BARRIERS TO ACCESS UNDER THE AFFORDABLE CARE ACT: AN ANALYSIS OF MARKETPLACE ENROLLMENT

by

Jessica Ann Johnson

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Approved by:

Advisor: Dr. Heather Ondercin

Reader: Dr. Jonathan Winburn

Reader: Dr. Chuck Smith
Abstract

This thesis seeks to understand how the Affordable Care Act impacted certain groups who had faced barriers to accessing health insurance prior to the passage of the act. It provides a fundamental understanding of the major provisions of the Affordable Care Act and discusses disparities amongst, and challenges incurred, by different groups in the current health insurance system. Research focused specifically on demographic factors of income, gender, primary language spoken, ethnicity, education and age as well as looked at the effect that urban setting and sufficient internet access had on enrollment rates. In order to understand the impact that the Affordable Care Act has had on different demographic’s ability to obtain insurance, I compared the number of estimated eligible enrollees to the number of those who actually enrolled in the federal marketplace exchanges in the year of 2014.
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Section 1. Introduction

One major goal of the Affordable Care and Patient Protection Act was to move the United States towards universal healthcare coverage by increasing access for many Americans who previously did not have health insurance. Prior to the ACA, a person had three major ways to receive health insurance: through an employer group insurance, through a non-group option or if a person met the qualification requirements, they could receive insurance through governmental social programs. The lower socioeconomic classes were eligible to receive Medicaid or other social insurance such as Children’s Health Insurance Program. (CHIP). The elderly, who have the highest medical needs, received health insurance through Medicare. However, the majority of Americans received health insurance through their place of employment. If a person did not have health insurance offered through their employer, they could seek out non-group insurance on their own. However, not everyone was eligible to receive non-group insurance. Non-group policies required that a person prove they were healthy enough to be a good candidate for the insurance company to insure. Many people were denied non-group health insurance because they had risky health conditions or lifestyles. Yet even for many who were offered an insurance policy, the non-group policies charged very high costs which often made non-group insurance too expensive to afford.

These people fell into what was called the “gap group” who were not eligible to receive any health insurance coverage making them the primary group the government sought to expand coverage to. Thus the ACA created a form of governmental health insurance ran through marketplace exchange websites, that guaranteed coverage to anyone who did not have employer insur-
ance offered, did not qualify for other forms of social insurance, or had insurance coverage that did not meet new affordability and coverage standards as newly defined by the ACA.

The following sections of this thesis discuss in greater detail how Affordable Care Act sought to address several of the factors that attributed to a person’s inability to obtain health insurance and will analyze what impact the act had on providing insurance to different demographic groups. Section 2 of this thesis provides a brief history of the passage of the Affordable Care Act and discusses some of the controversies associated with the legislation. Next, Section 3 provides a fundamental understanding of the major provisions of the act and gives an overview of some of the major challenges that the healthcare system was facing prior to the passage of the act. Particularly important for our analysis throughout the paper, is the discussion on the establishment of marketplaces.

Next, Section 4 discusses the challenges that impeded certain group’s ability to access health insurance and the healthcare system overall. It specifically focuses on the challenges based on different income levels, gender, primary language spoken, ethnicity, education and age. I also looked at challenges faced by those in urban settings and challenges faced by those without sufficient internet access. This section provides the basic understanding for my hypotheses which are laid out in section 5.

The data analysis helped me determine if whether marketplace enrollment levels showed increased coverage for groups who had historically faced disparities in coverage or if certain groups were still more likely see lower enrollment rates after the ACA. I was able to determine the impact that the Affordable Care Act has had on different group’s ability to obtain insurance by comparing the number of people across different demographic subgroupings who were eligi-
ble to enroll with the number who actually enrolled in the marketplace exchanges. The results will be discussed in more detail throughout sections 6 and section 7.
Section 2. Passage of the Affordable Care Act

For over a century the issue of governmental health care has been a heavily debated topic. Many bills were proposed and many bills failed. Finally in 2010, through a series of compromises, the Patient Protection and Affordable Care Act (ACA) finally passed through Congress and was signed into law (Rigby). The ACA faced controversy from the beginning over funding, issues of federal compulsion versus state’s rights, and many details of the actual policy substance. That controversy was augmented by the belief that the bill very partisan. The Democratic Party held such a majority that they were able to push the bill through both chambers of Congress without needing a single vote from the Republican minority party. The bill was then signed into law by a Democratic president. Upon judicial challenging, the act’s constitutionally was upheld the Supreme Court by only one vote which was cast by the traditionally conservatively leaning Chief Justice, John Roberts. Robert’s vote amongst the liberal court members was seen by some as a vote aimed not at upholding the laws but rather as a vote aimed at ensuring a positive lasting legacy for the Robert’s Court. The bill’s passage and continuous institutional upholding has largely been attributed to an auspicious political opportunity structure that the Democratic Party’s strength at the time provided (Rigby).

The heated political rhetoric around the bill often overshadowed the intent and actual content of the law, leading to more misunderstanding amongst Americans as to how the ACA will affect everyone’s access to healthcare and affordable treatment. The ACA’s primary intent was to move the United States towards universal coverage, while containing costs and improving patient protection and overall quality of care. The byproduct of the numerous series of debates and compromises yielded over 20,000 pages of legislation and addresses too many specific de-
tails to discuss thoroughly within the limits of this thesis so, in order to gain an adequate understanding of the act, the following section discusses seven major pieces of the legislation: the mandate of essential standards on insurance companies, the mandate of individuals to acquire coverage, the mandate of employers to provide essential coverage, Medicare expansion, Medicaid reform and expansion, and the establishment of online insurance marketplace exchanges.
Section 3. Understanding the Affordable Care Act

The ACA set forth a mandate that required insurance companies to provide essential standards of care aimed at expanding access to a larger pool of patients. The first major provision mandated that a young adult could remain on his or her parent’s insurance plan until his or her twenty-sixth (26) birthday, as long as he or she did not have health insurance coverage offered through his or her own employer. The provision’s primary goal was to expand the number of young adults with insurance coverage, while the secondary goal was also to allow that age group more flexibility in choosing a career path, continuing their education or finding a job opening, without losing his or her coverage. The provision went into effect in 2010 and by 2012, nearly eight million young adults between ages nineteen and twenty-six were able to stay on their parent’s insurance plans (Dahlen).

Additionally restrictions were imposed upon an insurance company’s ability to make arbitrary cancelations of policyholder’s coverage. In the past, if a policyholder were to make an error on the insurance application or if they left out non-important information regarding their health, the insurance company had more power to cancel the plan or declare the insurance coverage contract invalid since the date it was originally signed. In some instances, an insurer could possibly require the person pay back the benefits collected under the invalidated plan. While sometimes this was used as fraud control, this practice was sometimes used as a way to drop policyholders that become too costly. Now under the ACA, if patients make a deigned “honest” mistake on their insurance forms, or if they leave out “non-critical” information that was not intended to defraud, the insurance company can no longer legally make arbitrary policy cancelations (HHS Curving Insurance Cancellations).
The final provision of the essential standards mandate stated that insurance companies are no longer allowed to charge people a higher rate for having a preexisting condition. Preexisting conditions encompass any illness the person had before they had obtained insurance coverage through that insurer. In addition to discriminating based on just preexisting health status, some insurance companies treated sex similarly to having a preexisting health condition. Women were charged higher rates since they would likely undergo childbirth and accrue more medical costs overtime than a man likely would. Under the ACA, an insurance company was prohibited from charging a person higher premiums based on either health status or sex. Additionally, the insurer may not deny coverage or treatments based on any preexisting condition (HHS. Pre-existing Conditions).

