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U.S. Health Via Education Analysis

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U.S. HEALTH VIA EDUCATION ANALYSIS

by

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M.A., Southern Illinois University Carbondale, 2016

A Research Paper
Submitted in Partial Fulfillment of the Requirements for the
Master of Science Degree

Department of Agribusiness Economics
in the Graduate School
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RESEARCH PAPER APPROVAL

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For the Degree of

Master of Science

in the field of Agribusiness Economics

Approved by:

Dr. Jebaraj Asirvatham

Graduate School
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AN ABSTRACT OF THE RESEARCH PAPER OF

DANIEL VANOVERBEKE, for the Master of Science degree in AGRIBUSINESS ECONOMICS, presented on MAY 18th, 2017 at Southern Illinois University Carbondale.

TITLE: U.S. HEALTH VIA EDUCATION ANALYSIS

MAJOR PROFESSOR: Dr. Jebaraj Asirvatham

Does the level of someone's education affect their health behaviors such as drinking and smoking? This research aims to examine the relationship between health behaviors & the level of someone's education with health behaviors as the dependent variable. I aim to model the relationship between health behaviors and the level of education for a 2-year period from 2013-2014. My independent variables in this multiple regression are the U.S. education level, race, age and gender. And, my dependent variables in two separate regressions are the smoking health behavior variable measured in the number of cigarettes measured in the number of cigarettes one smokes in addition to the number of alcoholic drinks someone has had.

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CHAPTER 1

INTRODUCTION

This relationship of education and health will be helpful to portray since it can show how someone's health is affected by the level of his or her education level and show what other factors play a role in health outcomes. The coefficients in front of the X variables will capture the total magnitude that education levels play on negative health behaviors such as smoking and drinking. It should be that a higher education level has a decoupling relationship with negative health behaviors such as drinking and smoking. We will be able to analyze education levels on negative health behaviors to see how health reacts to education levels.

I would like to start by defining the variables in my research that include education levels and health behaviors (smoking and drinking). Education levels are defined in the study by Cutler and Muney as the number of years someone has been educated for. Health behaviors are a measure of education levels in this study which shows how much education plays a role in negative health behaviors. This research interest me since I am very interested in positive health behaviors and want to understand the relationship between someone's education levels and their health behaviors. This could help us determine how much education is proper for one to live a healthy lifestyle.

No level of research will allow you to determine why people choose negative health behaviors even if their level of education is beyond understanding. This paper simply aims to understand the types of things that affect health behaviors. The statistics show us that there is a small amount of significance and a small amount of weight or magnitude that is caused by an education level. In this paper, I will run the statistics to check how much magnitude smoking and

drinking have on education levels. I will also attempt to show the relationship between health behaviors and education levels. However, I will also review other variables that affect health behaviors as well.

Nutritional behaviors start at a young age and they should not be ignored. Healthy behaviors need to start early in life. Health behaviors, such as smoking and drinking, are very bad for the community and economy. Therefore, everyone needs to pay attention to how we can avoid these types of behaviors. We can do this through education. However, this does not have to be through a regular school system. Alternatively, you need to get directly to the point. I need to get right to the point about why people should not smoke or drink. This shows us a higher level of education does avoid smoking and drinking in negative health behaviors. However, people do not need a bunch of education to be able to avoid these types of things. They can directly learn them from their parents if their parents are properly educated on the subject and manage their children's time well. We all need to realize that educational levels affect health behaviors. However, there are other variables that cause a root direct effect to this problem such as time management. We need to address this root cause of behavior causes by gathering together all of our resources all of our community and fight improper time management. We need to get our community together to organize a resistance program for smoking and drinking. We need to educate the community and the dangers of smoking and drinking. Excessive smoking and drinking are some of the root causes of death and disease in this country for abuse. They are easily accessible and there is nobody who is going to stop you from doing these things if you want to do them. That is why they are such a big problem. However, we can come together as a community and change the effects of education levels. If we have education levels that are in the

right area and the right subject, we do not need to spend our whole life in school. We can realize that education has nothing to do with understanding.

