Llamas no son Ovejas The Pervasive Impacts of Colonization on Indigenous Peoples Labor Market Choices in Peru: An Examination of Exclusionary Institutions through Sociohistorical and Economic Lenses

Molly Jeanne Devine
Bard College

Follow this and additional works at: https://digitalcommons.bard.edu/senproj_s2021

Part of the Econometrics Commons, Economic History Commons, Growth and Development Commons, and the Latin American Studies Commons

This work is licensed under a Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License.

Recommended Citation
Llamas no son Ovejas
The Pervasive Impacts of Colonization on Indigenous Peoples Labor Market Choices in Peru: An Examination of Exclusionary Institutions through Sociohistorical and Economic Lenses

Senior Project Submitted to
The Division Social Studies
of Bard College

by
Molly Jeanne Devine

Annandale-on-Hudson, New York
May 2021
This Senior Project is dedicated to my Grandma Jeanne. Every day I am so honored to be named after such a phenomenal and inspirational woman and as much as I wish she was still with us; I am endlessly grateful to have shared the earth at the same time as her. Until we meet again.

Jeanne Devine
December 30th 1926 – April 6th 2021
Acknowledgements

To my dad for always double checking my spelling and grammar. Also, for putting up with my seemingly never-ending rants about the current state of the world. Thanks for allowing me to discover the, “fantastic universal sense that whatever we were doing was right, that we were winning… that sense of inevitable victory over the forces of Old and Evil”, it is now my turn to not let the wave crash. vive la révolution.

To my mom for instilling in me from a young age that the sky is the limit and that whatever I put my mind to I can achieve. I am so unbelievably lucky to have grown up with such a strong and powerful woman as my mother and role model, you have taught me what hard work and perseverance is.

To my academic and Senior Project advisor Michael Martell, thank you for your wisdom and support through my time at Bard. Thank you for believing in me even when I wasn’t the greatest student and pushing me to become who I am today. I am so grateful to have been able to know you these past four years.

To my professors at Bard, thank you for providing me with the tools to discover my passions. Gracias John Burns por ayudarme a encontrar mi pasión por el español una vez más, y animarme a estudiar en Perú, donde me enamoré de la cultura y el país. Thank you Sanjay for always encouraging and believing in me to use econometrics in my papers and for all of the seminars in development which have had a monumental impact on this senior project. Thank you to professor Mitra for making microeconomics worlds better than I expected it to go. Thank you to Pavlina Tcherneva for being such a phenomenal role model for women in economics, you have truly been an inspiration to us over these past four years.

To my Econ Girls, formerly ES currently PG. I wouldn’t have wanted anyone else by my side these past four years. From the second floor of Cruger all the way to now, I am so unbelievably proud of us and the people we have become. I can’t wait to see what the future holds for us.

To Emma, thank you for keeping me sane this past year. I wouldn’t have wanted to live with anyone else my senior year and I could not have done it without you!

To all of you, I am eternally grateful, and I will always hold a special place in my heart for you.
Abstract

Using historical and empirical evidence, this Senior Project looks at the long-term impacts of colonization on economic, social, and cultural institutions. This project explores impacts both immediately upon Spanish arrival in 1532, and created during the Spanish colonization of Peru. Systems of forced labor created through colonization created two separate paths of development: one for the Spanish and Spanish-selected Peruvian elite and another for the Indigenous people of Peru. Vestiges of the Spanish colonization of Peru continue to manifest themselves in modern times in many ways. This Senior Project examines the link between Indigenous individuals and their participation in the informal economy. The data used is from “Encuesta Nacional de Hogares sobre Medición de Niveles de Vida 1991” ((INE), 1991), a household survey conducted under the Living Standards Measurement Initiative of the World Bank. Through using logit and linear probability models, this project finds that Indigenous individuals have a higher probability of participation in the informal economy than their non-Indigenous counterparts. Finally, this project will propose possible state policy to address the disparities which continue to exist between Indigenous and non-Indigenous individuals in Peru.
Introduction

Colonization has been a predominant method for the Western World to exert control over and exploit the resources, natural and human, of the previously colonized areas across the globe for as long as history has been recorded. As Humans have developed technologies over time, the spread and impact of colonization has expanded exponentially. In Peru colonization has been pervasive and has had significant negative impacts on the Indigenous population (Note: throughout this paper I will intentionally be capitalizing the word Indigenous as my way of recognizing and acknowledging the Indigenous people of Peru, and by reference Indigenous populations around the world, who have been intentionally excluded in many critical ways from participation in and development of economic policy in their home countries.). Historically indigeneity and informality economies have both been viewed through a deficit model and a people and a situation that is inferior and needs to be ameliorated both, interdependently and dependently. Through the crafting of policy that address the intersectionality of informality and indigeneity, the Peruvian government can alleviate some economic burden from the informal indigenous population. This can be seen clearly through labor market segregation and exclusion of indigenous people from the formal economy originated in the creation of a new social order, the Peruvian Viceroyalty, and systems of forced labor.

I will analytically chronical the economic history of the region. The analysis will begin with the Incan empire and transition through phases of colonization, industrialization, liberation, and end around modern times. Past studies of the economic discrimination of the indigenous population often fail to account for the historical institutions, which play a major role in where Peru is today.
Along with a theoretical analysis of the economic history of the region I will also analyze relevant data from a household survey disseminated in 1991 to gain insights into the mechanisms that perseverate participation in the informal economy of Peru. With the key variables of indigeneity and informality in mind during my analysis I will run probability tests to attempt to quantify the effect indigeneity has on economy choice in Peruvian society. The purpose of analyzing the household survey is to apply the results to broader policy implications.

This senior project will concentrate on the economic and social impact that colonization has had, and continues to have specifically on the Andean region, principally by focusing on the former capital region of Peru where the Spanish centered their colonial empire in the Americas. This region has been historically marked by limited economic overall economic growth. In order to understand the reasons for this low economic growth and indicators, it is critical to understand the Andean region's economic and social history.

The Spanish colonization has had a dramatic impact on the Andean region, and not necessarily for the better for the indigenous peoples who live there currently and had lived there long before. Darrell E. La Lone, a noted American scholar and Anthropologist, who has focused on the Incan civilization, stated in 1982 that, “We are only just beginning to overcome the deeply rooted habits of the early Spanish chroniclers who persistently called llamas sheep. Just as llamas are not sheep, Andean social systems are not ‘just like’ our familiar European models” (Lone, 1982). This paper will attempt to further uncover the injustices and the negative impact that colonization has had and continues to have and as it impedes equitable access by all to the full Peruvian economy today.
Economic History of Peru

1.1 Introduction

This region has a rich and varied economic history starting many millennia ago with a redistributive economy orchestrated through a central government which was located in the city of Cusco. The economy has gone through many varied and distinct periods and cycles, including wartime periods that brought with them the conflicts periods rife with mass inflation, and carrying into a modern period characterized by more institutionally driven policy that has shown significant improvements across many economic indicators. In this chapter, I will explain the Andean region's economic history intertwined with a variety of applied economic theory. When one studies the history of this rich and varied region it becomes apparent that when the colonizers (in this case primarily Spain) arrived in the Andean countries, they had three main goals and specific methods through which they would colonize the region. The first is the notion of a state in the historical context of the Americas' colonization, meaning that Castilian Spanish life in its entirety would be imported into the new world. The second is the political domination through the creation of two juxtaposed systems, meaning that there was major conflict when the new social and economic order was forced upon the native population. The third goal was extraction of natural recourses in the quest for economic prosperity and gains in Spain. (Noejovich, Salazar-Soler, Suárez, Glave, & Salas, 2009). Further patterns and goals of colonization have created paths of exclusion and discrimination of Indigenous peoples. In this chapter I will establish an economic history of Peru and explain how different facets of colonization have led to the systemic and institutional exclusion of Indigenous people in the modern Peruvian economic sphere.
1.2 Pre-Hispanic

Before colonization, in the pre-Hispanic era, the Andean region was home to the ancient Incan empire who dominated the region, although there were also many other smaller groups living in the region. The vast Incan empire at the time was known as the Tawantinsuyu which translated to English is the four part empire (Lone, 1982). This empire was redistributive, meaning that all of the goods and services were distributed by the central government which at that time was located in the city of Cusco, also known as the Sapa Inca (Stanish, 2001). The economic structure of this empire was comprised of four distinct components, the central government in Cusco and three other regions each with local rulers of the respective regions. The Incan empire developed in almost complete isolation from the rest of the world. In the twelfth century CE there had yet to be any real significant major global migrations, colonization, or travel at this point in world history.

The Incans had a different view of the concepts of growth, prosperity, and wealth than those that existed in the 1400’s in western Europe. In the Incan world, wealth was seen as measure of social welfare rather than individual monetary growth or monetary growth as in a Gross Domestic Product (GDP) sense that we are familiar with today (Lone, 1982; Stanish, 2001). In addition to developing in complete isolation there was no money in their economy, as all of the goods were produced and distributed equally through the central government. Through strategies of reciprocal exchanges within the community the empire was able to guarantee access to all goods necessary for survival (Lone, 1982); therefore making their empire entirely self-sufficient and allowed the state to easily and swiftly mobilize the labor force to finance and complete state operations. Some of these operations included support of the elites, capital investment projects including agricultural intensification and the construction and maintenance of roads, administrative centers, and store houses (Rostworowski, 1970). Because these were the driving
goals of the empire there was no need for a market exchange, but the most important economic action was the mobilization of their massive labor force (Rostworowski, 1970).

The land was split into four regions and each region had its own ruler (Escosura, 2005). Each of the four rulers reported back to the emperor directly. The central government decided who would work what jobs and produce certain goods so as to never run out of food, even in a scenario where there might be a period of famine. This was accomplished by people working together to fill the needs in the society known as Ayllu. Labor was divided across the regions and divided based upon land to labor productivity (Stanish, 2001). Every citizen was required to contribute with labor, and refusal to contribute could result in imposition of the death penalty. The central government would collect the surplus from each of the regions when local needs were filled then redistribute the goods through the empire by use of their extensive road and storage house systems. In exchange for labor each citizen was given free clothing, food, healthcare and education. There was no money and no need for money because their economy was so thoroughly planned that every individual had their basic needs met (Lone, 1982). The Incan government knew how to allocate recourses for each member of every community, yet still allowed each community to maintain a since of autonomy (Rostworowski, 1970).

Any other exchange of goods and services made outside of the governmental systems was orchestrated through the method of bartering, meaning that people traded with each other to gain things that they needed (Stanish, 2001). However, many Archeologists believe that there was no trading class in the Incan society, and little trading between people took place on any meaningful levels (Stanish, 2001). It is widely believed that the only outside trading was with small Amazonian tribes and existed only on a small scale.
The foundation of the Incan Empire’s economic success was their organized and mandatory labor force, the Ayllu. The Ayllu was comprised of families that lived in close proximity to, or in the same village. In addition to a consistent labor force these groups also provided social structure, meaning that you would marry into the same Ayllu and never leave, so it created a mini society within the larger society (Stanish, 2001). An additional benefit was that the skills developed were transferable intra-generationally, meaning that the older generations could, and in many instances did, impart their knowledge of the skills needed to maintain and perpetuate the means of production for each Ayllu. In this way the system developed great efficiencies in that there was no need for the central government to provide training resources, as the older generations of each insular Ayllu would transfer the knowledge and develop the skills needed to continue to maintain the levels of production for the central government on their own (Stanish, 2001). It is important to note that the Inca did not come up with the idea of massive labor mobilization, but the Incan civilization should be thought of as, “the last of succession of the stratified societies and states dating back to at least Huari times” (Rostworowski, 1970). The main strength of the Incan empire that all of its predecessors lacked, was its ability to, in a way structure the different geographical regions in a way that the locals still had a sense of autonomy, yet the fact remained that at the end of the day had to pay taxes and remain loyal to the central government (Rostworowski, 1970).

Each Ayllu specialized in the production of certain production depending on its location and the natural comparative advantage of that region. For example, agricultural Ayllu’s were near fertile land. These agricultural Ayllu’s are the most well preserved and can be widely seen in the agricultural terraces that exist today in the Andean region. The Andean Ayllu created a terrace structure that created micro-climates which made the rugged Andes mountains farmable for many
different types of goods (Stanish, 2001). Other Ayllu focused on products such as pottery, clothing, or jewelry design. All of the output generated by the Ayllu would be given to the central state and state would redistribute these goods to other locations in the empire where the particular goods were not available. Any surplus of goods would be kept in storage houses along their roads, known as Collcas (Stanish, 2001).

Collcas would generally be located close to a large city. The surplus of goods and services during times of war or bad weather periods only served to strengthen the citizens loyalty to the local government and the Sapa Inca. The Ayllu sufficiently provided for the societal and economic needs of the citizenry to such an extent that none of the citizens ever were left wanting (Stanish, 2001). Because the populations existed in near isolation, they never developed the concept of what we think of today as individual material welfare. Their entire society was geared towards the improvement of their empire as a whole.

There are three ways collective labor was organized outside of the Ayllu, those being the Ayni, Minka, and Mita. First the job of the Ayni was to help a member of their community who needed help. For example, they would help build a house for a family or help take care of a sick member of their community (Stanish, 2001). The second is the Minka which was teamwork within the community that benefited the entire community. An example of Minka would be building the agricultural terrasses or cleaning irrigation canals (Stanish, 2001). The final system is the Mita system. Mita was the tax paid to the central government, the Sapa Inca. Because there was no monetary system in the Incan empire, the tax was instead paid through crops, animals, textiles, or specialty goods. Mita workers served as soldiers, farmers, messengers, road builders, or anything the empire needed at a particular time. The Mita jobs were temporary and each person in the Ayllu cycled thru this position. In exchange for all of the above the government would distribute to the
general population anything the citizens required in order to survive (Stanish, 2001). This system allowed the empire to have all the necessary goods and services without incurring unnecessary overproduction.

Having one's own land was a natural right in the Incan empire that meant that every member of an Ayllu had some amount of their own land to tend to and build a home on. Curaca distributed the land according to the size of the families. Each family worked their own land but did not own it as all property was owned by the Incan government (Stanish, 2001). The land could and was used to provide subsistence farming and food for the family so that once the subsistence was satisfied all of their work could be used to produce the surplus for the entire empire. Land would be taken away and given along with family growth, death, and marriage (Stanish, 2001).

