responding, you have the option of choosing the one of your preference:

- **Method 1 – Audio Recorded Interview:** In this method we will audio record the interview to minimize its duration.
- **Method 2 – Non-Recorded Interview:** In this method researchers will write down your responses with pen and paper.

4. Purpose and characteristics of this study

- The purpose of this study is to generate knowledge about the origin, demographic characteristics, and career awareness of the construction workforce in the state of Texas. The study will focus on construction workforce performing drywall installation, roofing, iron work, bricklaying, and plumbing.
- The findings of this study will provide construction professionals with the necessary information to help them focus recruiting efforts where they can be more effective.
- This is an academic study with no economic, political or legal purposes.
- The following information may affect your decision to participate or not in this research study, please review it.

5. Participants selection criteria

You were selected to be a possible participant in this study because you are currently a construction worker performing one or more of the following trades in the state of Texas: drywall installation, roofing, iron work, bricklaying, and plumbing.

6. Value of your participation

Your opinion and point of view can significantly contribute to the construction industry and to this study. That is why we ask you to voluntarly participate and give us your valuable feedback. There is no compensation for your participation on this survey. However, your opinion will make a contribution to understanding where the construction workforce comes from, training workers receive, and construction career awareness.

7. Information concerning the survey

- **Participation:** Again, your participation is voluntary. If you agree to participate in this study, you will be asked to answer questions concerning the type of training workers receive, construction career awareness, and the location where workers come from. You may decide not to answer partially or any of the survey without your current or future relations with Texas A&M University being affected.
- **Risk associated with the study:** The risks associated in this study are minimal, and there are not greater risks than those encountered in daily life.
- **Confidentiality:** Every effort will be made to protect your confidentiality. The records of this study will be kept private. No identifiers linking you to this study will be included in any sort of report that might be published. Research records will be stored securely and only Dr. Ben F. Bigelow will have access to the records. If you have questions regarding this study, you may contact Dr. Ben F. Bigelow at (979) 458-4457, bbigelow@arch.tamu.edu. This research study has been reviewed by the Human Subjects' Protection Program and/or the Institutional Review Board at Texas A&M University. For research related problems or questions regarding your rights as a research participant, you can contact these offices at (979) 458-4067 or irb@tamu.edu.

<u>If you agree to participate in this study please continue wit</u>

IRB NUMBER: IRB2015-0160
IRB APPROVAL DATE: 03/16/2015
IRB EXPIRATION DATE: 03/15/2016

APPENDIX E

ELECTRONIC-MAIL: RECRUITMENT SCRIPT, AUTHORIZATION LETTERS, AND FOLLOW-UP LETTERS

TEXAS A&M UNIVERSITY

Veronica Zarate Morales <veronica.zarate@tamu.edu>

Invitation to participate in a Texas A&M University study: Labor shortage in Texas

3 messages

Zarate Morales, Veronica Consuelo <veronica.zarate@email.tamu.edu> Mon, Apr 13, 2015 at 6:47 PM
To:

Dear

We are Veronica Zarate and Jose Soto, construction management graduate students at Texas A&M University. We are conducting a study as part of our thesis addressing the evident **labor shortage in your construction trade (drywall installers)**. We are trying to determine where the construction workforce comes from, the types of training that motivate them, and their overall construction career awareness.

The purpose of this email is to ask if your organization would give us the opportunity to interview as many members as possible who agree to participate in our study.

To accomplish this, we need to perform short interviews **(10-15 minutes)** to the **drywall installers**. We are willing to perform the interviews at any time convenient for you and for your workers. Please note that there are no risks associated with our study. Their participation will only benefit the construction industry.

Attached are a **study information sheet** and the **interview questions in English and Spanish**. These documents provide more information about our research project.

Can you let us know if is willing to participate and when would be the best time to coordinate the short interviews?

We sincerely appreciate your time and attention. Your collaboration will contribute significantly to the construction industry. If you have any questions or need additional information, feel free to contact us.

Thanks and best regards,

Invitation to participate in a Texas A&M University study: Labor shortage in Texas

1 message

Zarate Morales, Veronica Consuelo <veronica.zarate@email.tamu.edu> Mon, Mar 30, 2015 at 11:39 AM
To:

Good morning,

We are Veronica Zarate and Jose Soto, construction management graduate students at Texas A&M University. Given the evident **labor shortage in construction** and particularly in your trade, we are conducting a study as part of our thesis that will try to find where the construction workforce comes from, what types of training have workers received, and overall construction worker's career awareness. Our objective is to find alternative solutions to an evident labor shortage in the industry. To do so, we will need to perform face-to-face interviews to the following construction tradesmen: **drywall installers**, **roofers**, **iron workers**, **bricklayers**, and **plumbers**.

The purpose of this email is to ask if your company will be interested in participating in this study.

If you voluntarily decide to participate, we will conduct short interview-questionnaires (10-15 minutes) to your personnel. Please note that there are no risks associated with our study. Your participation will only benefit the construction industry.

You can review the attached information to help you decide if you will like to participate:

-Study information sheet

-Interview sample in English and Spanish

We sincerely appreciate your time and attention. Your collaboration will contribute significantly to the construction industry and particularly address the labor shortage issue. If you have any questions or need additional information, feel free to contact us. You may also contact our faculty advisor Dr. Ben Bigelow, who is the principal investigator.