It has everything to do with how somebody is taught at an early age to have the proper skills (e.g. time management) to get through life. You can go to any city in any state in any country and find excessive smoking and excessive drinking in any part of the population no matter how educated they are. Sometimes, we have to realize that we have to come together as a community to address this problem. In this paper, we are also going to discuss the other variables besides the level of education that affects our health behaviors. It is a sociological experiment gone already. It is going on all around us. In addition, to understand it we need to jump in the shoes of the community. How does the community feel about these things? Smoking and drinking causes the community many side effects. They have some positive effects and some negative effects. In addition, the sin taxes on tobacco and alcohol help tax revenue. So somebody is benefiting from all of this in the long run. But, it is not the community or the country as a whole. The community is made up of people with linkages and geographical and political ties that work together. The country is part of the community.

The main objective of this paper is to identify and statistically show some key economic variables that influence the level of U.S education. From this analysis, the qualitative variables that have a significant impact on U.S education will be discovered, and also a model to possibly forecast education levels will be developed. This study will be using multiple regression models to demonstrate the relationship between U.S education and the qualitative variables that have been identified and will be discussed later in this paper. This multiple regression model will demonstrate the simultaneous impact of several independent variables on education levels from 2013 – 2014.

CHAPTER 2

REVIEW OF LITERATURE

The research in this field is nothing new to cultures. Research on demographics and

health behaviors has been studied in Ghana in Mondain's journal article stating how reports were

made up that included 50 years of research on population, health and environment in Senegal.

This paper has shown how beyond the ethical dimension these activities may also have an impact

on population's attitudes toward research and could have a greater impact on their own heath

choices. (Mondain 2016) There have been many studies that include health and demographic

factors. Kishamawe's article states in the Journal of Epidemiology how they linked health

facilities to community--based data and conducted qualitative studies to address the issues linked

to HIV stigma and the perception of Art access. (Kishamawe 2015)

Cutler and Muney found a significant relationship between education and health

behaviors. However, they used health behaviors as the dependent variable. I am using education

as the dependent variable in my study. The research on this topic has been researched and most

notably is seen in the article "*Understanding Differences in Health Behaviors by Education*" by

Cutler and Muney. They state, "To document the effect of education on health behaviors, we

estimate the following regression:

$$Hi = \beta 0 + \beta * 1 Education i + X i \alpha + \varepsilon i$$

Where H_i is a health behavior of individual *i, Education* is measured as years of

schooling in the US, and as a dummy for whether the individual passed any A level examinations

in the UK.[5] The basic regression controls for basic demographic characteristics (gender, age

dummies, and ethnicity) and all available parental background measures (which vary depending

on the data we use). Ideally, in this basic specification, we would like to control for parent

characteristics and all other variables that determine education but cannot be affected by it, such

as genetic and health endowments at birth— we control for the variables that best seem to fit this

criterion in each data set.[6] The education gradient is given by β_1, the coefficient on education,

and measures the effect of schooling on behavior, which could be thought of as causal if our

baseline controls were exhaustive. We discuss below whether the best specification of education

is linear or non-linear.

In another article by Friis and others, they noted that they used six variables to estimate

the predictive value of health behavior. (Friis 2014) However, they used other health variables.

In my own research, I am using demographic predictors to estimate the predictive value of socio-

demographic variables. The possibilities are endless with areas to study in this field shown

further in Anyamele's article. He states that there is even a role of wealth and Mother's

education to be played on health outcomes of children. (Anyamele 2017)

CHAPTER 3

U.S. EDUCATION VIA HEALTH

The country does not depend on a change of educational levels to change smoking and drinking behaviors. They do not need to have more money put into educational systems just because some researchers said the educational levels would decrease smoking and drinking. We all know that it will not. It depends on different things such as time management skills. It also depends on people learning about the negative effects of smoking and drinking. People in the community say that all the new smoking and drinking comes from their fathers and mothers who also habitually smoke and drink. Therefore, they do the same thing. It is a vicious cycle. They feel like they are victims. They feel like they are victims of the country not protecting them from these institutions that provide excessive alcohol and cigarettes. They are too easily accessible. In addition, they are too easily accepted by the community.