However, by eliminating higher rates for people with preexisting conditions, the financial burden was shifted from the consumer to the insurance companies. Previously, the higher rates were placed upon people with certain preexisting conditions since they would more likely require repetitive, advanced treatments that would go beyond the scope of normal coverage thus accruing higher costs for the company and the individual. By charging higher rates for high risks people, the insurance companies were able to maintain lower premiums for normal to lower risk people in the market (Haeder, High Risk Pools).

In order to maintain an overall lower insurance market rate, the federal government passed the Trade Act of 2002 and subsequent legislation to address health care insurance costs by providing subsidies in the form of tax credits to qualifying people with higher medical needs. Essentially, people with more costly medical needs are placed in a high-risk category and are eligible to receive subsidized medical coverage. By 2012, thirty-five states had accepted federal
funding to help create high-risk insurance pools. However, the quality and scope of these programs varied by state and often still had higher premiums that many people could not afford. Moreover, these programs often required extensive qualifications that greatly limited access, had long wait list periods, had life-time caps on how much aid a person could receive, and usually covered about half the cost of treatment. Despite the strides made to reduce barriers to access, coverage still remains unaffordable for many high risk patients (Haeder, You Can’t Make Me Do It).

In addition to the subsidies provided to form separate high-risk insurance pools, insurance companies are also projected to recover costs through the individual mandate provision. The individual mandate requires every US citizen to either obtain insurance or pay a fine for not obtaining insurance coverage. This will increase the overall number of people in the insurance pool which would bring in more premiums for the insurance company as well as change the demographics of the pool. Previously, the market demographic had a selection bias where it consisted of more people with high health risks who needed to purchase and use medical insurance, while the healthy, low-risk people did not buy insurance or would sign up for minimalistic plans. Under the individual mandate, healthy low-risk individuals will now become part of the pool, thus increasing the revenue an insurance company takes in while likely costing the insurance companies less which helps to control for overall costs. Additionally, the extension of time allowed for adolescents to remain on their parent’s insurance plans helps to increase the number of young adults in the pool. More adolescents in the pool further balances costs since this younger age group is likely to be at a lower health risk than older insureds. (Haeder High Risk Pools).
In addition to the mandates, the Affordable Care Act established online marketplace exchanges. Marketplaces target the “gap group” who are people who earn too much to qualify for Medicaid but still fall below the federal poverty line and do not have employee based insurance or have employee based insurance that is not compliant with the ACA’s affordability and adequacy provisions. This group perviously was at a higher risk of being uninsured and did not have assistance to make insurance more affordable. Now people whose income falls within 400% of the federal poverty line are eligible for premium tax credits which is essentially money given to reduce the financial burden of purchasing health insurance and may only be used on the exchanges. The amount of credit given varies depending on factors such as income and cost of insurance relative to their geographic area. The insured pays a percentage of their income rating from 2% of income at the federal poverty line up to 9% of their income as they move further away from the federal poverty line with premium tax credits covering the difference (Kaiser, State by State Estaminets).

The actual marketplaces are websites that bring together all the different insurance coverage options to allow qualifying buyers to be able to compare different plans and have more information and more options available. Marketplaces are intended not only to increase the number of purchasers but also help increase competition between insurance companies and help increase transparency and the ability of the government to regulate and enforce laws. In addition to providing options and plans, the marketplaces were also given the task of determining eligibility for enrollment as well as what subsidies were available for each costumer (Haeder High Risk Pools). States were given the option either to develop their own exchange which would entail creating a website or working through the federal website to oversee enrollment, determine eligibility and
subsidies, and enforce the ACA provisions. If a state did not choose to develop their own ex-
change by January 2014, the Department of Health and Human Services would automatically
add the state into the federally facilitated exchange (*Haeder High Risk Pools.*).

States were given great leeway in deciding how to run and implement their exchange as
well as in setting tailored provisions that would better fit the needs of their state. Therefore there
are several variances across states and exchange types. For example, Mississippi, Arkansas and
Utah created marketplaces to help small business owners gain health insurance but did not create
a state ran exchange for individual enrollment. The two most common choices were either creat-
ing a state based exchange or relying on the federal exchange. State based exchanges can be fur-
ther broken down into entirely state based exchanges or federally supported state based ex-
changes. The federal marketplace can be further divided into state partnership federal exchanges
and federally facilitated exchanges. Both state based marketplaces and federally supported mar-
ketplaces independently run their own marketplace in terms of operations, regulations and over-
sight and preform all the essential features of the marketplace. However in state based market-
places, the state created its own website for enrollment whereas in federally supported market-
places, states use the federally created and operated website, [healthcare.gov](http://healthcare.gov), for enrollment in-
stead. In state partnership exchanges and state facilitated exchanges, the state did not create its
own exchange and relies on the federal marketplace. However in state partnership exchanges the
state does offer in person help services while in federally supported exchanges the entirety of
support services falls on the federal government (*Kaiser State Health Insurance Marketplace
Types*).
The next major provision under the ACA was to aid in expanding existing Medicaid programs. States were allotted more funding to expand their existing Medicaid programs in order for those programs to become more inclusive. Before the ACA, Medicaid was a federal program that aided persons under sixty-five years of age that fall within 138% of the federal poverty line and were either a person with disability, parents that met certain need based criteria, impoverished children, or pregnant women. Now under the new law, in states that expand the program, other adults that fall within the 138% of the federal poverty line are also eligible for benefits (Wachino et al).

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While Medicaid expansion is optional for states, other Medicaid enrollment changes are not. Regardless of whether a state chooses to expand, the ACA requires that new standards designed to simplify enrollment must be implemented. States are required to offer applications through multiple sources such as by phone, online, in person or via mail, in an attempt to increase access and to reduce the amount of time that an applicant has to wait in order to receive his or her benefits. The new law also increases enrollment outreach aimed to help educate and encourage eligible people to apply for benefits. Initially outreach occurred as a combined effort for marketplace enrollment but has continued to operate year round. Since the start of the expansion period in October 2013 through March 2014, 4.8 million more individuals enrolled in Medicaid (Wachino et al).

Similar to the expansion of the Medicaid program, the ACA sought to close coverage gaps in Medicare programs and sought to increase the longevity of the programs by containing costs. The Department of Health and Human Services along with the Department of Justice have increased coordination amongst themselves and the states in order to help detect, prevent, and eliminate fraud and waste, which is expected to save billions a year. These savings helped to expand Medicaid until 2024 instead of allowing parts of the program to expire in 2016 as originally projected would occur due to a lack of funding. Low funds also aided in the creation of what is commonly referred to as the “Medicare Donut hole”, which is a coverage gap that affected about three million Medicare recipients. While within that gap, recipients must pay for medicine at full cost with little to no insurance coverage or subsidies. This gap often resulted in a patient’s inability to purchase medicine or resulted in irregular dosage usage depending on when a patient could afford the drug. However under ACA, the gap is set to phase out by 2020 leaving patients to only
pay the Medicaid 20% standard copay of the out of pocket cost. Lastly, the program now will cover more preventative care such as yearly wellness exams, mammograms, colonoscopies, and other screenings without charging the recipient deductibles and copays. (medicare-rights.org).