Thanks and best regards,

TEXAS A&M UNIVERSITY

Veronica Zarate Morales <veronica.zarate@tamu.edu>

Request for participation in Texas A&M University study

9 messages

Mon, Mar 2, 2015 at 6:56 PM

To: Veronica Consuelo <veronica.zarate@email.tamu.edu>, A Soto <jsotogoico@neo.tamu.edu>

Cc:

Dear Veronica & Jose,

We will be happy to accommodate you to interview some of our employees for your research. I did not receive a copy of the questionnaire that was attached to your email to Please let me know what day, what time and where would be the best location for you and I will give you the address and contact information for one of our field project to visit. Looking forward to hearing from you. I be also happy to refer you to friends in a roofing company & brick/ mason company if you need some.

Regards,

Division Operations Manager

Houston, Texas.

TEXAS A&M UNIVERSITY

Veronica Zarate Morales <veronica.zarate@tamu.edu>

Follow up: Site Access Authorization Letter for Texas A&M Study

7 messages

Jose Soto <jsotogoico@tamu.edu> Wed, Feb 18, 2015 at 2:51 PM
To:
Cc: "Bigelow, Ben" <BBigelow@arch.tamu.edu>, Veronica Zarate Morales <veronica.zarate@email.tamu.edu>

Good afternoon

We want to thank you for allowing us to introduce ourselves and our study today. We are writing to follow up on the status of the site authorization letter.

Please note that there are no risks associated with our study. Your participation, as noted in our information sheet, will only benefit the construction industry.

Attached, you will find:
-Site access authorization letter
-Study information sheet
-Interview sample in English and Spanish

Let us remind you that as of now we only require your approval for future access and coordination of interviews. You can authorize this by replying to this e-mail or a written approval of the letter.

If you have any questions or need additional information, feel free to contact us. You may also contact our faculty advisor Dr. Ben Bigelow, who is the principal investigator.

Thanks and best regards,

Jose Soto
(917)794-7755
jsotogoico@tamu.edu

Veronica Zarate
(832) 931-2105
veronica.zarate@tamu.edu

Ben Bigelow
(979) 458-4457
bbigelow@arch.tamu.edu

4 attachments

- Information Sheet.pdf 89K
- Interview in English.pdf 90K
- Interview in Spanish.pdf 91K
- Site Access Authorization.pdf

TEXAS A&M UNIVERSITY

Veronica Zarate Morales <veronica.zarate@tamu.edu>

Appointment Date and Time: Survey TAMU study

Mon, Apr 13, 2015 at 7:31 PM

To: Jose Soto <jsotogoico@tamu.edu>
Cc: Veronica Zarate Morales <veronica.zarate@email.tamu.edu>

I will see you tomorrow. , Austin Texas

Thank you

APPENDIX F

COMPLETE LIST OF GEOGRAPHIC ORIGINS

Town/City/Municipality, State/Department	Country
Camaguey, Camaguey	Cuba
Cienfuegos, Cienfuegos	Cuba
Trinidad, Sancti Spiritus	Cuba
Agua Caliente, Chalatenango	El Salvador
La Union, La Union	El Salvador
San Agustin, Usulutan	El Salvador
Santa Rosa de Lima, La Union	El Salvador
Sonsonate, Sonsonate	El Salvador
Quetzaltenango, Quetzaltenango	Guatemala
Choluteca, Choluteca	Honduras
Olanchito, Yoro	Honduras
Pimienta, Cortes	Honduras
Tegucigalpa (Distrito Central), Francisco Morazan	Honduras
Nairobi	Kenya
Acambaro, Guanajuato	Mexico
Acapulco de Juarez, Guerrero	Mexico
Celaya, Guanajuato	Mexico
Ciudad Madero, Tamaulipas	Mexico
Cuernavaca, Morelos	Mexico
Donato Guerra, Mexico	Mexico
Durango, Durango	Mexico
El Mante, Tamaulipas	Mexico
Estacion Santa Engracia - Hidalgo, Tamaulipas	Mexico
Guadalajara, Jalisco	Mexico
Guanajuato, Guanajuato	Mexico
Huetamo, Michoacan de Ocampo	Mexico
Juchitan, Guerrero	Mexico
La Luz de Juarez - Tlalixtaquilla de Maldonado, Guerrero	Mexico
Leon, Guanajuato	Mexico
Linares, Nuevo Leon	Mexico
Luvianos, Mexico	Mexico
Martinez de la Torre, Veracruz de Ignacio de la Llave	Mexico
Mexico City - (Federal District or D.F.)	Mexico
Monclova, Coahuila de Zaragoza	Mexico
Montemorelos, Nuevo Leon	Mexico
Monterrey, Nuevo Leon	Mexico