CHAPTER 4

THE PROCESSING

This will help me determine what is going on in the larger picture. The larger Picture shows us what else is going on besides the level of education related to someone's health behaviors. Sure being smarter helps us decide what is right and wrong. But, many of these people who decide to smoke or drink knew what was right or wrong before they decided to drink or smoke. So what made people drink and smoke. In addition, what makes people do healthy behaviors like playing basketball or eating before 7 pm so that their food will digest properly? I will form a theoretical paper that describes this relationship. I will also use these other variables such as time management and distance from the house for parents to work and children to go to school as variables in my research. The distance plays a big part in health behaviors. However, what is the key variable I am looking for a root cause of health outcomes? The answer lies within the key of life; which is time. The ability to have free time is important for health. However, it is not critical to this behavior. The important thing is that you know how to use this free time properly. The ability to use this free time properly is called time management. We need to learn how to use our time properly and treat ourselves the proper way with great health behaviors. So, let's get down to the Nitti gritty. Do smoking and drinking make you unhealthy? I know many healthy people that smoke and drink on occasion. Does this mean that they are unhealthier than you or me? I do not think so but everyone is entitled.

CHAPTER 5

U.S. POLICY

U.S. policy-makers have a lot to do with helping people with their health behaviors. Smoking and drinking have simply become out of control. We must identify a legit relationship between health behaviors and another variable that we can control such as the current level of education attained in the U.S. Health behaviors could be positive by going to a recreational center for the whole family. A family that works out together stays together. In addition, they will be healthfully living together. The catalyst for health behaviors that are positive. Education levels are shown to have an effect on health behaviors. However, is it the time management aspect of the level of education that provides health outcomes?

The research shows that someone who has more education should have a better understanding and have better health outcomes in life. Therefore, this research is telling us that school can teach you to understand better. This will help you understand the negative health outcomes of smoking and drinking better and you will not do those types of behaviors. However, I do not believe the level of education has that big of an effect. I believe there is a stronger effect from indirect effects such as the ability to properly manage your time. I believe parents have a greater impact on the health behaviors of a child in their ability to properly teach time management. The health behaviors of a person stem from the health behaviors of the child. Therefore, I do not believe there is not a direct connection between health behaviors in education level. I believe that this level of understanding comes from the parents and the indirect effect of time management. This level of understanding is a type of reasoning that is determined

by the ability to have other things keeping you busy so that you do not become a habitual

tobacco or alcohol user. Time management can solve the issues of health behaviors.

CHAPTER 6

DATA AND METHODS

The NHANES (National Health and Nutritional Examination Survey) data that I used for my regression analysis with SPSS was found in the questionnaires, datasets, and related documentation section. The data on smoking and drinking is found under questionnaires in the data, documentation, codebooks, & SAS code section. These are surveys that ask different people with varying levels of education if they smoke or drink.

This time series analysis for this 2 year period from 2013-2014 was the relationship between education levels and health behaviors, race, and income. This research used a multiple regression and OLS methods which is used for finding unknown structural parameters in this type of model. We will minimize the errors and produce a better fit for the predicted values and the predictor variables.

The model used to show the relationship between the variables will be a multiple regression model. The ordinary least squares (OLS) estimator will be utilized to determine coefficients for the explanatory variables. The OLS method is used for estimating unknown parameters in linear regression models. The objective of the OLS estimator is to minimize the error sums of squares. This will produce a line of best fit where predicted values are closest to actual observed values for the data-set.

