UNCOVERING HUMAN SMUGGLING PATTERNS
From Guatemala to The United States
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# UNCOVERING HUMAN SMUGGLING PATTERNS FROM GUATEMALA TO THE UNITED STATES

## TABLE OF CONTENTS

1. Project Narrative
2. Methods
4. Statistical Analysis
5. Maps
6. Questions & Results Analysis
7. Analysis
8. Deliverables
9. Recommendations
10. References
11. Appendices

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Geographic Information Systems (GIS) Mapping</td>
</tr>
<tr>
<td>16</td>
<td>Populating the Database</td>
</tr>
<tr>
<td>17</td>
<td>Data Manipulation and Analysis</td>
</tr>
<tr>
<td>19</td>
<td>Statistical Analysis</td>
</tr>
<tr>
<td>31</td>
<td>Maps</td>
</tr>
<tr>
<td>63</td>
<td>Analysis</td>
</tr>
<tr>
<td>65</td>
<td>Esri File Geodatabases</td>
</tr>
<tr>
<td>66</td>
<td>BTI_MigrantRoutes_Waypoints.gdb</td>
</tr>
<tr>
<td>70</td>
<td>BTI_MigrantRoutes_Waypoints.gdb</td>
</tr>
<tr>
<td>71</td>
<td>BTI_MigrantRoutes_Waypoints.gdb</td>
</tr>
<tr>
<td>87</td>
<td>Western IRB Protocol</td>
</tr>
<tr>
<td>96</td>
<td>Appendix A - Association between interview questions and geodatabase tables.</td>
</tr>
<tr>
<td>120</td>
<td>Appendix B - Waypoints and Travel Notes</td>
</tr>
</tbody>
</table>
## TABLE OF FIGURES

<table>
<thead>
<tr>
<th>Figure 1: (above)</th>
<th>Overview of Geospatial Model - pg 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2: (above)</td>
<td>Migrants Data Model - pg 4</td>
</tr>
<tr>
<td>Figure 3: (above)</td>
<td>Example of Simultaneous Data Creation - pg 4</td>
</tr>
<tr>
<td>Figure 4: (above)</td>
<td>Workflow for Mapping Waypoints - pg 5</td>
</tr>
<tr>
<td>Figure 5: (above)</td>
<td>Obtaining Ground Truth for Facilities - pg 5</td>
</tr>
<tr>
<td>Figure 6: (above)</td>
<td>Using Open Source Tools to Map Routes - pg 6</td>
</tr>
<tr>
<td>Figure 7: (above)</td>
<td>Interview Cities - pg 6</td>
</tr>
<tr>
<td>Figure 8: (above)</td>
<td>Routes from KML Files - pg 7</td>
</tr>
<tr>
<td>Figure 9: (above)</td>
<td>Open Source Publications (Facilities) - pg 7</td>
</tr>
<tr>
<td>Figure 10: (above)</td>
<td>Detail of Facilities Address Info - pg 8</td>
</tr>
<tr>
<td>Figure 11 (above):</td>
<td>Using Buffers to Capture Facilities - pg 11</td>
</tr>
<tr>
<td>Figure 12: (above)</td>
<td>Stylized Flow of Migrants - pg 12</td>
</tr>
<tr>
<td>Figure 13: (above)</td>
<td>Migrant Routes to Sectors - pg 15</td>
</tr>
<tr>
<td>Figure 14 -</td>
<td>Goal of Managing a GIS - pg 16</td>
</tr>
<tr>
<td>Figure 15: (above)</td>
<td>Migrant Facilities - pg 17</td>
</tr>
<tr>
<td>Figure 16: (above)</td>
<td>Detail of Five Mile Buffer - pg 17</td>
</tr>
<tr>
<td>Figure 17: (above)</td>
<td>Migrant Routes to Tucson Sector - pg 18</td>
</tr>
<tr>
<td>Figure 18: (above)</td>
<td>Migrant Routes to Laredo Sector - pg 19</td>
</tr>
<tr>
<td>Figure 19: (above)</td>
<td>Migrant Routes to RGV Sector - pg 19</td>
</tr>
</tbody>
</table>

## TABLES

| Table 1: | Estimated Annual Central American Migrants by Sector under a Range of Scenarios - pg 13 |
Introduction

This original design of this project was to address the gap of knowledge ("the unknowns") in specific Human Smuggling routes, patterns, and the numbers of human migrants moving north from Central America through Mexico. Project Findings (number of migrants in the flow, or "unknowns") would be compared with DHS detention data (the number of arrests of "the knowns") to assess the number of successful entrants ("The Successful") into the U.S. This knowledge would provide DHS a better ability to manage resources at the U.S. southern border. The project would utilize Geographic Information Systems (GIS) to plot, map and analyze critical nodes in the transportation or Human Smuggling "supply chain" and to develop estimated numbers of migrants in the stream. The GIS database would establish a framework that allows for visualization of the data and more efficient decision-making. This project would also contain surveys of detainees and reviews and analysis of DHS data on migration patterns and smuggler contracts.

After researchers met with DHS and U.S. Border Patrol stakeholders before and during the commencement of the actual research, the primary objectives and deliverables for this research project were translated into Departmental language which defined the project research as an attempt to develop the "Unknown Got-Aways" (Estimated Illegal Entries) element of the Total Interdiction Rate (TIR) Formula. In addition, this research would yielded other benefits, including an understanding of the capacity of the human smuggling networks that pass from Central America through Mexico and into the United States. The project would also collect information about the actual geography of the routes taken by migrants and incorporated Geographic information Systems (GIS) capabilities to catalogue and map data collected during interviews of migrants, as well as information obtained from open sources. The resulting analysis produced a better understanding of the waypoints, support structures and major decision points of the routes taken or used by the migrants. Other information that is described further below was also collected and analyzed.

Benefits to DHS

This project envisions the utilization of "Time and Space" as an effective mitigation strategy to allow DHS enforcement personnel to more effectively secure and manage our borders and thereby more effectively enforce and administer U.S. immigration laws and streamline the entry of people into the United States. This Human Smuggling project will build upon existing detection and monitoring activities of DHS/CBP by providing a more comprehensive, multi-dimensional, and strategic view of the areas of interest and linking that knowledge to a proposed regional detection and monitoring approach that will include the proposed interaction of several Central American nations, Mexico, and the United States. The project could also result in a better understanding of the plight of migrants and how to better protect their basic human rights.

Stakeholders/HSE/Others:

DHS Office of Policy; DHS Office of Unity of Effort Integration - Department of Homeland Security. Contact with DHS on on September 24, 2015 determined that, aside from the already stated goals and objectives of this research, the Department was also interested in learning more about the "immigrant experience" and suggested that current DHS data had good insights on the matter but that they needed more help in fully delineating the scope of Human Smuggling contracts, as a way to understand the immigrant experience. He suggested this Project could engage in data-mining existing DHS databases, across sectors, to learn more about Human Smuggling contracts.
PROJECT

Background & Motivation:
Motivations include supporting the DHS international strategy of combating terrorism and Trans Criminal Organizations, strengthening the security and resilience of the Global Supply Chain and Travel System, expediting lawful flows of people and goods and promoting lawful immigration.

Challenges:
The most difficult obstacle or challenge to providing a comprehensive database of migrant route maps for interdiction agencies may be the obtaining of ground truth by gaining the cooperation of Mexican immigration and customs authorities, social workers and others that provide safe haven for central American migrants as they make their way north from Guatemala to the Mexico-Texas border. We expect to engage Mexican government, academia and Non-government Organizations to assist us in gathering this data, as a way to mitigate this potential deficiency.

Goals & Objectives:
To develop a framework of assets related to Human Smuggling migration patterns and generate an associated geospatial model to provide an environment for analysis and visualization of those patterns, ultimately enhancing border security decision-making strategies. This framework will evolve as new data is received so that changes in migration patterns can be discerned.

PERFORMANCE METRICS & METHODOLOGY

Methodology
The target of this project is to allow DHS stakeholders to make better decisions or determinations about border enforcement strategies. These decisions or determinations will be supported by analysis of geographic and non-geographic data that have been located, plotted and mapped. They will also be supported by interview survey data about smuggling contracts and other journey dynamics that will be analyzed and provided in narrative form with tables and charts.

Resources
GIS: Acquisition of open-source and commercially-available aerial imagery will assist in the visual identification of support-infrastructure related to Human Smuggling movement and allow for cover-change detection. These include the discovery of new pathways leading to river crossings, visible alteration of surface features that reveal human activity, and other discernable changes to the landscape. Once identified, the positions of real-world features and captured biometric data will populate the developing geo-database. These include existing and conspicuous multi-modal transportation means and conveyances.
RESEARCH SUMMARY

Uncovering Human Smuggling Patterns from Guatemala to the United States

This project focuses on human migration and smuggling from Central America through Mexico into the United States. It has two components. The first focuses on the geography of transit. The second focuses on the nature of "contracts" between the smugglers and the smuggled. It seeks to answer important questions such as what routes migrants take, what is the economic relationship between the smuggled and the smuggler, are there human migrant debt markets in the United States, among others. Understanding the nature of this phenomenon could lead to policy prescriptions related to migrant victimization, improved border enforcement, improved conditions for migrants, better prosecution of smugglers and traffickers, improved cooperation on border enforcement operations with Mexico, etc.

Testable Hypotheses:

1. Migrants and the smugglers they hire use predictable routes that adjust to U.S. and Mexican law enforcement presence to achieve their goals.

2. Migrants pay large sums of money to smugglers to enter the United States and these contracts are financed in a variety of ways such as debt obligations and enforced through violence and extortion.

3. Building on previous research, these contracts are responsive (in terms of price) to U.S. enforcement efforts.

Literature:

The existing literature distinguishes between human smuggling and trafficking. Human smuggling generally refers to the voluntary payment of a smuggler to cross a border while trafficking implies a loss of agency for the victim who will likely be trafficked for the purposes of forced labor (human slavery) or for sex work (another form of human slavery).

The existing literatures on illicit flows suggest that increased border enforcement leads to increased profits for organized crime by increasing "risk premiums" and leads to consolidation in the flow at borders. This results in a "double funnel model" instead of a "capillary model" at borders. In the double funnel fewer organizations and individuals provide trafficking services at difficult crossing points given the sophistication required to cross at a heavily enforced border, whereas in the capillary model more low-level unsophisticated operations smuggle people/commodities cheaply. This results in an increase in profit and profit for organized crime networks following increased enforcement on borders. This research is empirically supported by DHS commissioned reports, which have demonstrated that increased enforcement spending is consistent with increased prices paid by migrants.

Peter Andreas’ seminal work Border Games describes how counter-narcotics enforcement can be understood as “thick policing” which occurs throughout the country while immigration enforcement is “thin policing” which typically only occurs at the border and in border communities. Andreas also discusses the concept of the Balloon Analogy used in counter narcotics literature but which is equally valid in human smuggling. The balloon analogy argues that as enforcement efforts pressure illicit flows in one locale they will simply shift to another.

Bagley’s cockroach analogy is similar and argues that as traffickers are pressured in one area they simply shift to another like cockroaches running from light. Spener’s work on human smuggling points to decentralized networks for human smugglers. George Diaz’s historical work on the US Mexico border points to the role of illicit flows across both sides of the border.

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8. Peter Andreas, "Smuggling Migrants through South Texas: Challenges Posed by Operation Rio Grande."

Procedures:

With the support of the Department of Homeland Security, research personnel will enter detention centers and advertise in English and Spanish for participation in the research and post flyers in common areas such as cafeterias, hallways, and other open spaces.

No incentives for participation in research will be promoted. Flyers will be posted asking that interested participants identify their willingness to participate in research to the appropriate detention center employee. Detention center employees will then coordinate the appropriate time and place for the interview while at every step minimizing any information kept in records beyond the name of the interview subject. The facility will provide appropriate facilities for the conducting of research of sensitive nature that will ensure privacy, anonymity, and confidentiality. Research will be conducted in quiet rooms to ensure privacy. No person other than the researcher will be allowed in the room with the interviewee during the interview.

No incentives will be given for participation in the interviews. (See attached informed consent document). To protect participants from undue influence or pressure, detention center authorities will not be involved in the selection of research subjects. Research subjects will have to voluntarily indicate an interest in participating in the study as a result of seeing and reading the flyers, posters, or other forms of announcements seeking participation.

The “Fairness” of this research is derived from the fact that participant interest is derived from reading announcements and participation is voluntary and not the result of recruiting by detention center officials. We will ask that the detention center employees (in this case border patrol agents at detention center or social workers at a privately run facility, not a prison where people are serving a sentence) to not intervene or interfere with the voluntary nature of research subject participation.

Detainees will get no special privilege as a result of participation related to parole boards or hearings. There are no parole boards as this population is being held administratively, and not criminally. Participants may eventually attend an administrative hearing conducted by an immigration court. If required or subpoenaed the researchers will testify that they were informed that their participation would have no effect on decisions being made by any authority about the subjects (see informed consent document attached). This fact has been added to the informed consent form.

Again, the participants of this study are not prisoners serving sentences. They are being held administratively pending an administrative hearing that will decide their future immigration status. We do not anticipate the need for any follow up examination or further care after the participants end participation.

Interview Subjects will meet the following criteria:

- Have made the journey to the United States through Mexico from Central America
- Will be between the ages of 18 and 64.
- Will suffer no major disabilities putting them in a protected class
- Will be asked if they are competent to make decisions for themselves and if the court has raised any issues of competence (See interview questionnaire and instructions on implementation). Those not meeting these requirements will be excluded.