Continued

Town/City/Municipality, State/Department	Country
Morelia, Michoacan de Ocampo	Mexico
Nuevo Laredo, Tamaulipas	Mexico
Piedra Colorada - Luvianos, Mexico	Mexico
Puebla, Puebla	Mexico
Queretaro. Queretaro	Mexico
Raudales Malpaso - Tecpatan, Chiapas	Mexico
Rayon, San Luis Potosi	Mexico
Reynosa, Tamaulipas	Mexico
Rincon de Rodriguez - Luvianos, Mexico	Mexico
Rio Bravo, Tamaulipas	Mexico
Sabinas Hidalgo, Nuevo Leon	Mexico
Salamanca, Guanajuato	Mexico
San Felipe del Progreso, Mexico	Mexico
San Felipe, Guanajuato	Mexico
San Fernando, Tamaulipas	Mexico
San Jose del Rincon, Mexico	Mexico
San Luis de la Paz, Guanajuato	Mexico
San Luis Potosi, San Luis Potosi	Mexico
San Miguel de Allende, Guanajuato	Mexico
San Miguel Octopan - Celaya, Guanajuato	Mexico
Santa Teresa - Coyuca de Catalan, Guerrero	Mexico
Tampico, Tamaulipas	Mexico
Tejupilco, Mexico	Mexico
Tlalpujahua, Michoacan de Ocampo	Mexico
Toluca, Mexico	Mexico
Tuzantla, Michoacan de Ocampo	Mexico
Valle Hermoso, Tamaulipas	Mexico
Valparaiso, Zacatecas	Mexico
Veracruz, Veracruz de Ignacio de la Llave	Mexico
Victoria, Tamaulipas	Mexico
Zaragoza, Coahuila de Zaragoza	Mexico
Zitacuaro, Michoacan de Ocampo	Mexico
Somotillo, Chinandega	Nicaragua
Arequipa, Arequipa	Peru
Abilene, Texas	USA
Arlington, Texas	USA
Austin, Texas	USA
Bellville, Texas	USA
Brookhaven, Mississippi	USA

Continued

Town/City/Municipality, State/Department	Country
Corpus Christi, Texas	USA
Deming, New Mexico	USA
Galveston, Texas	USA
Georgetown, Texas	USA
Hamilton, Ohio	USA
Houston, Texas	USA
Lafitte, Louisiana	USA
Laredo, Texas	USA
Long Beach, California	USA
McAllen, Texas	USA
Miami, Florida	USA
Minneapolis, Minnesota	USA
Pasadena, Texas	USA
Pittsfield, Massachusetts	USA
Sacramento, California	USA
Seattle, Washington	USA
Shreveport, Louisiana	USA
St. Thomas United States Virgin Island (USVI)	USA
Sweet Home, Oregon	USA
Trenton, Texas	USA
Waco, Texas	USA
Wellsville, New York	USA
Maracaibo, Zulia	Venezuela

APPENDIX G

QUANTITY OF PEOPLE, LAND AREA (mi²), AND SIZE OF POPULATION IN LOCATIONS WHERE THE PARTICIPANTS WERE BORN AND RAISED

Town City or Municipality, State or Department	Country	Quantity	Area (mi²)	Population Size (2000 -2010)
Cienfuegos, Cienfuegos	Cuba	1	137.31	173,453
Trinidad, Sancti Spiritus	Cuba	1	450.80	75,135
Agua Caliente, Chalatenango	El Salvador	1	75.58	8,261
La Union, La Union	El Salvador	1	55.75	34,045
San Agustin, Usulutan	El Salvador	1	39.94	6,518
Santa Rosa de Lima, La Union	El Salvador	1	49.64	27,693
Sonsonate, Sonsonate	El Salvador	1	89.78	71,541
Quetzaltenango, Quetzaltenango	Guatemala	1	46.33	127,569
Choluteca, Choluteca	Honduras	2	398.69	120,791
Olanchito, Yoro	Honduras	1	799.00	78,776
Pimienta, Cortes	Honduras	1	23.55	12,461
Nairobi	Kenya	1	268.73	3,138,369
Acambaro, Guanajuato	Mexico	1	338.78	109,030
Acapulco de Juarez, Guerrero	Mexico	5	665.89	789,971
Celaya, Guanajuato	Mexico	2	213.60	468,469
Cuernavaca, Morelos	Mexico	2	77.38	365,168
Donato Guerra, Mexico	Mexico	1	74.14	33,455
Durango, Durango	Mexico	1	3,575.19	582,267
El Mante, Tamaulipas	Mexico	1	633.85	115,792
Santa Engracia - Hidalgo, Tamaulipas	Mexico	1	828.93	6,225
Guadalajara, Jalisco	Mexico	2	58.46	1,495,189
Guanajuato, Guanajuato	Mexico	1	391.72	171,709
Huetamo, Michoacan de Ocampo	Mexico	1	794.71	41,937
Juchitan, Guerrero	Mexico	1	97.85	7,166
La Luz de Juarez - Tlalixtaquilla de Maldonado, Guerrero	Mexico	1	44.98	1,200
Luvianos, Mexico	Mexico	5	271.43	27,781
Martinez de la Torre, Veracruz de Ignacio de la Llave	Mexico	1	155.25	101,358
Mexico City - (Federal District)	Mexico	11	573.55	8,851,080
Montemorelos, Nuevo Leon	Mexico	1	721.74	59,113
Monterrey, Nuevo Leon	Mexico	6	124.94	1,135,550

