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What Influences Federal Allocation of Behavioral Health Grants: Evidence from the United States

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Abstract

Subnational government entities benefit from federal funds to support programs and operations. There are a variety of factors that influence federal grant funds to recipients. This study seeks to identify the effects of multiple factors on federal grant allocation from the Substance Abuse and Mental Health Services Administration (SAMHSA) to state entities. The literature suggests three categories of factors affecting federal funding distribution, including problem severity and need, recipient capacity, and political motivation. I conduct a regression analysis to test the effects of these factors, using a pooled cross-sectional time-series data set. The results indicate that political motivation has a significant influence on federal grant distribution, primarily through representation in the House of Representatives majority party. These results help to explain the disparity in federal grant distribution and the factors that influence funding.

Introduction

Mental health disorders are prevalent across the United States. In 2012, the United States National Health Interview Survey (NHIS) found that about 27 million adults experienced feelings of sadness, and about 39 million experienced feelings of nervousness, at least some of the time 30 days prior to their interview (HHS, 2012). The Substance Abuse and Mental Health Services Administration (SAMHSA) continues to lead the charge toward prevention and treatment of substance use and mental health issues in the U.S., yet these issues remain prevalent. Many individuals develop mental illness due to stressors that build over time, including a combination of economic, family, and discriminatory factors. Low-income individuals and families are at a higher risk of developing a mental illness due to these stressors, with the U.S. poverty rate at 12.3 percent in 2017, or about 40 million people (Fontenot et al., 2018; Santiago et al., 2013).

This study seeks to improve the understanding of mental health and substance use policy in the United States. More specifically, this study seeks to answer the question of how federal behavioral health grants to state entities are allocated. What are the determinants of behavioral health grants from SAMHSA? Is the distribution of funds related to need and problem severity, state governmental characteristics, political motivation, or unobserved factors? This research examines the determinants of federal behavioral health grants and the factors that may need further consideration from the federal government in grant allocation.

In order to answer these questions, this study discusses federal mental health and substance use policy and emphasizes the importance of proper funding mechanisms from the federal level to lower level governments and independent actors. The United States federal government provides financial support to many sectors, both public and private, in order to support their endeavors and to serve the public. Recipients require federal funding for different reasons, making its application unique to each sector (Albrecht and Ziderman, 1992; DaRonco, 2015; GAO, 2009; Immunotherapy Weekly, 2014; Lee, 2012; University Wire, 2017). Influencing factors on federal funding are different for different programs. The present study explores the influencing factors on grant funding from SAMHSA for mental health and substance abuse services.

Federal funding is important for these sectors in order to address problems and support operations. This is also true for state and local governments, often lacking the capacity to address problems. The federal government plays a critical role in ensuring that all states and localities have access to resources in order to combat problems. In particular, the federal government plays such a role for social problems, as it reallocates national resources to states and localities, allowing those lower-level governments to have access to solutions for social problems. One such social problem requiring federal support is behavioral illness. Behavioral illness includes both broad categories of mental illness and substance abuse, often grouped together to streamline services.

Behavioral illness requires intervention and funding from the federal government for three main reasons. The first is that behavioral health is a human rights issue, as individuals with

behavioral illness are forced to conform to societal norms and standards (Dhanda and Narayan, 2007). This pressure to conform hinders an individual's capacity and opportunity to act, therefore diminishing their basic human rights (Ryan and Deci, 2000). The second reason is that behavioral illness is a public health issue. Public health issues affect the health of entire populations from the local level to the national level (CDC, 2019). In the U.S. alone, one in five adults live with a mental illness (NIMH, 2019). As such, behavioral health as a public health issue affects the U.S. population at the national level. The third reason for the federal government to become involved is that behavioral illness is an economic burden, with global mental health costs totaling US $2.5 trillion in 2010 and estimated to reach US $6.0 trillion by 2030 (Bloom et al., 2011, p. 27). High income countries such as the United States pay for about two-thirds of the global mental health burden, making it a topic of economic importance both domestic and abroad (Bloom et al., 2011).

Policy Background

As previously mentioned, the United States federal government provides financial support to a plethora of lower-level governments, agencies, research institutions, public entities, and so forth. The funding mechanisms vary between recipients based on recipient characteristics, previous mechanisms, power of actors, and enacted policy (Albrecht and Ziderman, 1992; DaRonco, 2015; GAO, 2009; Immunotherapy Weekly, 2014; Lee, 2012; University Wire, 2017). For example, in the education sector, federal funding can be categorized as negotiated funding (based on the previous year and power of institutional actors), input funding (formula funding with such determining factors as the higher cost of education or higher than expected enrollment), and output funding based on performance (rewarding academic institutions for positive results) (Albrecht and Ziderman, 1992).

In order to address mental health problems, the United States Congress founded the Substance Abuse and Mental Health Services Administration (SAMHSA) under the Department of Health and Human Services (HHS) in 1992. Since its inception, SAMHSA has lead "public health efforts to advance the behavioral health of the nation and to improve the lives of individuals living with mental and substance use disorders, and their families" (SAMHSA, 2019, Who We Are, para. 1).

SAMHSA offers grants for behavioral health to various state and territorial institutions. Among these grants are the Community Mental Health Services Block Grant (MHBG) and the Substance Abuse Prevention and Treatment Block Grant (SABG), authorized by the Public Health Service (PHS) Act.

Block grants are administered for a specific set of programs, yet have little restriction on how they are administered and for what purpose. Federal grants for behavioral health are most often block grants, such as the MHBG and SABG, allowing recipients to determine the proper application of funds (Dilger, 2018). SAMHSA also allocates thousands of other grants, notably falling under Projects of Regional and National Significance and Drug-Free Communities Support Programs (USASpending, 2019).

The MHBG was developed in 1981 under the Reagan administration in an effort to give more fiscal freedom to states under new federalism. The MHBG allowed states to disseminate funds based on local needs, as determined by their state mental health agency. In 1982, this block grant was implemented and managed by the National Institute of Mental Health (NIMH) and was transferred to SAMHSA after its inception in 1992 (NASMHPD, 2007). The MHBG is now administered by the Center for Mental Health Services, within the Administration (SAMHSA, 2017a).