Waivers for written informed consent documents have been provided by the WIRB. This is necessary because the written informed consent documents would be the only documents linking the subjects to the research and therefore would risk a breach of confidentiality in potentially sensitive research.

To prevent duplicate interviews we have added a question to the beginning of each interview: “Have you been interviewed for this research project on immigration before?” And… “If at any time you realize you have participated in this interview please tell the interviewer.” The researchers will also take the further step of sanitizing overly specific details in any qualitative analysis or presentation of the materials. This will include any details or experiences that might be so unique as to identify the interview subject. This will be left to the researcher’s judgment but with the intent to provide anonymity to the subject’s identity (See Informed Consent and Questionnaire Documents on pg. 81).
Interviews

(See attached questionnaire & informed consent document)

Interviews may also be conducted in non-detention facilities using pre-established contacts through NGOs with undocumented migrants. Outside the detention system snowball-sampling methods may be used to identify more research subjects.

Interviews will be semi-structured and based on the questionnaire contained in this IRB application (See Questionnaire). Interviews will last approximately one hour and will complete the subjects’ participation in the research. Upon beginning the interviews each subject will be read the informed consent document (contained within the application) and be told that participation in the research is voluntary and confidential with the exception of legally required reporting requirements (See Informed Consent Document). If the subject chooses not to participate in the interview, the appropriate employee will be notified and the individual will be allowed to leave without any consequence.

Affiliated researchers will conduct approximately 100 interviews inside and outside detention facilities in addition to analyzing anonymized data provided by DHS related to migrant smuggler contracts. Researchers will focus detention facilities within the state of Texas due to proximity and the value of interviews in this area to the research. Houston has been identified as a major human smuggling/trafficking hub and thus should serve as fertile ground for identifying appropriate research subjects.

The survey information will still be locked in filing cabinets and the data will be further encrypted. These security measures will apply to all of the data collected including the hand written notes taken of responses, in the event that details so unique as to identify the individual are recorded. The probability of this occurring is extremely low. Further, only the Principal Investigator and the interviewers will have access to any of the materials.

At the conclusion of the interview subjects will be thanked for their participation. Any personally identifying information will be removed from interview results by interviewers and associated researchers. No personal health information will be taken during the interview unless the individual discloses a health condition or injury as it relates to the migrant journey. No biological samples will be taken or stored.

There will be no deception involved in the research.

Once interviews are collected, results without names will be entered into a password-protected database that will include qualitative and quantitative components and will utilize GIS software. The department of homeland security will have access to this database and researchers may produce peer-reviewed and non-peer-reviewed publications based upon the results.

Interview Participants:

Many of the respondents or participants of this survey are detainees that are being held in detention centers, and may have been apprehended by U.S. Customs and Border Protection at the border and are subject to potential deportation. Some may be subject to deportation given their undocumented immigration status. Many are awaiting hearings from Federal Immigration judges. In this sense they could leave the facility via deportation to their home country at any time, however some are likely to be filing for some type of asylum. Some facilities are privately run contracted by the United States Government.
Anticipated Risks:

Anticipated risks are minimal given the anonymous nature of the study. We confirm that the risks involved in the research as commensurate with risks that would be accepted by non-detainee volunteers.

Given the nature of the information sought, the provision of information of interest to the study would highly almost always remain a secret of the participant or any other person (non-detainee) who would provide similar information to third parties.

As such, we believe that neither prisoners nor non-prisoners would reveal to anyone that they provided any information to this study since it could incur additional unwanted attention from third parties.

Potential Risks Include:

- Those resulting from a breach of confidentiality related to participation in the study. Waiver of Consent has been obtained from WIRB.

- For some subjects the interviews may result in the discussion of past traumas (See Informed Consent Document.)

- The anonymity provided by conducting interviews in a controlled environment, and by not using or reporting names of the participants will preclude any knowledge of the participants inclusion in the study by outside parties, thereby mitigating endangerment to the participants.

Anticipated Benefits

(See Informed Consent Document)

Policy changes that could be derived from this research might include safer journeys for undocumented migrants, changes to the legal system to streamline journeys, improved human rights, protection from criminal gangs along the journey, improved United States law enforcement targeting of extortionist debt collectors that prey on immigrants in the United States, reduced kidnappings of the undocumented in the United States due to improved U.S. law enforcement awareness of the problem, etc.

A positive policy change for the interviewee population could be viewed as fitting within the principle of beneficence as outlined in the Bellmont Report.

The researchers cannot guarantee any specific policy changes but point out that government and government commissioned reports such as these regularly lead to policy shifts. The migrant may also benefit personally from sharing their story as a form of catharsis and knowing that researchers and the Department of Homeland Security care to know more about the subject.

Staff will be instructed not to offer or confer any special privileges or treatment on the detainees for participation in the interview. This will include no special or different meals, addition to commissary etc.

Most federal detention centers maintain normal temperatures throughout the facilities unlike Texas State facilities, which can climb over 100 degrees and an air-conditioned interview, might be viewed as a benefit and thus the interview will not confer such a benefit.
The primary objective and deliverable of this research project was to develop the "Unknown Got-Aways" (Estimated Illegal Entries) element of the Total Interdiction Rate (TIR) Formula. In addition, this research yielded other benefits, including an understanding of the capacity of the human smuggling networks that pass from Central America through Mexico and into the United States. The project also collected information about the actual geography of the routes taken by migrants and incorporated Geographic information Systems (GIS) capabilities to catalogue and map data collected during interviews of migrants, as well as information obtained from open sources. The resulting analysis produced a better understanding of the waypoints, support structures and major decision points of the routes taken or used by the migrants. Other information regarding the following additional deliverables was also collected and analyzed:

- Central American Migrant Push-pull factors.
- Migrant perceptions of U.S. government immigration policy under the current Trump Administration.
- Smuggler contracts.
- Migrant motivations.

A key finding regarding decision points includes the assessment there are specific junctures at which decisions were made to alter or change a route, i.e. migrants did not change routes based on perceived enforcement activities. In contrast, smugglers generally determined the routes to be taken based on the support network that they had already developed, as well as the crossing-point into the U.S., or destination on the Mexican side of the border. In other words, a smuggler with a network passing through Laredo did not shift to Tucson based on increased enforcement in Laredo.

Narrative Roadmap:

The project narrative will proceed in the following fashion: (1) It will discuss the Total Interdiction Rate formula derived from the data (one of the key deliverables); (2) it will cover the methodology and the development of the deliverable GIS dataset; (3) it will discuss and analyze the quantitative results of the survey of 270 migrants regarding all of the deliverables mentioned above.

The primary research objective is to develop the "Unknown Got-Aways" element of the Total Interdiction Rate (TIR) Formula. The TIR is comprised of the following formula:

\[
\text{TIR} = \frac{\text{Apprehensions} + \text{Turn Backs}}{\text{Apprehensions} + \text{Turn Backs} + \text{Estimated illegal entries}}
\]

The calculus developed by Voir Dire International is designed to in "validating or refining a methodology for estimating total illegal inflows" (Efforts by DHS to Estimate Southwest Border Security between Ports of Entry OIS, September 2017, page 5).
This project conducted 270 detention center interviews of Central American Migrants in the Rio Grande Valley, Laredo and Tucson Border Patrol sectors. Interviews were based on a Western Institutional Review Board approved questionnaire consisting of 56 questions that were developed with in collaboration with the Office of Immigration Statistics (OIS) at the Department of Homeland Security (DHS) and with the Strategic Planning and Analysis Directorate (SPAD) at the Headquarters of the U.S. Border Patrol.

Interviews were conducted in detention facilities with informed consent documents read aloud to interviewees who voluntarily chose to participate. Indeed, some respondents felt comfortable enough to decline participation or giving “no answer” on numerous questions e.g. question 55, 91% of respondents chose to give no answer. A copy of the approved Institutional Review Board Forms is included as an appendix (page 95).

The semi-structured qualitative interview style produced rich interview results. The results of the interviews of actual responses given by migrants interviewed have been delivered to DHS in their raw form as PDF formatted documents. The questionnaire format allowed the interviewees to provide truthful and unanticipated responses that might not have been garnered in a check the box style survey.

INTERVIEW METHODS:

Interviews were conducted within hours (usually 1-4) of detention and at the first processing facility the migrants encountered. This reduced the chances for bias generated from prolonged contact with other detainees and increased the validity of the responses of the interviewee.

Interviewers were identified as academics versus law enforcement officers. This improved the chances for obtaining truthful responses and increased the validity of the responses from the interview.

The interviews were conducted on varying shifts (days, evening, and nights), at three separate locations, increasing the validity of the responses.

The interviews were incorporated into the USBP Processing Center flow and individual migrant selection was made by USBP Agents based on a next-available basis, increasing randomization in the group.

Shelter locations along routes identified were determined by self-reporting on the internet by the shelters and independently verified by Google street views and media reporting.

Shelter capacity was determined by self-reporting by the shelters and by independent media reports on the internet about shelter capacity (the number of beds available).

Migrants provided anecdotal estimates regarding shelter utility at locations where they overnighted. These occupancy or utility rates were not used in the following calculus due to limited validity, but they tend to provide corroboration.
Geospatial Model (Keep it Simple):

- Populated Places
- Migrant Routes
- Migrant Facilities
- Buffers
- Intermediate Data

Figure 1: (above)
Overview of Geospatial Model

Figure 2: (see page 68 for full size image)
Migrants Data Model
Simultaneously Populate

- Non spatial responses
- Geography-based responses

21. Which specific resources (i.e. pedestrian fencing, walls, camera towers, air support, high visibility law enforcement presence along the border) would deter you from crossing the border in a given area?

10. Where did your journey begin? What country and city?

Figure 3: (above)
Example of Simultaneous Data Creation

Figure 4: (above)
Workflow for Mapping Waypoints
Figure 5: (above)
Obtaining Ground Truth for Facilities

Figure 6: (above)
Using Open Source Tools to Map Routes
Figure 7: Interview Cities

Figure 8: Routes from KML Files
Figure 9: (above)
Open Source Publications (Facilities)

Figure 10: (above)
Detail of Facilities Address Info.
Introduction

The use of a Geographic Information System (GIS) in this project supports the effort to fulfill Stakeholders’ (Project Champion: Office of Immigration Statistics; Strategic End-User: U.S. Border Patrol) desires to learn about migrant contracts and to generate parameters for the Total Interdiction Rate (TIR) Formula.

In business, GIS is used to create a geospatial model of the area on the Earth where business is conducted, to populate that model with pertinent real-world features, to enrich those features with non-spatial information, then to analyze and visualize that data for business decision-making.

Assuming the geospatial model managed by U.S. Border Patrol to interdict and apprehend illegal border crossers is restricted to the area within its twenty sectors, this project expands the model to include non-exhaustive, pertinent real-world features related to the travel infrastructure of intending border crossers as they pass through the spaces of Northern Triangle countries and Mexico.

Interviewing detained migrants also produced information about the nature of human smuggling contracts, a variety of socioeconomic push-pull factors, and geographic details about journey origins, waypoints and destinations. A spatially-enabled relational database was used to collect and organize the responses and their geographic attributes were processed using GIS software to construct and visualize routes and calculate theoretical numbers of migrants travelling through Mexico.

The Geodatabase

An Esri file geodatabase serves as a container for the response data because of its ability to store, query and manage non-spatial tables and spatial feature classes (map layers) in a way makes the data relatable to each other (i.e., one-to-one, 1:1, one-to-many 1:M, many-to-many, M:M). For each response to the structured interview questions, the design of each geodatabase table considers the way the data should be classified (i.e., nominal, ordinal, interval, ratio) and includes attribute domains to govern data integrity (See Appendix “A” and Migrant Geodatabase Data Model). Esri’s companion ArcMap application allows for the creation, editing, querying, analysis, spatial data manipulation and cartographic display of all the data within the file geodatabase as well as provides tools for the conversion between various file types or the altering of database schemas to match foreign databases.

The principal object of the geodatabase is a non-spatial table (Interviews) with rows storing information for each interviewee. The alphanumeric code assigned to each structured interview (SerialNo) uniquely identifies each row/interviewee and functions as a primary key for that table. The fields included in the Interviews table hold information for questions having a single response, a 1:1 cardinality. Nine other tables exist in the geodatabase whose fields hold information for questions having multiple responses, a 1:M cardinality. The relationships existing between all interviewees and their response information across the associated tables can be exploited using the [SerialNo] unique identifier.

The principal spatial objects of the geodatabase are feature classes having geographic locations. The feature class InterviewCities is represented by point data which are uniquely identified using the alphanumeric primary key CityID. The InterviewCities feature class include cities of origin, populated places serving as waypoints, and destination cities. The migrant routes feature class, represented by line data are stored in a supplementary geodatabase (RoutesFromKMLs.gdb), have a 1:1 correspondence with each interviewee, and share the same unique identifier/primary key, SerialNo. Route buffers, areas measured in distance units surrounding routes that are used for proximity analysis also share this identifier.
Populating the Database

As interviews were parsed, response information was input into their corresponding fields. This included information characterizing the interviewee, numbers of migrants travelling with or observed by the interviewee, motivations for migration, journey start/end dates, human smuggling contract arrangement/payment, prior residency/detention/deportations from the US and other data. Sought-after geographic attributes mentioned in responses included cities of origin, populated places serving as journey waypoints, embarkation cities (MX) and destination cities (US). These locations were cataloged in a travel list dedicated to each interviewee (see Appendix “B”, Waypoints Notes). As this information was compiled it was used in the ongoing construction of the geodatabase feature class (map layer) InterviewCities, from which geographic coordinates were derived.