Hypothesis tests for this study can be expressed as:

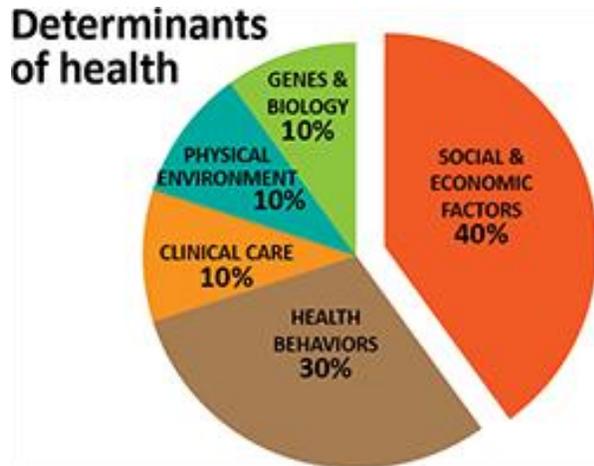Hypothesis Tests

1. H_0: Smoking = 0

2. H1: Drinking = 0

FIGURE 1: Determinants of health (From healthandlearning.org)

CHAPTER 7

RESULTS

The following OLS estimation was used for this study and the test statistics are shown below the coefficient estimates.

Regressions

(1) Smoking = 1.701 + (-).067(Eth1) + (-).027(Eth2) + (-).038(Eth4) + (-) .002(Eth5) + (-).022(Gender) + (-).001(Age) + (-).009(Education)

(2) Drinking = 1.723 + .029(Eth1) + (-).007(Eth2) + .137 (Eth4) + (-) .037(Eth5) + (-).086(Gender) + (-).002(Age) + .012(Education)

My model found that that smoking was not explained at the 5 percent significance level for my independent variables from 2013-2014. This tells us that smoking is not significantly related to demographics. Therefore, there is no relationship between smoking and demographics. On the other hand certain variables have some significance for drinking. The variables that explained for drinking were gender and race at the 5% significance level.

CHAPTER 8

DISCUSSION

The idea that smoking and drinking are caused by lower education levels is understandable. However, they may not be related at all. Other factors such as distance from work and school for parents and children add to health behaviors such as smoking and drinking. Distance from school or work from the parents has a lot to do with health behaviors. A family that has no time together to prepare meals is going to have health outcomes. My research shows that health outcomes depend on the amount of time management skills parents actually give their own children. I do not believe a level of education of a person can tell you anything about health behaviors in general. What really causes health behaviors? There are many things that affect health behaviors. Health behaviors are affected by peers as well. Friends in school and friends in the workplace affect what you eat in what you do. Your peers affect your health behaviors as well. However, the way you manage your time can change peer effects.

Activities such as sports or hobbies are a form of time management and can contribute to health outcomes. Family members also affect your lifestyle. If your significant other does not want to go to the gym, you may not want to go to the gym. A gym is a great place for positive health outcomes. We should look at the amount of exposure to working out at the gym or anywhere else and see how that affects health behaviors. Gym or work out time allows us to have positive health behaviors and expose them to our loved ones. A recreational center can take any education level and turn health behaviors into a positive action for a person. There are many benefits that a recreational center can have on health outcomes. Exposure to work-out classes and different food ideas can't help people make positive health outcomes in your life. Different

food does not have to be expensive. Local food choices are reasonably cheap if you look at the prices. Our local Carbondale farmers market offers many options that are healthy and cheap.

The level of education of a person is important for health outcomes. However, this education does not have to come from going to school. This education comes from the wisdom taught in that person's life. This wisdom comes in the form of properly managing your time. This is the best way for someone to avoid negative health behaviors. The structure of knowledge for a person is the best way for someone to avoid negative health behaviors. Because let's get serious there are no real ways to stop people from smoking and drinking on occasion. People have been doing this since time began. However, we want to make sure that people do not habitually use these drugs. In addition, we now know that people die because of the negative health behaviors they hold in life. Moreover, people still do these things. Therefore, the question is why do they still do that? The answer lies in the mysteries of the human mind. Only God himself is to answer these types of questions. He might say though that it has something to do with being social beings and that someone with no time management will manage their time negatively due to their sin nature.