Continued

Town City or Municipality, State or Department	Country	Quantity	Area (mi^2)	Population Size (2000 -2010)
Nuevo Laredo, Tamaulipas	Mexico	1	464.06	384,033
Piedra Colorada - Luvianos, Mexico	Mexico	2	271.43	154
Puebla, Puebla	Mexico	2	210.29	1,539,819
Queretaro. Queretaro	Mexico	3	286.07	801,940
Reynosa, Tamaulipas	Mexico	3	1,211.96	608,891
Rincon de Rodriguez - Luvianos, Mexico	Mexico	1	271.43	148
Rio Bravo, Tamaulipas	Mexico	1	611.41	118,259
Sabinas Hidalgo, Nuevo Leon	Mexico	1	595.43	34,671
Salamanca, Guanajuato	Mexico	1	292.10	260,732
San Felipe del Progreso, Mexico	Mexico	1	142.14	121,396
San Felipe, Guanajuato	Mexico	1	1,160.93	106,952
San Fernando, Tamaulipas	Mexico	1	2,672.90	57,220
San Luis de la Paz, Guanajuato	Mexico	1	783.78	115,656
San Luis Potosi, San Luis Potosi	Mexico	7	568.23	772,604
San Miguel de Allende, Guanajuato	Mexico	1	601.92	160,383
San Miguel Octopan - Celaya, Guanajuato	Mexico	2	213.60	11,946
Santa Teresa, Guerrero	Mexico	1	1,314.11	1,454
Tejupilco, Mexico	Mexico	2	258.35	71,077
Tlalpujahua, Michoacan de Ocampo	Mexico	1	73.25	27,587
Tuzantla, Michoacan de Ocampo	Mexico	1	392.77	16,305
Valle Hermoso, Tamaulipas	Mexico	3	347.48	63,170
Valparaiso, Zacatecas	Mexico	1	2,206.25	33,323
Veracruz, Veracruz de Ignacio de la Llave	Mexico	1	95.71	552,156
Zaragoza, Coahuila de Zaragoza	Mexico	1	3,065.34	12,702
Somotillo, Chinandega	Nicaragua	1	279.92	24,767
Arlington, Texas	United States	1	95.80	365,438
Austin, Texas	United States	2	251.50	790,390
Brookhaven, Mississippi	United States	1	7.30	12,513
Galveston, Texas	United States	1	46.20	47,743
Houston, Texas	United States	23	579.40	2,099,451
Lafitte, Louisianna	United States	1	6.41	972
Long Beach, California	United States	1	50.40	462,257
McAllen, Texas	United States	1	46.00	129,877

Continued

Town City or Municipality, State or Department	Country	Quantity	Area (mi^2)	Population Size (2000 -2010)
Minneapolis, Minnesota	United States	1	54.90	382,578
Sacramento, California	United States	1	97.20	466,488
Shreveport, Louisianna	United States	1	103.10	199,311
Trenton, Texas	United States	1	1.60	635
Wellsville, New York	United States	1	36.68	7,397
Maracaibo, Zulia	Venezuela	1	212.36	1,459,448

APPENDIX H

MAJOR ECONOMIC ACTIVITIES PERFORMED WITHIN EACH LOCATION

Town City or Municipality, State or Department	Major Economic Activities Performed (Varied between year 2000 - 2012)
Cienfuegos, Cienfuegos	n/a
Trinidad, Sancti Spiritus	n/a
Agua Caliente, Chalatenango	Wholesale and retail trade 55.93% Manufacturing 11.86% Services 32.20%
La Union, La Union	Wholesale and retail trade 51.25% Services 39.55%
San Agustin, Usulutan	Wholesale and retail trade 69.23% Manufacturing 21.54%
Santa Rosa de Lima, La Union	Wholesale and retail trade 63.35% Services 30.85%
Sonsonate, Sonsonate	Wholesale and retail trade 47.14% Manufacturing 13.38% Services 34.53%
Quetzaltenango, Quetzaltenango	n/a
Choluteca, Choluteca	Agriculture, forestry, fishing and hunting 27.43% Wholesale and retail trade 22.90% Health care and social assistance 16.49%
Olanchito, Yoro	Agriculture, forestry, fishing and hunting 55.24% Wholesale and retail trade 12.26% Health care and social assistance 11.36%
Pimienta, Cortes	Agriculture, forestry, fishing and hunting 18.66% Manufacturing 42.32% Wholesale and retail trade 12.09%
Nairobi	n/a
Acambaro, Guanajuato	Agriculture, forestry, fishing and hunting 21.41% Construction 12.17% Manufacturing 10.95% Wholesale and retail trade 20.53% (2000)
Acapulco de Juarez, Guerrero	Construction 10.12% Wholesale and retail trade 19.57% Accommodation and food services 13.80% (2000)
Celaya, Guanajuato	Manufacturing 19.90% Wholesale and retail trade 22.76% (2000)

Continued

Town City or Municipality, State or Department	Major Economic Activities Performed (Varied between year 2000 - 2012)
Cuernavaca, Morelos	Manufacturing 13.48% Wholesale and retail trade 17.65% (2000)
Donato Guerra, Mexico	Agriculture, forestry, fishing and hunting 36.14% Construction 23.87% Wholesale and retail trade 10.53% (2000)
Durango, Durango	Manufacturing 16.50% Wholesale and retail trade 18.35% (2000)
El Mante, Tamaulipas	Agriculture, forestry, fishing and hunting 16.23% Manufacturing 12.20% Wholesale and retail trade 21.04% (2000)
Estacion Santa Engracia - Hidalgo, Tamaulipas	Agriculture, forestry, fishing and hunting 57.75% (2000)
Guadalajara, Jalisco	Manufacturing 24.79% Wholesale and retail trade 23.17% (2000)
Guanajuato, Guanajuato	Wholesale and retail trade 12.54% Manufacturing 11.54% Construction 12.40% Actividades del gobierno 10.05% (2000)
Huetamo, Michoacan de Ocampo	Agriculture, forestry, fishing and hunting 25.11% Manufacturing 10.05% Wholesale and retail trade 16.32% (2000)
Juchitan, Guerrero	n/a
La Luz de Juarez - Tlalixtaquilla de Maldonado, Guerrero	Agriculture, forestry, fishing and hunting 53.69% Construction 11.91%
Luvianos, Mexico	n/a
Martinez de la Torre, Veracruz de Ignacio de la Llave	Agriculture, forestry, fishing and hunting 31.22% Wholesale and retail trade 20.11% (2000)
Mexico City - (Federal District or D.F.)	n/a
Montemorelos, Nuevo Leon	Agriculture, forestry, fishing and hunting 18.65% Manufacturing 16.25% Wholesale and retail trade 14.64%
Monterrey, Nuevo Leon	Manufacturing 22.26% Wholesale and retail trade 18.46% (2000)
Nuevo Laredo, Tamaulipas	Manufacturing 23.59% Wholesale and retail trade 16.12% Transportes, correos y almacenamiento 11.12% (2000)