Another database feature critical to developing this extended geospatial model is represented as point data by the features Migrant_Facilities and are uniquely identified using the alphanumeric primary key HVN_ID. These locations are comprised of entities which facilitate the journeys of migrants through Mexico to the U.S. southern border, such as Immigrant Advocacy Groups, Charitable Facilities and Churches. Also included in this layer are migratory detention facilities (Estaciones Migratorias) run by the Mexican federal government’s National Institute of Migration (INM). The nonexhaustive collection and mapping of these facilities was conducted and ground-truthed using open sources such as websites, Facebook pages, and Google Map/Street View Searches. Migrant capacities for each facility were primarily sourced from online press articles cited within the geodatabase field, Citation.

Data Manipulation & Analysis

Migratory routes for each interviewee were generated from populated places listed in Appendix “B”. Cities on each list were selected from the InterviewCities feature class, and a new feature class created, BTI_MigrantRoutes_Waypoints. As these waypoints were laid out on the map, a sequential travel order could then be applied which reflects the general pattern of movement by migrants from the Northern Triangle countries through Mexico to the US southern border in a northern/northwestern direction.

The geographic longitude-latitude coordinate pairs of those waypoints were entered into the Google Directions app to produce a travel route using Google Maps’ underlying local, state and national roads network. The resulting URL of the generated Google directions route was then entered as a parameter into an open source app, www.gpsvisualizer.com (see Figure 6) which converted the geographic information inherent in the URL into a Google Earth KML file. This resulting KML was converted to a Geodatabase feature class and assigned a file name reflecting the SerialNo of the interviewee the route represents.

A five-mile buffer was generated for each migrant route and assigned a file name reflecting the associated SerialNo of the route/interviewee. The buffers were then utilized in a spatial join, a geoprocessing operation which merges the qualitative attributes (in this case migrant capacities) of the Migrant Facilities point layer with the space occupied by each migrant route buffer. This buffering operation essentially casts a net over a migrant route to capture the total number of migrants that could be present in the proximity of a single route at a single point in time, based on the total capacities of facilities within the buffers space.

Because origin and destination cities were listed and mapped for each interviewee, a series of choropleth and graduated symbol maps were generated using political/administrative divisions (i.e., States, Departamentos, Municipios) as enumeration units to graphically express the quantities of emigrants at their sources and quantities of immigrants at their destinations.
Statistical Analysis

This describes the processes of estimating flows of migrants from Central America to the U.S. Estimates of undocumented immigrant flows are hard to come by. There are several reasonable approaches, including the multiplier approach, the capture-recapture, and the modeling approach. Our approach involved a modeling approach.

The modeling approach we developed identifies all of the people who are traveling to the United States in routes through Mexico. The approach involves two steps: identifying the capacity of the network then estimating the extent to which that capacity is actually being utilized.

Generating the capacity of the network was undertaken in GIS. This is described in more detail elsewhere but involved identifying:

- All paths along which people traveled from the Southern border of Mexico to the Southern border of the United States, developed from surveys of migrants in custody;
- The number of shelters along the route, specifically within five miles of the route;
- The capacity of people per shelter, developed from open sources.

Combining these will give the total capacity of the system, with the total number of spaces for people available along the entire route.

Next, we converted the capacity of the network to a total potential flow. The route capacity previously described identifies the number of people in the route at a given time, while what we really want is the number of people crossing the border per day or per year. Consider Figure 1, a stylized flow of the migrants. The capacity estimates identify the number of people at every stop (A1, A2, A3, A4, B2, B3, B4, C2, C3, and C4) while what we really want are the numbers passing across the border (passing out of A4, B4, and C4) in a given amount of time.

To calculate this, we divide the capacity of the route by the number of days it takes to traverse the route. Based on our survey, we estimated that the route would take 30 days to traverse, based on information from our interviews. We then converted this from a daily to an annual flow.

\[ \text{max. people completing/day} = \frac{\text{max. people completing/day}}{\text{days to complete the route}} \]

\[ \text{max. people completing/day} = \frac{\text{max. people completing/day}}{30 \text{ days}} \]

This presents us with a theoretical maximum flow, not the actual flow. To calculate the actual flow, we have to identify the extent to which the capacity of the network is actually utilized. One factor about utilization rate that is known is the season—migration rates are not constant throughout the year. To incorporate this seasonality, we used USBP data on migrants taken into custody. We assumed that the apprehension rate was constant, such that fewer migrants taken into custody in the smaller months would imply proportionally fewer migrants traveling in those months. In practice, we set the month with the largest number of migrants as the maximum capacity of the network, then scaled the number of migrants downward based on the actual number of apprehensions.
Statistical Analysis

Other factors about utilization are unknown. One the one hand, we would expect that the route would run below capacity as inefficiencies would lead to beds going unoccupied. Hotels in the United States and Mexico typically run at 50 to 70 percent capacity and this network's utilization rates may be near that range. On the other hand, our approach may not identify the maximum potential of the network. There may be a non-trivial number of migrants that are not staying in shelters or are staying in unidentified safehouses. For this reason, we used a range of possible scenarios, developing estimates based on 200%, 100%, 80%, and 50% of capacity.

<table>
<thead>
<tr>
<th>Utilization Estimates</th>
<th>Tucson</th>
<th>Laredo</th>
<th>Rio Grande</th>
</tr>
</thead>
<tbody>
<tr>
<td>200% OF CAPACITY</td>
<td>38,967</td>
<td>89,878</td>
<td>122,241</td>
</tr>
<tr>
<td>100% OF CAPACITY</td>
<td>19,483</td>
<td>44,939</td>
<td>61,121</td>
</tr>
<tr>
<td>80% OF CAPACITY</td>
<td>15,587</td>
<td>35,951</td>
<td>48,897</td>
</tr>
<tr>
<td>50% OF CAPACITY</td>
<td>97,42</td>
<td>22,469</td>
<td>30,560</td>
</tr>
</tbody>
</table>

We checked the validity of these numbers by comparing them to the known numbers of apprehensions. USBP records the nationality of migrants in custody and we can compare these to our estimates. In the Tucson sector, the average number of Central American migrants taken into custody in 2016 and 2017 corresponds to 73 percent of our capacity estimate. This seems plausible with our expectations of utilization rates. However, our Laredo and Rio Grande estimates are more problematic. Our Laredo estimate corresponds to 17 percent of our estimates while Rio Grande corresponds to 187 percent. Either there are significant differences in the apprehension rates in those sectors or there is still room for improvement in our estimates.

This validity check suggests that these estimates hold some potential but that there is room for improvement. There are several areas where this model can be improved. Some of the assumptions of the model are untested—is a distance of five miles from the route reasonable, too close, or too far? What percentage of shelters are being utilized? To what extent are Central American migrants falling out of the route, stopping along the way, and conversely to what extent are Mexican migrants are adding to the route (because while we focused on Central American migrants, Mexican migrants could use the same shelters on the same routes)? Additionally, these issues should be joined with other approaches to produce convergent validity, including improved capture/recapture rates, alternative approaches to sampling border crossers, or synthetic or proxy measures. These additional refinements would be useful for improving these estimates of migrant flow.
Figure 13: (above)
Migrant Routes to Sectors

Figure 14 (above)
Goal of Managing a GIS
Figure 15: (above)
Migrant Facilities

Figure 16: (above)
Detail of Five Mile Buffer
Figure 17: (above)
Migrant Routes to Tucson Sector

40 Interviewees/Routes
174 Facilities in Flow
16,157.9 Migrants in Flow

Figure 18: (above)
Migrant Routes to Laredo Sector

84 Interviewees/Routes
165 Facilities in Flow
14,056.5 Migrants in Flow
Figure 19: (above)
Migrant Routes to RGV Sector

Migrant Routes to US Border Patrol Sector
Rio Grande Valley
145 Interviewees/Routes
201 Facilities in Flow
18,876 Migrants in Flow
Questions and Results Analysis:

The following section will discuss the results of all 56 questions asked of detainees in accordance with the Western Institutional Review Board Protocol.

**Question 1**

**Have you been previously interviewed for this research project above?**

99% responded they had not, 1% appeared to be unsure giving us high confidence interviews were not repeated on the same individuals.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>99%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Question 2**

**Why did you leave your home?**

62% said for economic reasons, 25% fear of violence, 4% to escape illegal activities, 2% for education, and 0% to escape homelessness.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Economic Reasons</th>
<th>Fear of Violence</th>
<th>Escape Illegal Activity</th>
<th>Education</th>
<th>Escape Homelessness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62%</td>
<td>25%</td>
<td>4%</td>
<td>2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Analysis:** It should be noted that some respondents gave multiple reasons for why they chose to make the journey and the data here focuses on the primary reason stated. Further, it should be noted that violence and economic development have significant interplay on each other and thus put nations in what is known as the “security trap,” where violence hinders economic development and the lack of economic development exacerbates violence, be it criminal or political.

**Question 3**

**Do you know anyone who decided not to make the trip?**

81% responded no, 17% yes and 1% gave no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17%</td>
<td>81%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** Results are generally consistent with later questions related to perceptions of others not making the journey.

**Question 3 - Part 2**

**Why did they decide not to make the journey?**

89% gave no answer, 5% fear of violence, 5% economic answers, and 1% referred to immigration policies.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>No Answer</th>
<th>Fear of Violence</th>
<th>Economic Answers</th>
<th>Immigration Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>89%</td>
<td>5%</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Analysis:** This suggests the state of the US economy and its ability to offer jobs to the undocumented and violence during the journey are perceived to be the primary reasons for migrants not to make the journey.
**Question 4**

*Did the new Trump Administration policies impact your decision to travel?*

74% no, 23% yes, 1% not sure and 1% no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23%</td>
<td>74%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** Surveys were conducted in 2017-2018 which was an aberrant year for migrants given the low apprehensions immediately following the Trump administration’s entry into office. Thus, these surveys were of migrants who were not deterred when many others were. This suggests they were a particularly risk acceptant group or were facing a highly dangerous situation in their home country. Nonetheless, 23% still identified the entry into office of the Trump Administration and its rhetoric as effecting decision making.

**Question 4 - Part 2**

*Why? How?*

92% gave no answer. The remaining 8% gave myriad explanations including: “Difficult to enter,” “enforcement of immigration laws,” “new immigration policies,” “deportation,” “economic,” “fear of violence,” “no answer given.”

<table>
<thead>
<tr>
<th>Research Group</th>
<th>No Answer</th>
<th>Fear of Violence</th>
<th>Economic Answers</th>
<th>Immigration Policies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>89%</td>
<td>5%</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Analysis:** Given the high no response rate we should be cautious in analysis. Of the remaining 8% most cited some form of enforcement.

**Question 5**

*Why specifically did they not travel?*

83% no answer, 5% deportation, 4% Administration policies, 4% enforcement of immigration laws, 1% detention, 1% danger of journey, 1% economic, and all other responses less than 1% were typically related to violence on the journey and or retribution for entering US/anti-immigrant sentiment.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Deportation</th>
<th>Administration Policies</th>
<th>Enforcement of Immigration Laws</th>
<th>Detention</th>
<th>Economic</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>81%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** With an 83% non-response rate and a question that surveys migrants on the thinking of other people, we should be very cautious in interpretation. About 14% of the all migrants surveyed cited some form of enforcement as the reason the journey was not made.

**Question 6**

*Were you instructed by anyone on what to say if detained by U.S. authorities?*

93% of respondents claimed they were not instructed on what to say if detained, while 6% were told what to say, and 1% chose not to answer the question.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Were Not Instructed</th>
<th>Were Instructed</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>93%</td>
<td>6%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** This suggests that migrants are typically not told or instructed by smugglers to try to take advantage of the legal system in some fashion. This suggests the “magic words” rhetoric from Jeff Sessions is largely politicized rhetoric.
**Question 7**

**Did you or your smuggler have intentions to turn yourself in to US authorities?**

87% say no, 10% say yes and 3% give no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10%</td>
<td>87%</td>
<td>3%</td>
</tr>
</tbody>
</table>

**Analysis:** The 10% yes may be abnormally high due to selection bias, i.e. these interviews were done in detention centers and those who intended to be caught are likely to be overrepresented.

**Question 8**

**If so, what were your expectations if apprehended?**

50% No answer was given, 18% permission to remain, 20% deportation, 4% released on bond, 0% political asylum, 2% judicial review, 4% assistance to be given.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Deportation</th>
<th>Did Not Contemplate</th>
<th>Permission to Remain</th>
<th>Detention</th>
<th>Released on Bond</th>
<th>Bodily Harm</th>
<th>Assistance Given</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>81%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** Less than one in five believed they would get permission to remain. Results should be taken with a grain of salt given the group gave non-response rate of 50%.

**Question 9**

**What was your perception of what would happen to you if you were detained?**

62% deported, 6% detention, 11% did not contemplate, 9% no answer given, 3% permission to remain, 2% released on bond, 4% bodily harm, 3% assistance would be given.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Deportation</th>
<th>Did Not Contemplate</th>
<th>Permission to Remain</th>
<th>Detention</th>
<th>Released on Bond</th>
<th>Bodily Harm</th>
<th>Assistance Given</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>81%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** The majority of those surveyed did not expect a "public" benefit but only the ability to pursue employment. Only a narrow minority (5%) thought they would receive formal permission to remain, assistance. This suggests the notion that there is a widespread belief that people caught will legally remain in the United States is false. Less than 1 in 20 expect to walk freely in the United States. That number goes to 7% only if release on bond is included.
Where did your journey begin? What country and city?