The last portion of the ACA I will discuss is the employer mandate. Employers are required to offer health insurance that is considered both affordable and adequate, only if that employer has fifty or more full time equivalent employees. Full time equivalent employers are those who work an average of at least thirty hours a week per month. In order for insurance to be considered affordable, the cost of the insurance plan cannot cost more than 9.5% of the employee’s household income. Additionally, the plan must cover 60% of a patient’s medical costs to meet the minimum standards requirement for adequate coverage (Chamber of Commerce- Employer Mandate). If the employer does not offer insurance at all or does not offer insurance that meets the affordable and minimum adequacy standards, then they are subject to fines. These fines vary based on several factors such as if the employees offers insurance at all or varies by the number of employees within the company. The idea of the fine is both to encourage employees to offer affordable, quality plans but it is also to prevent employers from benefiting by shifting the cost of insurance from themselves to the federal government via tax credits. Low income employees that fall within 100% to 400% of the federal poverty line, that cannot get affordable and adequate coverage through an employer, are eligible for a federal tax credit to purchase insurance through the marketplace exchanges (Chamber of Commerce- Employer Mandate).

Numerous lawsuits arose potentially threatening the survival of the ACA. While a few of the mandates did not pass judicial review, a strong majority of the provisions were upheld. One of the major challenges arose over the individual mandate. Congressional Democrats, who single
handedly passed the bill through both houses, viewed the Affordable Care Act the same as any other bill written to address the general public health and welfare concerns while Republicans viewed the individual mandate as a gross overreach of power that impeded liberty and invaded privacy. Democrats asserted that the individual mandate was constitutional under the Commerce Clause, which gives the government the power to regulate interstate commerce. However, Republicans generally argued that mandating citizens to purchase insurance took government regulation too far by not just regulating commerce but requiring commerce and punishing those who did not engage in insurance commerce (Denniston).

The individual mandate’s constitutionality as well as potentially repealing the ACA became a hot button topic and received great media attention during the 2012 campaign season. The Supreme Court, in a controversial decision, upheld that since the commerce clause of the constitution granted the government taxation privileges, the mandate could require every citizen to have insurance or levy a tax as a penalty for not having health insurance (Howe).

One important provision that the Supreme Court struck down was the mandate that states must expand their current Medicaid system or would have their federal funding withheld for their existing Medicaid programs. The Supreme Court ruled that since the federal government provided such substantial funding for Medicaid for such a long period, states have become dependent on the federal funding. Henceforth, that dependency hinders a state’s ability to choose to refuse to expand to such a point that the state does not have a choice. The Supreme Court ruled that this part of the Act infringed upon state’s rights. So additional funding was still available to states that wanted to expand their Medicaid programs but the ruling prohibited the withholding of funds for Medicaid programs already in place in states that did not wish to expand (Howe).
Section 4. Barriers to Access

The ACA essentially guarantees that any citizen who does not have employer based insurance or is eligible to receive other types of government insurance like Medicaid, can gain insurance through the marketplace. So while every citizen theoretically has access to a form of health insurance, there may exist challenges for certain groups to actually utilize health insurance. The following section looks at both historic trends that have long existed amongst those who have insurance and those who do not. The section also posits that the marketplaces and the healthcare industry as a whole are facing challenges as our country technologically, culturally, and demographically changes.

Socioeconomic status is arguably the primary factor that affects a person’s access to insurance. Inability to afford insurance is reported as the number one reason as to why a person is uninsured. Many factors contribute to limited access amongst lower socioeconomic groups including not only having lower paying jobs, but also an increased likelihood to have fewer employer offered insurance benefits, an increased chance of having less stable work, and the inability to afford premiums even with assistance provided through the governmental subsidies (“Key Facts of Uninsured Populations”).

Since the passage of the ACA, the rate of the uninsured has dropped significantly especially amongst women and minorities. As of March 2015, the Department of Health and Human Services reported that 16.2 million Americans had gained insurance since 2010 when the ACA was passed. The majority of the newly insured come from marketplace enrollment, expansion of Medicaid, and the provision allowing children to remain on parent’s insurance until age 26. Minority insurance rates, which had historically tended to be much lower, increased significantly.
The rate of those without insurance dropped by nearly 10% for African Americans and dropped by nearly 12.3% for Latin Americans (ACA is Working”). Roughly, 7.7 million women gained insurance coverage and roughly 55 million women are expectedly benefitting from the ACA’s required expansion of preventive care coverage (ACA is Working”).

In 2014, one in every eight women did not have health insurance. Overall, for all women the most commonly reported reason to not have health insurance was that they could not afford it. One factor that contributed was that thirty four percent of women gained health insurance through their own workplace compared to forty-three percent of men who obtained health insurance coverage through their workplace (Women’s Health Insurance Coverage.) Not having employer based coverage offered is significant because when employer based coverage is not offered, the two common options for gaining insurance are either government social insurance programs or non-group coverage. Non-group coverage is generally much more expensive because the insured has to provide proof of insurability which can require doctors exams in order for the insurers to determine if they want to offer insurance and how to price a policy whereas with employer insurance, the employee automatically qualifies and usually has cheaper rates based off the entire pool. Since prior to the ACA women were charged more already, non-group insurance was particularly expensive.

Additionally, since women were less likely to have employer based coverage, they were also more likely than men to gain insurance as a dependent of their spouse with twenty four percent of women listed as dependents versus sixteen percent of men (Women’s Health Insurance Coverage). This left women with a greater risk of losing insurance coverage if they were to become widowed or divorced. Single mothers, whether divorced, widowed, or never
married, had the highest risk of being uninsured. Single mothers had a twenty percent higher rate than two parent households of being uninsured ("Women’s Health Insurance Coverage").

While women appear to have benefited from the ACA’s passage, conversely, men have not seen the same spike in insurance. Whether a state expanded its Medicaid program really effected who had access to healthcare and who did not particularly for men. As of 2014, 15 million non-elderly, non-disabled, males were uninsured which accounts for roughly 55% of noninsured adults and of this 15 million uninsured males, nearly 6.6 million now qualify for Medicaid insurance under the ACA, although ability to receive coverage largely varies between the states that expanded Medicaid and those that did not. Men that live in states that expanded Medicaid qualify for assistance if they make within the 138% of the federal poverty line, however, for men who live in states that did not expand, regardless of their salary they cannot receive Medicaid ("Characteristics of Remaining Uninsured Men").

A third of the uninsured male population reported that they paid for medical expenses without insurance aid in 2014. These out of pocket expenses has potentially negative effects on the groups overall health given that high out of pocket expenses means that this group is less likely to receive preventative care or seek out medical care when they are sick. Many factors increase the likelihood that a non-elderly male will be uninsured. In addition to perceived affordability, education and socioeconomic status and motivation may play a key role here. Young single fathers may perceive that they do not need health insurance or cannot afford it. Around 11.3 million of these men are single, childless adults. Significantly, African Americans make up over half of the uninsured non-elderly male population ("Characteristics of Remaining Uninsured Men").
Even under the ACA, immigrants without proper documentation do not qualify for government aid through Medicaid, Medicare, or the marketplaces. For many legal immigrants who do qualify, gaining insurance still presents many challenges. As of 2014, an estimated 30% of the uninsured population were hispanic which makes hispanics the minority with the highest rate of remaining uninsured ("Adults Who Remain Uninsured").