One of the most impressive facets of the Incan empire was their infrastructure. The Incan empire built more than 18,600 miles of paved road in the Andes mountains. The road system stretched from Quito Ecuador to Santiago Chile. The longest road was 3,500 miles long, which is longer than the longest Roman road. Inca did not have the wheel and did not have horses, so all transportation was done by foot and using llamas to carry heavy loads of goods. The roads were also used by messengers to carry messages efficiently across the empire. They built their roads to adapt to the natural environment (Stanish, 2001). In the mountains they built a type of stair to address the changes in elevation, and in the desert, they built walls so that the sand would not overtake the road. In addition to roads, Incans also constructed suspension bridges to cross rivers and steep mountain peaks safely. This type of infrastructure was unparalleled in other parts the world during this time. The Incan empire was able to construct these significant systems even though the empire only existed for one hundred years.
In summary, at its peak, the Incan empire stretched from Quito in the north down to Santiago in the South and even into Bolivia and Argentina in the east. The Inca developed in near-complete isolation, so they never possessed any of the technologies used in Europe or the rest of the world. The fact that the Incan empire developed in isolation also made its economy unique. Economic prosperity and welfare were not thought of as an individual measure; instead, it was thought of as a measure of social welfare as a whole. Their means of exchange was labor. Labor acted as money and tax in the Incan society (Lone, 1982). Production and specialization of goods were separated by region, and skills were passed down generationally. The Incas did not have a written language, and when the Spanish arrived, they killed a substantial majority of the Inca population, so most of what we know has been passed down orally, or it comes largely from the expressed perspectives of the Spanish colonizer’s themselves, how very fortunate for them that, as the saying goes, history is written by the victors.

1.3 The Great Transformation

Karl Polanyi was a Hungarian economist and intellectual who lived from 1886 to 1964. A significant part of his work concerned itself with the study of the industrial revolution and the transformation from feudalism to capitalism. What set him apart from many of his peers and keeps his work relevant even today was his focus on the social tensions that arose within that transformation and those that followed. An interesting theoretical application here is through his noted work, "The Great Transformation". The application is instructive here as a means of analyzing and considering why Latin America, specifically the Andean region, has not seen the same transformative economic growth patterns that can be observed in Europe and the United States of America post industrial revolution.
Polanyi begins his analysis with feudal Europe. Feudal Europe was a period marked by stagnate economic growth, rigid social structures, and an overall poor quality of life. The social and economic hierarchy of this system was as follows: The monarch and church occupy the level at the top. The level possessed of all of the power, seized of all title to the lands and recipients of all of the taxes collected in the land. The monarch and church gave title to some lands to the nobility class. The nobility class, who owned and oversaw the lands given to them by the Crown and the Church, were then responsible for collecting taxes from those working the land and sending those taxes to the monarch. The next level down in the hierarchy was occupied by the knights. The knights gave the classes above them their protection and military service to defend the land, known as the fiefdom. Occupying the bottom tier of the feudal structure were the peasants and the serfs, who were charged with producing, on a subsistence level, to provide for the fiefdom. These class structures were incredibly rigid and movement from any level to the level above was not possible. As a result of this lack of social mobility, many ramifications followed. Where Polanyi’s analysis picks up is with the preconditions that made the industrial revolution, and after that capitalism, possible. Among the preconditions he identified were advancements in technology, long distance trade, commodification of land, labor, and capital. Also noted was the introduction of new laws such as the enclosure movement and property laws. He points to the steam engine and the industrial revolution as the primary catalysts for the radical change that was, and is, capitalism.

At this point it is important to examine the timeline on which these events were occurring. The Spanish colonization of Latin America began in the 1520’s. At this time Europe was completely dominated by the feudal system. An examination of the timeline both of when the Spanish began their colonization and the time that their colonization took place gives an extremely different idea then what the imposition of Castilian life would show at face value. For the first one
hundred years of Spanish colonization in Latin America, Spain, and the majority of western Europe, as previously stated, existed under the economic and social model of feudalism. As a result, when the Spanish first arrived in Latin America, they imposed the system they were the most familiar with, one aligned with the European feudalism, and certainly nothing remotely akin to the modern industrial capitalism that is common today.

Polanyi, in “The Great Transformation”, wrote about the tensions that arose in the transition of economies as they moved from feudalism to capitalism. Because Latin America had a feudal structure imposed on it, the application of the tensions that Polanyi speaks about are especially prescient to our analysis here. The European transition from feudalism to capitalism was not glamorous in any fashion. Significant and lasting tensions were created and between the market and the society. Before the creation of these public enclosures, factories, and mills, society was structured in a way that only produced enough to sustain the fiefdoms of the elites and population of people who lived on the to produce goods for the Lords, and their own subsistence existences. There was no surplus of goods or services. This is the way the Incan government and economic system had been structured, it had everything anyone needed to survive (Lone, 1982), but there was no surplus to the extent that could be seen post industrial revolution and enclosure movements.

Technological advancements allowed for faster and eventually mass production of goods, which in turn led to the creation of surpluses. The creation of these surpluses then allowed the peasants and serfs to begin to move incrementally beyond their solely subsistence farming and produce other goods. This time that was “freed up” from the production of goods for the elites was quickly claimed by an entirely new class of the population, a class who had access to these technological advancements. The result of the situation was that previous endowments given in
the feudal system were transferred into a new monetary based capitalist economy. Since the access to the advances in technology were limited to just a small portion of the society, inherently the system that was based on those advancements, capitalism, has always been unequal (the only relative equality noted in the capitalist model was seen during the years immediately following World War II).

In addition to not having access to this technology, the peasants and serfs did not experience any change in class standing. Rather they were then given the opportunity to work for a wage in order to buy the surplus goods. This trend has snowballed into the modern consumerist capitalism economy that predominates in much of the western world today. The way that the transition from feudalism to capitalism has played out in the Andean region is completely different from how it has in Western Europe. The reasons for this are worthy of examination and will be discussed in detail throughout this paper specifically in the examination of the way the Spanish organized and the systems of forced labor were implemented.

1.4 Early Colonization 1532-1700

The 300 years of Spanish occupation can be broken up into two main periods, early colonization, and late colonization. Early colonization is when the Spanish began to implement a capitalist monetary system onto a non-monetary redistributive economy. This caused significant tensions between the old values and way of life and the new ones. Recently there has been a novel application of Karl Polyani's, “The Great Transformation” to developing nations in the modern sense. “The Great Transformation” can offer some interesting insights on what occurs when capitalism is introduced to non-capitalistic economic systems.
When the colonizers arrived in the Andean countries, they had three main goals and methods through which they would colonize the region. The first is the notion of a state in the historical context of the Americas' colonization (Noejovich et al., 2009). This is the imposition of a new government and social structure, which reorganized the region's entire market structure. The Spanish, who came from feudal Europe, imposed the same system on the Andean region's redistributive economy, specifically the Incan Empire (Noejovich et al., 2009). The region went from an equal society with only one real class other than the emperor to a rigid social structure called European feudalism. This was done through the introduction of property rights (Noejovich et al., 2009). The Spanish established an unfair exchange rate for the price of precious metals and began to assign property rights. There was now a new group of a capitalist class of bosses who were typically Spanish, and this capitalist class owned all of the means of production. Instead of the central government supplying what each of the citizens needed, people were required to purchase needed goods. The only way they could purchase these goods, such as food, shelter, property, and anything else for that matter, was to work for the Spanish industrial capital class to get their preferred means of exchange, which was money. The Pre-Hispanic civilization did not have money as it was a redistributive economy (Noejovich et al., 2009).

Pizarro arrived in South America, specifically Peru, in 1526, and made his way to Cusco, the Incan empire's capital city in 1532. By the time he arrived in Cusco, disease, introduced to the indigenous peoples through the Spaniards, had already ravaged the Incan population killing nearly 80% of the population (Noejovich et al., 2009). Within a matter of years, Pizarro had claimed the Incan empire in the name of the Spanish Crown and Catholicism, and the few remaining Incas fled to the Amazon Jungle in an attempt to reorganize and reclaim their lands. All of their attempts were thwarted, primarily by a massive Spanish advantage in weaponry and they significantly
outnumbered the remaining Inca (Stanish, 2001). The overall goal of the Spanish was to, “more efficiently to administer and Christianize what remained of a decimated and demoralized indigenous population while meeting the various forced labor demands of the Potosí silver mines, the mercury workings of Guancavelica, and the coca plantings of Paucartambo” (Bowser, 1991). The Spanish used Christianity as a tool to provide justification for the exploitation of the Indigenous population and did this through ousting Indigenous leaders and religious figures and selectively placing Catholic priests and Spanish elite in positions of power (Salinas, 1983). Peru did not regain its independence for over two hundred and fifty years, when, at long last, they finally reclaimed their sovereign independence on July 18th, 1821. During this entire span of time period Spain had complete control over the Andean region.

One of the most impactful changes that the Spanish brought about were the changes in the human geography of the region. The Spanish conquistadors set up the region as a costal colony rather than in the highlands, which the region had been set up in for hundreds of years preceding their arrival (Noejovich et al., 2009). This shift from the highlands to the coastal region allowed for the Spanish to have an almost blank slate to create, develop, and build out the region as they saw fit. Both Santiago in Chile and Lima in Peru are now major coastal cities, Lima being the second largest city in South America, and Santiago being the fifth largest city in South America were constructions by Spain as export and import ports. Both of these cities are post colonization superpowers in the region, but they were not before. The development of these two cities, as well as others, created major tensions between the highlands and the coastal regions and also caused major rural to urban migration shifts in the post-colonial eras because indigenous workers left their agrarian rural life to search for economic opportunity in the cities.
When the Spanish arrived in the Andean region they were expecting a market based economy like they had seen in the Aztec Empire of Mexico (Lone, 1982). They entered into their conquest of this region with this preconception, a preconception that proved to be diametrically opposed to what actually existed at that time. When reading Spanish accounts of the structure of the Incan empire upon their arrival, there is no mention of Incan markets, markets that can be proven with a high degree of certainty to have been active pre Spanish arrival (Lone, 1982). La Lone further establishes that there is no tangible evidence to support the claim that markets, like those in Tenochtitlan existed, but more rebellious Incan civilians looking to gain some extra stockpile by trading with small unaffiliated Andean tribes (Lone, 1982). The only markets that occurred were on these individual scales.

This settler colonialism pattern is interesting in Peru's case because the Spanish set up port cities and created a system of forced labor or slavery in the country. This was not a traditional method of settler colonization because they also added to the exploitation of the labor of the native population, which made up 85% to 90% of the workforce in Latin America at the time (Chocano, Contreras, Quiroz, Mazzeo, & Flores, 2020). The combination of the mass murder of indigenous people and destruction of their cultures could with the exploitation of the remaining indigenous population lead to the importation of a western pre-industrial feudal style economic and social market. Lima exemplifies the core of the Spanish imposition of colonial markets and social structures, in that it developed into the largest city in Peru, yet it was not even a major city in pre-Hispanic Peru.

One of their first acts of colonization of the Spanish Crown was to establish a feudal like system so they could organize. Their feudal systems were “self-sufficient in basic food items, and the land lords sold their surplus to the fledging cities of Europe to buy the luxury goods produced
by the urban artisans and imported from the Orient from merchants” (Salinas, 1983). It is for this reason the colonization goal in Peru was to extract the natural resources and not trade with the indigenous populations, but rather trade in and with South-East Asia, and East Asia nations as they could get more desirable luxury goods from trade with these nations. After the Spanish were able to settle into feudal-like structures and secure the basics for survival, they were able to set up major port cities to ensure the maximization for raw mineral exports for themselves. These cities include Lima, Trujillo, Lambayeque, and Tumbes (Salinas, 1983). All of the coastal cities did not have access to the raw material they desired, so the Spanish also set up cities around the mines (Ayacucho, Arequipa, and Potosi) and bolstered the already existing and advanced Incan road system. In reality the Spanish colonizers invented no new system of infrastructure to allow them to maximize their outputs, rather they simply adopted already existing Incan systems of labor organization, agriculture, transportation, and social structures and tweaked it in a way that all of the output was to benefit the Spanish Crown, not a theme unique to the Andean region (Noejovich et al., 2009; Salinas, 1983).

When the conquistadors arrived in the Americas, not only did they bring a new economic system with them, but they also imported agriculture, plants, animals, and technology that had never before been seen in Latin America (Chocano et al., 2020). The Spanish covered a space of over one million and a half square kilometers, so this was not the job of just one colonizer. When the Spanish arrived, the market system was redistributive through the central government; excepting the small subsistence farming within communities, all of the goods produced went through the capital, Cusco. This land encompassed almost all of Latin America's southwestern coast, except Brazil (Chocano et al., 2020). One of the most impactful changes in the early colonization period of the Andean region of Latin America was the genocide of the native
population. The genocide resulted in a massive population decrease, so the Spanish settler method of colonization took hold and set up port cities along the western coast of Latin America (Chocano et al., 2020).

One of the most significant economic importations that the Spanish imposed on the native population was property rights. Before the Spanish conquest, all of the land in Peru was distributed by the central government or by individual groups' leaders. When the Spanish arrived, because individual property rights did not exist, it was a straightforward matter for them to establish similar processes to create these rights and then simply claim the land as their own. This is one of the fundamental sources of significant inequality that stems from colonial development patterns (Chocano et al., 2020). Individual Spaniards now claimed all of the agricultural fields, mines, cities, and any type of infrastructure created by the native people in the name of individual property rights. This structure is in complete opposition to the communal system of life that had grown organically over time in the area and was extremely important and vital in pre-Hispanic Latin America (Noejovich et al., 2009). The early colonial period can be categorized as "el perfil perfecto de una economía colonial" (Chocano et al., 2020), which means that because of the demographic decline and the specialization as a commodity export economy that did not need an abundant workforce, this was the perfect colonial economy. Although there is an abundance of examples of the negative consequences of Spanish colonization in the Andean region, the Europeans did bring productivity-boosting institutions and technology (Chocano et al., 2020). This then gives rise to the question that comprises the thrust of this Senior Project, and the one it seeks to answer, what are the long-lasting effects of colonization in the Andean region of Latin America and how can we move forward in a way that mitigates the adverse effects that colonization has had on economic growth and development on the Andean region in recent years?
1.5 Spanish Structure of Colonization

The colonizers exploited the region in three main capacities. These were in their capacities as mine owners, as merchants, and as landowners. These three positions were often interconnected and fed into one another (Mallon, 1983a). Mallon (1983a) states that “By the second half of the eighteenth century, economic opportunities in the central sierra were concentrated in three sectors: mining, agriculture and livestock raising, and commerce. More often than not merchants in the mining area owned mines, or mine owners owned Haciendas which they could use the produce from to fuel their mining ventures. Even though there was a myriad of connections and links between these different colonial sectors, each of the sectors functioned in completely different ways and each had its own dynamics.