Deliverables: Hard locations and hard numbers on a City- and Administrative District-level for this question in a geodatabase table called Interviews in three associated fields (see Appendix A, Questions to Database Fields)

Analysis: There is a noticeable concentration in migrants leaving from the southernmost Guatemala-Chiapas border region. This may be explained by existing relatives in the United States and connections to the US or may also be explained by the residents of this area regularly seeing the migrants passing through and becoming exposed to the smuggling networks. Network theory and “threshold” concepts may best explain the concentration of migrants from this area in Guatemala in addition to other contributing factors, be they violence and economic desperation.

Did you use a passport to Enter Mexico?

Research Group

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>92%</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

Analysis: This suggests a highly porous Mexico-Guatemala border in which there is either no passport requirement at the border (or is loosely enforced), or migrants cross between POE’s. Coordination with the Mexican government on tightening this border and enforcement in southern Mexico might be more cost effective than US-Mexico border enforcement expenditures.

Did you use a passport to Enter Mexico?

Research Group

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>62%</td>
<td>27%</td>
<td>10%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Analysis: Again, this suggests a highly porous Mexico-Guatemala border with only 27% using a smuggler likely as part of a larger journey smuggling trip and the majority 62% paying no fee.

What modes of Transportation did you use?

34% bus, 19% car, 13% boat, 13% walk, 8% semi-trailer truck, 1% airplane, 1% motorcycle, 5% swim, 6% train.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Bus</th>
<th>Car</th>
<th>Boat</th>
<th>Walk</th>
<th>Semi-trailer Truck</th>
<th>Airplane</th>
<th>Motocycle</th>
<th>Swim</th>
<th>Train</th>
</tr>
</thead>
<tbody>
<tr>
<td>34%</td>
<td>19%</td>
<td>13%</td>
<td>13%</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Analysis: The varied responses to this question may reflect the varied conveyance method a single individual may take in this long journey. Clearly land vehicle, bus, car and semi-trailer, constituted a large proportion of overall conveyance method (61%).

What roads did you travel on?

Deliverables: Answers for this question were rarely specified by the interviewee; Instead, Google’s underlying street network was used to create routes from interviewees' travel logs which were converted to GIS layers that our end-user can overlay on maps if they so wish. They are part of our deliverables and exist in both Google Earth KML file and Esri geodatabase feature classes in the geodatabase Routes_FromKMLs.gdb.

How did you travel? (walk, bus, car, truck, train, horse, boat)

<table>
<thead>
<tr>
<th>Mode of transportation</th>
<th>13.20%</th>
<th>33.60%</th>
<th>19.07%</th>
<th>0.53%</th>
<th>8.00%</th>
<th>5.47%</th>
<th>5.87%</th>
<th>12.93%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airplane</td>
<td>1.33%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.20%</td>
</tr>
<tr>
<td>Bus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33.60%</td>
</tr>
<tr>
<td>Car</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19.07%</td>
</tr>
<tr>
<td>Motorcycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.53%</td>
</tr>
<tr>
<td>Semi-trailer truck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.00%</td>
</tr>
<tr>
<td>Swim</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.47%</td>
</tr>
<tr>
<td>Train</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.87%</td>
</tr>
<tr>
<td>Walk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12.93%</td>
</tr>
</tbody>
</table>

Analysis: Land conveyance mechanisms dominated with vehicles busses, cars, semi-trailer trucks dominating with a combined percentage of 61%. Boats played a role in 13% of migrant journeys and walking similarly was 12.93%. It should be noted that migrants used multiple types of transport and thus instead of an N of 300 there was an N of 750 for this question. Question 13 and 15 are similar and effectively replicate each other. The similar answers and supremacy of land-based transport mechanisms suggest the results are robust.
Did you ride “La Bestia” or any other trains in Mexico?

Interviewees responded: Yes 16%, No 78%, 6% providing no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16%</td>
<td>78%</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Analysis:** This suggests the use of trains was not the primary mechanism for migrants making the journey through Mexico with only 16% choosing this dangerous and notorious conveyance method. The results here are consistent with those of question 13 suggesting land-based automobiles are the primary conveyance method. This may in part be due to the fixed nature of train tracks which allow for fixed state countermeasures. However, roads are typically more developed, in terms of other alternate routes allowing land-based vehicle transportation to be more adaptable in terms of countermeasures, e.g. if GOM LE establishes a checkpoint, it is more easily evaded by cars than by train. Also, the trains are notoriously dangerous in Mexico, with gangs charging extortion fees to ride. The fatigue of the journey makes it more likely only young men tend to choose this conveyance mechanism and smugglers choose to eschew it.

Was getting on the train organized by someone?

Interviewees replied: yes 3%, no 10%, 85% no answer given, and 2% were not sure.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3%</td>
<td>10%</td>
<td>85%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Analysis:** With such as high non-response rate we should take these results with a grain of salt. This low response rate is consistent with previous question results which suggest only 16% use trains on the journey. Of all responses only 3% said that it was organized actors controlling. It should be noted that that is 3% of the 15% responding with an answer suggesting this may be a larger proportion akin to 20% of respondents who rode trains saying the trains were controlled by “actors” likely organized crime.

What roads did you travel on?

Answers to this question are found in the word document Appendix B Waypoints Notes. In this appendix a list of cities visited by each immigrant (by serial number) is found. There are also GIS layers in Esri geodatabase feature class format in the geodatabase BTI_MigrantRoutes_Waypoints.gdb that visualize these waypoints in the form of routes traveled which our end-users can overlay on maps to further analyze the data.

Can you use this marker to trace on the map the route that you took to get from your country of origin to the U.S. border? Can you place an “x” at the places or cities that you rested or slept during your trip?

Our interviewers attempted to use hard copy maps, but we never developed an ideal process for this interactive mapping exercise. Alternatively, we ended up constructing routes in a GIS environment by digitally connecting-the-dots using the city waypoints visited by each interviewee, resulting in the GIS travel route layers in Esri geodatabase feature class format (found in Appendix B and the geodatabase Routes_FromKMLs.gdb).

Did you make use of any charitable facilities whose mission it is to help migrants?

Interviewees replied no 78%, yes 15%, and 12% gave no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15%</td>
<td>78%</td>
<td>12%</td>
</tr>
</tbody>
</table>

**Analysis:** Only 15% of those interviewed utilized shelters suggesting that those who make the journey likely stay in hotels, motels, or camp along the way. Thus, any “crackdown” on shelters would likely have a very limited impact in addition to being politically unwise and immoral.

---

² Sonia Nazario, Enrique’s Journey (United States of America: Random House, 2007).
Why did you enter the U.S. in this area of the border?

42% of interviewees said they were brought by a smuggler, 3% said they had had a prior successful crossing in the location, 5% said they perceived it as safe, 15% said it was the most direct route, 13% said they had a contact, 9% cited ease of crossing, 2% said it was a self-planned route, 1% identified it as close a train, and 11% gave no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Brought by a Smuggler</th>
<th>Prior Success in that Location</th>
<th>Perceived that Location as Safe</th>
<th>Most Direct Route</th>
<th>Had a Contact in that Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20%</td>
<td>16%</td>
<td>50%</td>
<td>4%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Self-planned Route</th>
<th>Location as Close as Train</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Analysis: Evidence indicates that smugglers play a key role in the choosing of route and the specific decision on where to cross. However, a slightly larger (45%) gave “Migrant decision” reasons for where they chose to cross.

Which specific resources would deter you from crossing the border in a given area?

24% replied Law Enforcement present, 18% pedestrian fencing, 14% said Helicopters, 6% Walls, 4% aerostat, 2% boat, 4% camera tower, 2% drone and 24% no answer given.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Law Enforcement Present</th>
<th>Pedestrian Fencing</th>
<th>Helicopters</th>
<th>Walls</th>
<th>Aerostat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20%</td>
<td>18%</td>
<td>50%</td>
<td>4%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Boat</th>
<th>Camera Tower</th>
<th>Drone</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Analysis: Only 6% cited a wall as something that would deter them. Pedestrian fencing ranked higher at 18% suggesting existing fence structures are effective deterrent types. Interestingly 24% cited Law enforcement presence as the single greatest deterrent factor. This is intuitive, a fence or wall can be scaled but only a responding LE agent can make a detention and end the migrant journey. Of note, migrants cited, helicopters, aerostats, drones, boats and camera towers as other significant deterrents. These results suggest that the high-tech border security advocates may be right. Instead of fixed fortifications and barriers, the Department of Homeland Security should focus on the deployment of visible technologies combined with law enforcement presence to deter illegal crossing and link LE to apprehensions.
What was your final U.S. destination, city and state?

Deliverable: Hard locations and hard numbers on a U.S. City and U.S. State levels (where the interviewer provided responses) in a geodatabase table called Migrants_to_Destinations in the geodatabase called BTI_Interviews.gdb. The resulting data is visualized in the choropleth below:

Question 23 - Part 2

Why are you going to that city?

Reunite with Family 48%, Reunite with Friends 18.67%, Education 67%, Employment 27.3%, Freedom from Violence .33%, No Answer Given 4.33%

Analysis: Reunification with family and friends was the overwhelming answer response combining to roughly 67% of all respondents for why they choose final destination city. Employment was the next largest factor at 27.3% while other factors such as education and freedom from violence playing almost no role in the migrant final city destination.

What U.S. benefits or guarantees were you promised, or did you expect, if you successfully entered the United States?

78% employment, 5% reunited with family, 4% freedom from violence, Residency 3%, medical care 1%, protection from US authorities 1%, 0% education, 0% asylum, 8% no answer given.

Analysis: Again results suggest that the primary “benefit” migrants expected was employment. 4% identified freedom from violence and 5% family reunification if they entered the United States.

Did someone help you or facilitate your journey?

69% replied yes, 23% replied no and 8% gave no answer.

Analysis: This suggests smugglers play a significant role for most migrants travelling from Central America. Whether this applies to the course of the entire journey or only a portion is unknown.
Amount of Money Paid by each migrant to smugglers.

<table>
<thead>
<tr>
<th></th>
<th>USD</th>
<th>GTQ</th>
<th>MXN</th>
<th>SVH</th>
<th>HNL</th>
<th>No Currency Answer Given (zero’s removed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average</strong></td>
<td>$4,135.92</td>
<td>$4,473.37</td>
<td>$194.53</td>
<td>$5,000</td>
<td>$526.36</td>
<td>$3,331.05</td>
</tr>
<tr>
<td><strong>Max</strong></td>
<td>$17,000.00</td>
<td>$11,578.33</td>
<td>$539.69</td>
<td>$5,000</td>
<td>$1,632.75</td>
<td>$10,000.00</td>
</tr>
<tr>
<td><strong>Min (zero’s removed)</strong></td>
<td>$26.00</td>
<td>$136.22</td>
<td>$2.62</td>
<td>$5,000</td>
<td>$63.57</td>
<td>$100.00</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>$3,875.00</td>
<td>$4,096.47</td>
<td>$183.65</td>
<td>$5,000</td>
<td>$425.08</td>
<td>$2,750.00</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>4000</td>
<td>4066.47</td>
<td>26.035</td>
<td>n/a</td>
<td>425.08</td>
<td>2000</td>
</tr>
<tr>
<td><strong>N Size (zero’s removed)</strong></td>
<td>112</td>
<td>49</td>
<td>13</td>
<td>1</td>
<td>7</td>
<td>16</td>
</tr>
</tbody>
</table>

**Analysis:** All currencies converted to 2018 USD. The above table gives us a sense of the amounts migrants pay to travel through Mexico and in what currency. All zeros or no answer given were removed. Payment in USD predominates, seconded by the Guatemalan Quetzal and Mexican Peso. We had only one entry for El Salvadoran currency. It should be noted that as these migrants were detained on the border, these amounts likely represent a fraction of total costs given most journeys involve payment in stages, including in the United States interior, as we will see in later questions.

**Question 26**

Did you make a verbal or other form of contract for the help you were given?

Yes 56%, No 17%, 25% no answer given and 2% were unsure.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>56%</td>
<td>17%</td>
<td>25%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Analysis:** Most respondents made some type of an agreement with a facilitator. Given the high no answer given rate, it is likely more used a facilitator or smuggler with fear of organized crime as one possible explanation for the high no response rate of 25%.

**Question 27**

Would you describe facilitators as being connected to the government?

59% no, Yes 2%, not sure 12%, and no answer given 27%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2%</td>
<td>59%</td>
<td>27%</td>
<td>12%</td>
</tr>
</tbody>
</table>

**Analysis:** Only 2% of respondents knew their smugglers had a relationship with the government (Context implies Mexican government). This percentage is no doubt higher given the unsure (12%) and no response rate (27%).

**Question 28**

Do you know if the facilitators are connected to organized crime?

Yes 10%, no 38%, not sure 21%, and 31% gave no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10%</td>
<td>38%</td>
<td>31%</td>
<td>21%</td>
</tr>
</tbody>
</table>

**Analysis:** A majority gave answers of not sure or no answer which is to be expected given the nature of secretive and menacing organized crime groups. Only 10% identified organized crime groups as connected to their facilitators with 38% saying their facilitators were not working with organized crime. In this case the 10% connection of facilitators to larger organized crime groups is likely an under representation.
Do you know of any affiliated gangs or groups that helped the facilitator?