Continued

Town City or Municipality, State or Department	Major Economic Activities Performed (Varied between year 2000 - 2012)
Piedra Colorada - Luvianos, Mexico	n/a
Puebla, Puebla	Manufacturing 25.02% Wholesale and retail trade 19.62% (2000)
Queretaro. Queretaro	Manufacturing 24.52% Wholesale and retail trade 18.22% (2000)
Reynosa, Tamaulipas	Manufacturing 36.40% Wholesale and retail trade 14.55% (2000)
Rincon de Rodriguez - Luvianos, Mexico	n/a
Rio Bravo, Tamaulipas	Agriculture, forestry, fishing and hunting 10.83% Manufacturing 27.47% Wholesale and retail trade 17.76% (2000)
Sabinas Hidalgo, Nuevo Leon	Construction 13.60% Manufacturing 20.08% Wholesale and retail trade 16.07%
Salamanca, Guanajuato	Agriculture, forestry, fishing and hunting 14.07% Construction 10.12% Manufacturing 23.90% Wholesale and retail trade 15.94% (2000)
San Felipe del Progreso, Mexico	Agriculture, forestry, fishing and hunting 32.79% Construction 27.89% Wholesale and retail trade 11.11% (2000)
San Felipe, Guanajuato	Agriculture, forestry, fishing and hunting 33.38% Construction 15.01% Manufacturing 12.76% Wholesale and retail trade 13.27% (2000)
San Fernando, Tamaulipas	Agriculture, forestry, fishing and hunting 30.75% Manufacturing 16.23% Wholesale and retail trade 15.53% (2000)
San Luis de la Paz, Guanajuato	Agriculture, forestry, fishing and hunting 20.97% Construction 13.75% Manufacturing 12.72% Wholesale and retail trade 17.04% (2000)
San Luis Potosi, San Luis Potosi	Manufacturing 23.07% Wholesale and retail trade 18.81% (2000)

Continued

Town City or Municipality, State or Department	Major Economic Activities Performed (Varied between year 2000 - 2012)
San Miguel de Allende, Guanajuato	Agriculture, forestry, fishing and hunting 12.80% Construction 16.32% Manufacturing 18.13% Wholesale and retail trade 13.59% (2000)
San Miguel Octopan - Celaya, Guanajuato	Manufacturing 19.90% Wholesale and retail trade 22.76% (2000)
Santa Teresa - Coyuca de Catalan, Guerrero	Agriculture, forestry, fishing and hunting 39.30% Manufacturing 10.72% (2000)
Tejupilco, Mexico	Agriculture, forestry, fishing and hunting 25.39% Construction 12.25% Wholesale and retail trade 14.17% Educational services 11.94% (2000)
Tlalpujahua, Michoacan de Ocampo	Agriculture, forestry, fishing and hunting 21.64% Construction 10.21% Manufacturing 33.94% (2000)
Tuzantla, Michoacan de Ocampo	Agriculture, forestry, fishing and hunting 64.06% (2000)
Valle Hermoso, Tamaulipas	Agriculture, forestry, fishing and hunting 13.41% Manufacturing 26.63% Wholesale and retail trade 15.16% (2000)
Valparaiso, Zacatecas	Agriculture, forestry, fishing and hunting 35.00% Construction 13.86% Wholesale and retail trade 11.98% (2000)
Veracruz, Veracruz de Ignacio de la Llave	Manufacturing 11.34% Wholesale and retail trade 21.34% (2000)
Zaragoza, Coahuila de Zaragoza	Agriculture, forestry, fishing and hunting 21.52% Construction 10.21% Manufacturing 32.70% (2000)
Somotillo, Chinandega	n/a
Arlington, Texas	Manufacturing 10.80% Retail trade 12.70% Professional, scientific, and management, and administrative and waste management services 10.50% Educational services, and health care and social assistance 19.40% Arts, entertainment, and recreation, and accommodation and food services 10.00%