The mining industry was, “small, privately owned, and technologically primitive”(Mallon, 1983a). The first type of mining was ore mining. The mined ore was typically transported by muleback to the local Haciendas that specialized in mineral extraction. The raw ore was then processed, and the silver was extracted on these Haciendas. The labor for both of these places was either slave labor brought about through the transatlantic slave trade or, “peasants recruited forcibly from their village” (Mallon, 1983a). This sector proved to be generally unstable because of the fluctuating labor force and the reality that the mines would eventually run out of silver to extract. Though there were a significant number of successful mining endeavors and investments in the Andean region, more often than not there were many more instances of failure. The mine owners either struck the jackpot and made it big or missed the boat completely and suffered major economic losses, there was no in-between (Mallon, 1983a).
Agriculture and livestock were another sector that the colonizers found economic prosperity through. Agriculture proved to be a safer investment than the mines, but it did not yield the dramatic revenues and profits and associated the wealth gain that some mine owners experienced on a consistent enough basis to justify the risk to many others. The labor forces for the agricultural sector were again native peasant labor sourced forcibly in the local villages. This agricultural extraction is most similar to the United States Slavery system, in the tasks that the workers had to complete. The type of produce produced was determined based upon geographical advantages. In the lowland’s wheat, alfalfa, and vegetables were produced, while in the arid highlands typical Andean crops were produced such as quinoa and potatoes. This was further seen as a safer investment because the landowner could adjust their produce based upon the needs of the surrounding area, so as not to overproduce to the point of diminishing returns. An additional benefit to the colonizers was the fact that these large plantations and estates were seen as a “source of prestige and influence” (Mallon, 1983a).

The third sector during the colonial era was commerce. This sector was controlled by Spanish merchants and connected the vast region. One of the main challenges with conquering and controlling the Andean region was the sheer size and geographical diversity of the region. The merchants acted as a connector between all of the areas of the region and often were the people who could grant loans to the mine owners or the agricultural owners. Merchants were, “key providers of credit and made good use of their money by charging high interest rates” (Mallon, 1983a). In addition to being major credit lenders, merchants often became landowners when people could not repay their loans and defaulted. This gave the merchants an enormous amount of power in this region. This interconnection between the sectors is critical in understating the way that the
economy developed. It was extremely common to see a Spaniard owning a mine and an agricultural estate.

It is for the interconnectivity of the above three sectors that the regions early colonial economy operated primarily in two tiers. The first being large agricultural estates and the second tier being the mining, commerce, and small agricultural farms. The first tier of the large estates was the most stable because the owners of the estate owned all of the capital and the second tier was subject to the fluctuations of the economy and, as a result, much more volatile (Mallon, 1983a). These two tiers often excluded the native population with the exception of a few Indigenous people who made in into the second tier. Social and political influence had just as much of a pull on maintaining wealth in this region as economic skill did. This created a class divide that allowed generational wealth to be passed down and multiplied overtime. The specific systems under which these conditions and results functioned were the subjugation of the native population. They were not included in any economic, social, or political activity and reduced to being pawns in the Spanish conquest for economic prosperity. These systems were the Encomienda, Hacienda, and Mita system. Over all the spatial organization of the region from Pizarro’s arrival in the 1530’s all the way through the 1700’s is a clear reflection of the exploitation of natural resources and indigenous peoples to serve the needs of Spanish mercantile systems (Salinas, 1983).

In the early years of Latin American colonization, especially in Peru, this resulted in a situation where both a labor shortage and a land surplus existed. This, in turn, led to economic activities that were better suited to the new population distribution. They used all of their new industrial revolution technology and European animals to compensate for this massive labor shortage (Chocano et al., 2020). The remaining population of indigenous peoples was then driven
into forced labor environments. Forced labor only benefits the exploiter and severely stagnates internal market growth. In short, all of the economic growth and expansion that occurred in the early colonial period of Peru, inured exclusively to benefit the Spanish in their search and desire for precious metals and natural resources in general (Chocano et al., 2020). The early examples of this forced labor are known as the Encomienda, Hacienda, and Mita systems.

1.6 Main Systems of Forced Labor

The Encomienda, Hacienda, and Mita systems were the three main systems of forced labor implemented by the Spanish. The Encomienda came first and was a feudal like structure where the encomendero, similar to a lord in Europe, had a plot of land and was in charge of organizing the labor source. The Encomienda system fed into the Hacienda system, which was very similar in that the hacendados, were in charge of a plantation worked by indigenous laborers. The hacendado had a bit more power than the encomendero and the Hacienda system overtook the Encomienda. The third system, Mita, was different then the Hacienda and Encomienda systems but had the same basic structure. In the Mita system indigenous workers, or mitayos would work the silver mines and a Spanish man would oversee the work being done. In all of these systems the commonalty was that the labor was forced and there was no mobility between class standing as everything was created in a way to extract as much as possible from the native population of Peru, while gaining as much material wealth as possible for those in power.

Encomienda

In the early colonization era, the primary system of forced labor was called the Encomienda system. The Encomienda system can best be compared to a structure resembling that of the fiefdoms, peasants, and lords in Europe. An Encomienda was, "an organization in which a
Spaniard received a restricted set of property right over Indian labor from the Crown whereby the Spaniard (an *encomendero*) could extract tribute (payment of a portion of output) from the Indians in the form of goods, metals, money, or direct labor services. In exchange, *encomendero* provided the Indians protection and instruction in the Catholic faith, promised to defend the area, and paid a tax to the Crown” (Yeager, 1995). This established, almost immediately, rigid social classes with the Spanish conquerors, of course, occupying the top tier. The Ecomienda system served to grant Spain its initial political control over the Andean region (Wiedner, 1960). This method of forced labor was not productive in the slightest and prevented proper royal authority over the area for decades (Wiedner, 1960). Still, the Spanish's main goals were to "expand and defend the Spanish empire in a cost-minimizing manner, spread Christianity to the natives, and extract wealth from the colonies" (Yeager, 1995). The Encomienda system allowed the Spanish to conquer quickly and spread their overall goals over the Andean region's vast landmass.

Another reason why Spain preferred the Encomienda system to one of slavery at first was that the property rights were granted to the encomenderos, so there was less of a threat to security. The ultimate goal of the Spanish Crown was to implement a system of wage labor into the Andean region. Still, in that transition period, they were accepting of a temporary forced labor system so that they did not miss out on any potential profit. This underlying philosophy was based on the Aristotelian doctrine of natural slavery, meaning that these "natural slaves" are those who reject Christianity. The Spanish Crown did not believe in enslaving the indigenous population because they had never been exposed to Christianity, meaning they had never outright dismissed it yet. This grey area provided the conquistadors a substantial amount of flexibility with how they implemented forced labor systems in Latin America. In a way, it made the conquistadors and Spanish Crown less accountable for their actions (Yeager, 1995).
The reason why the Encomienda system failed eventually, even though it had produced profits in the beginning, was because it "lowered revenue by more quickly depleting human capital, restricting labor mobility, and promoting higher average costs. The Crown preferred this organization over other forced labor alternatives because it allowed rents to be earned from native labor and gave the Crown greater security of rule in the New World while not reducing Native Americans to the status of slaves" (Yeager, 1995). The Encomienda fed its structure into the Hacienda system, but the Hacienda system was designed to be in place for the long run and it solidified the exploitation in a formal way.

**Hacienda**

The system that came about next was the Hacienda. Although not a direct replacement of the Encomienda, the Hacienda system, took over and became the primary system of forced labor in Peru. Both of the systems dominated the Latin American country sides, not just in the Andean region. The Encomienda and Hacienda system, "cut from the same cloth; they were patriarchs of a special kind who ruled both the countryside and the city" (Lockhart, 1969). Lockhart further posits that both the hacendados and encomenderos asserted themselves to be part of an aristocracy and elite ruling class of the Indigenous communities. This assertion is critical because it depicts the new social order put into place by the conquistadors.

When production was proficient on the Hacienda plantation, the hacendados would often spend most of their time in major cities and treat their Hacienda estates more as a vacation home. These landowning elite would split their time between their rural and urban dwellings, meaning that they separated their lives into two vessels, "economic base in the country and their social ties in the city" (Lockhart, 1969). The Hacienda system's social structure was the hacendado or the landowning male, then their "steward" who acted as a manager and took over then the hacendado
was in the city, and then at the lowest level was the raw labor completed by the Indigenous communities. Lockhart clarifies that, "Hacendados, as mere property owners, lacked any legal justification whatever for such a role; yet they too achieved it in practice" (Lockhart, 1969). These hacendados even went as far as to consider themselves as lords with retainers and vassals like they would have if they were in feudal Europe.

It is also important to note that the term "Hacienda" is a scholarly invention and the time these large properties were referred to as "estancia". In the Andean region, it is also important to state that the Hacienda systems organization stems from the Incan organizational system. Each of the regions specialized in producing a specific good that they had the natural comparative advantage in (Lockhart, 1969). In addition to the production of local goods, there is also an emphasis on Hacienda's self-sufficient nature. Each Hacienda would have its farm and living quarters for all of the workers. Lockhart further notes that during the early colonization of the Andean region, the Incan structures were relatively intact, therefore easily adaptable to the Castilian goals, but, "as Indian structures deteriorated and the cities grew, supervision increased; the city came into the country" (Lockhart, 1969).

Throughout Spanish colonization, there were many migrations shifts between the rural and urban areas. These shifts have made it difficult to understand the development of these forced labor systems but a common thread through them all is, "the Spanish properties and their permanent crews to grow, while the Indian villages and their lands and production shrank" (Lockhart, 1969). The Spanish attempted to use many different legal frameworks to justify these systems. The Hacienda gave, "legal status only to land ownership and leaving the jurisdictional aspects the de facto patterns…It evolved along two simple lines—constant ride in legal ownership of land and change in the balance of the labor force, as permanent workers increased and temporary workers
decreased" (Lockhart, 1969). It is fair to conclude that these estates' function and overarching goal and systems of forced labor connected the city and the country, whether to produce goods or connect ideologically.

**Mita**

The third central system of forced labor was known as the Mita system. Like many colonial systems of oppression, the Mita system was adapted from the Incan empire called Mita. The majority of research is presented form and, “external viewpoint, with institutional matters often taking precedence over sociocultural one” (Tandeter, 1993). The Mita system's main goal was to extract raw silver from the mines and refine it with mercury. Indigenous communities were required to provide, "one-seventh of their adult male population as rotating Mita" (Dell, 2010). If these communities could not provide the needed labor, they would need to pay the wage necessary to hire the missing silver workers. The Mita system worked so that the Spaniards were able to issue debts as to, "bind the Indian to his master" (Wiedner, 1960). The Spanish needed this system of forced labor because most of the native population would refuse to work voluntarily for Spanish gains. The way these drafted forced labor groups were made was through the reorganization of the remaining indigenous population. This was not difficult because the Incan empire already had its rotational labor force. The Spanish could adapt their system and tweak it to exclude the natives from receiving any profit. The newly modified Mita structure allowed for, "further abuses by Indian chiefs and Spaniards because the centralization that made labor drafts so workable also made abuses easy to perpetrate" (Wiedner, 1960). In theory, the Spanish adaptation aimed not to perpetuate slavery or even forced labor, but this theoretical aim proved to be untrue over time. In reality, many of the native Mita workers (mitayos) did not work in rotations and were often indebted to the mine owners or encomenderos. These abuses often stemmed from, "Slow,
unreliable communication with Spain certainly gave some validity to this attitude, but evidence indicates, the abuses went far beyond the level of mere good intention" (Wiedner, 1960).

The original plan created in Spain for the Mita system changed quickly when applied to the mines in Peru's rural areas. This was seen through, "The difficulties of returning home, the obligations of the system at home, the apparent laxity of tribute collection at Potosi itself, and the epidemic-free climate induced released mitayos to create a substantial class of permanent free Indian labor" (Wiedner, 1960). The reality was that all of these native people were coerced to work in hazardous conditions because there was no alternative for them. Although in the early 1600's the Mita mining system ended, there were still ample adaptations of this "rotational" forced labor in the Andean region. Instead of the mine, the mitayos would work on farms and textile mills to keep up with the taxes owed to the Spanish. Wiedner (1960) further finds that, "roughly 80 per cent of the tributary Indians in Peru were eventually subject to one or more forms of forced labor."

With the abolishment of these forced labor systems came the legal bondage of debt and land ownership. These concepts were complete contradictions to the beliefs held by the Inca people. The Inca believed in success and growth in a communal sense, and the Spanish sought these things as individual wealth and glory.

In summary, "Born and preserved for the exploitation of wealth, forced labor was justified on the grounds of missionary endeavor and paternalistic guidance" (Wiedner, 1960). Wiedner (1960) further concludes that the, "Mita, debt servitude in textile mills and the tribute extortion succumbed more ready to changing social and economic forces then to a changing concept of law.” This further demonstrates the manner in which the Spanish colonized the Andean region of Latin America and did not seek to assimilate the two cultures but rather sought to destroy the existing native culture and replace it with a Castilian culture, economy, and governance.
All of these systems of forced labor, especially in the early colonization era, were created with the model of feudalism in mind. This feudal structure is critical when examining the industrial revolution and transition to a capitalist economy because tensions that play out in Peru are similar to those in Europe.

1.7 Late Colonization 1700-1812

The late colonization period (1700-1821) is characterized by the Spanish global power decline and a period of economic growth for Peru (Chocano et al., 2020). In this phase of colonization, the Spanish imposed was more of a political stance than restructuring markets and society. The two political and economic spheres were in complete juxtaposition (Chocano et al., 2020), meaning that there were many clashes when capitalism was imposed on the native population and government. This push for political and economic control could be seen through the solidifications and continuations of the systems of forced labor such as Mita, Encomienda, and Hacienda.

In this era, the Peruvian population doubled, and for most people, the quality of life overall increased dramatically. The population growth was also not a result of migration influx (Chocano et al., 2020). At this time, the port cities in the region also opened even more for external trading. This caused massive economic and population growth in and around Lima. Lima would soon be home to one-third of the Peruvian population and one of the enormous conglomerations of informal settlements and economies in urban areas of South America. In addition to a more open trading economy in the late colonial period, there was the religion of Tupac Amaru II, which acted as a catalyst for many of the following rebellions in the period. This was also when significant
industries such as mining and sugar and tobacco plantations were more formalized, as seen in the Mita, Encomienda, and Hacienda systems.

The government's primary role in the pre-Hispanic Andean region was to redistribution goods and production to sustain and grow in a collective sense. The Spanish view of growth was one of individual economic growth and prosperity. This was a significant culture shock to the remaining native population (Noejovich et al., 2009). This is the genesis of the dualistic structures formed in the early colonization eras, which remains largely intact.

The third phase in colonization was the enforcement of Spanish rule in Peru. Spanish colonization's main goal was "el beneficio material y la obtención de prestigio" (Noejovich et al., 2009). This means that the Spanish were in it for the natural resources and the prestige they would receive when they returned to Spain, having claimed new land in the name of the Spanish Crown. This further perpetuated the dualistic structures and established the economic elite families observed today in modern Peruvian economic circles. Once the Spanish reached this phase in their colonization, they had near-complete control over the region and could begin fully imposing their western industrial plans for the new land that they "found".