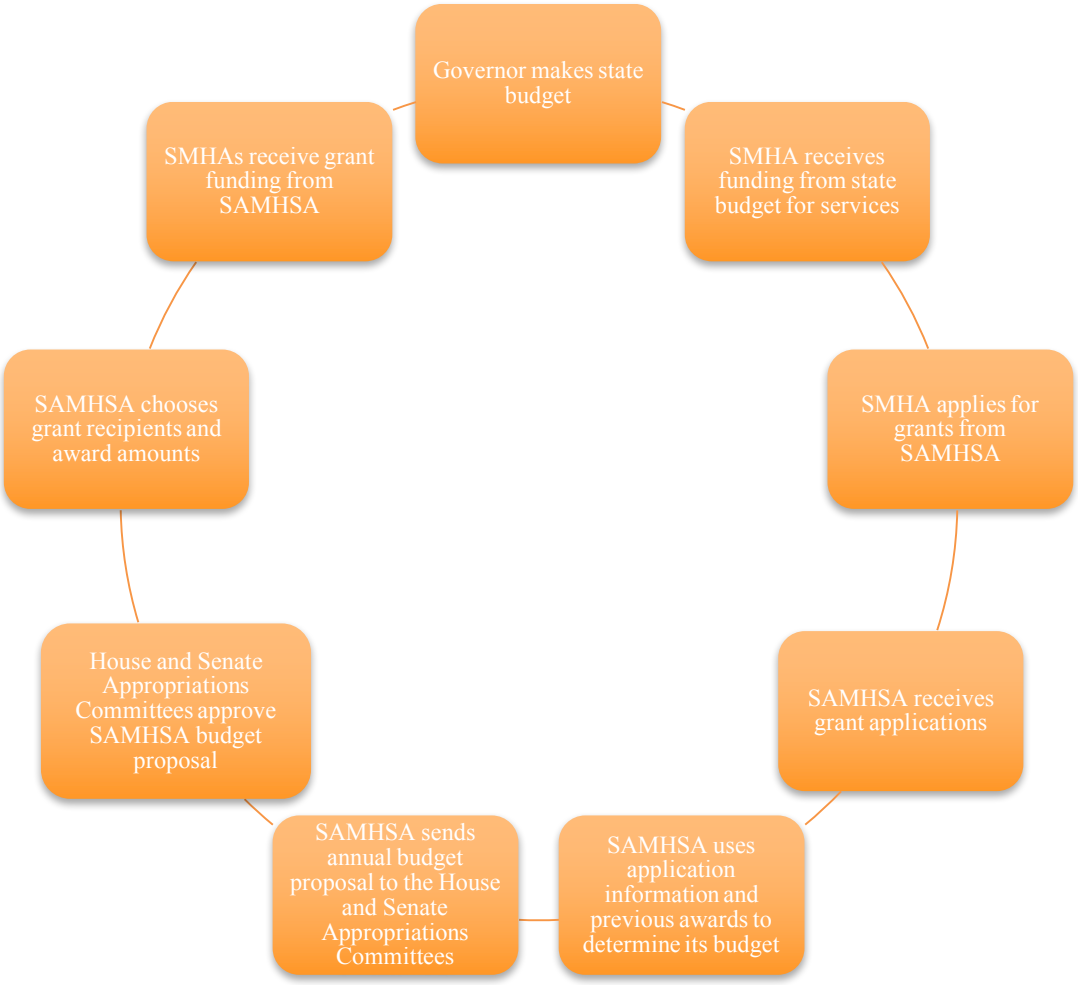
The SABG was established in 1993 under The Alcohol, Drug Abuse and Mental Health Administration Reorganization Act (ADAMHA), amending the PHS Act. The SABG is currently the "largest Federal program dedicated to improving publicly-funded substance abuse prevention and treatment systems" (SAMHSA, Fact Sheet, para. 1). The SABG provides funding to states, territories, and one Indian tribe to combat substance abuse. It is jointly administered by the SAMHSA Center for Substance Abuse Prevention and the Center for Substance Abuse Treatment (SAMHSA, 2017b).

In fiscal year 2018, SAMHSA allotted $722 million in MHBG funding and $1.7 billion in SABG funding (Ashwood et al., 2019). These noncompetitive block grant allotments are calculated based on formulas developed by the agency and are allotted based on a thorough application and reporting process. The three core components of these formulas are recipient population, cost of services, and fiscal capacity. Grants from federal agencies, such as SAMHSA, are the second largest sources of funding for mental health and substance use programs (MHA, 2019).

Each of these grants has a list of targeted populations and service areas as designated by ADAMHA and updated by the Children's Health Act of 2000. The MHBG targeted populations include adults with serious mental illness and children with serious emotional disturbances. The SABG targeted populations include pregnant women and women with dependent children, intravenous drug users, tuberculosis services, early intervention services for HIV/AIDS, and primary prevention services (SAMHSA, 2017a, 2017b).