Continued

Town City or Municipality, State or Department	Major Economic Activities Performed (Varied between year 2000 - 2012)
Austin, Texas	Retail trade 10.40% Professional, scientific, and management, and administrative and waste management services 15.80% Educational services, and health care and social assistance 20.80% Arts, entertainment, and recreation, and accommodation and food services 11.60%
Brookhaven, Mississippi	Retail trade 21.30% Educational services, and health care and social assistance 35.10%
Galveston, Texas	Educational services, and health care and social assistance 30.80% Arts, entertainment, and recreation, and accommodation and food services 17.10%
Houston, Texas	Construction 10.10% Retail trade 10.60% Professional, scientific, and management, and administrative and waste management services 14.00% Educational services, and health care and social assistance 19.20%
Lafitte, Louisianna	Agriculture, forestry, fishing and hunting, and mining 17.70% Manufacturing 11.00% Professional, scientific, and management, and administrative and waste management services 10.40% Educational services, and health care and social assistance 26.00%
Long Beach, California	Manufacturing 10.20% Retail trade 10.80% Professional, scientific, and management, and administrative and waste management services 11.90% Educational services, and health care and social assistance 22.70% Arts, entertainment, and recreation, and accommodation and food services 10.50%

Continued

Town City or Municipality, State or Department	Major Economic Activities Performed (Varied between year 2000 - 2012)
McAllen, Texas	Retail trade 15.40% Professional, scientific, and management, and administrative and waste management services 11.40% Educational services, and health care and social assistance 27.80% Arts, entertainment, and recreation, and accommodation and food services 10.70%
Minneapolis, Minnesota	Retail trade 11.00% Professional, scientific, and management, and administrative and waste management services 15.50% Educational services, and health care and social assistance 27.00% Arts, entertainment, and recreation, and accommodation and food services 12.50%
Sacramento, California	Retail trade 10.60% Professional, scientific, and management, and administrative and waste management services 12.60% Educational services, and health care and social assistance 22.20% Public administration 12.90%
Shreveport, Louisianna	Retail trade 12.20% Educational services, and health care and social assistance 28.40% Arts, entertainment, and recreation, and accommodation and food services 14.00%
Trenton, Texas	Manufacturing 17.90% Retail trade 20.80% Finance and insurance, and real estate and rental and leasing 10.70% Educational services, and health care and social assistance 20.50% Arts, entertainment, and recreation, and accommodation and food services 11.80%

Continued

Town City or Municipality, State or Department	Major Economic Activities Performed (Varied between year 2000 - 2012)
Wellsville, New York	Manufacturing 16.50% Educational services, and health care and social assistance 30.60%
Maracaibo, Zulia	n/a

APPENDIX I

RESPONSE LIST FOR QUESTION: LIST OTHER WORKING EXPERIENCES

Number	Response Text
1	Fire cocking, Apex firestop.
2	Restaurant, administrative assistant.
3	Rig inspector, sewer, newspaper writer
4	Painter
5	Cook
6	Diverse
7	None
8	Glass and glazing
9	Always building something
10	In a restaurant, maneuvering stationary tanks and as an installer.
11	Wholesaler
12	Butcher
13	Rodbuster (tie bar)
14	Carpenter
15	Landscaping
16	Cleaning
17	Carpenter, landscaper
18	Restaurant
19	Pool installer
20	Restaurant
21	Vehicle mechanic
22	Bricklayer, Sheetrock, and saire
23	Restaurants, and Roof
24	Butcher, tailor.
25	Restaurant, and a factory.
26	Painting.
27	Tile and roofing.
28	Framing.
29	Crane driver
30	Safety and Environment
31	Bricklayer.
32	Carpentry.
33	Punch press operator.
34	Aluminum windows, frames
35	Carpentry, concrete.
36	Framing, plumbing, drafting, flagger, radiographer
37	Carpentry.

Continued

Number	Response Text
38	Roll framing, HR, safety, drive a forklift.
39	Cook.
40	Housing construction
41	In Cuba I used to work in housing construction.
42	Construction.
43	Concrete, rock, bricklayer, blox.
44	Roofer.
45	Concrete
46	Driver
47	Painting and tile.
48	Granite.
49	Teacher, doctor, electricity, plumbing.
50	Landscaping and restaurants
51	Mechanic
52	Landscaping
53	Paint
54	Landscaping
55	Welder, plumber
56	Welding, mechanic.
57	Paint, restaurants cook
58	Warehouse
59	Bricklayer
60	Restaurant
61	Carpentry
62	Roofing
63	Landscaping
64	Machinist
65	Restaurant
66	None.
67	Carpentry
68	Drywall installer (restaurants)
69	The field (agriculture)
70	Air A/C, Cement (concrete)
71	Carpenter, Painter
72	Roofing, restaurant, plumbing, a/c, landscaping
73	Gardening (landscaping)
74	Only this trade
75	Cable TV.
76	Restaurant, paper production, welding.

Continued

Number	Response Text
77	Gardner
78	No.
79	Welding, machinist
80	Carpet, paint, home remodeling, framer.
81	Paint.
82	Driver, shelving, mechanic, teacher, pool service.
83	Cook
84	Drywall, general contractor
85	24 years ago I worked 10 years in residential A/C trade.
86	Drywall
87	Computer science degree. Commercial Driver License driver.
88	Home restoration, boat merchant, ranch hand.
89	Acoustical ceilings, doors and hardware, layout, school teacher.
90	Poor production, attitude, evaluation, workers budget.
91	Auto mechanic, welder, drywall.
92	Sports office, national guard service, security.
93	Carpentry, welding, painting, and finishing.
94	Iron worker.
95	Tape and float.
96	Finisher.
97	Residential
98	Door framing installation, framing ceilings.
99	I have only been finishing walls.
100	Frame, drywall hardware installation, reco installation.
101	Painting, gardening, welding, acoustic ceilings.
102	Drywall installer, secretary, correctional officer.
103	Warehouse, mech, construction industry painter.
104	Scaffolding, replacing sewer line, automotive
105	Painter, drywall, finisher
106	Carpenter only
107	Everything (welding)
108	Moving and deliveries 4 years.
109	Finisher.
110	Welding operator.
111	Finisher.
112	Mechanic
113	None.
114	Paint
115	Panels