There are many factors or variables that affect health behaviors. Health behaviors range from good health behaviors to bad health behaviors. Many different health behavior causes are researched in my study. I want to look at all the health behaviors from good to bad. Good health behaviors like working out and eating healthy are not hard to do. However, they take a lot of time management. People who have time can still have unhealthy health behaviors. People who have too much time on their hands may still practice bad health behaviors. They may do this because they have too much free time on their hands. Therefore, what factors really cause health behavior changes? Many causes affect health behaviors. However, I think time management is

the key factor. This time management includes a consistency of life. Because, as we all know, life is best dealt with consistency. Consistency causes good habits and bad habits. Habits are hard to break. Many people struggle with food addiction problems. We all know people who are overweight and out of shape in our lives. It is a common problem in America. Unhealthy health behaviors cause many people to get sick and die early. It is also an economic problem. Thus, we need health programs provided by the government to help people have healthy health behaviors. These healthy habits start at a young age. These habits should include eating fruits and vegetables. They should also include working out and doing activities that will keep our bodies healthy and in shape. Too many health behaviors that are being trained to our generation are unhealthy (e.g. sitting in class 8 hours a day).

We need to have behaviors that develop good muscles and good healthy bodies for future Americans. This will develop a stronger economy in the long run as well. Researchers know that if people live longer they can't work longer and provide more for their country. People living longer and healthier can also provide additional benefits for an Academy. They can include science, mathematics and the other arts that contribute to a better world. Smoking and drinking are just a couple of bad habits that are caused by the same factor (time management) that good habits are created. The same thing that causes good health habits causes these two factors of healthy and unhealthy health behaviors. It is a shame that people try to pin it on one factor like the level of education. Anybody who is anybody knows that it is simply time management making the health behavior happen. Time management is the answer to all these problems and benefits of life. I was once asked how to stay healthy. I thought about it long and hard. Was it just one thing that I was doing? I do not think so. Of course, I created healthy habits. However, this wasn't going to happen without some time management in my life. Working out twice a day

is part of having a healthy body. You do not need to work out like crazy. However, you should stretch your body out and get your blood flowing at least twice a day. This should be a part of American culture. We should be training our future Americans to become strong at an early age with a lot of this type of activity.

Imagine if all Americans stretch out for one hour at school before and after their school or work every day. In addition, imagine if all these people could work out for one hour at the end of their day. Sure, we will lose some productivity in the economy. However, this is only in the short run. The long run provides a different ending. Productivity and consumption will increase in the long run and the economy will continue to grow. This will be due to people living longer, spending more money, and working longer. Everyone will benefit. This paper will not just be about the health behaviors that are negative. This paper will examine the deeper picture that provides a bigger story about how to be not just avoiding certain health behaviors but also being a healthy person in general. This does not include just avoiding negative health behaviors. However, this paper will include the guidelines of a healthy lifestyle that should be maintained for a healthy community and a healthy economy.

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APPENDIX

Table 1: 2013-2014 Summary Statistics for drinking

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.723	.101		16.991	.000
	RIDRETH1=1.0	.029	.059	.018	.487	.626
	RIDRETH1=2.0	-.007	.069	-.003	-.099	.921
	RIDRETH1=4.0	.137	.051	.096	2.697	.007
	RIDRETH1=5.0	.037	.054	.024	.684	.494
	Age in years at screening	-.002	.001	-.062	-1.889	.059
	Education level - Adults 20+	.012	.015	.029	.816	.415
	Gender	-.086	.036	-.077	-2.357	.019

a. Dependent Variable: Had at least 12 alcohol drinks/lifetime?

Table 2: 2013-2014 Summary Statistics for smoking

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.701	.048		35.299	.000
	RIDRETH1=1.0	-.067	.027	-.047	-2.457	.014
	RIDRETH1=2.0	-.027	.032	-.015	-.848	.396
	RIDRETH1=4.0	-.038	.023	-.031	-1.659	.097
	RIDRETH1=5.0	-.002	.026	-.001	-.068	.946
	Gender	-.022	.017	-.022	-1.317	.188
	Age in years at screening	-.001	.000	-.024	-1.388	.165
	Education level - Adults 20+	-.009	.007	-.021	-1.176	.240

b.   Dependent Variable: Smoked at least 100 cigarettes in life

I am only using unstandardized coefficients in my study. The unstandardized parameters tell you the difference in Y per unit change in X whereas the standardized tells you the difference in Y in standard deviations per standard deviation difference in X.

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