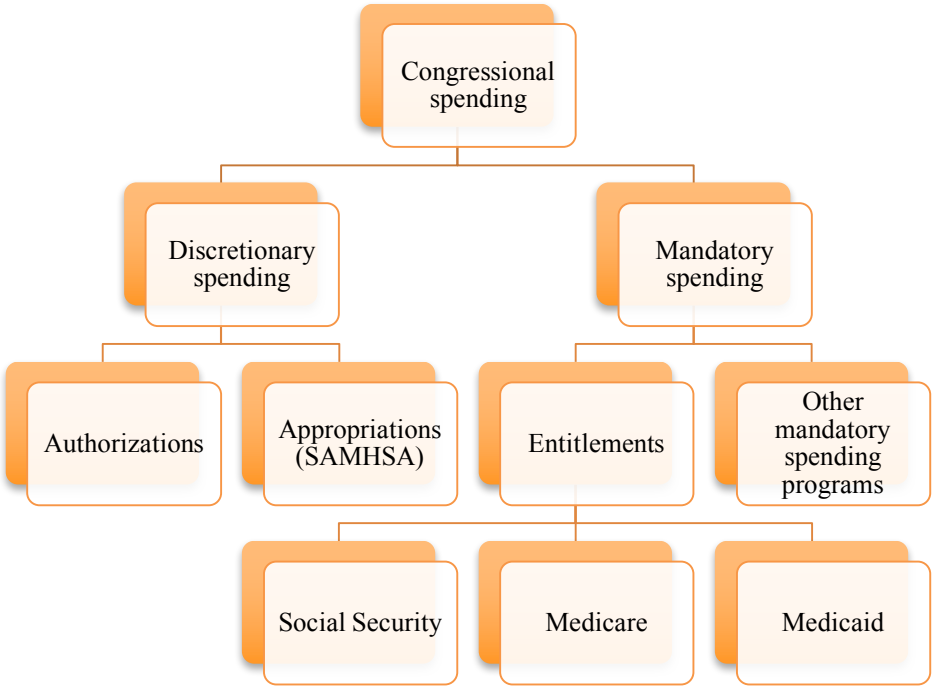
In order to receive funding for their programs, SAMHSA develops an annual budget proposal, presented to the Senate and House Appropriations Committee for approval. The SAMHSA Congressional Justification provides detailed explanations for programs and services included in the annual budget proposal to Congress. This is then used by the Senate and House Appropriations Committee to make funding decisions to SAMHSA. A graphic showing the funding relationships between SAMHSA, state mental health agencies (SMHAs), state governors, and congressional committees can be found in *Figure 1*.

Figure 1: Substance Abuse and Mental Health Agency Funding Flowchart



As seen in *Figure 2*, all congressional spending is divided between discretionary and mandatory spending. Discretionary spending includes appropriations and authorizations. Appropriation spending decisions are made solely by the House and Senate Appropriations Committees with a "top-down" funding structure, meaning the total amount is decided first and programs then compete against each other within these limits. Authorizations are decided under jurisdiction of select legislative committees (Tollestrup, 2016). Annual funding to SAMHSA is categorized as appropriations.

Figure 2: Congressional Spending Flowchart



Mandatory spending includes entitlement programs such as Social Security, Medicaid, and Medicare. One such mandatory spending program, Medicaid, remains the largest single payer source of funding for mental health and substance use services (Sampat et al., 2013).The Patient Protection and Affordable Care Act (ACA) of 2010 allows states to expand their Medicaid program as early as January 1, 2011. Medicaid expansion allows "all children, parents and childless adults who are not entitled to Medicare and who have family incomes up to 133 percent" of the federal poverty line (FPL) to qualify for Medicaid beginning in 2014 (U.S. Senate, p. 3).

Under the ACA, mandates are given to all marketplace health plans in a list of ten Essential Health Benefits. These benefits include ambulance services, emergency services, hospitalization, pregnancy care, mental health and substance abuse services, prescription drugs, rehabilitative services, laboratory services, preventive and chronic illness care, and pediatric services. The ACA expands access to mental health care under these required benefits, continuing the notion that the federal level should ensure individuals are covered.

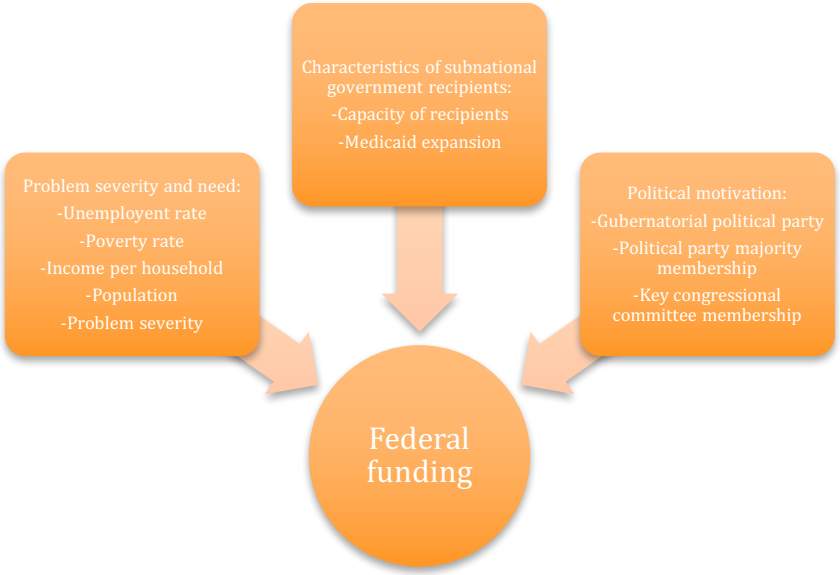
Health agencies such as SAMHSA continue to support behavioral illness abatement by providing grants to states. Unlike Medicaid and Medicare, SAMHSA block grants are not based on reimbursement, providing flexibility for states to allocate their financial resources. Although the MHBG and SABG are based on formulas, they are also based on recipient performance requirements. Recipients of these grants must qualify for funding based on the designated

formula, submit an application, submit annual service plans to support targeted populations, and submit annual reports evaluating the previous year's plan (SAMHSA, 2017a, 2017b).

Literature Review and Theory

In reviewing the relevant literature, I explore determinants of federal grant allocation from a broad perspective, including various sectors and state programs as recipients. Previous literature has discerned patterns in the distribution of federal funding to lower levels of government (Alvarez and Saving, 1997; Atlas et al., 1995; Bickers and Stein, 2000; Hall, 2008; Hall, 2010; Holcombe and Zardhooki, 1981; Hoover and Pecorino, 2003; Howsen and Lile, 2011; Knight, 2002; Larcinese et al., 2013; Levitt and Snyder, 1995; Rich, 1989; Sampat et al., 2013). *Figure 3* represents a compilation of these influencing factors as they relate to federal funding, as based on the literature.