Zetas 20%, Diez y Ocho 14%, Cartel de Noreste 3%, Mara Salvatrucha 34%, Gulf Cartel 29%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Zetas</th>
<th>Diez y Ocho</th>
<th>Cartel de Noreste</th>
<th>Mara Salvatrucha</th>
<th>Gulf Cartel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20%</td>
<td>14%</td>
<td>3%</td>
<td>34%</td>
<td>29%</td>
</tr>
</tbody>
</table>

Analysis: These answers skew toward large DTOs operating in northeastern Mexico and Maras operating in Central America and Mexico. The 3% of Cartel de Noreste is likely an under representation given it split from Los Zetas in 2016 period and is relatively new. As a former Zeta faction, members of the group may also call themselves Zetas as some US LE continues to do. Thus, a portion of the 20% Zeta may also be referring to CDN. It should be noted that the Maras also operate in many Mexican states particularly in the south according to Mexican PGR reports.

Did the facilitator accept a form of debt to be paid later? Describe the terms presented by the facilitator.

34% yes, 23% no, 40% no answer given, 3% unsure.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34%</td>
<td>23%</td>
<td>40%</td>
<td>3%</td>
</tr>
</tbody>
</table>

Analysis: Fully a third of respondents said that debt played a role in their journey. However, as subsequent question results will illustrate, this appears to be debt related to stages of the journey for the majority, rather than long term collateral-based debt. It should be noted that with a no answer rate of 40% the role of predatory lending could be larger than represented here.

Was any collateral or guarantee offered?

Yes 7%, No 57%, No answer given 34%, 2% unsure.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7%</td>
<td>57%</td>
<td>34%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Analysis: Collateral debt guarantees appear to be the minority of cases but with the no response rate, this result should be viewed cautiously.

Were family members serving as collateral?

No 66%, No Answer given 33%, not sure 1%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7%</td>
<td>57%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Analysis: It appears that family members were not used collateral in smuggler debt obligations however, given the sensitive nature of such questions, the authors cannot rule out false answers or the 33% non-response rate as a factor in this result.
**Question 34**

**How was payment to be made?**

Wire Transfer 28%, 1% money Order, Bank Loan 1%, Bank account transfer 8%, and Cash 50%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Cash</th>
<th>Wire Transfer</th>
<th>Bank Account Transfer</th>
<th>Money Order</th>
<th>Bank Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
<td>28%</td>
<td>8%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** “Cash is King” - Cash payment predominates during the journey accounting for half of all payments. Wire transfers, Bank account transfers, and money orders account for 37% of all transactions. Less than 1% involved a form of debt, likely to a bank and not the smuggler.

**Question 35**

**How was payment to be made?**

Responses to this question were taken from Question 34

**Question 36**

**Did the facilitator steal your money and not help you?**

70% no, 2% yes, 28% no answer given.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2%</td>
<td>70%</td>
<td>28%</td>
</tr>
</tbody>
</table>

**Analysis:** While the 28% no response rate suggests we should be wary in our interpretation of results, only 2% of migrants interviewed positively identified their smugglers as stealing from them or not helping them after payment rendered. While an illicit market allows a great deal of defection, if facilitators do not establish positive reputations for getting migrants to the US, they are not likely to get repeat customers and the overall demand for the journey would go down. Simple market forces explain why facilitators tend to minimize stealing from their clients.

**Question 37**

**Did the facilitator threaten you?**

Yes 5%, No 67%, 28% no answer given.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>67%</td>
<td>28%</td>
</tr>
</tbody>
</table>

**Analysis:** Threats appear to play a limited role in smuggling operations. This is intuitive in the sense that migrants and facilitator incentives are aligned during the journey.

**Question 38**

**Did the facilitator Hurt you?**

No 70% No answer given 28%, yes 2%, not sure 0%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2%</td>
<td>70%</td>
<td>28%</td>
</tr>
</tbody>
</table>

**Analysis:** Only 2% of migrants identified being harmed by the smuggler suggesting again that the migrant and smuggler incentives are aligned during the journey. It should noted that these migrants were caught at the border and there are well known cases of smugglers demanding more money from migrants at US based stash houses. These types of cases may thus be under represented in this sample, portraying an overly optimistic view of smuggler practices.
Question 39

Were you ever transferred to other facilitators or did the same one help you all the way along your journey?

Yes 40%, No 29%, No answer 30%, and Not sure 1%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40%</td>
<td>29%</td>
<td>30%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** Based on the results, 40% of respondents were transferred between facilitators suggesting facilitators may have had local affiliates or employees for different portions of the journey.

Question 40

How was delivery made?

No answer 99%, and Bank loan 1%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Cash</th>
<th>Bank Loan</th>
<th>Wire Transfer</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
<td>99%</td>
</tr>
</tbody>
</table>

Question 40 - Part 2

Do your friends contacted for more money?

Yes 5%, No 64%, No answer 30%, and not sure 1%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>64%</td>
<td>30%</td>
<td>1%</td>
</tr>
</tbody>
</table>

**Analysis:** Only 5% had family members contacted for more money during the Mexican portion of the journey. This suggests common reports of smugglers changing terms of the contract in “coyote rip” situations are more likely to occur in the US portion. Again there is a 30% no response rate and there may be selection bias as people whose contracts change en route may not have made it the US border.

Question 41

Do you or your family continue to owe money to anyone facilitating this journey?

Yes 15%, No 55%, No answer given 28%, and not sure 2%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15%</td>
<td>55%</td>
<td>28%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Analysis:** This question related to debt engendered a more larger response than previous similar questions. Fully 15% acknowledged continuing to owe money to a facilitator because of the cost of the journey. As the answers to question 42 indicate property confiscation, personal debt, death and bodily harm were significant responses. However, the no response rate was 28% for question 41 and 79% for 42 below.
Question 42

What are the consequences of failing to pay these debts?

No answer given 79%, incur personal debt 6%, property confiscation 8%, Death 2%, bodily harm 1%, handed over to authorities 1%, hostage 2%, Harm family 0%, Incarceration 0%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Incur Personal Debt</th>
<th>Property Confiscation</th>
<th>Bodily Harm</th>
<th>Death</th>
<th>Handed Over to Authorities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6%</td>
<td>8%</td>
<td>1%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Hostage</td>
<td>Harm Family</td>
<td>Incarceration</td>
<td>No Answer</td>
<td>2% 0% 0% 79%</td>
</tr>
</tbody>
</table>

Analysis: Again results suggest that the primary “benefit” migrants expected was employment. 4% identified freedom from violence and 5% family reunification if they entered the United States.

Question 43

Did the facilitator charge different amounts to different people based on nationality, gender, race, or religion?

Yes 6%, No 24%, Not sure 33%, and no answer 37%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6%</td>
<td>24%</td>
<td>37%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Analysis: Scholars have long pointed to different nations of origin being charged differently based on the nation of origin. This has been linked to terror concerns post 911 where in cartels are perceived to be unwilling to bring middle eastern migrants to the United States given the US response to another 911 style attack would shut down the US Mexico Border constricting profits for these rational organized criminals. Only 6% of migrants responding to this question in the affirmative at first glance appears to refute that assertion. However, given the not sure and no response rates combine to more than 70% of all responses, we should again be cautious in interpretation.

Question 44

Were you ever a facilitator?

87% No, 13% no answer.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>87%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Analysis: This null result is to be expected given it effectively asks them to confess to a crime, though a clear majority are likely telling the truth given the ratio of smugglers to migrants.

Question 45

How did you attempt to enter the United States?

Rural area 53%, Urban area 8%, crossed river 37%, between port of entry 2%, no answer given 1%, near urban bridge 0%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Rural Area</th>
<th>Urban Area</th>
<th>Crossed River</th>
<th>Between Port of Entry</th>
<th>Near Urban Bridge</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6%</td>
<td>8%</td>
<td>1%</td>
<td>2%</td>
<td>1%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Analysis: River crossings tend to be rural suggesting very few migrants attempt urban crossings (8%). This is consistent with the current state of border security resource distribution which since the 1990s has built up urban areas with physical barriers and increased LE and surveillance. While urban areas allow migrants to rapidly blend into the local population, increased LE presence in urban areas makes rural crossings more attractive.

Question 46

Where were you detained?

<table>
<thead>
<tr>
<th>Location Detained</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arivaca, AZ (Sasabe, MX)</td>
<td>1</td>
</tr>
<tr>
<td>Encinal, TX, USA</td>
<td>2</td>
</tr>
<tr>
<td>Laredo, Texas</td>
<td>2</td>
</tr>
<tr>
<td>Laredo, TX</td>
<td>1</td>
</tr>
<tr>
<td>Laredo, TX, USA</td>
<td>2</td>
</tr>
<tr>
<td>Lukeville, AZ (Hombres Blancos, MX)</td>
<td>1</td>
</tr>
<tr>
<td>McAllen, TX</td>
<td>1</td>
</tr>
<tr>
<td>McAllen, TX, USA</td>
<td>2</td>
</tr>
<tr>
<td>Near Camargo, MX</td>
<td>2</td>
</tr>
<tr>
<td>Near Fallurrias, Texas</td>
<td>1</td>
</tr>
<tr>
<td>Near Fallurrias, TX</td>
<td>2</td>
</tr>
<tr>
<td>Near Hidalgo, MX</td>
<td>1</td>
</tr>
<tr>
<td>Near Laredo, TX</td>
<td>6</td>
</tr>
<tr>
<td>Near McAllen, TX</td>
<td>61</td>
</tr>
<tr>
<td>Near Miguel Aleman, MX</td>
<td>4</td>
</tr>
<tr>
<td>Near Mission, TX</td>
<td>2</td>
</tr>
<tr>
<td>Near Nogales, MX</td>
<td>9</td>
</tr>
<tr>
<td>Near Nuevo Laredo, MX</td>
<td>76</td>
</tr>
<tr>
<td>Near Reynosa, MX</td>
<td>76</td>
</tr>
<tr>
<td>Near Rio Grande City, TX</td>
<td>4</td>
</tr>
<tr>
<td>Near Roma, TX</td>
<td>4</td>
</tr>
<tr>
<td>Near San Francisco, TX</td>
<td>1</td>
</tr>
<tr>
<td>Near San Ygnacio, TX</td>
<td>1</td>
</tr>
<tr>
<td>Near Sasabe, MX</td>
<td>10</td>
</tr>
<tr>
<td>Near Sonoyta, MX</td>
<td>11</td>
</tr>
<tr>
<td>Near Tijuana, MX</td>
<td>1</td>
</tr>
<tr>
<td>Near Tucson, AZ (Nogales, MX)</td>
<td>4</td>
</tr>
<tr>
<td>Near Tucson, AZ (Nogales, MX)</td>
<td>1</td>
</tr>
<tr>
<td>Nogales, AZ (Nogales, MX)</td>
<td>3</td>
</tr>
<tr>
<td>Rio Grande City, TX</td>
<td>1</td>
</tr>
<tr>
<td>Rio Grande River</td>
<td>1</td>
</tr>
<tr>
<td>Roma, TX</td>
<td>1</td>
</tr>
<tr>
<td>San Luis Potosi, MX</td>
<td>1</td>
</tr>
<tr>
<td>Topawa, AZ (Sasabe, MX)</td>
<td>1</td>
</tr>
<tr>
<td>unsure</td>
<td>1</td>
</tr>
</tbody>
</table>

Grand Total: 298

Analysis: The data speaks for itself in this case. The location of the interview (nearest detention center to where a migrant was detained) invariably correlates with the location of where the detention actually occurred on the border (for example, if an immigrant crossed into the U.S. within the confines of the Tucson Sector, they were interviewed at the Tucson Sector.)
Question 47

Who detained you? Mexican or U.S. authorities?

92% US authorities, no answer given 8%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>U.S. Authorities</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>87%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Question 48

Did you gain the cooperation of any officials in the United States or Mexico?

No 19%, No answer given 79%, 1% yes, and not sure 1%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
<td>19%</td>
<td>79%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Question 49

Did you gain the cooperation of any officials in the United States or Mexico? At what level agency or type?

1% Mexican federal police, 1% State LE, 1% federal LE and 98% no answer given.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>State LE</th>
<th>Federal LE</th>
<th>Mexican Federal Police</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>98%</td>
</tr>
</tbody>
</table>

Analysis: The 1% LE cooperation likely refers to Mexican LE and the payment of small bribes or mordidas to allow their journey to continue.

Question 50

What did you charge migrants for various parts of the journey? What currency did you prefer to be paid in?

100% of the responses for this were “No Answer Given”.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Question 51

Did prices you charged change depending on the mode of transportation?

No answer given 94%, Yes 1%, No 2%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
<td>2%</td>
<td>94%</td>
</tr>
</tbody>
</table>

Question 52

Were migrants subject to price increases?

Yes 3%, no 9%, No answer given 84%, not sure 4%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3%</td>
<td>9%</td>
<td>4%</td>
<td>84%</td>
</tr>
</tbody>
</table>
**Question 52**

*Were migrants subject to price increases?*

Yes 3%, no 9%, No answer given 84%, not sure 4%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3%</td>
<td>9%</td>
<td>4%</td>
<td>84%</td>
</tr>
</tbody>
</table>

**Question 52 - Part 2**

*If so why or under what circumstances?*

98% no answer given, 1% vary by mode of transportation, currency exchange 1%, yes 1%, demanded ransom 1%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>Demanded Ransom</th>
<th>Vary by Mode of Transportation</th>
<th>Currency Change</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3%</td>
<td>9%</td>
<td>4%</td>
<td>98%</td>
<td>98%</td>
</tr>
</tbody>
</table>

**Question 53**

*Were migrants ever stolen by rival groups?*

No answer given 84%, no 13% yes 1%, not sure 2%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
<td>13%</td>
<td>2%</td>
<td>84%</td>
</tr>
</tbody>
</table>

**Question 54**

*Were migrants allowed to pay debts after being released into the US?*

84% no answer given, yes 9%, no 4%, not sure 3%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9%</td>
<td>4%</td>
<td>3%</td>
<td>84%</td>
</tr>
</tbody>
</table>

**Question 55**

*How was payment assured?*

No answer given 91%, Hold hostage 7%, death threat 0%, cash 1%, wire transfer 1%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Cash</th>
<th>Wire Transfer</th>
<th>Death Threat</th>
<th>Hold Hostage</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>7%</td>
<td>91%</td>
</tr>
</tbody>
</table>

**Question 56**

*Was there any collateral offered or provided?*

No 57%, No answer 34%, yes 7%, not sure 2%.