Continued

Number	Response Text
116	Paint
117	Only drywall.
118	Drywall
119	Baker, restaurant.
120	Mechanic, carpenter (wood), electrical/HVAC.
121	Firefighter (08-10)
122	Restaurant, computer technician, sales rep, battery tech, valet, retail.
123	Welding, plumbing, tiling, painting, light electrical
124	Reliant Stadium running ice cream stands, Astrodome, Astroworld
125	Intern, marathon oil, Bredero Shaw Corp, Little Caesars Pizza.
126	Wine maker, actor, drywall/construction, commercial driving.
127	Small business owner-doors; Electronics (Bio-med); Electronics-U.S. Navy
128	Wood framer, residential remodel, plumbing, tile installer.
129	Piping, warehouse retail.
130	Plumbing
131	Glass metal doors.
132	Security
133	Painting
134	Carpenter
135	Cement.
136	Ceiling finishing
137	Automobile mechanic
138	Plumbing, electric, carpentry.
139	Mechanic, agricultural field.
140	Driving forklift.
141	Roofing
142	General labor, restaurant.
143	Work long hours.
144	Finishes- stucco
145	Helper
146	Restaurants and retail business
147	Industrial mechanical
148	Ironworker
149	Cook
150	Painting, carpentry, al welding
151	Security system camera alarm
152	Building maintenance
153	Carpenter
154	Carpenter

Continued

Number	Response Text
155	Bricklayer, working with pools
156	carpets, cook,, assistant manager uncle house
157	Automotive mechanic
158	Door welder; Windows
159	In my country in cattle
160	Painting, wood framing
161	None
162	Wood framing, concrete, tile, fencing
163	Car mechanic
164	Warehouse, shipping /receiving, mechanist
165	Swimming pool construction.
166	Banquets, correctional officer.
167	Acoustical ceiling
168	Warehouse worker

APPENDIX J

RESPONSE LIST FOR QUESTION: HOW OLD ARE YOU

Number	Response Text
1	24
2	56
3	35
4	50
5	31
6	53
7	58
8	53
9	32
10	43
11	31
12	50
13	48
14	22
15	39
16	56
17	45
18	23
19	34
20	20
21	44
22	31
23	53
24	35
25	37
26	31
27	35
28	22
29	67
30	31
31	36
32	42
33	39
34	35
35	21
36	35
37	54

Continued

Number	Response Text
38	32
39	22
40	25
41	28
42	34
43	29
44	20
45	27
46	51
47	40
48	37
49	45
50	34
51	26
52	20
53	32
54	48
55	26
56	22
57	31
58	30
59	34
60	51
61	29
62	51
63	42
64	24
65	22
66	30
67	45
68	27
69	27
70	27
71	30
72	23
73	28
74	29
75	32
76	31

Continued

Number	Response Text
77	28
78	37
79	64
80	20
81	22
82	19
83	27
84	24
85	31
86	36
87	44
88	23
89	26
90	39
91	34
92	40
93	30
94	40
95	36
96	32
97	21
98	22
99	40
100	23
101	23
102	45
103	33
104	39
105	32
106	33
107	35
108	46
109	47
110	53
111	31
112	63
113	50
114	64
115	40

Continued

Number	Response Text
116	59
117	49
118	41
119	54
120	45
121	24
122	47
123	39
124	52
125	64
126	32
127	31
128	50
129	62
130	42
131	59
132	35
133	44
134	44
135	42
136	36
137	57
138	37
139	33
140	57
141	21
142	23
143	60
144	50
145	18
146	50
147	20
148	33
149	40
150	42
151	35
152	50
153	30
154	38

Continued

Number	Response Text
155	59
156	48
157	40
158	50
159	23
160	26
161	32
162	33
163	34
164	22
165	35
166	51
167	52
168	54
169	30
170	35
171	49
172	39
173	35
174	45
175	40
176	47
177	36
178	48
179	45
180	55
181	43
182	47
183	34
184	40
185	25
186	43
187	21
188	44
189	30
190	41
191	20
192	52
193	35

Continued

Number	Response Text
194	23
195	30
196	54
197	54
198	37
199	62
200	40
201	61
202	47
203	29
204	36
205	54
206	33
207	45
208	30
209	32
210	32
211	33
212	35
213	46
214	54
215	32
216	43
217	19
218	33
219	20
220	28
221	21
222	27
223	32
224	22

APPENDIX K

FACTORS THAT ATTRACTED WORKERS TO THE DRYWALL CONSTRUCTION TRADE

Number	Response Text
1	Great company.
2	My brother works here and he help me enter the business.
3	Something different
4	Salary and opportunities
5	Wish I could do and be something else
6	I like painting
7	Better job opportunities
8	Salary
9	I like it
10	Money
11	The salary
12	Lots of work available
13	Because it is a work to have a trade in the future.
14	Every day something different
15	Money
16	The salary is better than in others
17	A family member
18	A friend
19	A friend brought me in
20	Because there is abundant work
21	Someone talked to me about it and it is a good job
22	Because this is an indoor type of work and the sun does not affect you; it is easier
23	It is a good job
24	The salary
25	A friend in the job
26	It is the first thing I learned and I like it.
27	Good salary.
28	You become active.
29	Started at 13 years old. Stayed in it, all I know well.
30	They invited me to it.
31	A friend
32	It is what I learned to do since I arrived to this country.
33	I like it and my family does it too.
34	I like interior design and creating designs.
35	I like this job and I feel well here