Figure 3: Factors Influencing Federal Funding, as Based on the Literature



The literature suggests three overarching determinant categories of federal funding, or grants allocated to subnational entities. These three categories include problem severity and the need of recipients, characteristics of subnational government recipients, and political motivation. Conceptually, federal funding mechanisms to lower level governments in particular can be viewed through one of two lenses. Public choice theory suggests that funding decisions are made to accommodate the public good. It asserts that the government, and its influential stakeholders, seek to address problems that hinder public welfare. Under this theory, actors in positions of political power will set aside their personal motivations in order to serve the greater good, often through regulation, taxation, and spending (Garret and Sobel, 2003). In opposition to public choice theory, pork barrel theory suggests that actors in positions of power are inclined to serve their constituents. Pork barrel politics occurs when officials are elected based on their sets of

interests and priorities and continue to funnel money to those interests. The theory suggests that government officials and their staff members will spend substantial time addressing certain issues in order to satisfy constituent groups, therefore garnering more votes and beginning a vicious pork barrel cycle (Maskin and Tirole, 2019).

I will review the previous literature as it relates to each factor. Drawing on this body of literature, I propose a theoretical framework, based on need and problem severity, state governmental characteristics, and political motivation, to explain the distribution of federal grants for behavioral health programs.

Problem Severity and Need

As previously mentioned, the federal government provides funding to lower levels of government to assist in addressing local social problems. This funding supports programs implemented at the state and local level to address issues such as unemployment and poverty. States with higher levels of need are often targets of federal funding. The purpose of targeting is to "alleviate fiscal disparities among state and local governments" (Morgan and Shih, 1991, p. 60). Such components of need are strong determinants of federal funding, as evident in the literature (Atlas et al., 1995; Bickers and Stein, 2000; Hall, 2008; Howsen and Lile, 2011; Levitt and Snyder, 1995). The literature shows that low income and high unemployment rates are associated with greater total amounts of federal grants to lower level governments (Levitt and Snyder, 1995). The literature also shows that these measures of need are related to greater federal funding for entitlement programs, such as Medicare and Social Security, and for programs with high variation between localities, such as highway construction and local education grants (Bickers and Stein, 2000; Hall, 2008; Hoover and Pecorino, 2003; Howsen and Lile, 2011; Levit et al., 2013).

For example, Hall (2008) utilizes the Federal Assistance Award Data System (FAADS), a compilation of all annual federal domestic assistance to localities, to examine the determinants of federal grants. He shows that per capita income is related to more total federal grant amounts, total number of grants, and total grant amounts per capita (Hall, 2008). Similarly, Levitt and Snyder (1995) utilize the FAADS, compiled by Bickers and Stein (2000), in their analysis of federal funding allocation to local districts. They find that low income districts receive disproportionately more funding through non-formula programs than formula programs.

Atlas et al. (1995) also find that lower per capita income is related to more federal outlays to local areas. Hoover and Pecorino (2003) find that states with high populations receive less total federal spending than states with low populations, and this translates to high populous states receiving less federal spending per capita. They also find that per capita income is negatively related to federal spending, suggesting that federal outlays are redistributive with regard to income.

Howsen and Lile (2011) analyze the economic factors that determine per capita funding from the American Recovery and Reinvestment Act (ARRA) of 2009. They include poverty and unemployment rates as the economic factors in their regression analysis. Although there is no

relation between poverty and per capita funding from ARRA, they find that higher unemployment rates are related to more per capita funding from ARRA. Likewise, in determining the differences in spending trends at the federal level, Bickers and Stein (2000) use the FAADS to find that congressional entitlement spending for individuals increased as unemployment rates increased, and entitlement spending for individuals decreased as per capita income increased.

Rich (1989) found that the ability of the federal government to allocate funding to distressed cities has increased over time. Geographical areas with high levels of unemployment, high levels of poverty, low average per capita income, and low population levels will be targets of federal funding, specifically through categorical and project grant programs (Aronson and Hilley, 1986).

The severity of public problems and need factors can also include non-socioeconomic characteristics of a state. Sampat et al. (2013) analyze the Research, Condition, and Disease Categorization system (RCDC) to examine the impact of disease deaths and hospitalization on National Institutes of Health (NIH) funding. The RCDC system allows for transparency of disaggregated federal funding and disease reporting into a standardized system. Sampat et al. (2013) find that both measures of disease burden, deaths and hospitalization, were associated with more NIH funding. More disease burden is directly related to more NIH funding, for both targeted and non-targeted grants. This suggests that increased problem severity of an illness is related to more federal funding.

It is important to control for the socioeconomic characteristics when examining the severity of the mental health problem, as the literature proves that greater need generates greater federal funding (Atlas et al., 1995; Bickers and Stein, 2000; Hall, 2008; Hall, 2010; Hollingshead and Redlich, 1958; Howsen and Lile, 2011; Levitt and Snyder, 1995; Linn et al., 1985; Sturm and Gresenz, 2002). Based on public choice theory, I propose that mental health problem severity will lead to greater federal funding. That is, states with more individuals with mental illness, or states with a greater prevalence of mental illness, will likely receive more federal aid for mental health.

Hypothesis 1: A state with more adults living with mental illness receive more funding through grants from SAMHSA.

Government Capacity

While need and problem severity are key components in this way, federal funding first filters through state and local governments to address these issues. With this, characteristics of the recipient government also affect the distribution and acquisition of federal funding (Hall, 2008; Levit et al., 2013; Rich, 1989; Sommers and Gruber, 2017).

An important measure of a state government is its capacity, or its resources available in order to function and apply for funding. Hall (2008) examines the impact of capacity on federal funding to local areas, using grant funding from the FAADS. He measures financial capacity as

county-area own-source revenues per capita, obtained from the Compendium of Government Finances. He measures administrative capacity as local government full-time employment, obtained from the Compendium of Government Employment. Hall (2008) finds that an increase in local government own-source revenues, or financial capacity, results in an increase of total federal grants and number of grants per person. However, an increase in local government own-source revenues results in lower federal grant amounts, likely due to lower demand of local governments for federal funding. In regards to administrative capacity, a greater number of employees in a local government is related to more grant receipts, likely due to more employees that are available to apply for grants and manage existing grants.