In addition to the solidification of these systems of forced labor, there were large migration movements form rural to urban areas due do the need for labor in the mines, Haciendas, and Encomienda plantations. This migration was to avoid being forced to work these plantations. Bowser (1991) claimed that, “to remain in the countryside, new migrants were often forced into contract wage labor under Spanish agriculturalists, frequently under conditions which lead to debt peonage and the creation of the more widely known landless forasteros” (Bowser, 1991). This meaning that by the indigenous people migrating from city to escape disease and religious persecution were met with forced labor by the Spanish in the country, there was no escape. Further,
although migration from Castilian cities to rural ancestral lands was seen as a form of resistance by the Indigenous people of the Andean region, in the end it assisted the Spanish in their quest to conquer and extract from the region by adding to their Labor Supply (Bowser, 1991).

It wasn't until Napoleon invaded Spain that the Latin American countries could begin to regain their sovereignty. Peru was one of the last countries in that region to regain its independence because there was still a robust Spanish military and societal elite presence in Peru that wanted to remain loyal to Spain. In the end, Chile and Argentina fought for Peruvian independence to secure Peruvian independence as well. This caused there to be strong Spanish loyalist ties in the urban centers, so when even as a sovereign nation Peru still heavily relied on Spanish social and economic systems.

1.8 Post-Independence Era 1821-1950

The independence and post-independence era in Latin America are foundational eras of Latin American economic history. In Peru, independence was gained when, “foreign republican armies defeated the royalist elite” (Escosura, 2005). Peru had remained one of the Spanish strongholds in Latin America, after other countries in the region had broken free of Spanish rule and control and gained their independence from the Spanish crown. In Peru the continuation of Spanish control resulted in significant portions of the population still held strong loyalties to Spain. In cities such as Lima the majority of the population was of Castilian decent and had retained some type of power over the indigenous peasant class. The power transitioned from the Spanish crown to the existing Viceroyalty, so inherently there was not a massive change until the abolishing of the systems of forced labor. This is due to the establishment between, “the long-run consequences of colonial emancipation and widening gap in living standards between Latin America and the
developed countries” (Escosura, 2005). Some of the major issues in this economic era included fragmentation of political power, militarization of the general population, and the mass mobilization of labor and goods for ongoing wars in the region (Escosura, 2005). There weren’t immediate changes in the social or political structures in Peru like there had been in many other countries in Latin America, slavery was not abolished until the late 1800’s (Noejovich et al., 2009). In the short run, meaning immediately post-independence, “the economic benefits of independence were small and overcome by its costs” (Escosura, 2005). In the long run, “the destruction of the colonial institutional order freeing the colonies from Spanish taxation and trade monopoly brought economic benefits including institutional modernization” (Escosura, 2005). Escosura (2005) further noted that the lack of political stability directly influenced the lack of economic instability in this era. Other short run effects include subverted trade, destroyed property and productive assets, and absorbed labor, causing output to decline by around 50% (Escosura, 2005).

The war of the pacific between Bolivia, Peru, and Chile was a pivotal separation point in this post-independence era. Peru had lost the war of the pacific, which was a war caused by border disputes where there were massive nitrate deposits and many of the Spanish elites blamed the indigenous population for this defeat (Mallon, 1983b). This can be seen clearly in a communication between Ricardo Palma to Piérola, quoted in (Paredes, 2008), “The main cause of the big disaster of 1883 is that the majority of the population of Peru is formed by an abject and degradable race that you wanted to dignify. The Indians do not have a sense of patria; they are enemies of all white men from the coast; for them is the same to be Chilean or Turkish. Educate the Indians, inspire in patriotism will not be the task of the institution, but the time”. Piérola was a two time president of Peru and Ricardo was a prominent Peruvian politician in the post-independence era, so it is clear to see that there was an institutional movement by those in power to exclude the Indigenous

Another change in this era were the massive migration movements from traditional agrarian areas to cities, like Lima, Santiago, and Quito. This was a complete and dynamic reorganization of the region as a whole. The rural to urban migration was a direct result of the abolition and the fall of the forced labor systems in the mid 1900s. When these migrants were able to leave their forced labor positions they had no money or other resources or pathways to buy land, and all of the economic opportunity to be found, was in the Spanish colonial cities along the coast (Mallon, 1983a). In the 1960s there began to be major migrations from rural areas to urban areas and along with these migrations massive informal settlements were created as of a result of the reality that migrants just freed of their debts could not afford to purchase land in these cities. Despite this fact, they still needed to be close to the cities in order to have access to any kind of real economic opportunity, so they were forced to settle on the outskirts of these metropolises in informal, often dangerously constructed informal settlements (Salinas, 1983). This is not an uncommon occurrence in the wake of colonization, informal economies and settlements are the cause of lack of infrastructure due to massive rural to urban migration (Fox & Goodfellow, 2016).

As these informal settlements grew and grew they began to have a real impact on the overall economy of the nation itself. They became so large that the majority of the Peruvian economy, about 60 percent of GDP, can be attributed to the informal market of Peru (Fox & Goodfellow, 2016; Ghersi, 1997). During this era the informal settlements and markets became more and more common as the indigenous and peasant workers continued to migrate unabated to the urban colonial centers.
1.9 Modern Peru 1950-Present

This era can be best categorized by the characteristics of major instability and mismanagement. The era began with a debt crisis in Latin America. In response to the major debt crisis two trends developed and were prevalent in the implementation of economic policy, one being orthodox policy, promoted and advocated for by the International Monetary Fund (IMF), and the second the heterodox policies that emerged after 1985 (Manuel Pastor, 1992). In any critical examination of the nation’s economy, it is necessary to examine each of these distinct economic policy schools of thought separately. This management by the central government only widened the divide and further the exclusion of indigenous people in the modern economy of Peru that was established through colonization.

From Peruvian independence to the 1900’s had a track record of leaning towards a laissez-faire economic policy. This was due to their past history of colonialism, dictators, and coups d’états. Although on the whole they would lean towards more orthodox theory, the swing to more liberal and heterodox theory can be observed when direct Peruvian intervention fails (Pastor & Wise, 1992). According to Werner & Santos (2015), this era was riddled with insufficient import substitution, low social indicators, and 1985 administrative actions. The insufficient import substitution was caused by quantitative import restrictions and high tariffs, overvalued exchange rates that favored urban consumers while discouraging exports and agricultural production. This time period was also marked by a massive rural to urban migration caused by terrorism, mining production, energy, changes in the agricultural sectors, and the quest for individual economic opportunity. This insufficient import substitution was coupled with low social indicators. During this time period sixty percent of the population lived in poverty, political terrorism and violence killed 20,000 people, and there was a cholera epidemic (Pastor & Wise, 1992; Werner & Santos,
The epidemic was a result of the deterioration of social services coupled with and as a result of political unrest. The political unrest during this time period drew all of the attention away from the underlying structural problems that the region was facing. At the beginning of this era there were major administrative acts in an attempt to fix structural issues and boost economic growth. One of the acts was put in place to boost domestic demand through credit expansion and tax reduction (Werner & Santos, 2015), public sector employment increase, and a government mandated minimum wage. The goal was to limit public sector external debts service payments to ten percent of export goods in non-factor services and service debts to creditors to provide a positive net flow of resources. This generated a short-lived boom from 1986 to 1987 that was quickly followed by hyperinflation and a deep recession. This further speaks to the root of the debt and economic turmoil being chiefly attributable to structural problems (Werner & Santos, 2015).

The next phase of the modern Peruvian economy, known as The Great Stabilization, is an era in reference to the aftermath of economic and political disarray in the region. In Peru in 1990 the GDP was 25 percent lower than the three years previous. The first thing the great stabilization did was sharply reduce the budget deficit through increase in the prices of government provided services and streamlined the tax system, strengthened the tax administration, reduced civil service, and liquidated some public development bank (Werner & Santos, 2015). The abolition of price controls, capital control and quantitively trade restrictions, unifying and floating the exchange rate, and liberalizing the labor and financial markets, are more examples of what the great stabilization period encompassed. In short it deregulated the economy and removed many social safety nets. In addition, this movement turned many previously public sector markets private and open to foreign investment. This lack if public infrastructure as a result of colonial urbanization manifests as the creation of an informal economy (Fox & Goodfellow, 2016; Saavedra & Tommasi, 2009).
Due to these major political swings from far right to far left, the general population of Peru had little to no trust in the central government and one of the major cause of informal economies is a lack of trust in the central government (Ghersi, 1997; Saavedra & Tommasi, 2009). Informal economies and settlements occur as a result of a collection of transactions between individuals and the state, in other words informality is a result of micro-level decision on whether and how to participate in certain market places (Saavedra & Tommasi, 2009). For example, firms decide whether to participate in the formal or informal marketplace, meaning whether their transactions will be formal or informal. The aggregation of these individual choices by individual firms creates the aggregate supply of formal and informal jobs in the economy (Marcouiller, Castilla, & Woodruff, 1997). At the same time workers are faced with the decision of whether or not to enter into the labor market. This opens up questions that individuals must grapple with such as whether to search for wage employment or to be self-employed. They are forced to choose between joining the informal or formal job markets. These choices, about which market to enter, formal or informal, have been constricted to the point of almost no choice for the indigenous population (Saavedra & Tommasi, 2009), due to path dependency and exclusion rooted in the vestiges of the Spanish colonization through systems like Encomienda, Mita, and Hacienda, that were not abolished until the mid 1950’s. Literature has shown that these choices are severely constrained leaving the individuals little to no choice in what kind of work they can do.

The informal sectors of economies were defined in 1995 by Marcouiller and Young (1995) as the, “sector comprises producers who avoid taxes by bypassing these procedures, thereby forgoing any claim on the order provided by the government.”(Marcouiller & Young, 1995). Further, they claim that informality occurs as a result of a predatory government that is dedicated to maximizing gaft, gaft being, “the excess of tax revenue over the cost of providing order”
Marcouiller & Young, 1995. They conclude their empirical study by making the claim that, “Order is a public good, so provisions by a public authority is more efficient than private provision” (Marcouiller & Young, 1995). In addition to the need for public goods, such as order, to be provided by the central government, they argue that those who control the state attempt to appropriate the surplus generated by this increase in efficiency, but it is possible to avoid this exploitation by moving into the informal market. They claim that because of the high taxes and limited pay off for paying these taxes, a mismanagement of the government, economic agents are more likely to attempt to provision these public goods for themselves and avoid the taxation. This aligns with the findings in Saavedra & Tommasi (2009), in that informality is a result of distrust and malfunctions of the state. All of this falls into place with the path dependency and systems of exclusion and oppression founded in Spanish colonization of Peru. The central institutions, governance, and economies were initially designed to leave out Indigenous citizens and the creation of the root of these oppressive institutions have not been addressed so the exclusion and discrimination of Indigenous people has continued.

It is also important to recognize that the modern informal economy of Peru, in and of itself is not a problem, but the problem surrounding the informal economy is that it is a broader reflection of the failures and systemic malfunctions of the State in Peru that manifest themselves in both economic and social settings. The complication with defining informality is that it is socially embedded, and as such multifaceted, and it is important to examine all of the factors that could be playing a part in the cause of informality. The causes of informality could be from the side of the individual actors (firms and workers) through motivators such as social norms, social interactions, and systemic failures (Saavedra & Tommasi, 2009). Another side of the debate is focused on the actions of the central government or the State. The State has control over the quality of regulations,
inclusiveness of social policy, and the nature of enforcement of legislation (Saavedra & Tommasi, 2009). Informal economic activities are defined as activities that are illegal but not criminal, licit goals achieved by illicit means.

In post-colonial Peru the majority of the Indigenous rights movements have been concerned with erasure of native lands and sacred grounds in rural areas rather than the creation and growth of informal settlements in urban areas. This is not to say that the protection and preservation of sacred and native lands is not critical, but, “Since the 1940s and 1950s, marginalized people in Peruvian cities have taken part in collective occupations of land for purposes of housing, and creating new urban neighborhoods where infrastructure is constructed through collective work and efforts” (C. Ødegaard, 2010). The creation of these informal settlements is due to a massive rural to urban migration movements after the destructions of the Hacienda, Encomienda, and Mita systems of forced labor in Peru. Many of these rural to urban migration settlers had “migrated from the Andean highlands – or have parents who once did” (C. Ødegaard, 2010). When they reached the metropolis area of Lima, they did not have the economic means to purchase a formal home within Lima. This caused the creation of the barrios or informal settlements on the outskirts of the city.

1.10 Conclusion

In all of these Andean regions and Latin American countries, similar trends can be confirmed and illustrated by researching existing source materials. Movements such as the circulation of Spanish political elites in the post-colonial era reveal significant inequality (both economic and social), creation of the informal economy and settlements, and long term stunted and stagnant economic growth. The path dependency that the Colonial era created through
systems of forced labor which has stagnated economic growth and inhibited the region's overall welfare in the intervening years is a primary focus of this paper. Some of the mechanisms that perpetuate inequality are rent-seeking and anti-growth institutions such as informal economies. When the Spanish colonized the western region of Latin America, they built cities on the coasts that have developed into some of the world's largest cities (Escosura, 2005) and are home to some of the largest informal economies. The caveat to these major developments is that large slum populations have developed alongside these major cities. The research I have done culminating in the presentment of this Senior Project, I contend, demonstrates that colonization has had a significantly negative impact on economic indicators such as inequality, social class mobility, and economic development as a whole. More specifically my analysis reveals that the pervasive effects of systems of forced labor implemented in early colonization have had dramatic effects on the systemic and institutional exclusion of Indigenous individuals in the modern Peruvian economy. Colonization was designed and implemented to benefit the colonizers at the expense of those colonized, and to stunt the growth of the native populations in the respective nations colonized. This can be observed in the over representation rates of Indigenous people in the modern informal economy.
Data Analysis: Informality & Indigeneity

2.1 Introduction

As demonstrated in my previous chapter there is a historical precedent, in Peru specifically and Latin American more generally, to exclude Indigenous people. This precedent was set in the immediate post-colonial era and has continued to adapt and shift with the times. In modern time one of the ways this exclusion and discrimination manifests is by constricting the choice of marketplace, formal or informal, to the point where there are almost no choice and Indigenous people must participate in the informal market. Through path dependence brought about in the colonial era, Indigenous people have been systemically excluded from the formal economy. These historical institutions of forced labor have just morphed and adapted to fit with the current times, economic structures, and social systems.

