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**Senior Thesis Proposal**

Outline:

***Introduction:***

Here I will give a brief discussion on the motivation for this research paper, and define high-level terms that will be relevant throughout the paper.

* I will mention the trends in MML politics and a summary of the major sentiments regarding their effects as they relate to labor market outcomes.
* I will mention the trends in labor force participation and the most prevailing explanations surrounding them.

I will introduce my technique(s) for approaching the analysis of the relationship between MMLs and labor force participation rates.

I will also give an abbreviated explanation of my findings and either their agreeable or conflicting significance with prevailing hypotheses and studies.

Lastly, I will outline the significance of each of the following sections within the paper. In short, this section will be used to set the stage for the remainder of the paper.

***Background****:*

Here I will provide a more in-depth analysis into the time trends of both the independent variable (labor force participation rates) and the dependent variable (The enactment of Medical Marijuana Laws or MMLs).

* Despite a record low American unemployment rate in recent years, and a surplus of available jobs, the labor force participation rate in the country has significantly diminished, especially when considering prime-working-age males.
* In the last twenty years, a series of pro-marijuana legalization bills have been passed, resulting in 33 states and DC allowing for regulated medical use of marijuana. 11 of these states allow for legal recreational marijuana usage.

Due partially to psychological studies suggesting a connection between marijuana usage and amotivational syndrome, it could be argued that there is a negative causal relationship between the two variables, as illustrated by the trends above. Conversely, others argue that with disorders being effectively treated with marijuana, the effect of legalization should contribute to an increase in labor force participation.

Here I will also submit hypotheses on what I believe my data will show regarding the different facets of the relationship that I am investigating.

***Literature******Review****:*

In this section, I will discuss prior research that is relevant to the relationship that I wish to analyze. While currently I have not found any papers that share an exact topic with my intended research (the effect of MML legalization with a specific focus on labor participation rates), one of my primary sources will be a paper on “The Effect of Medical Marijuana Laws on Labor Market Outcomes” (Sabia, Nguyen, 2018). In this paper, the authors’ findings argue that MMLs have little effect on labor market outcomes, particularly discussing employment, wages, and hours worked.

Furthermore, there is prior literature on the effect of psychotropic drugs on labor market outcomes, including “Drug use, drug abuse, and labour market outcomes” (Buchmueller, Thomas C., and Zuvekas, 1998). I intend to draw parallels between this prior research and my own.

In addition, I will look into the psychological evidence and research behind both the probable causes for changes in labor force participation rates, as well as possible links between marijuana usage and labor force participation rates.

I will then compare the implications of the findings of these prior research efforts to my own hypotheses and findings. I will also discuss the differences and new ideas proposed and explored in my research relative to older research.

***Data****:*

In this section I will discuss the structure of the data that is used in my regressions. Presently, I intend to obtain the data on labor participation rates (and potentially other labor market outcomes) from the Current Population Survey (CPS) of the US Bureau of Labor Statistics.

For the data source of my dependent variable, I intend to compile MML and marijuana usage statistics from several sources, including the National Conference of State Legislatures, the Marijuana Policy Project, the National Organization for the Reform of Marijuana Laws, and the National Survey of Drug Use and Health (NSDUH).

In this section, I will also display graphs and figures to directly illustrate the trends discussed in the ‘Background’ section and shown by the data (raw data and summary statistics)

***Methodology******(“Main Modeling Idea”):***

In this section, I intend to describe my strategy for analyzing the relationship between the enactment of MMLs and labor force participation rates in the United States. This will mainly be accomplished through presenting regression equations.

First, mirroring Wen et al. (2015) and Sabia and Nguyen (2018), I will form a difference-in-differences model to estimate individual-level marijuana usage based on MML enactment and a collection of control variables. Empirically establishing a connection between the enactment of the legislation and usage levels will add support for the psychological and physiological research that contribute to the motivation for the study.

Next, I will estimate the relationship between labor force participation rates and MML enactment potentially through another difference-in-differences model, but using other techniques (either additionally, or in place of a difference-in-differences model) seems valuable as well, as there are many different methods in which similar relationships have been analyzed (linear probablity model, logit regression model, etc), and this aspect will require more research for me.

I still need to settle on a time span for my regressions (more confidence in this area will follow after becoming more familiar with the topic literature), but am currently leaning towards starting at the same date as Sabia and Nguyen, which is 1990, and ending at the most recent time period available in the data.