Continued

Number	Response Text
36	Earn more money.
37	Earn enough money to give my family a better quality of life.
38	Money and the need to provide for my family.
39	Help employees.
40	Make money.
41	The salary.
42	Shortage in other jobs
43	The job stability and the personal growth and my family's growth.
44	A friend that worked in the same area motivated me for this job.
45	I like this job.
46	Because it is good to learn different trades. It is a good and growing trade.
47	Walls and ceilings.
48	That it is a good job and it is well paid.
49	Learn another trade.
50	This was the only thing I heard of at that moment.
51	A friend that has a lot of experience in this trade.
52	A friend of mine motivated me to work here.
53	They pay better per hour and we can live a little better.
54	My son.
55	I like to work in it.
56	Money
57	I like it.
58	They pay more
59	Opportunity
60	It was the first thing I learned to do.
61	There is sufficient work.
62	That I like it and it pays well.
63	Because the pay is a little better than in restaurants
64	My friends
65	Because of a family member
66	Because I have a family member that works here and he trains me in this trade
67	Because it is a job that never ends
68	It is what I knew
69	You invest in tools and learn to work in this trade
70	Self-improvement
71	Carpentry, Plumbing
72	Better salary than others
73	The need and the willingness to learn
74	because it is a good job

Continued

Number	Response Text
75	I like it
76	Money
77	More practical and the payment is more or less good
78	Because I like to frame and place sheetrock
79	Better job
80	Because it pays better
81	Through my family
82	There are more work opportunities and it's easy.
83	The payment and desire to learn how to do this kind of job.
84	Interest in getting to know about it
85	Financial necessity
86	I liked the job
87	Because I like it and I wish to learn everything
88	This is where I started and I liked it
89	Because I had tools for drywall installation
90	More money
91	The family well-being
92	The money
93	The salary and the trade is what attracted me
94	I like this trade, it is not that risky.
95	I like it.
96	Making stuff.
97	Building stuff
98	My father was a finisher,
99	Union pension.
100	Job was available.
101	Job
102	Good at it.
103	Oil field.
104	Always busy, like the pace.
105	More money
106	Third generation.
107	Money
108	I had a chance to briefly working the trade and it sparked my interest so I stuck with it, Really gave me a different perspective.
109	I always like to share the knowledge, and my work allows me to help others.
110	Other workers.
111	A little more money, a little liter work task.
112	More technical

Continued

Number	Response Text
113	Enjoyed seeing my completed work.
114	Seen it as a way that fit me more- was more interesting to me.
115	Skills and knowledge of how they do it.
116	To work to pay for expenses
117	The pay.
118	I like it.
119	Great working environment
120	I like my job
121	My job
122	I like it.
123	The need to have a job.
124	Besides liking my job, you earn good money and you can grow in this company.
125	I got motivated by the job, it is like building a puzzle.
126	I like what I do.
127	I like my job.
128	Painter
129	Family history
130	The money
131	Money
132	Money
133	Structural interest.
134	I like it.
135	To live.
136	Need a job.
137	Family responsibility.
138	Acoustic
139	Money.
140	The look when the job is done.
141	Because I like to build.
142	Something new.
143	I understood it easier.
144	My family so that I can help them prepare better.
145	Love for the job.
146	My brother in law had a friend in the trade.
147	Being able to build monumental structures for other people to see.
148	Only trade family was not in.
149	Good skill to have.
150	Like carpentry

Continued

Number	Response Text
151	Following footsteps when I walk on a new job and start layout and buildings we set the pace for other trades
152	Gave it a chance
153	Money and I am a journeyman.
154	Inherent skill set.
155	Enjoy the work.
156	I see construction as a career
157	New opportunity.
158	The money
159	Help others maintain safe
160	Money
161	My family
162	Just because I like it.
163	Nothing
164	Training to be a foreman
165	Because I like it.
166	Money.
167	I like construction
168	Good pay.
169	I like it.
170	Because the company I work for is very good, my family and the salary
171	I want to learn something different.
172	I like the job
173	High interest.
174	Family.
175	I wanted to be an advanced employee
176	The different steps of how to mark all kinds of drywall.
177	Personal growth
178	Don't know
179	Offered on the job training
180	For a better salary
181	All my brothers do it
182	Good pay
183	Have a good benefit for my retirement
184	The easiness to develop
185	I feel good
186	The type of work
187	The type of work
188	Wall framing and installing drywall caught my attention

Continued

Number	Response Text
189	To be someone better
190	I like it and it pays well
191	To have a vocation with a better salary
192	The schedule fits my necessities and I also like the salary
193	To live better
194	My family
195	Salary
196	The salary
197	I don’t know, maybe for a better progress
198	I like heavy jobs
199	I like to learn new things
200	Everything, work motivates me.
201	Money
202	A friend + lots of work
203	The amount of work that the drywall industry is active in.
204	Job opportunity after High School
205	It is more hands on, you get to work with a lot of different tools.
206	I wanted to experience different types of trades.
207	It is part of the training development for work.
208	It’s part of a program not the people