Systems of forced labor and construction of new Castilian cities are two of the main forces and drivers of this exclusion. As time has progressed Peru has not addressed the erasure and exclusion of native people, instead their central government has pushed for neoliberal fiscal policy in an attempt to compete with the economic superpowers of the world. Enrique Ghersi (1997) in “The Informal Economy in Latin America” found that there were two major revolutions in Peru the first one was that of a failed Maoist terrorist group and the other being the Informal Entrepreneurs who work outside of the law in every city of Peru. Further he argues that the informal economies of Peru and Latin America in general need to be examined because in Peru 38% of the GDP and 60% of human-hours worked take place in the informal sectors. Other authors like Saavedra & Tommasi (2009) argue that it is not informality that is the problem but the structures that allowed the informality to occur and continue that are the problem. That informality
is a result of the failure of the state to those who have to participate in the informal economy (Saavedra & Tommasi, 2009).

In the previous chapter I demonstrated a trend of systemic discrimination and exclusion of Indigenous peoples in economic activities in Peru through Spanish colonization and that this discrimination and exclusion can be seen in the individuals market choice, formal economy or informal economy. In this chapter I will analyze relevant data about how economic discrimination rooted in the Spanish colonization has led to higher rates of Indigenous participation in the informal economy of Peru. I will show this causality by utilizing a regression analysis. If a link between indigeneity and informality can be made, policy can be better targeted to support and uplift the Indigenous communities that have been excluded from the formal economy and settlements and forced and crowded into informal economies and settlements.

In this chapter I will also analyze the available data on informality and indigeneity by using the “Encuesta Nacional de Hogares sobre Medición de Niveles de Vida 1991” conducted by the World Bank under the Living Standards Measurement (LSMS). As seen in the last chapter, through colonization, people native to the Andean Region have been systemically excluded from economic activity. Through this data analysis I hope to emphasize the relationship indigeneity and informality have in Peru. In order to figure out how to most efficiently and effectively help these people who have been excluded it is critical to analyze the data surrounding the question. Based on the historic institutions and systems of forced labor and theories about economic discrimination, development, and informality. I hypothesize that Indigenous people are more likely to participate in the informal economy then nonindigenous people.
2.2 Critical Definitions

In order for my analysis to function as a linkage between indigeneity and informality I first must define critical and re-occurring terms in the analysis. The two most critical terms in my analysis, the informal economy and Indigenous people, can be subjective in some cases. In this analysis both of the variables are discrete dichotomous where participation in the informal economy is the dependent variable and indigeneity is the independent variable of interest. In this section I will define crucial terms specifically as they apply to this paper. It should be noted that the way I am defining them in this analysis is different from the ways they are defined in other relevant economic and sociological literature.

The first marker, or definition is indigeneity. In this analysis indigeneity is defined by taking the ordinal variable of native language and sorting the categories of native language into indigenous or not. This then creates a new binary variable where an individual is either indigenous or non indigenous. Having a variable and defining indigeneity is critical in this study because by creating a variable that groups the population of Indigenous people in the study and the population of nonindigenous people in the study, we gain two things. First, we gain information about the demographics of our sample. Second, we can use this to examine how Indigenous people interact with each other, the government, and different markets. Indigeneity through path dependence created during Spanish Colonization has been seen as a key problem to solve. As noted in the previous chapter nearly 80% of the Indigenous population was killed during the early years of colonization and the people who survived were subjected to extractive systems of forced labor (Noejovich et al., 2009). It is also critical to note that in this survey some respondents who are Indigenous may have claimed they don’t speak an Indigenous language to avoid the negative social structures that surround indigeneity in Peru. By creating a variable to account for Indigenous
people we can examine what market they end up participating in whether their choice is constricted or not. A code for indigeneity is a necessity to understand the general population demographics, and particularly the demographics of the participants of informal economy. Moreover, if the individual chose to enter the informal economy, was their decision constricted by factors they cannot control.

Indigeneity, for the sake of this analysis will be proxied with native language. Language is a critical aspect of life in Peru, “despite the fact that both Quechua and Aymara are officially recognized languages and are widely spoken, indigenous languages have low status. Many indigenous people are forced to reject their own language and culture in order to improve their socioeconomic position” (Patrinos, 1995). Patrinos (1995) further found that the Peruvian social pyramid allows for little to no social mobility and as such is in fact structured like a pyramid. Patrinos (1995) shows that at the top of the pyramid would be the top 0.1 percent of the population that is white and holds twenty percent of the national income, next level down would be the mestizo population who comprise twenty percent of the population and hold 53 percent of the income, next level down is occupied by the cholos who represents 23 percent of the population and hold 14 percent of the income, and finally there is the indigenous population, the base level of the pyramid, who represent 56 percent of the population and receives 13 percent of national income (Patrinos, 1995). Through understanding the implications of these different demographic relationships, it becomes clear that there is a real need for a variable that accounts for indigeneity.

The second variable of interest is Informality. Informality is a binary dummy variable in this analysis, one either participates in the informal economy or they do not. In this analysis I will define the informal economy through a variable that encompasses all who have claimed that they were or are self-employed and additionally any sector (including agriculture), that have no
insurance, or have no union at work. This is in an effort to not account for anyone in the informal market. The informal economy is also commonly known and referred to as the informal sector, shadow economy, second economy or parallel economy (Fox & Goodfellow, 2016). The world bank uses the self-employed as a marker for informal economic actions (Saavedra & Tommasi, 2009). Some of the traditional markers of informality are: Low levels of participation in social security, low coverage of many social insurance schemes, large or small firm evading taxes, low or uneven enforcement of the laws, opting out of public provided services by the rich, low levels of trust in the fairness of the state as a whole, low levels of tax collection due too little to no tax compliance and small tax bases, and an overall sentiment of an ‘us vs them’ (Saavedra & Tommasi, 2009). All of the above features are a reflection on the state’s inability to preform effectively and equitably through the provision, redistribution, and protection, of public goods and services (Saavedra & Tommasi, 2009). The “us” being the excluded groups, among which are the indigenous people and the other being the established Castilian elite who have morphed their systems of exclusion to adapt to modernity. The establishment runs the state, hence the major distrust within the Indigenous and informal communities of Peru. In this sense informality is a reflection of how individual agents and the state interact with each other (Saavedra & Tommasi, 2009).

In addition to the definition by Saavedra and Tommasi (2009) the International Labor Organization (ILO) and Fox & Goodfellow (2016) offer a more comprehensive definition of the informal market. They list the key characteristics of the informal market as ease of entry, reliance on indigenous recourses, family ownership of enterprises, small scale of operation, labor-intensive and adapted technology, skills acquired outside of the formal school system, and unregulated and competitive markets (Fox & Goodfellow, 2016). They further argue that when studying
informality there is an inherent dualistic nature to the economies that’s roots can be traced back to the, “colonial origins of urbanism in low- and middle-income countries” (Fox & Goodfellow, 2016). Fox and Goodfellow (2016) define the informal economy as “those economic activities that circumvent the costs and are excluded from the benefits and rights incorporated in the laws and administrative rules covering property relationships, commercial licensing, labor contracts, torts, financial credit and social security systems” (Feige, 1990; Fox & Goodfellow, 2016). To examine the informal economy without mentioning the interdependency between informal settlements would be an incomplete study. Inhabitants of the informal settlements often participate in the informal labor markets. This is due to the reality that informal inhabitants often experience institutional exclusion in addition to poor living conditions. Because of this exclusion they are often subjected to environmental dangers, poor building standards, and reliance on a monetized economy (Fox & Goodfellow, 2016). Further while many agents benefit from the lax regulations surrounding the informal economy, wage laborer’s are often the losers in this situation, as they experience a lack of stability and exploitation across all fronts (Fox & Goodfellow, 2016). More often than not in the economy the wage laborers are the marginalized groups, while the employers are part of a higher social class and use this class standing to exploit the marginalized population (Fox & Goodfellow, 2016). This social structure was established in the early colonization period and only stratified further as time progressed.

All of this is not to paint the informal economy as the problem, but to use participation in the informal market to demonstrate the exclusion of Indigenous people. The problem is not the informal marketplace and informal settlements, but the systemic exclusion from the formal marketplace of the Indigenous population. Even though participating in the informal economy can be rational behavior, in many cases it is the result of systemic exclusion. In that sense informality
represents a second-best and least-worst solution from an economic standpoint (Fox & Goodfellow, 2016). The size of the informal market, in the case of Peru, demonstrates the effectiveness and in inclusivity of the state in the provision of public goods. By establishing the link between the informal economy and indigenous people, a door can be opened for further research on how to be more inclusive in the formal market of Peru for its indigenous people.

2.3 Theoretical Background

Sen’s (1999) capabilities approach in conversation with the institutional exclusion of the Indigenous populations of Peru is particularly prescient to the focus of my analysis. It is he clearly stated position that the Peruvian government has failed to provide for and include the Indigenous population and in turn the Indigenous population has availed itself of the informal economy (Sen, 1999). Sen’s (1999) theory of development as freedom would argue that the Indigenous people of Peru, through historic exclusion and oppression, have been stripped of their agency and freedom to choose what they seek as a desirable result. Sen would refer to this as a capabilities depravation, in that the mismanagement of the central government of distribution of public goods deprives individual of their freedom to choice. (Sen, 1999). This position is also articulated in Saavedra (2009) when they describe the choice to participate in the informal market, not as a choice for many, but as a result of constrained options and major barriers to entry (Saavedra & Tommasi, 2009).

Informality in and of itself is not a problem, but rather a result. Of course, problems with informality do exist, and one of the primary problems arising out of the existence of the informal economy is that it is a broader reflection of the failures and systemic malfunctions by the State in Peru that manifest themselves in both economic and social settings. Sen (1999) would argue that
it is the State’s duty to its citizens to provide with these public goods and tools for each individual to live as they please, and that when they do not provide this meta-toolkit, things like informal economies occur organically.

Another paper by Marcouiller, Ruiz de Castilla, & Woodruff (1997) found that “when workers are excluded from formal-sector jobs, the small firms of the informal sector offer second-best opportunities in easily entered, competitive markets” (Marcouiller et al., 1997). In their study they used the same household surveys I am using, except I am using data from 1991 and they used 1985, to determine what type of work the individuals did. They defined informal work in their study as workers who are self-employed or those who operate in firms with five or fewer employees. In this definition they also included those who receive social security coverage or pay social security taxes as a condition of their employment (Douglas Marcouiller, 1997). Although this study did not look at ethnicity as an independent variable in this study, they looked at different segments of the labor market such as retail trade, manufacturing, personal services, transportation, and construction. Their findings were that young and old workers were more likely to be in the informal sector rather than prime age workers, also that retail trade is the largest sector of the informal economy (Douglas Marcouiller, 1997).

Informality does not only play out on the outskirts of major cities, as it also is presenting in communities in rural sections of Peru. Delgado (2008) articulated, “Andean communities also invited their own marginalization from mainstream process of development. In Peru (like in Ecuador), this created a clear special divide between the coastal region, where elite and criollo people lived and associated with development, and the Andean region, which was related with tradition and backwardness and where Indians and Mestizos lived.” Delgado (2008) further posited that marginalizing people in turn marginalizes the geographical region, that because they
were seen as not as human or not as advanced they were left out of many of the economic and technological advancements developed over the past two hundred years of independence (Delgado, 2008). Dell (2010) proved the prevalence of the Mita system and poverty traps through disconunity regression. She found that in regions that had the Mita system “effect lowers household consumption by around 25% and increases the prevalence of stunted growth in children by around 6 percentage points in subjected districts today” (Delgado, 2008). Because informality and indigeneity are prevalent in both major cities and in the country, there needs to be a country-wide analysis of both indigeneity and informality.

Informality is the symptom of exclusion of marginalized people and mismanagement by the central government’s distribution of social welfare provisions and public goods (Fox & Goodfellow, 2016; Saavedra & Tommasi, 2009). In addition, informality has roots in colonial urbanism and urban development. The roots of exclusion and discrimination of Indigenous people in Peru is still clear in 2021. In Peru, through history, one of the most marginalized groups is the Indigenous people and this marginalization has its origins in Spanish colonization and systems of forced labor (Wiedner, 1960). If these colonial roots and discrimination of Indigenous people are not addressed and irradiated, discrimination will just take new forms and morph itself adapt to modernity. In this chapter I will establish a connection between participation in the informal economy and indigeneity. By taking a capabilities approach to distribution of public goods, we must acknowledge the other variables that, in their absence or presence, might have a sway on which market an individual enters.
2.4 Ideal Testing Scenario

The most ideal way to test this hypothesis of if being Indigenous makes an individual more likely to participate in the informal marketplace would be to run a randomized block design experiment with 32 Peruvians. I chose 32 because for a quantitative experiment to be considered statistically significant the population of the study must be at least thirty. All of the individuals participating in this study must be 25 years old, as 25 is the most ideal or prime working age in both the informal and formal marketplace. There are two levels of blocks in my study, and I would create the first block by selecting 16 individuals who self identifies as Indigenous and 16 individuals who self-identify as nonindigenous. I would then create another block with in the two ethnically divided blocks. This block would allow there to be 8 women and 8 Indigenous identifying men and 8 women and men who identify as non-indigenous. At this point I would randomly assign a 1 or 2 to each of the blocks. In the end there would be 4 Indigenous women randomly assigned a 1 and 4 Indigenous women randomly assigned a 2. I would repeat this randomized assignment of numbers to the Indigenous men, nonindigenous women, and nonindigenous men. All the individuals who were assigned a one would be labeled as Indigenous and all individuals who were assigned a two would be labeled as nonindigenous.

The intuition behind using a randomized block experiment and the chosen population is to avoid any outside variables that might skew the study’s results in either direction. This study would be conducted over the course of 25 years and would be repeated annually. This is to examine the effect that time has on individuals and their participation in the formal or informal market. By making sure all eight of the study subjects are 25 years old and their sex is also blocked for is to avoid any discrimination on the part of the employer based on prime working age or negative
gender perceptions. The reason I include both men and women in this study is because men and women face different labor market outcome in many economies as women are often perceived as less productive in the workplace. By looking at both men and women we are able to account for any gender based discriminatory forces that may have pushed women into the informal sector. The reason I have Indigenous men and women and then labeled half of them the opposite of their identity and non-indigenous labeled the same way is to attempt to avoid any ethnicity bias founded in the way one looks, speaks, or presents themselves outwardly. By labeling Indigenous people as nonindigenous we get a greater idea of If it is the label of indigeneity that is the cause of discriminatory policy and social norms that force indigenous people into the informal market or if it is another factor uncontrollable and specific to the individual. The overall aim of this study is to create a scenario that is all else equal between the subjects and have the only changed factor between them be their true ethnicity, Indigenous or non-indigenous, and the artificial label that is randomly assigned to them.