The insurance disparity amongst Hispanics is likely due to a combination of language barriers, immigration status, and/or work status. A study conducted by University of Texas Department of Pediatrics showed that adolescents who grew up in a home where English was not the primary language spoken, were less likely to have insurance and were less likely to undergo preventative care, as well as reported higher dissatisfaction with doctor’s office visit (May.) Trying to acquire medical care or insurance while dealing with a language barrier can present challenges even for what seems to be straightforward tasks. Sometimes, Non-English speakers cannot communicate their symptoms in terms the doctors understand which often leads to misdiagnosis. Furthermore, if a person does not speak English, it can be difficult to even schedule an appointment or inquire about insurance coverage. And if they do have insurance, misunderstandings occur over coverage and expenses, given that a person may not be able to read and comprehend their insurance plan that is written in English (Rhodes).

In addition to the challenges of mere comprehension and ability to obtain insurance, many minorities encounter cultural differences that may make patients less likely to visit doctors or seek out medical care. When people visit a doctor of a different race, they are more likely to report that they felt dissatisfied after their doctor visit especially if they do not understand their diagnosis or if they do not understand the type of medical care they are receiving. This occurs
between other cultures who often have medical norms that differ from the US. For example in Korea, a routine checkup includes a colonoscopy. Korean patients in the US who did not receive a colonoscopy, reported poor quality of care and the doctors struggled to communicate why this type of screening is not necessary at routine checkups (Rhodes).

This anecdote about cultural differences highlights a larger issue for ethnic minority groups. Not only did this group report low levels of insurance within the Korean community, they also reported high levels dissatisfaction with their healthcare experience (Rhodes). They still faced issues of misdiagnosis and inability to surpass language barriers. So while the ACA may provide an insurance opportunity for these cultural minorities that they did not have before, having insurance options available does not necessarily equate to receiving healthcare treatment or being able to utilize the insurance that the ACA makes available whether that be due to issues navigating beyond language barriers in the marketplace, a lack of motivation sparked by high dissatisfaction or other challenges.

While language creates an addition challenge. Not understanding how to access and navigate the online marketplace exchanges and other government aid websites affects who actually enrolls in the marketplace. Beginning in the 1990s, a trend emerged where internet usage was highest amongst, if not limited to, universities, military and government agencies, wealthy, well educated, and mostly males. These trends have decreased in the US due to both the efforts of the government and the private sector to bring technology to more people as well as the gradual increase of availability, affordability, and necessity of technology. However these trends of limited access have not disappeared entirely. Major barriers to access still exist. Two large trends of limited access exist based on geography and socioeconomic levels. Inner cities, rural areas, or areas
with low income have substantially less physical access to computer and internet access. This is partially attributed to the costs of building infrastructure for internet use. Investing in infrastructure in rural areas or inner cities would likely not be profitable since even if physical access were available, the services would likely still be unaffordable for the typically poor people living in these areas (Howard).

Government efforts helped increase access in lower socioeconomic areas by providing incentives for private sector infrastructure investment as well as actually building infrastructure in these areas. These federal and state initiatives provide economic benefits in terms of job searches but also in terms of having the ability to access government aid programs (Howard). More and more government services are becoming digital, such as social security, Medicaid, Medicare, and the ACA federal health insurance exchange. This puts those without internet access at a general disadvantage. Moreover, those with the greatest barriers to internet access are often either the elderly or are lower socioeconomic status who are the primary targets for government assistance programs like Medicaid or the federal ACA marketplace exchanges which suggests that a lack of internet access affects enrollment in the marketplaces for these disadvantaged groups.

However, there are some programs in place to help alleviate the lack of access to technology use. Many community centers and libraries offer free computer usage. Yet even physical access to a computer still presents the challenge of proficiently using one. This could be hindered by anything from language barriers, low literacy, or age. Many librarians have been trained to assist users with basic governmental services. Government agencies such as the Department of Social Security even encourages seniors to go to local libraries for assistance with online retire-
ment. The assistance has many limitations. Many librarians are only able to assist with basic services on government websites and have little training on how to use these websites and answering questions (Bishop). Additionally, assistance varies by location. For example, assistance is more likely available in larger state libraries as opposed to small regional libraries. This makes it less likely that a library in a rural area, the areas with higher barriers, would have the resources to assist users. Additionally, areas with larger Spanish speaking residents would be more likely to have someone who could assist in Spanish than would an area without a larger Spanish speaking population.

The lack of infrastructure in poorer parts of cities mirrors a larger common urban divide amongst socioeconomic groups within cities. In addition to having higher immigrant and minority populations, cities are also privy to having larger gaps between income levels that abet formation of gentrified and marginalized areas. These areas are characterized by more risky behaviors, particularly associated with higher crime rates coupled with the higher likelihood of having difficulty obtaining basic needs. People in these areas of the cities are also less likely to be insured and more likely to utilize emergency services as opposed to preventive and primary care services. In stark contrast, the wealthier areas are characterized by good health, less risky behaviors, higher rates of insurance, and higher access to preventative services (Urban versus Rural Health).

Despite socioeconomic disparities in cities, rural areas appear to face greater barriers to physical access and have lower overall health. In cities, doctors and other health services are more readily available as opposed to rural counties where patients must travel greater distances to obtain basic services and preventative care. This contributes to an increased likelihood of
emergency service use. In addition to a lack of physical access to doctors and services, the lifestyle in rural areas is substantially more risky, including higher rates of tobacco and excessive alcohol use, decreased likelihood to wear a seatbelt and increased likelihood to be obese (*Urban Versus Rural Health*).

Education levels also correlate with a person’s overall health and access to care. Firstly, those who attend college are more likely to have stable employment with higher pay and more healthcare benefits. Higher paying jobs also leaves more discretionary income available for purchasing insurance and receiving nonessential medical services such as preventative care screenings, teeth cleanings, flu shots (*Fletcher*).

Second, evidence found by the National Library of Medicine suggests that people with more schooling may actually comprehend medical advice better and be able adjust their lifestyles accordingly more so than those with less schooling. Given that there exists a saturated supply of medical information readily available online, barriers to accessing general health advice have been minimized while the ability to actually understand and implement recommended medical care and warning signs may be more challenging. This is further reflected in the correlation between less risky behaviors more commonly exhibited amongst higher educated versus the more risky behaviors that are more commonly exhibited amongst lower education levels. Receiving an additional four years of schooling beyond high school substantially lowers mortality rates, obesity rates, heart disease rates, and the chances of developing several other health conditions. In addition to lowering the overall chance of developing these conditions, education levels may affect the severity that the condition. Since those with higher education levels are more likely to utilize preventative screenings, the conditions are more likely to be caught early on versus those with
lower education levels who are more likely to utilize emergency medical services once the condition progresses (Fletcher).