<table>
<thead>
<tr>
<th>Research Group</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
<th>No Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7%</td>
<td>57%</td>
<td>2%</td>
<td>34%</td>
</tr>
</tbody>
</table>
Analysis

Trump administration rhetoric played a major role in reducing migrant crossings in 2017 which posted aberrantly low apprehension numbers. It was clear to all, including the migrants, that the migrant networks were effectively waiting to see how policies would be implemented. 2018 saw an increase from 2017 numbers in terms of apprehensions. To compensate the administration implemented a zero-tolerance policy including family separations which has resulted in severe political backlash.

Push-Pull factors

Many Central American migrants from the northern triangle countries of Honduras, Guatemala, Belize and El Salvador currently face record high levels of violence. Given high homicide rates and forced gang recruitment on pain of death, some people are migrating because of the extreme consequence of gang violence. It is difficult to identify a legal border deterrent mechanism that is higher consequence than death, torture, and rape. Poverty, which is exacerbated by security issues, also creates a push incentive to leave these areas. Given that family separation has proven morally, politically, and legally difficult, alternative policies such as cooperation with the incoming Mexican administration and foreign aid and security assistance to Central America might be more cost-effective policies.

Notwithstanding, many migrants identified employment as the primary “benefit” they sought followed by fleeing from insecurity. Few thought they would attain public welfare benefits of any kind. Migrants identified states such as Texas, California, New York and Virginia as their primary destinations and overwhelmingly identified family or friend reunification and employment opportunities in these areas as the reason. GIS maps identified areas along the Guatemala-Mexico border as the primary departure zone for Central American Migrants suggesting that country conditions, and exposure to the smuggling networks increase the likelihood of migration.

The strong U.S. economy is a major pull factor for migrants seeking employment. This suggests workplace enforcement which has been stepped up in recent years would be a major deterrent. However, given most migrants identified this as a major motivator it does not appear to be having that effect, yet. There could be a lag effect in terms of deterrence if migrants are unaware of these stepped-up enforcement mechanisms.

Migrant Contracts

No large-scale evidence was found for a massive underground smuggler debt market though debt did play a limited role in the market (under 10% across multiple questions). Most transactions were on some level cash based and immediate transactions or phased throughout the journey.

Choosing Crossing Points: Deterrent Factors

Migrants were typically undeterred by physical barriers (walls 6% and pedestrian fencing 18%) but were intent upon avoiding law enforcement personnel (24%) and identified myriad technologies that link LE personnel to physical spaces as deterring them. While not discounting the value of barriers, these results suggest migrants would be equally as deterred by a flexible law enforcement and technology centered border system. This would avoid many of the costs associated with barrier construction, including the costly use of imminent domain, environmental damage, damage to migratory species, and the high maintenance costs of physical infrastructure. Most migrants attempted crossings in rural areas. This is consistent with existing infrastructure in urban areas and LE presence built up since the 1990’s.

---


### DELIVERABLES

**Esri File Geodatabases:**
- BTI_Interviews.gdb
- BTI_MigrantRoutes_Waypoints.gdb
- Routes_Buffers.gdb
- Routes_FromKMLs.gdb

**Google Earth KML Files:**
Each file represents a proposed route traveled by the interviewee

**Maps**
- Choropleth_NorthernTriangle_Admins_20180506.png
- Choropleth_NorthernTriangle_Country_20180506.png
- Choropleth_USA_DestinationCities_20180506.png
- Choropleth_USA_Destinations_20180506.png
- Routes_Totals_BPSSector_Laredo.png
- Routes_Totals_BPSSector_Laredo_RGV_Tucson.png
- Routes_Totals_BPSSector_RioGrandeValley.png
- Routes_Totals_BPSSector_Tucson.png

**Power Point presentation**
- Presentation_GIS_20180523.ppt

**Data Model Illustration**
- Migrants_GDB_DataModel_2017.pdf

### RECOMMENDATIONS

**Commission a Program Extension to collect additional capacity data**

**Commission a Validation Study to validate utilization rates and other project factors**

Commission a contract to merge USBP existing route data with the Mapping Service, collect more data on capacity and utilization of network, manage the Mapping Service for DHS and/or USBP and other requirements … for the purposes of validating or refining this new conceptual methodology for estimating total illegal inflows.
Figure 2: (right)
Migrants Data Model
REFERENCES


APPENDICES

(1) Legitimate Trade & Travel/Immigration Policy Project Details Trade/Immigration Policy
Area: Uncovering Human Smuggling Patterns from Guatemala to the U.S.

Institutional Review Board Protocol, Western IRB (WIRB), Updated & Revised 08/18/2016

Project: Uncovering Human Smuggling Patterns from Guatemala to the U.S.

Principle Investigator: Project Lead(s) Gary J. Hale, Voir Dire International, LLC

Number of Students/Postdocs/Staff supported by Project - None
Informed Consent — Permission From for Research Regarding Migration to the U.S.

Consentimiento — Formulario de Permiso para participar en una investigación sobre migración a los Estados Unidos de Norteamérica

**TITLE:** Uncovering Human Smuggling Patterns from Guatemala to the U.S.

**NAME:** Descubriendo Patrones de Migración desde Guatemala hacia los EEUU

**PROTOCOL NO.:** None

**No. de Protocolo:** Ninguno

**SPONSOR:** Department of Homeland Security (DHS)

**Patrocinador:** Departamento de Seguridad Patrocinial (DHS por sus siglas en inglés)

**INVESTIGATOR:** Gary J. Hale, LLM

5710 Gardenia Lane

Katy, Texas 77493

United States

Investigador: Gary J. Hale, LLM

**STUDY-RELATED PHONE NUMBERS(S):**

Gary J. Hale, 832-865-7659 (cell phone)

**Punto de Contacto para la investigación:**

Gary J. Hale, celular: 832-865-7659. 

As an academic researcher and investigator, I am seeking your permission to ask you a series of questions about your trip from its point of origin to the United States of America.

Aviso:

Soy un investigador académico y estoy solicitando su permiso de hacerle una serie de preguntas sobre su viaje desde el punto de origen hasta los estados unidos Norteamérica.

Ud. no se tiene que identificar en ningún documento para participar en esta investigación.

**Why is this study being conducted?**

Gary J. Hale and members of his company are seeking to know more about the challenges and difficulties that people face when migrating from their countries of origin to the United States of America. This research will help us give recommendations to the governments of Central American nations as well as to Mexico and the United States on how to best provide support and assistance to the migrant community.

You are being asked to participate because you probably migrated from another country to the United States of America, through Mexico.

**Participation in this research will have no effect on your release from detention.**

Gary J. Hale y miembros de su empresa desean saber más sobre los retos y dificultades que se enfrenta la gente cuando hacen un viaje migratorio desde sus países de origen hacia los estados unidos de Norteamérica. Esta investigación nos ayudara en preparar recomendaciones a los gobiernos de los países centro americanos, así como a los gobiernos de México y de los estados unidos de Norteamérica sobre como mejorar y apoyo al pueblo migrante.

Ud. ha sido invitado para participar porque probablemente hizo un viaje migratorio desde otro país hacia los estados unidos de Norteamérica, por México.

Su participación en esta investigación no tendrá ningún efecto a su libertad de ser detenido.

**What is involved in this study?**

If you agree to participate in this study you will be asked some questions about your trip north, what happened during your trip, if you were provided shelter and assistance and where you received such help, if you were threatened or harmed in any way and by whom.

You must be between 18 and 64 years of age to participate in this study. Minors of age and persons who are mentally incompetent or mentally disabled are excluded from participating in this study.

This research will help us understand the motives, risks and conditions that people like you experienced and this will allow us to make recommendations to help people like you.

This interview will take from 60-90 minutes, we will only take handwritten notes and the interview will not be recorded in any way. Only the interviewers, translators and others from the University of Houston will have access to your answers. Each interview will be numbered and we will use a fictitious nickname, not your real name, so that no one will know who provided the answers to the questions that we asked.
Taking part in this study is voluntary. You may decide not to participate or you can end your participation at any time. There will be no penalties for withdrawal at any time. You may quit the study at any time without having to explain why. The researcher may decide to stop your participation if he/she thinks that your participation is causing you harm or discomfort.

Su participación en esta investigación es voluntaria. Ud. puede decidir no participar en esta investigación o puede terminar su participación en cualquier momento. No hay multas o pérdida de beneficios que le correspondan a Ud. si decide no ser parte de la investigación.

El investigador podrá terminar su participación si él/ella piensa que su participación lo está lastimando en alguna forma.

¿Con quién me puedo comunicar si tengo preguntas o problemas mientras que estoy participando en esta investigación?

You may ask any questions or concerns about your participation as a research subject or if you have questions or complaints about the research, you may contact the Western Institutional Review Board at 08 1019 39th Avenue SE Suite 120, Puyallup Washington 98374-2115, Telephone: 1-800-562-4789 or 360-252-2500, E-mail: Help@wirb.com.

¿Requisitos de Informes mandatarios que Ud. debe conocer:

Mandatory reporting requirements you should know about:

Declaración de Consentimiento:

I am _____ years of age. I have read each page of this permission form, or it was read to me in Spanish. I understand and acknowledge that my participation is voluntary and that I can stop participating in this study at any time with no penalty of punishment. I understand that I will be provided a copy of this authorization to take with me.

Do I enjoy any confidentiality from being a participant in this study?

Your participation is confidential. You will not be identified by your real name and none of the information you provided will be linked to your real name. Your information will be assigned an alias (code number or letter). This information will be kept separate from any information dealing with the study. Your name will not be used in any report. Western Institutional Review Board® (WIRBW) will have access to your records.

Su participación es confidencial y reservada. Ud. no será identificado por nombre y ninguna de la información que nos proporcionara tendrá algún nexo con su nombre.
Qualitative
Structured interview questions.

Preguntas para la investigación sobre migración a los Estados Unidos de Norteamérica.

**TITLE:** Uncovering Human Smuggling Patterns from Guatemala to the U.S.

Nombre: Descubriendo Patrones de Migración desde Guatemala hacia los EEU

**PROTOCOL NO.:** None | WIRB® Protocol #20160899

No. de Protocolo: Ninguno | WIRB® Protocol #20160899

**SPONSOR:** Department of Homeland Security (DHS)

Patrocinador: Departamento de Seguridad Patrocinial (DHS por sus siglas en inglés)

**INVESTIGATOR:** Gary J. Hale, "LLM

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**STUDY-RELATED PHONE NUMBERS(S):** Gary J. Hale,

832-865-7659 (cell phone)

Punto de Contacto para la investigación: Gary J. Hale, celular: 832-865-7659

---

**Question 1**

How old are you? Have you been interviewed for this research project on immigration before? And if at any time you realize you have participated in this research please tell the interviewer.”

¿Que edad tiene Ud.? ¿Ha sido entrevistado anteriormente para esta investigación sobre inmigración? Si en cualquier momento recuerda que si ha participado en esta investigación, por favor de informar al investigador.

**Question 2**

Why did you leave your home? (Was it for economic reasons, fear of violence, family reunification or any other reason?)

¿Por qué abandonó su hogar? (¿Fue por motivos económicos, temor de violencia, para reunirse con su familia o por cualquier otra razón?)

**Question 3**

Where did your journey begin? What country and city?

¿Dónde empezó su jornada? ¿En qué país y ciudad?.

**Question 4**

Did you use a passport or other documentation to enter Mexico?

¿Uso un pasaporte u otro documento?

**Question 5**

Did you have to pay anyone to enter Mexico? How much did you pay and to whom?

¿Tuvo que pagarle a alguna persona para entrar a México? ¿Cuánto pago y a quién?
Question 6
What modes of transportation did you take and in which places?
¿Qué medios de transporte utilizo y en qué lugares utilizo esos medios?

Question 7
What roads did you travel on?
¿Qué caminos o carreteras utilizó para viajar?

Question 8
How did you travel? (walk, bus, car, truck, train, horse, boat)
¿Cómo realizo su jornada? (¿A pie, por autobús, por vehículo, por camión, por ferrocarril, por caballo o mula, por bote o lancha?)

Question 10
Was getting on the train organized by someone? Did you have to pay to get on the train?
¿Estaba organizada la subida al tren por alguna persona? ¿Tuvo que pagar alguna tarifa para subirse al tren?

Question 11
Describe your journey. Name the cities or towns you stopped in along the way.
Díganos sobre su jornada: ¿En cuales pueblos o ciudades descanso durante su viaje?

Question 12
Did you make use of any charitable facilities whose mission is to help migrants? If so which ones? What services did they provide?
¿En cualquier momento utilizo servicios públicos, u hogares u otros servicios de inmigrantes? ¿Cuáles son los servicios que les prestaron a los inmigrantes?

Question 13
Did someone help or facilitate you make your journey?
¿Hay alguna persona, un guía, que le ayudó o facilitó su jornada?