Rich (1989) examines the influence of three factors local demand and administrative capacity on federal funding distribution to local areas. He assesses six grant programs administered by the Department of Housing and Urban Development (HUD) and the Economic Development Administration (EDA), including Urban Renewal, Model Cities, Community Development Block Grant (CDBG), Urban Development Action Grants (UDAG), Title I Public Works, and Local Public Works (LPW). He employs a regression analysis and finds that more local demand and capacity, or more local area spending and grant applications, results in more federal funding. He finds that "urban renewal allocations were based on the size and scale of the local projects submitted for HUD approval," and areas with more federal grant applications received higher amounts of federal funding through UDAG (Rich, 1989, p. 208).

In terms of funding for behavioral health, the impact of lower level government capacity is a key governmental characteristic that impacts federal funding. State capacity is the culmination of resources at a government's disposal, most often separated into internal and external capacity. Internal capacity includes staffing and finances, the most common resources available for a state government. External capacity includes outside influences of politics, economics, and social contexts (Hall, 2008). This study focuses on internal capacity, since external capacity is more closely linked to the other two major factors included in the present theory.

The literature shows that economic or financial resources are important in defining capacity for an entity, with more capacity being beneficial (Grodzins, 2000; Hall, 2002). A state with more economic resources has a stronger capacity to apply for federal funding and to match funds from federal programs. Hall (2008) finds that greater average revenue of local governments is related to an increased total number of federal grants and grants per capita. That is, a higher financial capacity within a state or local government is related to more federal outlays allocated to that government. Financial capacity will be represented by SMHA expenditures in this study, with greater annual expenditures signaling a larger state agency. As previously mentioned, the formula used to calculate SAMHSA block grant funding includes three core components of recipient population, cost of services, and fiscal capacity. Grant recipient characteristics are key in determining the allocation of funds. Therefore, I propose:

Hypothesis 2: Greater financial capacity of a SMHA will result in more federal funding through grants from SAMHSA.

During the recession of 2008-2009, millions of people lost employer-based health insurance in the United States, causing approximately 6 million people to enroll in Medicaid (Levit et al., 2013). In a study examining federal spending for behavioral health during the recession, Levit et al. (2013) show that all health spending growth was slowed during the recession, with a slight upturn a few years later. With the expansion of Medicaid in 2014, they expect an increase in federal spending for behavioral health and less pressure for state and local mental health agency spending. This suggests that state Medicaid expansion under the ACA will be related to more federal funding for behavioral health through the Medicaid program.

Sommers and Gruber (2017) analyze the annual State Expenditure Reports by the National Association of State Budget Officers (NASBO) in order to examine the impact of state Medicaid expansion on total spending. Their study implements a quantitative analysis of budget effects across all states, including both Medicaid expansion and non-expansion states, to supplement previous research that merely scratched the surface of expansion effects. The data shows the category of spending and the source of funding through state spending reports. They find that expanding Medicaid coverage is related to more federal spending. More specifically, states with expanded Medicaid have an average spending increase of 11.7 percent, primarily from federal funding.

Medicaid eligibility is dependent on multiple factors, specifically disability status, age, and income (CMS 1). More importantly, Medicaid eligibility is dependent on whether a state has expanded their Medicaid program under the Affordable Care Act. Sommers and Gruber (2017) find evidence that state Medicaid expansion leads to large increases in federal Medicaid spending, but does not alter state spending. Medicaid is also the largest single payer for mental health treatment in the United States (Sampat et al., 2013). In alignment with Levit et al. (2013), state expansion of Medicaid is expected to relieve pressure on state mental health agencies. State Medicaid expansion will result in more federal funding through Medicaid for behavioral health, and less from state mental health agencies and other federal agencies.

Thus it can be expected that states that have adopted the ACA Medicaid expansion will receive more federal funding for behavioral health through Medicaid. This is likely due to crowd out, a phenomenon that occurs when increased government involvement decreases involvement from other actors. The expansion of Medicaid may crowd out grant funding as state behavioral health grant applicants apply for fewer federal grants. It can then be expected that these states with expanded Medicaid programs receive less federal funding for behavioral health through other agencies such as SAMHSA, due to increased support from Medicaid.

Hypothesis 3: A state that has expanded their Medicaid program will receive less federal funding through grants from SAMHSA.

Political Motivation

The literature also describes a third factor of federal benefit distribution, that of political motivation (Alvarez and Saving, 1997; Atlas et al., 1995; Bickers and Stein, 2000; Holcombe and Zardhooki, 1981; Hoover and Pecorino, 2003; Howsen and Lile, 2011; Levitt and Snyder, 1995; Nicholson-Crotty, 2015). Political motivation occurs at all levels of government, with politicians constantly seeking constituent support, votes, re-election, and benefits for the area they represent. This is most evident through pork barrel politics, as elected officials attempt to direct funds and services to their constituents in exchange for votes. Governors and U.S. Senators use pork barrel tactics to drive federal benefits to their state, while district representatives in the House use these tactics to drive federal benefits to their own districts. The political influence of these officials, including their affiliated political party, has been shown to impact the allocation of federal funding to lower levels of government.

With regard to political motivation in this study, I consider the influence of gubernatorial political party, House of Representatives majority delegation, Senate Health, Education, Labor and Pensions Committee representation, and House Ways and Means Committee representation.

Nicholson-Crotty (2015) shows the influence of politics on federal funding through multiple empirical analyses of six unique federal grant programs. He shows that governors receive more federal funds from programs that typically align with their core constituency preferences. Additionally, Nicholson-Crotty (2015) shows that governors use pork barrel spending to support core constituencies. That is, right-leaning governors rely on grants from the Department of Justice (DOJ), as opposed to their left-leaning counterparts that rely on grants from the Department of Health and Human Services (HHS). Likewise, right-leaning governors favor small government and therefore their states apply for and receive less grant money.