Another aspect the marketplaces focused on was increasing the average person’s ability to comprehend the amount of available information so that people could enroll into a more customized and understandable plan. Government agencies switching to online services, ideally would make anything from filing taxes to receiving Medicaid benefits more efficient and less burdensome to the user. The Health Information Technology for Economic and Clinical Health Act of 2009 gave funding to hospitals and doctor offices so they could digitize their medical files thus allowing patients to access their records online. With more information online, patients would be able to receive more information on their conditions as well as have guidelines for treatment (Lyles). This would be most helpful for minorities or lower socioeconomic classes that were more likely to have chronic conditions needing long term self-care. Having health information online also presented the potential to mitigate language barriers that doctors encounter when trying to communicate specific medical terminology and treatment steps to someone of another language. Websites, though likely limited to major languages, often have the option to view content in another language. Additionally, audio versions sometimes are available for people with low literacy rates (Lyles). However, it is important to note that, not all minority groups face the same barriers. Spanish speakers are more likely to find someone that speaks Spanish or programs seeking to mobilize and enroll other Spanish speakers compared to a smaller minority population such as North Koreans living in the United States.
Section 5. Hypotheses

Given these challenges discussed throughout the section above, I would expect to see the following relationships between certain demographic factors and actual enrollment in the marketplace:

1. Due to a combination of lower rates of employment, lower income, and fewer affordable insurance options, lower socioeconomic classes had more barriers to healthcare and insurance access prior to the ACA, therefore the marketplace should see higher enrollment for this group. However the lower socioeconomic status were not the only economic group facing insurance access problems prior to the ACA. Though less common, even those in the upper socioeconomic classes did not always have affordable insurance options whether this be due to a lack of insurance offered through an employer or other factors. Therefore enrollment should increase for all groups besides just those in the lower socioeconomic status. I expect to see more actual enrollment in PUMAs that have more people within the lower 25th percentile of income than in PUMAs with fewer people within the lower 25th percentile. I expect to see more overall enrollment in PUMAs with more people in the upper 75th percentile than in PUMAs with fewer people in the 75th percentile.

2. The ACA expanded coverage to millions of women who had previously not had viable employer based insurance options or could not afford the insurance available to them. Additionally, men generally seem to take less advantage of and seem to place less value on healthcare, compared to women who generally have higher healthcare costs and needs. Therefore I expect to find that PUMAs with higher percentages of men will see lower actual enrollment than in PUMAs with lower percentages of men.
3. I expect to find that language plays a role in determining actual enrollment given that speakers of other languages face additional challenges to overcome to enroll. I expect to find that PUMAs with more Spanish speakers will have higher rates of actual enrollment than in PUMAs with fewer Spanish speakers. PUMAs with more English speakers should see more actual enrollment then in PUMAs with fewer English speakers and PUMAs with more other language speakers should see more actual enrollment than in PUMAs with fewer other language speakers.

4. Whites had higher rates of insurance rates prior to the ACA than did minority groups which is likely attributed to higher employment, education, and incomes amongst whites and the lower employment, education, and income levels associated with certain minorities. Whites also faced fewer cultural barriers and showed more trust of doctors than other minority groups did. Therefore I assert that whites who were uninsured prior to the ACA were more likely to be uninsured for reasons other than a lack of access to insurance coverage. I expect to see that PUMAs with more whites will show lower rates of actual enrollment than in PUMAs with fewer whites. I expect to see PUMAs with more Hispanics will see more enrollment than in PUMAs with fewer Hispanics. I expect to see PUMAs with more people of other ethnicities will see more actual enrollment than PUMAs with fewer people of other ethnicities. I expect to see more actual enrollment in PUMAs with more African Americans than in PUMAs with fewer African Americans.

5. I would expect to see higher rates of actual enrollment in PUMAs with higher percentage urban than in PUMAs with lower percentage urban. More urban areas are more likely to have higher minority populations and more people in the lower socioeconomic status, which means urban areas have a higher concentration of populations who were at a higher risk to be
without insurance coverage options prior to the ACA compared to the suburbs who would generally have higher incomes and less minorities. Additionally, cities have more doctors and healthcare infrastructure and more outreach programs and resources for enrollment aid than the less rural areas. Lastly more urban areas should have more internet infrastructure than less urban areas. The marketplaces are largely ran online so a lack of adequate internet access, which I will measure in terms of maximum upload speeds, should make enrollment more difficult. Therefore I expect to see that PUMAs with higher maximum upload speeds should see more actual enrollment than in PUMAs with lower maximum upload speeds.

6. Education is correlated to income level. This usually entailed that jobs with higher pay would provide employer based insurance. People in these higher paying jobs would be more likely to have insurance prior to the passage of the ACA and therefore are not included in our data. However people in jobs with lower pay who were likely uninsured due to a lack of employer based insurance options. The marketplace would give groups greater access therefore I would expect to see higher rates of enrollment in PUMAs with more people with a high school diploma than in PUMAs with fewer people with a high school diploma. I would expect to see that the PUMAs with more people with some years of college would see higher enrollment than in PUMAs with fewer people with some years of college.

7. Age has a lot of associated factors that would affect enrollment likelihood. Anyone 65 or older would qualify for Medicare therefore, in the enrollment data, I will only look at people under 65 who are in the non-elderly age group. Additionally, anyone up to age 26 who does not have their own employer based insurance is allowed the option to stay on their parent’s insurance therefore these people would be excluded also from the analysis. However, people in this age
group of 18 to 25 are permitted to choose to still enroll in the marketplace if their family situa-
tion does not permit them to receive this aid from a parent’s plan, so the data does account for
those people within this group who were not receiving parental coverage.

Though some people in the lower 25th percentile age group place great value on having
health insurance, the group as a whole is less likely to value health insurance as a necessity since
the group is generally healthier and therefore usually expect fewer medical costs compared to the
middle and upper age groups who generally have more medical expenses and health issues.
Therefore, I expect to see more enrollment in PUMAs with more people in the lower 25th than in
PUMAs with fewer people in the lower 25th age percentile. I would expect to see higher actual
enrollment in PUMAs with more people in the middle age percentile than in PUMAs with fewer
people in the middle age percentile. I would expect to see more actual enrollment in PUMAs
with more people in the upper 75th age percentile than in PUMAs with fewer people in the upper
75th age percentile.
Section 6. Research Design

In order to determine if a particular demographic group saw more actual enrollment in the marketplaces, I compared the amount of people who were estimated to be eligible for marketplace enrollment to the number of people who actually enrolled. To conduct my research I obtained data from the Kaiser Family Foundation on enrollment statistics, from the US Census bureau on urban versus rural composition and from the Federal Communications Commission on internet speeds.

I used data collected by the Kaiser Foundation where they estimated who they believed would be eligible to enroll in the marketplace. They analyzed Public Use Microdata Areas (PUMAs) which are statistical geographic groupings produced by the US Census Bureau. The bureau defines PUMAs as units that contain at least 100,000 people and are produced for every state. Each PUMA is created based on county lines or other census tracts and does not cross over state lines (US Census Bureau).

From the census data, Kaiser excluded people from their potential enrollment pool calculations who had insurance offered by their employer but included people who had insurance from their employer that did not meet the ACA’s adequately and affordability standards making these individuals eligible for premium tax credits. The potential enrollment calculations looked at people without coverage, primarily, but also looked into people with non-group coverage and certain individuals with non-spousal dependents who may qualify for premium tax credits. Kaiser then removed people with incomes that qualify for Medicaid and CHIP benefits and removed people who were noncitizen. Lastly, Kaiser excluded people who could receive certain types of employ-
ee security insurance (ESI) benefits which are benefits paid to dependents of a person who was killed in a work related accident (Kaiser; “Methodology”).

In order to analyze the relationship between internet access and enrollment, I merged in data from the Federal Communications Commission (FCC) as well as data on the percentage of urban and rural demographic makeup of PUMAs provided by the Missouri Census Data Center (Missouri State Census Data Center). The FCC report tracks download and upload speeds, technology and geographic changes overtime. The report defines upload speed as “the speed of transmission from the end user to the internet.” Prior to 2014, internet providers reported data in terms of “speed tiers” such as high middle and low but now the providers report based on the actual highest and lowest upload and download speeds measured in Megabits per second (Mbps). For my analysis I looked at maximum upload speed which is defined by the FCC as the maximum advertised upload speed within that census block which they broke down into four upload speed categories: less than 1 Mbps, 1 to 2.9 Mbps, 3 to 5.9 Mbps, and 6 Mbps and faster. It is important to note that while the FCC looks at maximum speeds offered within census tracts. this does not necessarily reflect the speed offered to every home within that census block nor does it include the amount of competition of availability of different providers in that census block (Federal Communications Commission).