Question 14
How much did you pay the facilitator? In what currency?
¿Cuánto le pago a esa persona (el guía)? ¿En qué tipo de moneda?

Question 15
Did you make a verbal or other form of contract for the help you were given?
¿Se realizó algún acuerdo, entendimiento o contrato para recibir la ayuda que recibió Ud.?

Question 16
Would you describe the facilitators as being connected to the government?
¿Esa gente que le ayudó (los guías) son agentes de algún Gobierno?
Question 17
Do you know if the facilitators are connected to organized crime?
¿Tiene conocimiento de que esa gente (los guías) son mafiosos o algún tipo de delictuoso?

Question 18
Do you know the names of any affiliated gangs or groups that helped the facilitator?
¿Tiene conocimiento de los nombres de los grupos, carteles, pandillas u otros que apoyaban los guías que les ayudaron a Ud.?

Question 19
Did the facilitator accept a form of debt to be paid later?
Describe the terms presented by the facilitator.
¿Se aceptó por el guía alguna forma de deuda que se podría pagar por Ud. después? Díganos sobre los elementos del acuerdo que tuvo con el guía que les ayudó.

Question 20
Was any collateral of guarantee offered?
¿Había alguna forma de enganche o de garantía que Ud. ofreció para recibir ayuda?

Question 21
Were family members serving as collateral?
¿Se ofrecieron o se detuvieron algunos familiares como garantía?

Question 22
How was payment made or to be made?
¿Cómo se iba pagar o cómo se pagó por la ayuda recibida?

Question 23
Were you to make a wire transfer or pay cash or pay by some other means?
¿Se iba realizar una gira bancaria, o se pagó en efectivo o se pagó por otra manera?

Question 24
Did the facilitator steal your money and not help you?
¿Le robaron su dinero los que estaban ayudándole a Ud.?

Question 25
Did the facilitator threaten you?
¿Lo amenazó el guía que le estaba ayudando con su viaje?

Question 26
Did the facilitator hurt you?
¿Lo lastimó el guía que le estaba ayudando con su viaje?
Question 27
Were you ever transferred to other facilitators or did the same one help you all the way along your journey?
¿Fue Ud. transferido a otros guías o otras personas durante varias etapas de su jornada o le ayudó el mismo guía durante el viaje entero?

Question 28
Were your family members or friends contacted for more money? How much? How was delivery made?
¿En cualquier momento le pidieron más dinero a Ud. o a sus familiares? ¿Cuánto más? ¿Cómo se entregó esa cantidad adicional?

Question 29
Do you or your family continue to owe money to anyone for facilitating this journey?
¿Sigue Ud. con una deuda al guía u otra persona que le ayudó con su jornada?

Question 30
What are the consequences of failing to pay these debts? Have you received specific threats?
¿Qué serían las consecuencias de no pagar estas deudas? ¿Ha sido Ud. amenazado en una manera específica?

Question 31
Did the facilitator charge different amounts to different people based on nation of origin gender race or religion?
¿Se cobraron tarifas o cuotas de diferentes cantidades a distintos individuos con base a su país de origen o su sexo o su religión?

Question 32
Were you ever a facilitator?
¿En cualquier momento ha sido Ud. un guía para otros inmigrantes?

Question 33
Did you gain the cooperation of any officials in Mexico or the U.S.?
¿Cuándo y si trabajó como guía: se obtuvo el apoyo de agentes de México o de EEUU para realizar su trabajo?

Question 34
At what level and agency type? (Customs, law enforcement local, state, federal)
¿En qué nivel de Gobierno trabajaban esos agentes? ¿Eran agentes de que agencia? ¿Eran agentes de la aduana, de la policía municipal, de la policía estatal, o eran agentes federales?

Question 35
What did you charge migrants for various parts of the journey? What currency did you prefer to be paid in?
¿Cuando y si trabajó como guía: ¿Cuánto cobró Ud. a los inmigrantes para realizar las varias etapas de su jornada? ¿Qué tipo de moneda o dinero se aceptó como pago? (dólares, pesos, etc.)

Question 36
Did prices you charged vary by mode of transportation?
¿Las tarifas varían por modo de transporte? ¿O sea, cada modo de transporte tiene su propia tarifa?
Question 37

Were migrants subjected to price increases? If so, why or under what circumstance?

¿Los inmigrantes sufrían precios más altos? ¿Si es así, que causo esos incrementos de precio?

Question 38

Were migrants ever “stolen” by rival groups?

¿Hubo alguna ocasión en cuando los migrantes fueron “robados” por grupos rivales?

Question 39

Were migrants allowed to pay debts after being released in the United States?

¿Había ocasión en cuando los inmigrantes estaban permitidos de pagar sus deudas por el transporte ya que habían llegado a su destino en los EEUU?

Question 40

How was payment assured?

¿Cómo aseguraron los guías que serían pagados?

Question 41

Was there any collateral provided or offered?

¿Si había una forma de fianza, qué usaban como fianza? (dinero, rehenes, propiedades, etc.)
Appendix A:
Association between interview questions and geodatabase tables

General fields which were not explicitly on the questionnaire:

<table>
<thead>
<tr>
<th>Table: Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field: SerialNo</td>
</tr>
<tr>
<td>Field: Intrw</td>
</tr>
<tr>
<td>- Domain: Interviewers</td>
</tr>
<tr>
<td>Field: NumMigsAcmpny (Number of Migrants that accompanied the interviewee)</td>
</tr>
<tr>
<td>Field: NumMigsObsrvd (Number of Migrants that the interviewee observed on the journey)</td>
</tr>
<tr>
<td>Field: PriorDeportedYN (Had the Migrant been previously deported?)</td>
</tr>
<tr>
<td>- Domain: YesNoIndicator</td>
</tr>
<tr>
<td>Field: PriorResideUSYN</td>
</tr>
<tr>
<td>- Domain: YesNoIndicator</td>
</tr>
<tr>
<td>Field: TotMigsEmbrkPt (Total number of migrants present, including the interviewee, at the point of embarkation into the USA)</td>
</tr>
<tr>
<td>Field: EmbarkationCity</td>
</tr>
<tr>
<td>Field: BPSector</td>
</tr>
</tbody>
</table>

Question 1
How old are you? Have you been interviewed for this research project on immigration before? And if at any time you realize you have participated in this research please tell the interviewer.

¿Que edad tiene Ud.? ¿Ha sido entrevistado anteriormente para esta investigación sobre inmigración? Si en cualquier momento recuerda que si ha participado en esta investigación, por favor de informar al investigador.

Table: Interviews
Field 01: SubjectAge
Field 02: PriorYN
- Domain: YesNoIndicator

Question 2
Why did you leave your home? (Was it for economic reasons, fear of violence, family reunification, or any other reason?)

¿Por qué abandonó su hogar? (¿Fue por motivos económicos, temor de violencia, para reunirse con su familia o por cualquier otra razón?)

Table: MigrantsToPushFactors
Field 01: SerialNo
Field 02: ReasonToLeave
- Domain: PushFactors
Question 3
Do you know anyone who decided not to make the journey to the U.S.? Why did they decide not to make the trip?
¿Conoce a alguien que decidio no hacer el viaje a EU? Porque decidieron no viajar?

Table: Interviews
Field 01: DecideNo
Domain: YesNoIndicator
Field 02: OtherWhyNo
Domain: PushFactors

Question 4
Did the new Trump administration policies impact your decision to travel? Why? How?
¿Las nuevas polizas de la administracion Trump impacto su decision para viajar? Porque? En que forma?

Table: Interviews
Field 01: Potus45YN
Domain: YesNoIndicator
Field 02: potus45WhyNo
Domain: YesNoIndicator

Question 5
Do you know of anyone else who decided not to migrate as a result of the new administration's policies? Why, specifically, did they not travel?
¿Conoce a alguien que decidió no inmigrar a resultado de las politicas de la nueva administracion? Porque decidieron no viajar?

Table: Interviews
Field 01: DecideNo45
Domain: YesNoIndicator
Field 02: DecideNo45Why

Question 6
Were you instructed by anyone on what to say if detained by U.S. authorities?
¿Recibio instrucciones de alguien de como responder a las autoridades EU en caso de ser detenido?

Table: Interviews
Field 01: InstrucYN
Domain: YesNoIndicator

Question 7
Did you have intentions or did your smuggler/coyote direct you to turn yourself in to U.S. Immigration Officers?
¿Tenia usted intenciones o recibio instrucciones de parte de su coyote de entregarse a Oficiales de Inmigracion EU?

Table: Interviews
Field 01: IntentYN
Domain: YesNoIndicator

Question 8
If so, what were your expectations after being apprehended (i.e. release into the U.S. after a short detention, detention and removal to your county of citizenship, criminal prosecution, permission to remain in the U.S. without consequence)?
Si es asi, que esperaba obtener al ser detenido (ejemplo: liberacion a los EU después de una corta detencion, detencion y deportacion a su pais de origen, cargos criminales, permiso de quedarse en EU sin consecuencia)?

Table: Interviews
Field 01: Expect
Domain: ExpectAfterApprehend
Question 9
What was your perception of what would happen to you if you were detained?
¿Que pensaba que le podia ocurrir en caso de ser detenido?

Table: Interviews
Field 01: PercepDet
Domain: PerceptionDetained

Question 10
Where did your journey begin?  What country and city?
¿Dónde empezó su jornada?  ¿En qué país y ciudad?

Table: Interviews
Field 01: MigBeginCity
Field 02: CityID
Field 03: MigBegCntry

Question 11
Did you use a passport or other documentation to enter Mexico?
¿Qué documentación uso para entrar a México?  ¿Uso un pasaporte u otro documento?

Table: Interviews
Field 01: PssprtYN
Domain: YesNoIndicator
Field 02: Pssprt
Field 03: OtherDocs

Question 12
Did you have to pay anyone to enter Mexico? How much did you pay and to whom?
¿Tuvo que pagarle a alguna persona para entrar a México?  ¿Cuánto pago y a quién?

Table: Interviews
Field 01: PayMxYN
Domain: YesNoIndicator
Field 02: PayQuan
Field 03: PayWhom

Question 13
What modes of transportation did you take and in which places?
¿Qué medios de transporte utilizo y en qué lugares utilizo esos medios

Table: Migrant_to_TransportMode
Field 01: SerialNo
Field 02: TransMode
Domain: TransportationMode

Question 14
What roads did you travel on?
¿Qué caminos o carreteras utilizó para viajar?

Table: Interviews
Field 01: RdsTrvld
**Question 15**

How did you travel? (walk, bus, car, truck, train, horse, boat)

¿Cómo realizo su jornada? (¿A pie, por autobús, por vehículo, por camión, por ferrocarril, por caballo o mula, por bote o lancha?)

Table: Migrant_to_TransportMode
   Field 01: TransMode  
   Domain: TransportationMode

**Question 16**

Did you ride “La Bestia” or other trains in Mexico?

¿Viajo a bordo “la bestia” o cualquier otro tren o ferrocarril en México?

Table: Interviews
   Field 01: RR_YN  
   Domain: YesNoIndicator

**Question 17**

Was getting on the train organized by someone? Did you have to pay to get on the train?

¿Estaba organizada la subida al tren por alguna persona? ¿Tuvo que pagar alguna tarifa para subirse al tren?

Table: Interviews
   Field 01: RRorgYN  
   Domain: YesNoIndicator
   Field 02: RRprice

**Question 18**

Describe your journey. Name the cities or towns you stopped in along the way.

Díganos sobre su jornada: ¿En cuales pueblos o ciudades descanso durante su viaje?

Information Found in Waypoints Notes (Appendix TBD), this question yielded journey Start/End Dates

Table: Interviews
   Field 01: StartDate
   Field 02: EndDate

**Question 19**

Can you use this marker to trace on the map the route that you took to get from your country of origin to the U.S. border? Can you place an “x” at the places or cities that you rested or slept during your trip? (yellow highlighter and map will be provided to the interviewee)

¿Puede usar este marcador para mostrarnos en este mapa la ruta que tomo desde su país de origen hasta la frontera EU? Puede marcar con “x” los lugares o ciudades donde descanso o durmio durante su jornada? (marcador y mapa sera proporcionado al entrevistado)

No table associated with this field, however this question prompted interviewees to recount cities through which they passed. This information was added to Waypoints Notes. (Appendix TBD)

**Question 20**

Did you make use of any charitable facilities whose mission is to help migrants? If so which ones? What services did they provide?

¿En cualquier momento utilice servicios públicos, u hogares u otros servicios de inmigrantes? ¿Cuáles son los servicios que les prestaron a los inmigrantes?

Table: Interviews
   Field 01: CharFacYN  
   Domain: YesNoIndicator
   Field 02: CharFac
Question 21
Why did you enter the U.S. in this area of the border? Why not another area of the border?
¿Porque ingreso a EU en esta área/punto de la frontera? Porque no otra área/punto?

Table: Interviews
Field 01: WhyUSbord
Domain: WhyCrossAtUSBorder

Question 22
Which specific resources (i.e. Pedestrian fencing, walls, camera towers, air support, high visibility law enforcement presence along the border) would deter you from crossing the border in a given area?
¿Cuales recursos lo previnieran de cruzar la frontera en alguna área (cercas de peatones,muros, torres de camera, apoyo aereo, visibilidad de oficiales en la frontera)?

Table: Migrants_to_Deterrents
Field 01: SerialNo
Field 02: Deterrents
Domain: Deterrents

Question 23
What was your final U.S. destination, city and state? Why are you going to that city?
¿Cual era su destino final en EU, ciudad y estado? Porque esa ciudad?