2.5 Data Description

This type of study in reality would not be ethically plausible, so in my analysis I must rely on an observational study from the available data. However, the available data makes analyzing the connection between informality and indigeneity even more difficult. The last time there was a deep country wide probe into Peruvian economies was conducted by the world bank in 1991 under their Living Standards Measurement Survey or (LSMS). Data from the “Encuesta Nacional de Hogares sobre Medición de Niveles de Vida” conducted by the World Bank as one of their Living Standards Survey was conducted in 1991. The survey has a population of 11,491 individuals across
2,450 households and it provides basic demographic, household, and individual level data covering a range of topics such as wages, poverty statistics, health care and many more.

The data in this set has no outright question of whether or not an individual identifies as Indigenous, as they only ask what their native language is. This is a fine measure, but it does miss out on a significant number of individuals who would otherwise identify as Indigenous, but do not speak the native language due to an attempt to “fit in” to post-Colonial Peru. As shown in the previous chapter many Indigenous people in Peru have had to leave their native languages behind to fit into and be able to participate in the post-colonial society. This is caused by many people viewing Indigenous cultures, societies, and economies as primitive and barbaric. The LSMS 1991 survey also does not strictly ask a question about informality, more it asks about symptoms or characteristics that informal work would fall into. Because there is no distinct measure for informality in this data set, I need to create a new variable for that as well.

Because it is physically and ethically impossible for me to run a double blocked experiment as I would have liked, rather I am required to run an observational study. In my study, because I cannot pick and choose my sample population, as would be the case in an ideal world, I would have to control with my existing data. Luckily the LSMS 1991 data does have variables that can attempt to create an all-else equal situation. This would be through using exogenous variables such as age, sex, marital status, presence of children, size of household, geographical location (rural vs urban), and geographical region (by region).

2.6 Descriptive Statistics

The data is from the world bank database Living Standards of Measurement Survey, specifically the “Encuesta Nacional de Hogares sobre Medición de Niveles de Vida 1991”. The
variables used were household identification number, personal identification number, native language, sex, marital status, labor market status (whether the individual has worked within the last week, month), self-employment in the past week and year, unionized workplace, and access to social security benefits at their workplace. All of the listed variables are either general characteristics of the population, labor force participation status, or markers of indigeneity. The reason there are so many variables is because participation in the informal economy is often hard to catch by just one measure, so I have created a dummy variable named “informal” to account for all of the possible ways informally can present itself in the market. Included in my informal dummy variable is: if the worker has been employed by a family farm in the past year, if they have been self-employed in the past week or year, if they their workplace is connected to a union, and if their workplace provides security benefits. I also created another dummies variable to determine who is indigenous and who is not by use of native language spoken. Respondents were asked what their native language was and anyone who chose Quechua, Amara or Other Native Language is considered to be indigenous in this study. The independent variable, X, is participation in the informal market, and the dependent variable, Y, is whether or not the person is indigenous. All of the other variables in this analysis are independent control variables.

Below there are some basic distributional charts and graphs created to explain the basic demographics, distribution, and variables of the sample study. Beginning with the geographical distribution of the sample population. The below table is the surveys that were completed in each region of Peru along with if it was in an urban and rural area.
Table 1  
Geographical Distribution of Sample Population

<table>
<thead>
<tr>
<th>Geographical Location</th>
<th>Households</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coast</strong></td>
<td></td>
</tr>
<tr>
<td>Urban North</td>
<td>297</td>
</tr>
<tr>
<td>Urban South</td>
<td>64</td>
</tr>
<tr>
<td><strong>Mountain</strong></td>
<td></td>
</tr>
<tr>
<td>Urban North</td>
<td>48</td>
</tr>
<tr>
<td>Rural North</td>
<td>150</td>
</tr>
<tr>
<td>Urban Center</td>
<td>210</td>
</tr>
<tr>
<td>Rural Center</td>
<td>240</td>
</tr>
<tr>
<td>Urban South</td>
<td>240</td>
</tr>
<tr>
<td>Rural South</td>
<td>195</td>
</tr>
<tr>
<td><strong>Lima</strong></td>
<td></td>
</tr>
<tr>
<td>Metropolitan Lima</td>
<td>1,006</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>All</td>
</tr>
<tr>
<td></td>
<td>2,450</td>
</tr>
</tbody>
</table>
Table 2
Distribution of Native Languages Spoken

<table>
<thead>
<tr>
<th>Language</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cum.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>10,085</td>
<td>85.13</td>
<td>85.13</td>
</tr>
<tr>
<td>Quechua</td>
<td>1,010</td>
<td>8.53</td>
<td>93.66</td>
</tr>
<tr>
<td>Aymara</td>
<td>520</td>
<td>4.39</td>
<td>98.05</td>
</tr>
<tr>
<td>Other Native Language</td>
<td>2</td>
<td>0.02</td>
<td>98.07</td>
</tr>
<tr>
<td>Other Foreign Language</td>
<td>1</td>
<td>0.01</td>
<td>98.08</td>
</tr>
<tr>
<td>Does Not Speak</td>
<td>228</td>
<td>1.92</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>11,846</td>
<td>100.00</td>
<td></td>
</tr>
</tbody>
</table>
Table 3

<table>
<thead>
<tr>
<th>Language</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cum.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quechua</td>
<td>1,010</td>
<td>65.93</td>
<td>65.93</td>
</tr>
<tr>
<td>Aymara</td>
<td>520</td>
<td>33.94</td>
<td>99.87</td>
</tr>
<tr>
<td>Other Native Language</td>
<td>4</td>
<td>0.13</td>
<td>100.00</td>
</tr>
</tbody>
</table>

As can be observed in the above sample statistics. In this study I will be working with a sample size of 11,846 and of those 1,532 or 12.93 percent speak an indigenous language. As stated previously, native language spoken is going to be used as a marker of indigeneity. Quechua and Aymara are the two main indigenous languages in Peru and the remaining two are
other Amazonian languages. Although using native language as a marker of indigeneity does erase some indigenous people and assists in the narrative of the erasure of indigenous people, there is no other marker in this data set that would allow for more inclusion under the umbrella of indigeneity. 12.93 percent is an acceptable amount of the sample whose native language was not Spanish.

Figure 2

Figure 3
In addition, there is the age distribution of the age of the entire sample and just the indigenous populations and an age distribution and tabulation of those participate in the informal economy. The Distribution of both the entire sample and just the indigenous population are slightly skewed to the left and the distribution of the informal sector is slightly left skewed but more normally distributed then the other two distribution. This makes sense because younger people would not participate in the work force, so they are omitted from the informal market distribution. In addition to population, I tabulated the total number of people who participate in each market, formal and informal, based on ethnicity, indigenous and non-indigenous.

Table 4
Tabulation of Sample Population Dependent and Independent Variables of Interest

<table>
<thead>
<tr>
<th></th>
<th>Formal Economy</th>
<th>Informal Economy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Indigenous</td>
<td>6,670</td>
<td>3,647</td>
<td>10,317</td>
</tr>
<tr>
<td>Indigenous</td>
<td>549</td>
<td>983</td>
<td>1,532</td>
</tr>
<tr>
<td>Total</td>
<td>7,219</td>
<td>4,630</td>
<td>11,849</td>
</tr>
</tbody>
</table>

(INE), 1991 )
As can be observed in the above table about 40 percent of the population participates in the informal economy, and as established previously about 13 percent of the population is Indigenous. In addition, the tabulation above shows that market participation out of the population that is not indigenous is 35.35 percent, so just over one third, of the non-indigenous population participates in the informal market whereas 64.16 percent, almost two thirds, of the Indigenous population participates in the informal economy. Proportionally a third more Indigenous people participate in the informal economy than nonindigenous peoples.
<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model A</th>
<th>Model B</th>
<th>Model C</th>
<th>Model D</th>
<th>Model E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigeneity</td>
<td>Coefficient</td>
<td>0.29***</td>
<td>0.25***</td>
<td>1.22***</td>
<td>0.25***</td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.08)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Size of Household</td>
<td>Coefficient</td>
<td>-0.00**</td>
<td>-0.02**</td>
<td>-0.00</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.00)</td>
<td>(0.01)</td>
<td>(0.00)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Coefficient</td>
<td>-0.05***</td>
<td>-0.24***</td>
<td>-0.04***</td>
<td>-0.19***</td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.00)</td>
<td>(0.01)</td>
<td>(0.00)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Age</td>
<td>Coefficient</td>
<td>-0.00</td>
<td>-0.00</td>
<td>-0.00***</td>
<td>-0.01***</td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Sex</td>
<td>Coefficient</td>
<td>-0.17***</td>
<td>-0.78***</td>
<td>-0.20***</td>
<td>-0.87***</td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.01)</td>
<td>(0.05)</td>
<td>(0.01)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Recent Illness</td>
<td>Coefficient</td>
<td>-0.00</td>
<td>-0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.01)</td>
<td>(0.06)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Migration</td>
<td>Coefficient</td>
<td>0.01</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.01)</td>
<td>(0.06)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary School</td>
<td>Coefficient</td>
<td>-0.28***</td>
<td>0.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.02)</td>
<td>(1.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary School</td>
<td>Coefficient</td>
<td>-0.36***</td>
<td>-0.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.02)</td>
<td>(1.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary Tech School</td>
<td>Coefficient</td>
<td>-0.28***</td>
<td>0.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.04)</td>
<td>(1.05)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University BA</td>
<td>Coefficient</td>
<td>-0.30***</td>
<td>0.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.03)</td>
<td>(1.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University MA</td>
<td>Coefficient</td>
<td>-0.29***</td>
<td>0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.02)</td>
<td>(1.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Edu.</td>
<td>Coefficient</td>
<td>-0.33</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.30)</td>
<td>(  . )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>Coefficient</td>
<td>0.35***</td>
<td>0.99***</td>
<td>2.16***</td>
<td>1.05***</td>
</tr>
<tr>
<td></td>
<td>Std. Error</td>
<td>(0.00)</td>
<td>(0.03)</td>
<td>(0.14)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Adj. R- Squared</td>
<td></td>
<td>0.039</td>
<td>0.119</td>
<td>0.101</td>
<td></td>
</tr>
<tr>
<td>P-Value</td>
<td></td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>11849</td>
<td>8714</td>
<td>8714</td>
<td>7636</td>
</tr>
</tbody>
</table>

*p<0.05, **p<0.01, ***p<0.001
2.7 Bivariate Analysis

In this portion if my analysis I will run bivariate tests from the above tabulation of available survey data, I will first run a chi-squared test on the sample using my variable of market participation, formal or informal, and indigeneity. The Chi-Squared test in a general since will take my two variables and see if they are related with each other. The chi-square test is a measure of the difference between observed and expected frequencies, and in this case between indigeneity and participation in the informal economy. In econometrics it is used to test whether two variables are related to one another through the proportional distribution of frequencies. The equation for this is do that by using the following equation:

\[ \chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} \]

Equation 1

\( O_i \) Represents the observed values
\( E_i \) Represents the expected values
\( \chi^2 \) Represents the Chi-Squared value

When the chi-squared value is calculated out for this dataset and the variables of type of economic system and indigeneity we get the values 0.000725. This value is statistically significant because it is below the previously set \( \alpha \) of 0.05, so the proportion of indigenous people who participate in the informal market is statistically significant. The data used in this chi-squared test is the from Table 4. The intuition is that there a relationship between the proportion of the population who is indigenous also participates in the informal market in comparison with the proportion of nonindigenous individuals who participate in the informal market. This establishes that there is a link between informality and indigeneity.
**Model A**

Next I will run a standard linear regression (LPM) that is only including my marker for informality and indigeneity. This is to see what occurs before anymore variables are added into the equation. I will be using a standard linear regression, so my equation will be as follows:

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon_l$$

- $X_1$ represents if the individual is indigenous
- $Y$ represents participation in the informal economy
- $\varepsilon_l$ represents the residuals and accounts for error

This regression results can be seen in the model A column of the above table. It shows that the P-Values for the F-Test is 0.00 which is below our previously determined alpha values of 0.05. In addition, our t and P>|t| values are also below our previously determined alpha value of 0.05. Therefore, we are able to conclude that the independent exogenous variable, indigeneity, reliably predict the dependent variable, which market, formal or informal, an individual will participate in. This regression also shows us that for every unit of increase in ethnicity there is a 28.881507 percent increase in the probability that you will participate in the informal market, holding all else equal meaning that if one is indigenous they are 28.88 percent more likely to participate in the informal marketplace then formal. This is particularly interesting with the reality that in this data set indigeneity only accounts for about 13 percent of the sample population and the informal sector encompasses 39 percent of economic activity in this analysis. This allows us to find the conditional average of the bivariate linear regression as 0.29 (the coefficient) divided by 0.39 (informal economy) where we get 0.7435. In other words, being indigenous is associated with a 74.35% increase in the probability of participating in the informal market. The R-Squared value shows that
3.92 percent of the variance can be attributed to the dependent variable. As can be observed in the tabulation on the right, the results of this regression are significant at p<0.001, further bolstering my hypothesis. This analysis provides evidence as to whether an individual is indigenous or not can predict weather or not they will enter into the informal market.

Although my analysis could be concluded at this point, it should not be. Because informality can manifest itself in many different ways, as explained in the theoretical portion of this chapter and the previous chapter, it is necessary to run multivariate regressions that control for exogenous variables. There could be other reasons why one might enter into the informal market then indigeneity, so it is important to run a multivariate analysis with variables that could be exogenous and endogenous. For this reason, the remainder of the analysis will be to examine the relationship between indigeneity and informality while controlling for relevant exogenous variables and possible endogenous variables.

2.8 Multivariate Analysis

In this portion of my analysis, I will run four regressions, two standard linear probability models and two logarithmic regressions. The first two will be with economic system and indigeneity like the previous regression analysis but this time I will include exogenous confounding variables such as age, sex, size of household and marital status. The same will follow for the logarithmic regressions. The final two regressions will include possible endogenous variables such as, recent illness, and never migrated. This is in an effort to have a complete analysis of the population that participates in the informal economy and the possible reasons an individual might chose to participate in the informal economy of Peru.


**Exogenous Variables**

The first exogenous variable introduced is sex. In this survey sex is a discrete dichotomous variable where the respondent had to choose male or female. The reason it is included in this variable is because sex plays a major role in labor market outcomes, in that women, overall, are more likely to experience labor market discrimination then men (Neumark & McLennan, 1995). Further women experience lower wages and wage growth then an all else equal man (Neumark & McLennan, 1995). All this being said is to bolster the idea that because the informal economy has lower barriers to entry the sex of an individual may play a role in which market they chose.