Once I had collected the data from Kaiser, the FCC, and the census bureau, I merged the data sets into STATA and ran several analyses. First I looked at summary statistics which gave the mean of each independent variable across all PUMAs and gave the range of the minimum and maximum distributions of each variable within a PUMA. Next I ran a correlation test to see the correlation strength and associated p-scores between the dependent share variable and each
of the independent variables. I also ran regression analyses to create more certainty that the findings represented a true relationship. Lastly, to get a better understanding of how much each group accounted for overall enrollment share, I ran an analysis of the expected values. The results are discussed in the following section.
Section 7. Findings

The “share” variable was the percentage of eligible potential enrollees who actually enrolled in the marketplace during the 2014 year. I ran summary statistics, correlations, regression analyses and expected value tests to look for trends between the share of actual enrollment with race, primary language spoken, gender, non elderly age groups, household income tiers, education levels, fastest upload internet speed and urban composition of a PUMA.

Table 1- Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
<th>Share Correl.</th>
<th>P-Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share</td>
<td>43.1</td>
<td>14.49</td>
<td>12</td>
<td>100</td>
<td>-0.178</td>
<td>0</td>
</tr>
<tr>
<td>White</td>
<td>65</td>
<td>23.9</td>
<td>1</td>
<td>97</td>
<td>0.0852</td>
<td>0.0006</td>
</tr>
<tr>
<td>Hispanic</td>
<td>15.04</td>
<td>18.49</td>
<td>0</td>
<td>97</td>
<td>0.1678</td>
<td>0</td>
</tr>
<tr>
<td>Black</td>
<td>13.84</td>
<td>16.75</td>
<td>0</td>
<td>96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Ethnicity</td>
<td>6.11</td>
<td>5.81</td>
<td>0</td>
<td>73</td>
<td>-0.0261</td>
<td>0.2953</td>
</tr>
<tr>
<td>English</td>
<td>75.77</td>
<td>18.8</td>
<td>3</td>
<td>98</td>
<td>-0.1521</td>
<td>0</td>
</tr>
<tr>
<td>Spanish</td>
<td>14.18</td>
<td>17.47</td>
<td>0</td>
<td>97</td>
<td>0.1144</td>
<td>0</td>
</tr>
<tr>
<td>Other Lang.</td>
<td>7.55</td>
<td>7.43</td>
<td>0</td>
<td>65</td>
<td>0.1602</td>
<td>0</td>
</tr>
<tr>
<td>income 25th</td>
<td>33,682.54</td>
<td>12,617.42</td>
<td>10,500</td>
<td>97,000</td>
<td>0.0626</td>
<td>0.0121</td>
</tr>
<tr>
<td>income50th</td>
<td>60,944.58</td>
<td>20,295.76</td>
<td>25,000</td>
<td>169,000</td>
<td>0.0648</td>
<td>0.0094</td>
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<tr>
<td>income75th</td>
<td>99,554.39</td>
<td>31,405.06</td>
<td>45,400</td>
<td>280,926</td>
<td>0.0747</td>
<td>0.0027</td>
</tr>
<tr>
<td>HS Degree</td>
<td>86.7</td>
<td>7.37</td>
<td>46</td>
<td>99</td>
<td>0.0027</td>
<td>0.0037</td>
</tr>
<tr>
<td>Years College</td>
<td>27.8</td>
<td>13.26</td>
<td>3</td>
<td>60</td>
<td>0.1151</td>
<td>0</td>
</tr>
<tr>
<td>Percent College</td>
<td>49.17</td>
<td>1.65</td>
<td>43</td>
<td>59</td>
<td>-0.2</td>
<td>0</td>
</tr>
<tr>
<td>nonelderly 25th</td>
<td>16.04</td>
<td>2.12</td>
<td>8</td>
<td>26</td>
<td>0.16</td>
<td>0</td>
</tr>
<tr>
<td>nonelderly50th</td>
<td>31.95</td>
<td>3.12</td>
<td>21</td>
<td>43</td>
<td>0.28</td>
<td>0</td>
</tr>
<tr>
<td>nonelderly75th</td>
<td>47.96</td>
<td>2.93</td>
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<td>57</td>
<td>0.15</td>
<td>0</td>
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<tr>
<td>max-up-speed</td>
<td>4.8</td>
<td>0.8</td>
<td>4.3</td>
<td>10.76</td>
<td>0.2074</td>
<td>0</td>
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<tr>
<td>percent urban</td>
<td>78.13</td>
<td>23.89</td>
<td>11.3</td>
<td>100</td>
<td>0.1669</td>
<td>0</td>
</tr>
</tbody>
</table>

The first variable I looked at was racial ethnicity where I expected to see lower rates of actual enrollment in PUMAs with more whites than in PUMAs with fewer whites. I expected to find that PUMAs with more African Americans, hispanics, and other ethnicities will show higher
rates of actual enrollment than in PUMAs with fewer African Americans, Hispanics, and other ethnicities.

Upon analysis, PUMAs showed great variance in ethnic composition. Table 1 column 2 shows the mean percentage of whites in any given PUMA was 65% but columns 4 and 5 show the percentage varied greatly from 1% to 97% white in a given PUMA. Table 1 column 6 shows the correlation between share and percentage white. The correlation shows that PUMAs with more white residents showed lower actual enrollment than PUMAs with fewer whites residents. Given that whites had higher rates of insurance and fewer barriers to access prior to the establishment of marketplaces, it is likely that other factors than their race account for the remaining population of uninsured whites.

Table 1 column 2 shows the mean percentage of Hispanic population within PUMAs was 15% yet columns 4 and 5 show that the percentage of Hispanics ranged from comprising zero percent of a PUMA to comprising 97%. PUMAs with more Hispanic residents saw more actual marketplace enrollment than PUMAs with fewer hispanics which holds true with my predictions.

Table 1 column 2 shows the mean percentage of African Americans within any given PUMA was 14% but columns 4 and 5 showed the percentage ranged from as low as 0% to 96%. The correlation shown in column 6 was positive therefore PUMAs with more African Americas saw more actual enrollment than in PUMAs with fewer African Americans.

Table 1 column 2 shows that the mean percentage of ethnicities other than white, hispanic and black accounted for 6% of any given PUMA but columns 4 and 5 show that the percentage ranged from 0% to 73% within a given PUMA. Column 6 shows that there was a positive correlation meaning that PUMAs with more ethnicities other than African Americans, white and His-
panic residents saw more actual marketplace enrollment than PUMAs with fewer other ethnicities. However, column 8 shows that this finding was not statically significant with a p-score of 0.25. Therefore, we are not able to draw conclusions from this data about the other ethnicity subgroup.

Though the ethnicity variable should highly correlate to the primary language variable, I looked at the relationship between share and a person’s language. I expect to see higher rates of actual enrollment in PUMAs with more Spanish speakers than in PUMAs with fewer Spanish speakers. In PUMAs that have more speakers of a language other than Spanish or English, I expect to find more actual enrollment than in PUMAs with fewer other language speakers.