Democratic governors and constituencies are more likely to support federal spending in general, including applying for and receiving federal grant funding. In a study examining the role of political parties in the geographic distribution of federal outlays, Levitt and Snyder (1995) utilize the FAADS. They conduct a regression analysis to find the impacts of political factors and demographic factors on the geographic distribution of federal outlays. They find that areas with large Democratic voter populations receive more federal outlays, and this is most prevalent among small federal assistance programs that target less geographically diffuse areas.

In a study comparing outlays between the Democratically controlled 103rd Congress with the Republican controlled 104th Congress, Bickers and Stein (2000) look for the impact of partisan control. Their analysis uses three types of funding from the FAADS, including entitlements, discretionary awards, and obligations for contingent liability programs. They postulate that spending on healthcare, formula funding, and entitlement programs will be higher under Democratic control because Democrats consistently support these programs, since they benefit core constituencies such as elderly and minority groups. Additionally, they show that a Republican control of Congress is related to more outlays for contingent liability programs, mostly issued to for-profit businesses that make up the core Republican constituency.

Focusing on the American Recovery and Reinvestment Act (ARRA) of 2009, Howsen and Lile (2011) find that states with greater electoral votes per capita receive more federal outlays per capita. During a time of Democratic majority in the Senate, House, and presidency, the authors argue that Democrats wish to continue being the majority party and continue to have a Democratic President. Thus, Democrats are more likely to spend based on state electoral votes per capita in an attempt to "maximize votes to retain office" (Howsen and Lile, 2011, p. 264). In alignment with pork barrel theory, elected officials will allocate funds to their political party and constituents in order to remain in political power. Howsen and Lile (2011) also mention the importance of political party in their study because Democrats in Congress are more likely to favor states with Democratic governors.

This last point is important to note for the present study because SAMHSA grant funding combines Congressional and gubernatorial politics. Governors create annual or biannual budgets that state mental health agencies can utilize, in order to apply for and maintain grants from SAMHSA, which are then authorized and supervised by Congress.

In the constant pursuit of re-election, governors are apt to provide resources that benefit their constituents and states. The theory of fiscal federalism and pork barrel spending explain why a governor funnels funds to areas most supported by their core constituents. A Republican state in favor of small government and lower spending will likely have a governor that applies for and receives less federal grants. Nicholson-Crotty (2015) argues that Democratic governors are more likely to prefer grants from such agencies as HHS than the DOJ, due to the core Democratic constituency preference of redistributive grants. Likewise, it is expected that states with Democratic governors are more likely to apply for and receive grants for health care, specifically from the HHS. As SAMHSA exists under the HHS, this hypothesis can be extended further to suggest that states with Democratic governors are more likely to apply for and receive grants for behavioral health.

Hypothesis 4: A state with a Democratic governor will receive more federal funding through grants from SAMHSA.

Members of Congress seek to benefit their constituencies within their districts and states. As opposed to the Senate, the House of Representatives functions with proportional representation. This limits the effect of per capita representation on federal outlays from the House. Though, the House is comprised of more congresspersons, with more potential for pork barrel politics on federal outlays (Denemark, 2000). Pork barrel politics is likely more prevalent in the House than in the Senate, as representatives attempt to satisfy constituents in their districts in order to be re-elected typically every two years (Hall, 2008). Pork barrel politics is two-fold and often one-in-the-same for representatives, with a strong desire to benefit their election districts, yet also satisfy their affiliated political party.

Levitt and Snyder (1995) affirm that the majority party directs funds to their party-controlled districts. They explain this by the "strong party" model, suggesting that the majority

party can target expenditures to their districts more quickly than the minority party, providing them more pork barrel power.

Levitt and Snyder (1995) also look into the pattern of federal domestic outlays from Congress. As previously mentioned, this pattern is disproportionately in favor of Democrats due to a Democratic control over both the House and Senate. This allows Democrats to create a "portfolio" of programs on which to prioritize spending, favoring their constituents.

Bickers and Stein (2000) suggest that there are strong differences in federal funding allocation due to the majority party in Congress. The majority party is the political party with the most representatives, therefore controlling the chamber. A state with more representatives in the majority party will likely have more political power and more influence on the allocation of federal funds. A representative not only attempts to satisfy their local district, but they also attempt to maintain in good standing with their political party, especially if it is the majority party. Thus, a state with more representatives in the House majority party will likely receive more federal outlays due to their increased political influence.

Hypothesis 5: A state with a greater percentage of representatives in the majority party receive more federal funding through grants from SAMHSA.

Holcombe and Zardhooki (1981) examine the economic and political factors that affect federal grant distribution. They find that political influences are stronger than other factors. More specifically, they show that states with a larger percentage of majority party members in the House, and states with members on key congressional committees receive more federal benefits per capita than their counterparts (Holcombe and Zardhooki, 1981, p. 399). In line with Levitt and Snyder (1995), "strong party" politics and pork barrel spending allow Congresspersons to use their political power to benefit their constituents and districts. Despite the presence of formulas in spending and grant funding, there remains party control based on political power (Holcombe and Zardhooki, 1981).

Alvarez and Saving (1997) analyze the impact of congressional committee representation on federal outlays to congressional districts. They use the U.S. Domestic Assistance Programs Database, a system that includes all federal outlays, disaggregated by program. They find that representatives continue to divert funding to their districts, most likely through pork barrel politics, with more new outlays going to Democratic members. Alvarez and Saving (1997) also show that membership on key congressional committees results in more outlays for the members' districts, because that Congresspersons can use their political power to influence the allocation of benefits to their representing districts or states.

Likewise, members of Congress have the opportunity to join various committees on which they may formulate and propose new legislation. In order to streamline constituent goals, pork barrel agendas and personal goals, members of Congress may elect to join specific committees. Previous research has shown that representatives on key congressional committees receive more federal outlays (Holcombe and Zardhooki, 1981; Alvarez and Saving, 1997;

Weingast and Marshall, 1988; Clemens et al., 2015). Congressional committees direct the flow of funds for their policy areas, with membership acting as a major part of the distribution process (Clemens et al., 2015).