Along this same line another variable included in the regression is marital status. In the survey the respondent selects their marital status. This status could be cohabitant, married, widowed, divorces, separated, or single. Knowing the individual’s marital status is included because marriage means that now the individual has a responsibility to another human. This could result in needing employment and the informal market is there to supply that employment.

The third variable in this regression will be age. Age is a continuous variable in this analysis and is included to control for age factors in the labor force. This because there is a prime working age in the formal work sector epically when it is manual labor. The idea is that maybe when folks are older, they could be more likely to participate in the informal market than if they were younger.

The next variable included in the regression would be the size of household for two reasons. The first is that when a household is large, this typically means the household is multigenerational, so an individual may choose to work in the informal sector because they can go to work on their own time. The second reason is there is a necessity to provide for children or cohabitants of a household. The more people living together the more mouths to feed and bodies to clothe. I
included the size of household so that elderly care could also be encapsulated in the analysis, not just children.

By including all of these variables I am attempting to rule out any other possible causes or constrictors that may lead an individual to choose to participate in the informal economy over the formal economy. The equation I will use for this standard linear regression is as follows:

**Model B**

*Equation 3*

\[
Y = \beta_0 + \beta_1 X_1 + \beta_n X_i + \varepsilon_i
\]

- \(X_1\) represents if the individual is indigenous
- \(Y\) represents participation in the informal economy
- \(X_i\) represents all of my other exogenous included variables which in model B are the size of household, marital status, sex, and age.
- \(\varepsilon_i\) represents the standard error of the regression

The results of this regression are fairly consistent with those in the bivariate. The only deviation is that the majority of the exogenous variables are also statistically significant. The variables of primary interest are informal economic activity and indigeneity. In this regression we can see that the variable for indigeneity is still statistically significant, however there are some minor differences.

Overall, the P-Value of F is statically significant as it is below the previously determined alpha level, 0.05. In addition, the R-Squared value has increased, so 11.96 percent of the variation in the independent variables can be attributed to the dependent variable of participation in the informal economy. In addition, the P>|t| value for ethnicity is statistically significant as it 0.000 which falls below the alpha values of 0.05. The coefficient is also very similar to the bivariate
analysis for indigeneity and market participation after the exogenous variables the coefficient is 0.2516645. This means that when all else is healed equal if a person is indigenous rather than non-indigenous, they experience 25 percentage point increase in likelihood of participating in the informal market. This is important for the same reason as the bivariate regression, that the indigenous population is only about 13 percent of this sample size but has a significant participation in the informal market, even when all other variables are healed equal. This results in a conditional average of 0.641, so in model B being indigenous is associated with a 64.1% increase in the probability of participating in the informal market, which is less than the bivariate regression, but expected.

**Model C**

The previous model was a standard linear probability model, but I will now run a logit regression, as my dependent variable is binary. The rationale behind a logit model is that it is specifically designed for binary dependent variables and participation in the formal market is a binary dependent variable. In the Logit regression the results are between 0 and 1 which logically is correct as the LPM allows for probabilities above one and below zero. In the logit model there is a clearer explanation of the marginal effects. The equation I will use for Model B is as follows:

$$\ln \left( \frac{p}{1-p} \right) = \beta_0 + \beta_1 X_1 + \beta_n X_n + \epsilon_i$$

$$\left( \frac{p}{1-p} \right)$$ represents the probability that an individual participates in the informal economy participation

$$\ln$$ represents the natural log and is combined with the probability of individual informal economy participation

$$X_1$$ represents if the individual is indigenous
$X_l$ represents all of my other exogenous included variables which in model B are the size of household, marital status, sex, and age.

$\varepsilon_l$ represents the standard error of the regression

The results for the logit regression provide data that aligns with the theory in that for individuals that are indigenous, they are more likely to participate in the informal market then if they were not indigenous. The coefficient of the logit regression shows that for an increase in the indigeneity variable, going from non-indigenous to indigenous, we can expect a 1.219 increase in log-odds of the dependent variable, informal economy participation, holding all other independents constant. This can be observed in the marginal effects value $dy/dx$ is 0.2782. The marginal effects values for indigeneity means that if an individual is indigenous they experience a 27.82 percentage point increase in probability of participation in the informal economy. The conditional average of this regression is the marginal affects (0.2782) divided by the population of the sample who participates in the informal economy (0.39), this comes out to 0.734 which is a 73.4 percent increase in the probability of the informal economy participation when an individual is indigenous. The final two models I run will include variables that will possibly be endogenous as to attempt to avoid omitting as few variables as possible.

**Endogenous Variables**

The next regression I will run is one with Variable that could be exogenous or endogenous depending on the situation. These include Highest Educational Attainment level, Access to Adequate Healthcare, and Internal Migration Status. All of these variables could be a result of participation in the informal economy or in some situations they could be a cause of one entering into the informal market. My marker of indigeneity and all other variables will remain the same in
this analysis as attempt to see if there is a change in results when the variable could be results of informality, rather than just possible causes.

**Model D**

This regression is a LPM standard regression, where the equation is as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_n X_i + \varepsilon_i \]

\( X_1 \) represents if the individual is indigenous

\( Y \) represents participation in the informal economy

\( X_i \) represents all of the variables in model B and adds all possible endogenous variables that are the size of household, marital status, sex, and age.

\( \varepsilon_i \) represents the standard error of the regression

The results of this regression are expected in that none of the possible endogenous variables have a statistically significant result on market participation choice. All of their \( P>|t| \) tests were well above the previously determined alpha value of 0.05. Again, like the previous regressions there is not much change with our primary variable of interest. R-Squared value has decreased, to 0.101, meaning that 10.1 percent of the variation in the independent variables can be attributed to the dependent variable of participation in the informal economy. The coefficient for indigeneity in this model is 0.25 with a standard error of 0.02, so very similar result of model B. When an individual is indigenous they experience an increase in probability of participation in the informal market of 24 percentage points. In mode D the conditional average is 0.6410 so, indigeneity is associated with a 64.1 percent increase in the probability of participation in the formal market
Finally, I will run a logit regression as in the previous section for the same reason as above, the dependent variable, market participation, is a binary variable constructed from economic markers of informality. The equation for the logit regression is as follows:

\[ \ln \left( \frac{p}{1-p} \right) = \beta_0 + \beta_1 X_1 + \beta_n X_i + \varepsilon_i \]

\( \frac{p}{1-p} \) represents the probability that an individual participates in the informal economy participation.

\( \ln \) represents the natural log and is combined with the probability of individual informal economy participation.

\( X_1 \) represents if the individual is indigenous.

\( X_i \) represents all of the variables in model B and adds all possible endogenous variables that are the size of household, marital status, sex, and age.

\( \varepsilon_i \) represents the standard error of the regression.

The results of the logit regression with added possible endogenous variables have marginal effects similar to that without the added endogenous variables and can be observed in the 5\textsuperscript{th} column of the table, which is labeled model E. We expect a 1.36 increase in log-odds when an individual is non-indigenous. The regression shows that if an individual is indigenous in this sample population, then they will 28.08 percentage point increase in probability of participation in the informal market when an individual is indigenous rather than nonindigenous. The conditional average of this model is 0.72. This means that there is indigeneity is associated with a 72 percent increase in probability of participation in the informal market. These holds constant with the results of all of the previous regressions.
2.9 Conclusion

My analysis provides evidence to contribute to the debate about the effect that indigeneity has on whether or not they participate in the formal economy. In addition, the results of this analysis show that there is a need for more analysis. The results of indigeneity as an independent variable can determine which marketplace one will participate in are in support of my hypothesis. The results from the multivariate regression are particularly interesting because, when more controls are added into the analysis we would expect to see a decrease in the coefficients, but the results of Model D and E, where all of my variables were included, exogenous and possibly endogenous, the results were only slightly less from the bivariate LMP regression.

The results of this analysis show that when an individual is Indigenous they experience between a 25 and 29 percentage point increase in the probability of participating in the informal economy. The conditional average of indigeneity as the independent variable and informal economy participation is between 0.64 and 0.74, meaning that in this sample population indigeneity is associated with a 64 to 74 percent increase in probability of participation in the informal market. These result points towards indigeneity possibly being a large factor in informal economy participation.

Further econometrics work is absolutely needed as there are extremely important variables that we omitted from this analysis such as geographical location, self-identified ethnicity, and employment sector. All of these variables have an effect on participation in the informal marketplace, so when added into the analysis we would expect to see a decrease in the coefficients, marginal effects, conditional averages, and an overall decrease in the probability of participating in the informal market when an individual is Indigenous.
This analysis provides preliminary imperial evidence to support the proposition that Indigenous people in Peru have been excluded from the formal economy, and that is because informality observed and analyzed is a direct result of mismanagement of the central government. The exclusion of Indigenous people in Peru is the result of institutional discrimination of the Indigenous people.
Analysis Findings and Policy Implications

3.1 Empirical Findings

My research and analysis provide evidence to answer the very specific question of whether one’s ethnicity causes Indigenous peoples to participate in the informal marketplace to a greater extent than it does the population of the colonizing nation. As demonstrated in the previous chapter, there is an observable, statistically significant, connection between indigeneity and the informal economy of modern Peru. This can be seen in all of the regressions resulting in a statistically significant t statistic at the 0.001 level and coefficient results explaining that the likelihood of informal market participation increases between 25-28 percentage points when the individual is Indigenous. The conditional average for multivariate analysis of this sample falls between 0.64 and 0.72, which means that for this sample population being Indigenous is associated with a 64 to 72 percent increase in probability of participating in the informal economy of Peru. There are other variables that appeared to be statistically significant, but in every single regression indigeneity appeared to be the most significant. This aligns with the relevant literature about Indigenous discrimination and development in Peru. This is, in large part, due to the institutional exclusion and historical patterns of colonization in Peru. The regressions in the previous chapter reveal evidence to explain possible causes of exclusion and discrimination of Indigenous people.

3.2 Limitations of Research

Although this survey came with an abundance of Data, there are limitations to the data reported in the “Encuesta Nacional de Hogares sobre Medición de Niveles de Vida 1991” conducted by the LSMS and World Bank. The first one of these limitations is that the survey was filled out by the “head of household” which they define as “the person whom the other members
of the household recognized as such, whether a man or woman,” this could lead to some response bias as only one person from each household responds on behalf of each individual living in the household. Traditionally the person most likely to be responding would be male, and likely answering behalf of one or more women, thereby giving the perspective of large segments of the female population through a male perspective.

Another limitation of the survey is that the deliverance of the survey was subject to individual error, the surveyor could have missed a question or misinterpreted a response. Third was the political unrest at the time of the survey, many of the respondents and households did not trust those conducting the survey and were reluctant to respond. A problem of a different sort can be found amongst the higher income brackets. While also rooted in distrust of the government, there existed a fear of response among the elites of retaliation from government over taxes. The final limitation of the survey itself was that in the rural areas that received governmental aid the respondents could have underestimated their income so as to maintain, or perhaps even increase, their current level of aid. Overall, when analyzing the data and results from this survey, and others of its kind it is important to account for the political and institutional impact of these factors.

In the analysis I didn’t have a geographical marker, and this is a major limitation of the analysis for two main reasons. The first reason is that informal economies and settlements are rooted in patterns of urban colonization a geographical marker would be extremely useful in future studies. If I had a variable that could distinguish between individuals who live in an urban and a rural area the coefficient would decrease. The second reason a lacking a geographical variable is there have been so many changes to the human geography of Peru and several distinct massive migration movements as well (Mallon, 1983a). Geographical studies in the future would also be critical because Peru is so large, and the landscape is so diverse, economic activities in each region
would vary. The economic activity in the Amazon rainforest, high altitude of Andes mountains, or the arid desert of the Peruvian coast are all very different from each other. In addition to just natural advantages and differences, the population changes dramatically from region to region. Almost one third of the entire population lives in the Lima-Callao province (Mallon, 1983a) and indigeneity, informality, and modern reminisce of colonization would manifest differently in the mega-city of Lima then in a rural hamlet in Amazonia.

Another limitation of my analysis was the creation of my variables. In my analysis I used language spoken as a proxy for indigeneity which is problematic because the identity of an individual is Indigenous or native is not only a linguistic identity but also a cultural identity as well. Many Indigenous individuals were forced to abandon their Indigenous land, culture, and language in order to avoid further negative economic outcomes or discrimination (Romo & Williams, 2016). By allowing individuals to identify themselves as Indigenous, rather than us marking individuals as Indigenous or non-indigenous, allows for more accurate research on the marginalized groups.

3.3 How to Expand

Because my analysis sought to answer a specific question about the magnitudes of participation in the informal marketplace of Peru based on indigeneity, there are lots of ways for those who follow to build upon my analysis for future studies. Some examples of possible extensions are constraining for sector within informal work, wage decompositions within informal work, studying more economic mechanisms that might constrain the individuals choice to the point where they must work in the informal sector, and a more expansive ethnicity study, so rather than Indigenous and non-indigenous, there could be Mestizo, Spanish, indigenous, and other ethnic
groups in Peru to see if the different ethnicities have different participation rates in the informal economies than others. In recent census material there has been more inclusion and space for self-identification of individual ethnicity, so the data collection is moving in the right direction, but because of the economic cost of identifying as Indigenous, self-identification is still thought to be perceived as underrepresented in available data (Aguila, 2016).

Further quantitative studies will be critical to our understanding of the magnitude and specificities of segregation, exclusion, and discrimination on indigenous people in Peru. It would be naive to ask governments to enact social policy without empirical work to back up the need for policy to bolster social inclusion, that is not the way our world works. It is necessary to closely examine factors such as geographical location, wage differentials, and many other interdisciplinary fields when studying the long run effects of colonization. If the data was made available this could be done by observing and calculating wage or earnings differentials between Indigenous and non-Indigenous people and between the formal and informal marketplace. Another study that would be useful in future work would be through examining wage decompositions in different geographical regions. As seen earlier economies and economic discrimination, as much as it would make the lives of economists easier, do not function in vacuums, but they are socially imbedded and should be studied in their social environments.

The first way to accomplish this would be by making the LSMS survey an annual survey so that differences in demographics, labor markets, and other economic and social indicators can be monitored and tracked over time. Even if the data was collected every few years in the same way the census is in our nation, it would allow for better tracking of marginalized communities and the inclusion of them in the formal economy of Peru. As has been previously stated, informality is not in and of itself necessarily a bad thing, but exclusion from the formal market is,
and in a very real sense, oppressive. So, by creating a standardized system to monitor the informal market and inclusion of Indigenous people there can be steps take to be more inclusive and have accountability moving forward in development by the government of Peru of more effective and positive policy actions.