The analysis showed that the percentage of primary language spoken within a PUMA varied largely. English was the primary language spoken on average by 75% of people within PUMAs yet ranged from 3% to 100% of a PUMA. PUMAs with more English speakers saw lower rates of actual enrollment than in PUMAs with fewer English speakers. Spanish was the primary language spoken by an average of 14% but ranged from 0% to 97% within a given PUMA. PUMAs with more Spanish speakers saw more actual enrollment than in PUMAs with fewer Spanish speakers. Other languages were spoken on average by 7% of any PUMA but ranged from 0% to 65% within a PUMA. PUMAs with more other language speakers saw more actual enrollment than in PUMAs with fewer other language speakers.

Next when looking at the relationship between share and household income, I expected to find higher rates of actual enrollment in PUMAs with more lower income households than in PUMAs fewer households. For PUMAs with more upper 75th income households, I expect to find lower rates of actual enrollment than in PUMAs with fewer higher income households. The
top and bottom household income varied greatly across PUMAs. The average income for bottom 25th household income across PUMAs was $33,700 yet ranged from $10,500 to $97,000. Table 1 column 6 showed a positive correlation therefore, PUMAs with more households with incomes within the bottom 25th percentile saw more actual enrollment than in PUMAs with fewer households with incomes in the bottom 25th percentile. The average income for middle household income within PUMAs was $60,900 yet ranged from $25,000 to $169,000. There was also a positive correlation between share and middle household income, therefore PUMAs with more households with incomes within the 50th percentile saw more actual enrollment than in PUMAs with fewer households with incomes in the 50th percentile. The average top 75th household income across PUMAs was $99,600 yet ranged from $45,000 to $281,000. Lastly, column 6 also shows a positive correlation between share and upper 75th income households meaning that PUMAs with more households with income within the top 75th percentile saw more actual enrollment than in PUMAs with fewer households with incomes in the top 75th percentile.

Additionally, I originally predicted that there would be lower levels of actual enrollment in PUMAs with more households within the upper 75th percentile than in PUMAs with fewer households in the upper 75th percentile given that households with higher incomes would be more likely to be able to afford insurance prior to the establishment of marketplaces but the data showed that more enrollment occurred when there were more households in a PUMA within the upper 75th than fewer households in the upper 75th. In my original predictions, I failed to consider that though this group had higher incomes, they may still not have had viable employer insurance offered or were within the group who was buying non-group insurance which is generally more expensive that the marketplace exchanges. Therefore, the marketplace could offer more
affordable options to this group which could account for the higher enrollment in PUMAs with more upper 75th incomes than in PUMAs with fewer upper 75th households.

Additionally, I assumed the upper income households that did not have insurance prior to the establishment of the marketplace would be driven by some other factor than income. This still may be the case given that the ACA mandated that everyone must have insurance or face a tax penalty. The tax penalty may be a factor that motivated people in this group to purchase insurance that previously had chosen not to purchase non-group insurance.

The next variable I looked at was the effect of level of education on share of enrollment. I expected that PUMAs with more people who had attended some years of college will have higher rates of actual enrollment than in PUMAs with fewer people with at least some years of college. On average, 87% of people within a PUMA had a high school degree or more. This ranged from 46% to 99% of people within a given PUMA. On average 28% of people had attended years of college. This ranged from 3% to 80% of people within a given PUMA. PUMAs with more high school degree earners saw more actual enrollment than in PUMAs with fewer high school degree earned. PUMAs with more people who had attended some years of college saw more actual enrollment than in PUMAs with fewer people who had attended some years of college.

Next I looked at the effects of internet upload speed and urban population. Considering urban areas generally have faster internet and overall greater access to the internet than rural areas do, I expected to find a high correlation between upload speed and percent urban. I expected to see that PUMAs with lower upload speeds will have lower rates of actual enrollment than in PUMAs with higher upload speeds. I also expected to see that in PUMAs with higher percent-
age urban will see higher rates of actual enrollment than in PUMAs with lower percentages urban. This proved true. The percentage of urbanization within a PUMA averaged 78% yet ranged from 11% to 100%. The maximum upload speed averaged 4.8 Mbps across PUMAs yet ranged from 2.1 Mbps to 10.5 Mbps in a given PUMA. For PUMAs with higher percentage urban, saw more actual enrollment than in PUMAs with lower percentage urban. PUMAs with higher maximum upload speeds, saw more actual enrollment than in PUMAs with lower maximum upload speeds. PUMAs with higher rates of percent urban saw higher rates of actual enrollment than in PUMAs with lower rates of percent urban.

The next variable I looked at was gender. The ACA expanded coverage to millions of women who had previously fallen into the gap group. Additionally men generally seem to take less advantage of and seem to place less value on healthcare than women do. Therefore I expect to find that PUMAs with higher percentages of men will see lower actual enrollment than in PUMAs with lower percentages of men. The mean for percentage male is 49% and has little variation from the mean with a minimum of 43% and maximum of 59% within a given PUMA. The tests showed that PUMAs with higher percentages of males saw less actual enrollment than in PUMAs with lower percentages of males.

The last variable I looked at was age. Given that younger people generally tend to be healthier and often perceive less need for insurance. I expect to find that PUMAs with more people in the upper 75th percentile of non-elderly aged people will see more actual enrollment than in PUMAs with fewer people in the upper 75th percentile of non-elderly aged people. I expect to find that PUMAs with more people in the lower 25th percentile of non-elderly aged people will
see more actual enrollment than in PUMAs with fewer people in the lower 25th percentile of non-elderly aged people.

I found that age distribution tended to stay relatively constant across PUMAs. The lower 25th percentile of non-elderly aged averaged 16% of any PUMA but ranged from making up 8% to 26% of a PUMA. The middle 50th percentile of non-elderly aged accounted for 31% of any PUMA and ranged from 21% to 43% of a PUMA. The upper 75th percentile accounted for an average of 47% and ranged from 29% to 59% of a given PUMA.

PUMAs with higher percentages of the lower 25th percentile of non-elderly aged people saw more actual enrollment than in PUMAs with lower percentages of the lower 25th percentile of non-elderly aged people. PUMAs with higher percentages of the middle 50th percentile of non-elderly aged people saw more actual enrollment than in PUMAs with lower percentages of the middle 50th percentile of non-elderly aged people. PUMAs with higher percentages of the upper 75th percentile of non-elderly aged people saw more actual enrollment than in PUMAs with lower percentages of the upper 75th percentile of non-elderly aged people.

Table 2 Regression Analysis

<table>
<thead>
<tr>
<th>Share</th>
<th>Coefficient</th>
<th>Err.</th>
<th>t</th>
<th>95% Conf. Int</th>
</tr>
</thead>
<tbody>
<tr>
<td>nonelderly50th</td>
<td>1.918</td>
<td>0.122</td>
<td>15.7</td>
<td>1.679</td>
</tr>
<tr>
<td>Spanish</td>
<td>0.188</td>
<td>0.0224</td>
<td>8.4</td>
<td>0.144</td>
</tr>
<tr>
<td>percent male</td>
<td>-1.359</td>
<td>0.209</td>
<td>-6.5</td>
<td>-1.769</td>
</tr>
<tr>
<td>income50th</td>
<td>-1.43</td>
<td>0.27</td>
<td>-5.3</td>
<td>-1.95</td>
</tr>
<tr>
<td>Years College</td>
<td>0.186</td>
<td>0.419</td>
<td>4.4</td>
<td>0.103</td>
</tr>
<tr>
<td>percent urban</td>
<td>0.075</td>
<td>0.183</td>
<td>4.1</td>
<td>0.039</td>
</tr>
<tr>
<td>cons</td>
<td>43.577</td>
<td>11.675</td>
<td>3.7</td>
<td>20.677</td>
</tr>
</tbody>
</table>
I next ran regression analysis to see if the effects of each variable held true when weighed against the effects of other variables. I choose to look at a variable from each of the major category but for reasons of collinearity, I had to run separate regressions for the race variables because there was overlap between the black and white variables with the percentage urban variable as well as overlap between the Spanish language variable with the hispanic ethnicity variable. I choose to look at the middle percentile variable for both age and income instead of looking at the 25th, 50th and 75th percentiles. Lastly, I chose to run years of college instead of the high school variable due to the overlap of the two variables that exists because assuredly everyone who goes to college holds a high school degree equivalent.