This study focuses primarily on healthcare and behavioral healthcare policy. In the Senate, the Health, Education, Labor, and Pensions (HELP) Committee directs all healthcare policy within the upper chamber. In the House, the Ways and Means Committee contains the Health subcommittee, among others, which then directs all healthcare policy within the lower chamber. It can be assumed that membership on these committees will benefit the member representatives with more federal outlays for those programs.

Hypothesis 6: A state with representatives on the congressional committees that make policy decisions related to behavioral health care receive more federal funding through grants from SAMHSA.

Research Design

Dependent Variables

The dependent variables in this study are federal grants to states for behavioral health programs, specifically the Community Mental Health Services Block Grant (MHBG) and the Substance Abuse Prevention and Treatment Block Grant (SABG), both awarded by the Substance Abuse and Mental Health Services Administration (SAMHSA). This data comes from USA Spending and includes all assistance awards from SAMHSA. The data are aggregated by year, by state, and by grant type.

Independent Variables

Based on my theoretical framework, my independent variables measure a state's problem severity in mental health, state government capacity, factors related to political motivation, and other control variables on federal grants.

To measure problem severity, I use the mental health state prevalence estimates from SAMHSA. Mental health state prevalence estimates come from the National Survey on Drug Use and Health (NSDUH), administered by the SAMHSA Center for Behavioral Health Statistics and Quality. The NSDUH is an annual survey conducted across all 50 states and the District of Columbia, including annual average percentages for various drug and health categories. I include mental health state prevalence estimates for any mental illness and serious mental illness for all persons equal to or greater than eighteen years of age, by state, from 2008-2017.

In this research, the measure of state government capacity is based on the size of a state's mental health agency. For the purpose of this study, and its focus on mental health, I quantify capacity as annual expenditures by state mental health agencies. State mental health agency annual expenditures between 2008-2013 are drawn from the National Association of State Mental Health Program Directors Research Institute, Inc. (NRI). State mental health agency

annual expenditures between 2013-2017 are accessed from the Center for Mental Health Services (CMHS) Uniform Reporting System (URS) through SAMHSA. The URS is a collaborative system developed by the federal government, in which state mental health agencies input data regarding mental health client characteristics and expenditures. It is used by state mental health agencies to report annual data, which is then included in the annual MHBG application from SAMHSA.

Medicaid expansion is considered as a dummy variable in this study, with 1 indicating a state has expanded their state Medicaid program and 0 indicating no expansion. State Medicaid expansion data is obtained from "tracking and analysis of state executive activity" by the Kaiser Family Foundation (KFF, 2019).

There are three political variables considered in this study as well. The first is gubernatorial political party, included as a dummy variable, with 1 representing a state as having a Democratic governor, and 0 representing a state as having a non-Democratic governor. This information is obtained from the Council of State Governments: Knowledge Center. The second political variable is majority party membership in the House of Representatives. This is measured by taking the number of a state's delegates in the majority party and dividing it by the number of majority party members in the entire House. Information regarding House party membership is from Congress.gov, operated by the Library of Congress. The final political variable is membership of elected representatives on key congressional committees that are responsible for allocating funding for public health programs. The Senate Health, Education, Labor, and Pensions Committee, alongside the House Ways and Means Committee, are responsible for the direction and proposal of new healthcare policy within their respective chambers. For this study, membership on such committees is quantified as a dummy variable. A state with representation on a key committee receives a 1, while a state without representation on a key committee receives a 0. Congressional committee data is from Congress.gov, maintained by the Library of Congress.

Control Variables

Following the research of Sampat et al. (2013) and Nicholson-Crotty (2015), this study controls for a state's socioeconomic and demographic characteristics. Based on the previous literature (Atlas et al., 1995; Bickers and Stein, 2000; Hall, 2008; Howsen and Lile, 2011; Levitt and Snyder, 1995; Nicholson-Crotty, 2015; Sampat et al, 2013), I choose the control variables of unemployment rate, personal income per capita, state population, poverty rate, and race.

Unemployment rates spiked between 2007-2009, with the loss of over 6 million jobs. The recession, as well as pockets of unemployment in impoverished areas of states, are important to recognize when determining grant allocation, as they may influence the results. Greater levels of unemployment are shown to be related to greater levels of all federal funding (Aronson and Hilley, 1986; Bickers and Stein, 2000; Howsen and Lile, 2011). Unemployment is also a common factor among Medicaid recipients, causing more federal funding to be allocated to these populations. Unemployment rate data is obtained from the U.S. Bureau of Labor Statistics.

This study also controls for personal income. The literature suggests that income is inversely related to all federal funding, with lower income populations receiving more federal support (Atlas et al., 1995; Dixit and Londregan, 1996; Hall, 2008; Holcombe and Zardhooki, 1981; Hoover and Pecorino, 2003; Levitt and Snyder, 1995). Low income is also a requirement for enrollment in Medicaid, with a strong relationship between income dynamics and Medicaid allocation per capita (Larcinese et al., 2013). The results of this study may show geographic favorability for states with high volumes of Medicaid enrollees. Per capita income data is also obtained from the U.S. Department of Commerce.

State population is included as another control in this study, following the work of Hall (2008), Rich (1989), and Nicholson-Crotty (2015). State population has been found to be inversely related to federal funding per capita (Atlas et al., 1995; Hoover and Pecorino, 2003; Larcinese et al., 2013), yet has also been found to have a small or positive effect on federal funding per capita (Holcombe and Zardhooki, 1981; Levitt and Snyder, 1995). To prevent faulty results, population acts as a control variable in this study, and state representation acts as an explanatory variable. State population is obtained from the U.S. Census Bureau.

This study also controls for poverty. The federal government establishes a Federal Poverty Level (FPL) each year, calculated based on the U.S. Census (HHS, 2017). Medicaid eligibility is based on individual or family income, as a percentage of the FPL. Areas with high levels of poverty are thus likely to see high levels of Medicaid enrollment. Areas with high levels of poverty are also likely to be targets of federal funding, primarily through categorical and project grant programs (Aronson and Hilley, 1986). This study controls for poverty rates to account these factors and for the high levels of poverty in urban areas, particularly in large cities (Berube and Frey, 2002). Poverty rate data is also obtained from the U.S. Census Bureau.