I will also describe potential shortcomings or complications of my proposed methodologies in this section.

***Results and Analysis:***

Here is where I will discuss the results of my regressions and their possible implications in depth. This includes detailing the specific meanings of the coefficients of the variables in my estimates, and based on the assumptions I made in the model, the scope of what is explained by these results.

I will display graphs and tables that appropriately showcase the results of the data manipulation.

I will also compare the results to the results of similar studies and outline reasons for why differences may have appeared.

***Conclusion****:*

In this section, I will summarize again the most salient points of my research. Namely, the contribution to the literature, the most significant aspects of the results, and the implications of the results on the current and future economy and politics.

I will note in this section the limitations of my research and how others could potentially and effectively extend its scope. I will also note areas of research concerning this topic that I believe will be most beneficial to further pursue.

Working Bibliography (APA format):

***Primary Sources:***

*Below are the sources I will primarily be looking towards for guidance on methodology and data sources:*

Berman, M. (2016). Medical Marijuana Laws and Crime: An Empirical Analysis of Market Design and Racial Implications. Princeton University Undergraduate Senior Theses, 1924-2019, Economics, 1927-2019. Retrieved from <http://arks.princeton.edu/ark:/88435/dsp01w0892d39h>

Kim, D. (2019). The Opioid-Labor Dynamic: Examining the Effect of Prescription Opioids on Labor Force Participation Among Prime-Age Workers. Princeton University Undergraduate Senior Theses, 1924-2019, Economics, 1927-2019. Retrieved from <http://arks.princeton.edu/ark:/88435/dsp018k71nk92h>

Sabia, Joseph J. and Nguyen, Thanh Tam, "The Effect of Medical Marijuana Laws on Labor Market Outcomes," The Journal of Law and Economics 61, no. 3 (August 2018): 361-396. https://doi.org/10.1086/701193

***Secondary Sources:***

Abraham, K., & Kearney, M. (2018). Explaining the Decline in the U.S. Employment-to-Population Ratio: A Review of the Evidence (No. w24333; p. w24333). <https://doi.org/10.3386/w24333>

Blake, D. R., P. Robson, M. Ho, R. W. Jubb, and C. S. McCabe. 2005. "Preliminary assessment of the efficacy, tolerability and safety of a cannabis-based medicine (Sativex) in the treatment of pain caused by rheumatoid arthritis." Rheumatology (advance access published November 9, 2005).

Buchmueller, Thomas C. and Samuel H. Zuvekas, 1998. "Drug use, drug abuse, and labour market outcomes," Health Economics, 7(3): 229-245.

Krause, E., & Sawhill, I. (2017). What we know and don’t know about declining labor force participation: a review. Center on Children and Families, Brookings Institution, Washington, DC.

Krueger, A. B. (2017). Where Have All the Workers Gone?: An Inquiry into the Decline of

the U.S. Labor Force Participation Rate. Brookings Papers on Economic Activity,

2017(2), 1–87. <https://doi.org/10.1353/eca.2017.0012>

Lac, A., & Luk, J. W. (2018). Testing the amotivational syndrome: Marijuana use longitudinally predicts lower self-efficacy even after controlling for demographics, personality, and alcohol and cigarette use. Prevention Science, 19(2), 117-126.

Laird, J. & Nielsen, T. (2016). “The Effects of Physician Prescribing Behaviors on

Prescription Drug Use and Labor Supply: Evidence from Movers in Denmark.”

Nicholas, L. H., & Maclean, J. C. (2019). The effect of medical marijuana laws on the health and labor supply of older adults: Evidence from the Health and Retirement Study. Journal of Policy Analysis and Management, 38(2), 455-480.

Popovici, I., & French, M. T. (2014). Cannabis use, employment, and income: fixed-effects analysis of panel data. The journal of behavioral health services & research, 41(2), 185–202. doi:10.1007/s11414-013-9349-8

Volkow, Nora D., James M. Swanson, A. Eden Evins, Lynn E. DeLisi, Madeline H. Meier, Raul Gonzalez, Michael AP Bloomfield, H. Valerie Curran, and Ruben Baler. 2016. “Effects of cannabis use on human behavior, including cognition, motivation, and psychosis: A review.” JAMA Psychiatry 73(3): 292-297.

Zarkin, Gary A., Thomas A. Mroz, Jeremy W. Bray, and Michael T. French .1998. “The relationship between drug use and labour supply for young men.” Labour Economics 5(4):385- 409.