The regression analysis results shown in table 2 showed that percent urban, years of college, Spanish speakers, and middle 50th age percentile all had positive coefficients meaning PUMAs with more of each these variables showed more enrollment than PUMAs with less presence of each. Additionally, the percentage male variable still showed a negative coefficient meaning that the more males in PUMA showed less enrollment than PUMAs with fewer makes even when controlling for the effects of other variables. However, row 5 column 2 shows that middle 50th income had a negative coefficient in the regression analysis. this differed from our findings in the correlations power correlations shown in table 1, row 17, column 6, which said there was a positive relationship between enrollment share and middle income households. percentile, The regression analysis findings for males, age, college years, Spanish speakers, and percent urban were all consistent with the results of the power correlation tests displayed in table 1, which yields more confidence in our findings.
Lastly I looked at the expected values associated with the minimum and maximum share of each variable, displayed above in Table 3. In the PUMA with the lowest share, the non-elderly group had an expected value of 22.1 while in the PUMA with the highest share of non-elderly aged people, the expected value was 64.3. Table 3 column 7 shows an extremely large difference of 42.2 percent when moving from the lowest to highest share of non-elderly aged group across PUMAs.

Table 3 row 2 shows the effects of moving from the highest to lowest share of the Spanish speakers across PUMAs. Table 3 column 3 shows that Spanish speakers have an expected value of 40.4 in the PUMA with the lowest share while column 5 shows that Spanish speakers have an expected value of 58.7 in the PUMA with the highest share. Column 7 shows that there is an difference of 18.3 percentile when moving form the PUMA with lowest to the PUMA with the highest share.

Table 3, row 3 shows the expected values of the percent male variable when moving from the PUMA with the highest to the PUMA with the lowest share of males. Table 2, row 4, column 2 showed that there was a negative correlation negative correlation between males and enrollment share, therefore saw a decrease when moving from the lowest share to the highest share.
Though table 3 columns 3 and 5 showed little variance between the percent of males within any PUMA, only changing from 43% to 59%, column 7 showed the expected values had a relatively large change with a difference of 21.6%. Column 4 and column 6 showed that the PUMA with the most males had an expected value of 51.4 and the PUMA with the fewest males had an expected value of 29.6. Though other variables had similar or even larger shifts in expected values, the other variables saw much larger variance between the highest and lowest percents found in any PUMA than did the male variable which deviated little from the mean.

Table 3 row 4 shows the expected values of the middle 50th income tier when middle income is at its highest and lowest value within any PUMA. The income variable was rescaled to divide actual income in dollars by 10,000 dollars in order for this variable to be comparable to the scale of the other variables. Column 6 showed that middle income households had an expected value of 51.4 in the PUMA with the most middle income households and column 4 showed an expected value of 27.6 in the PUMA with the fewest middle income households. The difference in expected values was 25.8. There was a decrease when moving from the lowest to the PUMA with the highest percentage of income because there was a negative correlation associated with middle income and share as shown in table 2, row 5, column 2.

The expected value of having some years of college was 38.5 in the PUMA with the lowest distribution of people with years of college and had an expected value of 52.8 in the PUMA with the highest distribution of people with years of college. The expected value of the years of college variable only differed 14.3% when moving from the PUMA with the highest to lowest distribution.
The expected value of percent urban was 38 in the PUMA with the lowest distribution and 44.7 in the PUMA with the highest distribution. This was a modest difference of 11.7% when moving from the highest to lowest values.
Section 8. Limitations

Overall, my analysis shows that the Affordable Care Act appears to have helped many groups obtain access to health insurance that have historically faced more barriers to obtaining insurance. While the Affordable Care Act more specifically aimed to provide insurance coverage to everyone, it also had the underlying intent of bringing about healthcare services like preventive care treatments that would lead to a healthier and better cared for population. It is important to note that my thesis looks simply at enrollment rates and is not able to make these broader conclusions about insurance access automatically equating to actually utilizing healthcare resources or creating a healthier population.

While minority groups may have insurance access provided through the marketplaces, minority groups may still face cultural or linguistic challenges that hinder these groups from actually utilizing or wanting to utilize services. Additionally having insurance does not guarantee adequate availability to healthcare facilities where a person lives nor does it guarantee access to healthcare facilities that accepts their insurance. In order to gain a more thorough understating of the impact that the Affordable Care Act had on the general health of these groups, further studies could look at healthcare services utilization rates as well as the overall health and disease rates typically associated with minority groups.

Additionally, my data only looked at enrollment trends for the year of 2014, which is the year that the individual mandate began penalizing people who did not have insurance. Further analysis could look at enrollment trends in these groups over a larger time period to better determine if the Affordable Care Act provided a lasting, positive impact on the populations who were historically more likely to be uninsured. A longer temporal study could account for effects that
the individual mandate’s tax penalty may cause. Also, my data did not look at people residing inside the US illegally which entails that our analysis may fail to accurately represent access to healthcare and insurance for the Hispanic population in the U.S. I was not able to draw statically significant conclusions about enrollment trends for speakers of another language other than English or Spanish with the available data. Lastly, the marketplace enrollment data only looked at states that had not established their own state based marketplace exchange as of 2014.
9. Discussion and Conclusions

Before the passage of the ACA, about 16% of the country was without insurance and as of the beginning of 2016 that number was nearly cut in half with roughly 8.5% of US citizens remaining uninsured. Through marketplace enrollment, expansion of Medicaid and extension of parental coverage to age 26, nearly 20 million Americans have gained insurance ("ObamaCare Enrollment Numbers").

The research conducted for this thesis broke down those enrollment numbers to see what groups have benefited and what groups still faced barriers to accessing health insurance. By looking at who was eligible to enroll and who actually enrolled in the marketplace, the results shows that the Affordable Care Act appears to have been successful in moving the United States a step closer to universal coverage. I found increased enrollment amongst women, African Americans, Hispanics and other ethnicities as well as increased enrollment across all ages, different education levels, and income levels and even across language barriers and urban city setting.

However not all groups had enrollment increases. Whether due to a dislike of the ACA, a low prioritization on having health insurance or other factors, males and whites were the only groups who showed consistent negative enrollment rates. Middle income households showed negative enrollment rates under certain tests as well. These results are not too shocking considering that males, whites and the middle class are generally perceived as having more opportunities and privileges and are not generally the primary targets of social programs.

Despite the overall increase in insurance for the 20 million Americans that are benefiting from the ACA, the legislation has continued to be debated and will likely undergo major repeals in the following years under the Trump presidency. The ACA has continued to be a hot button
issue throughout the Trump-Clinton presidential debate season leaving a divide between Democrats who generally champion the bill and Republicans that generally view the bill as a massive policy failure. Whether for better or worse, the impact on the ACA has had on country’s is undeniable.
Section 10. Work Cited


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