Table 01: Migrants_to_Destinations
Field 01: SerialNo
Field 02: FinCity
Field 03: ST
Field 04: CityCode
Field 05: FIPS_ADMIN

Table 02: Migrants_to_DestinationWhy
Field 01: SerialNo
Field 02: FinWhy
Domain: PullFactors

Question 24
What U.S. benefits or guarantees, if any, were you promised or did you expect if you successfully entered the U.S.?
¿Que beneficios o garantias EU, si las hubiese, fue prometido o esperaba obtener al ingresar a EU?

Table: Migrants_to_Benefits
Field 01: SerialNo
Field 02: Benefits
Domain: PullFactors
**Question 25**

**Did someone help or facilitate you make your journey?**

¿Hay alguna persona, un guía, que le ayudó o facilitó su jornada?

Table: Interviews
Field 01: HelpRecYN
Domain: YesNoIndicator

**Question 26**

**How much did you pay the facilitator? In what currency?**

¿Cuánto le pago a esa persona (el guía?) ¿En qué tipo de moneda?

Table: Interviews
Field 01: Currency
Field 02: PayFacUSD

**Question 27**

**Did you make a verbal or other form of contract for the help you were given?**

¿Se realizó algún acuerdo, entendimiento o contrato para recibir la ayuda que recibió Ud.?

Table: Interviews
Field 01: ContractYN
Domain: YesNoIndicator

**Question 28**

**Would you describe the facilitators as being connected to the government?**

¿Esa gente que le ayudó (los guías) son agentes de algún Gobierno?

Table: Interviews
Field 01: FacGovYN
Domain: YesNoIndicator

**Question 29**

**Do you know if the facilitators are connected to organized crime?**

¿Tiene conocimiento de que esa gente (los guías) son mafiosos o algún tipo de delictuoso?

Table: Interviews
Field 01: FacCrimeYN
Domain: YesNoIndicator

**Question 30**

**Do you know the names of any affiliated gangs or groups that helped the facilitator?**

¿Tiene conocimiento de los nombres de los grupos, carteles, pandillas u otros que apoyaban los guías que les ayudaron a Ud.?

Table: Migrant_to_GangFacilitator
Field 01: SerialNo
Field 02: Gang
Domain: Gangs

**Question 31**

**Did the facilitator accept a form of debt to be paid later? Describe the terms presented by the facilitator.**

¿Se aceptó por el guía alguna forma de deuda que se podría pagar por Ud. después? Díganos sobre los elementos del acuerdo que tuvo con el guía que les ayudó

Table: Interviews
Field 01: AllowDebt
Domain: YesNoIndicator
Field 02: DebtTerms
Domain: DebtTerms
Question 32
Was any collateral of guarantee offered?
¿Había alguna forma de enganche o de garantía que Ud. ofreció para recibir ayuda

Table: Interviews
  Field 01: CollateralYN
  Domain: YesNoIndicator

Question 33
Were family members serving as collateral?
¿Se ofrecieron o se detuvieron algunos familiares como garantía?

Table: Interviews
  Field 01: FamAsCollat
  Domain: YesNoIndicator

Question 34
How was payment made or to be made?
¿Cómo se iba pagar o como se pagó por la ayuda recibida?

Table: Migrants_to_MethodOfPayment
  Field 01: SerialNo
  Field 02: PayForm
  Domain: MethodOfPayment

Question 35
Were you to make a wire transfer or pay cash or pay by some other means?
¿Se iba realizar una gira bancaria, o se pagó en efectivo o se pagó por otra manera?

Table: Migrants_to_MethodOfPayment
  Field 01: SerialNo
  Field 02: PayForm
  Domain: MethodOfPayment

Question 36
Did the facilitator steal your money and not help you?
¿Le robaron su dinero los que estaban ayudándole a Ud.?

Table: Interviews
  Field 01: FacStealYN
  Domain: YesNoIndicator

Question 37
Did the facilitator threaten you?
¿Lo amenazó a Ud. el guía que le estaba ayudando con su viaje?

Table: Interviews
  Field 01: FacThreatYN
  Domain: YesNoIndicator
Question 38

Did the facilitator hurt you?
¿Lo lastimo a Ud. el guía que le estaba ayudando con su viaje?

Table: Interviews
Field 01: FacHurtYN
Domain: YesNoIndicator

Question 39

Were you ever transferred to other facilitators or did the same one help you all the way along your journey?
¿Fue Ud. transferido a otros guías u otras personas durante varias etapas de su jornada o le ayudo el mismo guía durante el viaje entero?

Table: Interviews
Field 01: TrnsfrdYN
Domain: YesNoIndicator

Question 40

Were your family members or friends contacted for more money? How much? How was delivery made?
¿En cualquier momento le pidieron más dinero a Ud. o a sus familiares? ¿Cuánto más? ¿Cómo se entregó esa cantidad adicional?

Table: Interviews
Field 01: AddMny YN
Domain: YesNoIndicator
Field 02: AddMny
Field 03: AddMnyDel
Domain: MethodOfPayment

Question 41

Do you or your family continue to owe money to anyone for facilitating this journey?
¿Sigue Ud. con una deuda al guía u otra persona que le ayudo con su jornada?

Table: Interviews
Field 01: ContOweYN
Domain: YesNoIndicator

Question 42

What are the consequences of failing to pay these debts? Have you received specific threats?
¿Qué serían las consecuencias de no pagar estas deudas? ¿Ha sido Ud. amenazado en una manera específica?

Table: Interviews
Field 01: Conseq
Domain: Consequences

Question 43

Did the facilitator charge different amounts to different people based on nation of origin gender race or religion?
¿Se cobraron tarifas o cuotas de diferentes cantidades a distintos individuos con base a su país de origen o su sexo o su religión?

Table: Interviews
Field 01: ChrgPrefYN
Domain: YesNoIndicator
Question 43

Did the facilitator charge different amounts to different people based on nation of origin gender race or religion?

¿Se cobraron tarifas o cuotas de diferentes cantidades a distintos individuos con base a su país de origen o su sexo o su religión?

Table: Interviews

Field 01: ChrgPrefYN
   Domain: YesNoIndicator

Question 44

Were you ever a facilitator?

¿En cualquier momento ha sido Ud. un guía para otros inmigrantes?

Table: Interviews

Field 01: FacYouYN
   Domain: YesNoIndicator

Question 45

How did you attempt to enter the United States? (e.g., through a POE vs between POEs; urban vs. rural area; etc.

¿Como intento de ingresar a EU? (por area urbana o rural)

Table: Migrants_to_HowEnter

Field 01: SerialNo
   Field 02: HowEnter
   Domain: CrossingMethod

Question 46

When and where were you detained?

¿Cuando y donde fue detenido?

Table: Interviews

Field 01: WhenDet
   Field 02: WhereDet

Question 47

Who detained you? Mexican authorities, U.S. authorities?

¿Quien lo detubo? Autoridades Mexicanas, autoridades EU?

Table: Interviews

Field 01: WhoDet
   Domain: DetainingAuthority

Question 48

Did you gain the cooperation of any officials in Mexico or the U.S.?

¿Cuándo y si trabajo como guía: se obtuvo el apoyo de agentes de México o de EEUU para realizar su trabajo?

Table: Interviews

Field 01: CoopOffYN
   Domain: YesNoIndicator
Question 49
At what level and agency type? (Customs, law enforcement local, state, federal)
¿En qué nivel de Gobierno trabajaban esos agentes? ¿Eran agentes de que agencia? ¿Eran agentes de la aduana, de la policía municipal, de la policía estatal, o eran agentes federales?

Table: Interviews
  Field 01: CoopAgncy
  Domain: AgencyTypeLevel

Question 50
What did you charge migrants for various parts of the journey? What currency did you prefer to be paid in?
¿Cuando y si trabajo como guía: ¿Cuánto cobro Ud. a los inmigrantes para realizar las varias etapas de su jornada? ¿Qué tipo de moneda o dinero se aceptó como pago? (dólares, pesos, etc.)

Table: Interviews
  Field 01: MgmtChg
  Field 02: MgmtChgCr

Question 51
Did prices you charged vary by mode of transportation?
¿Las tarifas varían por modo de transporte? ¿O sea, cada modo de transporte tiene su propia tarifa?

Table: Interviews
  Field 01: PrcVryMdYN
  Domain: YesNoIndicator

Question 52
Were migrants subjected to price increases? If so, why or under what circumstance?
¿Los inmigrantes sufrían precios más altos? ¿Si es así, que causo esos incrementos de precio?

Table: Interviews
  Field 01: PrcIncYN
  Domain: YesNoIndicator
  Field 02: PrcIncCirc

Question 53
Were migrants ever “stolen” by rival groups?
¿Hubo alguna ocasión en cuando los migrantes fueron “robados” por grupos rivales?

Table: Interviews
  Field 01: MgmtStlnYN
  Domain: YesNoIndicator

Question 54
Were migrants allowed to pay debts after being released in the United States?
¿Había ocasión en cuando los inmigrantes estaban permitidos de pagar sus deudas por el transporte ya que habían llegado a su destino en los EEUU?

Table: Interviews
  Field 01: AllwDbtPay
  Domain: YesNoIndicator
Question 55

How was payment assured?

¿Cómo aseguraron los guías que serían pagados?

Table: Interviews

Field 01: HwPymtAsrd
   Domain: PaymentAssured

Question 56

Was there any collateral provided or offered?

¿Si había una forma de fianza, qué usaban como fianza? (dinero, rehenes, propiedades, etc.)

Table: Interviews

Field 01: CollateralYN
   Domain: YesNoIndicator
Uncovering Human Smuggling Patterns From Guatemala to The United States

Appendix B: Waypoints/Travel Notes

Populated places extracted from interviews, by unique Serial Number. City names are copied/pasted from Interviewer reports.

Uncovering Human Smuggling Patterns From Guatemala to The United States
| GB052 | Ocotepeque, Guatemala |
| GB053 | Tegucigalpa, Honduras |
| GB054 | San Pedro Sula, Honduras |
| GB055 | Tegucigalpa, Honduras |
| GB056 | La Libertad, Honduras |
| GB057 | San Pedro Sula, Honduras |
| GB058 | San Pedro Sula, Honduras |
| GB059 | San Pedro Sula, Honduras |
| GB060 | San Pedro Sula, Guatemala |
| GB061 | La Libertad, Guatemala |
| GB062 | La Libertad, Guatemala |
| GB063 | La Libertad, Guatemala |
| GB064 | La Libertad, Guatemala |
| GB065 | La Libertad, Guatemala |
| GB066 | La Libertad, Guatemala |
| GB067 | La Libertad, Guatemala |
| GB068 | La Libertad, Guatemala |
| GB069 | La Libertad, Guatemala |
| GB070 | La Libertad, Guatemala |
| GB071 | La Libertad, Guatemala |
| GB072 | La Libertad, Guatemala |

**Uncovering Human Smuggling Patterns From Guatemala to the United States**

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**Page 128**
Uncovering Human Smuggling Patterns From Guatemala to The United States

| GB100 | Retalhuleu, Guatemala Tapachula |
| GB101 | Ahuachapán, El Salvador Villa Hermosa |
| GB102 | San Pedro Masahuat Palenque |
| GB103 | San Marcos, Guatemala Villa Hermosa |
| EMJ065 | Esquipulas Reynosa |
| EMJ066 | San Antonio La Paz Villa Hermosa Puente Penas Blancas Miguel Aleman |
| EMJ067 | Esquipulas Tapachula |
| EMJ068 | Santa Rosa de Lima Monterrey Reynosa |
| EMJ069 | La Reina, ES Villa Hermosa Mexico City Reynosa |
| EMJ070 | San Salvador Tapachula |
| EMJ071 | San Marcos GTM Acapachua, Chiapas Monterrey Reynosa |
| EMJ072 | San Cristobal Frontera Villa Hermosa Puebla Reynosa |
| EMJ073 | San Salvador Guatemala Palenque Tapachula |
| RLH001 | San Pedro Necta Comalapa Chiapas |
| RLH002 | Santiago, Chimaltenango de Huehuetenango en Guatemala Le Mesilla, Guatemala at Cuatemoc Mexico Comitan Tapatlan |
| RLH003 | Colotenango Palenque Mexico City Guadalajara |
| RLH004 | San Juan Sacatepexic Puebla |
| RLH005 | Tajumulco Tapachula |
| RLH006 | Concepcion Tutupapa Acapachua, Chiapas Monterrey Reynosa |
| RLH007 | Baracoa, Republica Dominicana La Tecnica Palenque |
| RLH008 | San Carlos Sija La Mesilla Puebla Veracruz Altar Sonora Sonora |
| RLH009 | Chiapala Nogales, Arizona |
| RLH010 | Vallecaquillo La Tecnica Palenque Salto de Agua, Chiapas Quetzalcocuicolor Cordoba |
| RLH011 | Departamento Valle, Municipio Nakaoma, Honduras Tapachula Puebla Guadalajara Sonora |
| RLH012 | San Francisco El Alto Nogales |

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| RLH013 | Lepaterique Salto de Agua Tecnica Chiapas Palenque Apasco Chuntepaka Sanctuario Limonera Francisco Ruedas Cuatzaacuilco Tarra Blanca Acatayacan Sonora Puebla Tepic, Nayarit Sonora |
| RLH014 | Cubulco Comalapa Altar Sonora |
| RLH015 | San Martin Sacatepexic Puebla |
| RLH016 | Tuxtla Miguelocan Sonora Nogales |
| RLH017 | Tuxtlita |
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