In addition to making the survey a yearly, or regularly scheduled survey there are questions that were not asked at all or not asked to their fullest potential that should be redone, and new questions developed given changed circumstances as the nation continues to develop. A question about what ethnicity an individual identifies as in the beginning should be asked, followed by a question clarifying the native language question (that is, if they spoke the native language). This is to account for and include those individuals who are Indigenous, but because of Spanish being the dominant language of communication in Peru many Peruvians learned their native language as a second language. In addition to these questions a question about ethnicity should be added. The question would ask how each individual identifies their ethnicity to reveal if they self-identify as Indigenous or native, mestizos, white, or any other of a myriad ethnicity? This question is to mitigate native erasure, which is a broad concern all across the Americas. By knowing which group, one identifies with, there is clearer picture of who they associate themselves with, resulting in a clearer picture of the type of discrimination they might be subjected to due to their identified group.

Another important question that should be asked in future studies is if they participated in the informal economy in the past five years and ten years. If the answer to this question is “yes”, a further question would be asked to understand what extent or informal activity more clearly, and if the individual felt constricted in their choice. This question could be phrased: Do you have access to have a job with healthcare benefits or social security? Did you purposely choose to avoid the
formal sector? This question or marker on the survey could be a result of many different types of questions, but there needs to be a code for just indigeneity. A code for indigeneity is a necessity to understand the general population demographics, and particularly the demographics of the participants of informal economy. Moreover, if the individual chose to enter the informal economy, was their decision constricted by factors they cannot control. The factor or variable in this case would be Indigeneity.

3.4 Policy Implications

Current policy approaches in Peru have missed the mark in that they attempt to address either informality or indigeneity, not both. Economics is a socially imbedded field of study and often times, as economists, we get lost in the quest to develop mathematical models that are used to address complex interdisciplinary and socially embedded tensions between individuals, sub-groups, and material well-being. This bleeds into modern economic legislative positions, which in the case of Peru, perpetuates the paths set by the Spanish colonizers in the sixteenth century as can be seen in the Peruvian economic policy through opening up their economy for international trade (Escosura, 2009). Economic policy is not and therefore should not be developed in a vacuum, and as impactful and insightful as the Freidman school of economic analysis is, the Galbraith perspective of contextualization also should be included and considered in any reasoned approach. Although maybe not intentionally, through the more quantitative analysis approaches, the marginalized and indigenous populations have been left out of policy discussions and decisions since the moment Pizzaro landed on the Peruvian coast. Virtually all of the policy enacted has been to benefit the Castilian elites in the coastal cities that were created during colonization. This divide, between Indigenous individuals and non-indigenous individuals will continue until the root of the
divide are addressed, that root being Spanish colonization and the systems of segregation and oppression they created.

In developmental economics there is often a push and call for equalizing legislation and policy. The policy or legislative enactments are created in an attempt to level the playing field between the marginalized population and the establishment population. This can be seen through different health care initiatives, standardizing and increasing funding to education, or even policy like affirmative action, but the problem with this type of legislation is that they are often reactionary. These policies often have a goal or push to be rapid, one stop shop fix solutions for all of the problems of informality and exclusion of indigeneity when in reality, “rapid and scalable solutions to resolve poverty and exclusion among urban indigenous populations are unlikely” (Horn, 2017). If a nation sees that a marginalized population is getting ill often, they could implement a health care incitive where they give out medication or clean water. Many of these policies that attempt to equalize the marginalized or impoverished group are reactionary rather than preventative. This is not to say that many of these policies aren’t beneficial or don’t help individuals who have been discriminated against or need the services that these policies often provide, but that these issues will just reshape and present themselves in different ways as different economic indicators if only the symptoms of discrimination are treated, rather than the illness itself.

Due to social stratification (Sen, 2000) and economic segregation with origins in Spanish colonization, Indigenous people in Latin America start in a more difficult position then non-indigenous people. As seen in the previous chapter they are far more likely to participate in the informal economy then their non-indigenous counterparts, so there is a need to ratify the oppressive social structures that constrict Indigenous individuals choices to the point there they
are forced to participate in the informal economy (Saavedra & Tommasi, 2009). In addition to informal economy participation indigenous people are also more likely to have a decreased probability of completing primary and secondary education, getting caught in a poverty trap, and this is only more statistically significant if the head of the household is a woman (Romo & Williams, 2016). For this reason, it is so critical to address the root of the problems rather than the symptoms or result of the institutional exclusion of the Indigenous population from the formal economy of Peru. Further Horn (2017) finds that public policy towards indigeneity in Latin America has been structured in a way that Indigenous people exist in rural areas, not major cities (Horn, 2017). Horn (2017) asserts this as a problem because in reality more than 30 percent of Indigenous people in Latin America reside in urban areas, but the majority of policy is designed to address rural indigeneity (Horn, 2017; C. V. Ødegaard, 2010).

Public policy can and should be used to address the roots of inequality and can explain the role of the government in molding the, “elite-mass relations to fit the economic and political interests they represent and correspondingly, to fit their ideological conception of the appropriate means of ordering political [and economic] relationships in society” (Collier, 1976). The chart below, created by Collier (1976), explains the policy approach and modernization path up until the mid 1970’s and is still applicable to policy approaches today. The chart reads in the same way a timeline would, right to left, chronologically.

Figure 5
First came economic and social transformations in the post-independence era which, in reality weren’t a lot until the mid 1900’s when the last Hacienda shut down. After the final forced labor system ended the human geography of Peru changed dramatically (Mallon, 1983a), and that is where the emergence of new economic and political groups emerge and the informal economy size grew.

**Current Policy Approach**

The main policy approach the Peruvian government has taken to address the informal economy and settlements, specifically in Lima is through granting residents of informal settlements land tenure rights (Field, 2007; Radcliffe, 2001). Often times if individuals participate in the informal economy they also live in an informal settlement. Because informal economies and settlements are a result of patterns established in urban colonization (Collier, 1976), it is often Indigenous people who inhabit these informal settlements (Horn, 2017). A study by Erica Field in 2007, found that many residents of informal settlements had to forgo work in the formal economy in order to protect their residences, out of fear of being evicted by the central government. Although in Peru there is a major informal settlement population, and they have had some policy approaches that have been successful in increasing the formal labor force and reducing the size of informal settlements.

One of the main policy approaches of reducing poverty and informality in Peru in recent times is through protecting property rights. Some literature claims that informal economies and institutions often appear due to the lack of availability of formal property or formal jobs (Field, 2007). Between 1996 and 2003 the central government gave property titles to over 1.2 million urban households (Field, 2007). In 1996 the Peruvian government passed *Decree 424: Law for the*
Formalization of Informal Properties and created a new public agency COFOPRI (Committee for the Formalization of Private Property) in an attempt to reverse the effects of rapid informal settlement growth. This initiative and creation of a committee is an example of a low-cost policy that reduced the size of informal settlements. Field (2007), shows that by granting residents of the informal settlements titles to their homes, through using a difference-in différence model, greater participation in the labor in the formal labor market (Field, 2007). Further, that often time residents of these informal settlements would have to take time off of formal work to protect their informal settlements due to the reality that many of them felt unsecure in their settlements (Field, 2007).

Although this is not an end all, be all solution to the exclusion and discrimination of Indigenous people in the Peruvian labor force, land titling programs have shown positive results in the overall size of the formal labor force.

3.5 Policy Proposal

Band-Aid Policy Approach

One possible policy approach the Peruvian government can take is providing free childcare for all Peruvian citizens. As observed in the analysis women are more likely to participate in the informal economy than their male counterparts. In a report by the International Labour Office (ILO) Aguila finds that, “For indigenous women, in some ways the implicit requirement is to stop being themselves and ‘conceal’ their origins in order to find skilled employment (Aguila, 2016). Further this study finds that in self-employed and unpaid family worker positions women make up a large portion of this population, specifically in 2013, 50.1% of women were engaged in these types of informal activities (Aguila, 2016). By providing government funded childcare, women
receive more agency to search for employment outside of the household, thus possibly in the formal marketplace of Peru.

Childcare and the female labor force participation can and should be thought of as interdependent (Self, 2005). Self (2005) further explains the coordination failures that currently occur between the childcare industry and hiring employers. She explains that if both of these industries are simultaneously incentivized by the government then the labor supply of women will increase (Self, 2005). Because a mother's labor supply and childcare services are interdependent and complementary, by providing childcare services mothers can increase their productivity in the labor market, while at the same time the childcare firm is able to provide a specialized service and in turn generate overall positive externalities on the Peruvian economy (Self, 2005). The government’s role is critical here in that it needs to incentivize both employers to hire mothers and women in general at the same time as creating available childcare. If they aren’t incentivized at the same time these coordination failures will continue and the female labor force participation will remain the same. This policy proposal creates an employment more opportunities and at the same time incentivizes women to enter into the formal labor force, over all a win for all.

Although government provided childcare and incentivizing employers to hire women would not eliminate labor market discrimination of indigenous women in Peru in its entirety, it would aid in making their daily lives easier and provide them with more agency to enter into the formal market of Peru if they desired while at the same time adding creating formal market jobs in the childcare sector for those who wanted them. By providing policy support for a group that is discriminated against on two levels, such as Indigenous women (Aguila, 2016), overall gains would be seen in the economy and a more inclusive and sustainable development could possibly be achieved.
Radical Policy Approach

As seen the previous chapters, informality is a symptom of mismanagement, distrust, and institutional failures to include all citizens in the formal economy (Fox & Goodfellow, 2016; Saavedra & Tommasi, 2009). In order to address informal economies in a meaningful way the root of why they exist must also be addressed, this root being colonial patterns of urban development and the overall institutional exclusion of marginalized communities from the formalized economies of Peru. This is not to say the current policy such as land tenure rights have not benefited many Indigenous people, they have, but these policies have not gone out of their way to explicitly include Indigenous people in current Peruvian policy discussions or address the roots of colonization. Even though there has been a recent push to distribute resources to non-metropolitan areas in Peru, often times, “power and resource remain tied to exclusionary political culture and social divisions that undermine efforts by the state” (Radcliffe, 2001).

Since the start of the 1980s there has been a major push for more Indigenous representation and participation in political spheres. This has certainly not been the case historically. In the 1860’s there was a modification to the constitution in which only adult men who were literate in Spanish could participate (Paredes, 2008). After this constitutional amendment nearly half of the population could not vote. This legislation was enacted because the Spanish elite in Lima believed that the reason Peru had lost the War of the Pacific was because the indigenous population did not want to fight with them and if they had they could have won. These voting restrictions caused a major decline from the use of Indigenous language which is the primary marker of indigeneity in my analysis. There has been a repeal of this voting legislation, but it does not undo the years of political exclusion through voter suppression. This has had a significant effect on the economy of
Peru because if Indigenous people were allowed to vote for its entire post-colonial history, more Indigenous people could have been elected to office where they would be able to make legislative decisions to include Indigenous people in the formal economy of Peru.

By 2013, Peru had elected nine Indigenous policymakers out of the total 130 available seats, when in reality Indigenous people encompass 26 percent of the population (Report on indigenous political representation: Introduction and summary, 2017). In developmental economics political reservations are another policy tool used to make sure that the central government is listening in to what the Indigenous population tell them what it is that they need, rather than simply telling them what it is they think the Indigenous population needs. By allotting spots for Indigenous representatives in Peruvian congress this includes them in the decisions about their communities that they have been excluded from for so long. Indigenous representatives know their communities better than the current positions and know how to most affectively administer and distribute these public resources such as healthcare, education, insurance, and infrastructure. If the Indigenous communities are proportionally represented in policy making positions, in theory the true economic development would be possible. This is in reference to Sen’s (1999) capabilities approach where he cites economic development is freedom. Freedom in all aspects of life such as social freedom, political freedom, and economic freedom. He argues that economic development is different to each individual, so by providing everyone with the capabilities like healthcare, education, and insurance they could possibly need to achieve their individual goals and reach freedom which is economic development. When the government does not provided these capabilities poverty occurs and the only way to move out of poverty is for the government to end the capability depravation (Sen, 1999).
Policies for political reservations have been successful in Peru’s bordering countries Ecuador and Bolivia (Radcliffe, 2001). In Ecuador municipalities lead by indigenous mayors or contained a decent amount of elected indigenous officials saw improvements in their material well-being and overall human rights (Horn, 2017). In addition to overall improvements in quality of life, policy interventions which directly addressed Indigenous interests and needs were more evident than before (Horn, 2017; Radcliffe, 2001).

When Indigenous people are allowed to and given positions in which they are able to create policy that will help their individual communities there are overall gains to the entire economy. This can be done through, “integrating universal and collective rights frameworks: In Latin America, leaving “no one behind” means providing people with access to universal rights and services while simultaneously protecting the specific rights of marginalized groups” (Horn, 2017). By including the Indigenous population in policy discussions and policy making discussions Peru can create a more inclusive governance structure and more effectively distribute resources and monetary funding.

White Europeans have told Indigenous individuals what they believe that their communities need rather than listening to them and having the Indigenous communities tell the government what they need. By reserving political seats for Indigenous individuals Peru would move away from telling Indigenous communities what we believe they need and instead give them the space and platform to more efficiently and effectively provide for the communities they know so well. In addition, there is empirical evidence in neighboring countries to support political reservations for Indigenous mayoral or policy making positions (Horn, 2017; Radcliffe, 2001; Report on indigenous political representation: Introduction and summary, 2017), so this policy proposal is not unfounded.
Conclusion

This senior project seeks to demonstrate how the institutions, economic and social, created during Spanish Colonization have had long term negative impacts on the Indigenous population and economy as a whole of Peru. The methods by which we have attempted to understand economic development in Peru and Latin America as a whole have been unsatisfactory. The inadequate analysis of the economic history and mechanisms inequality of the Andean region are due to applying European models of development to those in Latin America when they are completely different societies with different values and ideas of material well-being.

The negative impacts of colonization in modern Peruvian society are clearly illustrated through the economic history and data analysis. There is a pattern in Peru, of the same discrimination reoccurring, but under a different name. The oppression of Indigenous people occurred under the Encomienda, Hacienda, and Mita systems during colonization and can now be seen though exclusion from the formal economy and formal settlements. The exclusion of Indigenous people in Peru has perpetuated and exacerbated the problems surrounding the existence of the informal economy. Indigeneity in my sample is associated with these problems.

As economists it is our responsibility to understand the colonial impact on modern institutions so that we can adequately prescribe policy to efficiently mitigate the negative externalities of such pervasive and detrimental structures. This senior project has attempted to provide a basic framework for understanding the origins of economic discrimination rooted in colonization, what some of these colonial institutions look like in modern times, and how to adequately address these disparities created by colonization through effective State economic policy. In my time at Bard college, I have come to the same conclusion in many different arenas.
The conclusion that, economic development or progression without inclusion of all members of society, does not, and cannot provide for sustainable economic growth.
Bibliography


Fox, S., & Goodfellow, T. (2016). Cities and Development (Routledge Perspectives on Development)