In this study, I also account for a state's race characteristics. The majority of impoverished individuals in the U.S. are racial or ethnic minorities, that is, people other than non-Hispanic whites (Proctor et al., 2016). About 61.8 percent of America's poor identify as a racial or ethnic minority, as of 2014 (Proctor et al., 2016). In addition to poverty, minority populations withstand racism and discrimination that result in greater physiological, social, and psychological stress levels (Clark et al, 1999). Such stress levels put minority groups at more of a risk of developing mental disorders, especially depression and anxiety (HHS, 2001). As such, areas with greater populations of racial minorities are likely to have greater prevalence of mental illness. This study controls for race to account for economic and mental health discrepancies. More specifically, this study uses the proportion of a state's population that is black. Race data come from the U.S.Census Bureau.

This study includes data from 2008-2017 to account for the introduction of the Affordable Care Act and the option for states to expand their Medicaid programs. *Table 1* provides the summary statistics of the main variables used in this analysis.

Table 1: Summary Statistics

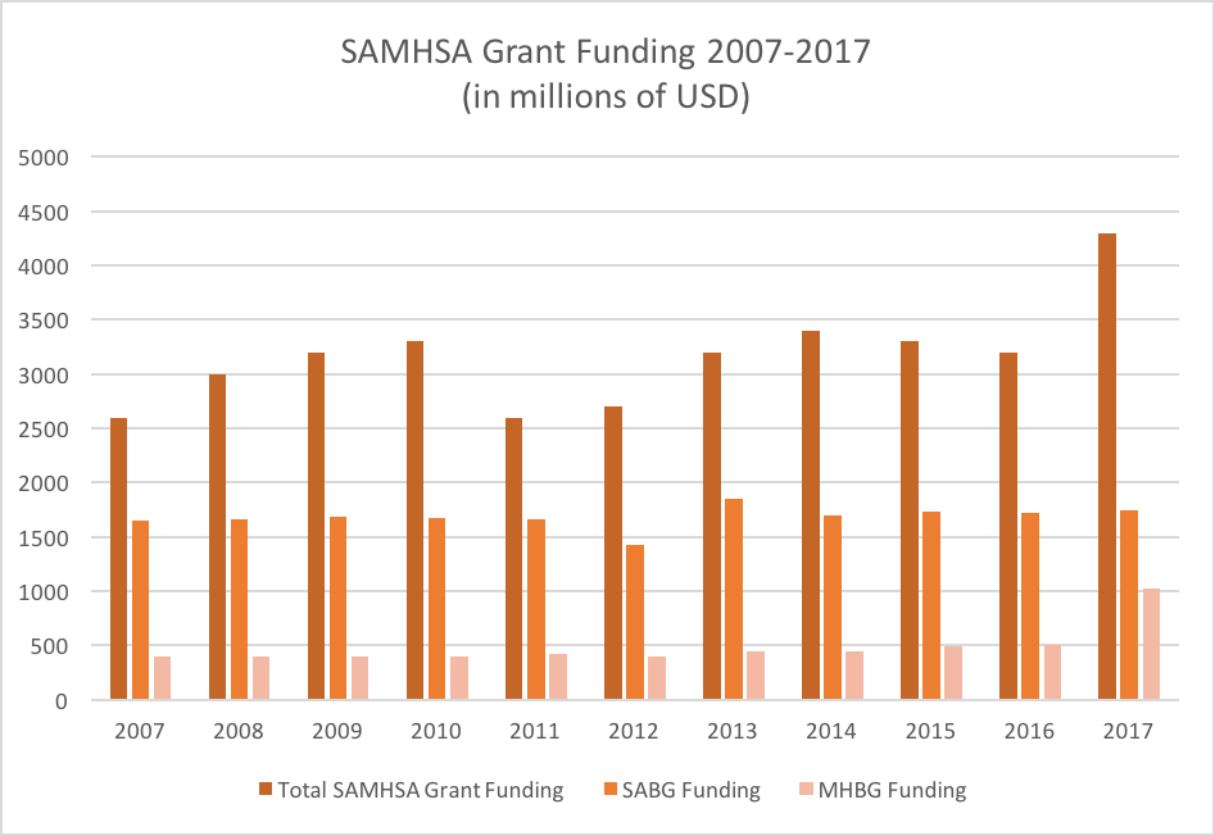
Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
Dependent Variables					
SABG per capita	510	1.853833	.180784	1.115572	2.525315
MHBG per capita	510	.8972659	.1881207	.5228127	1.620071
Total funding per capita	510	2.511439	.3784778	1.931345	4.604829
Independent Variables					
Proportion of state population with any mental illness	510	18.33549	2.047646	11.69068	25.0336
Proportion of state population with serious mental illness	510	4.191289	.6261492	2.591875	6.1775
SMHA spending per capita	510	4.735649	.5988718	3.13286	6.221267
State has a Democratic Governor	500	.426	.4949889	0	1
Proportion of Representatives in House majority party	510	2.008471	2.228708	0	15.45064
State has at least one Representative on House Ways and Means Committee	500	.478	.500016	0	1
State has at least one Senator on Senate Health, Education, Labor and Pensions Committee	500	.432	.4958505	0	1
Unemployment rate	510	6.460784	2.193371	2.4	13.7
Personal income per capita	510	44.17508	8.454947	29.80089	79.98946
Poverty rate	510	13.44902	3.378138	6.4	23.1
Population	510	15.13447	1.032584	13.21045	17.49274
State Medicaid expansion	510	.2372549	.4258175	0	1
Proportion of state population that is black	510	10.4114	10.38751	0	52.01332

Results

Descriptive Statistics

The three types of funding in this study can be directly compared in *Figure 4*. Naturally, total SAMHSA grant funding is greater than the two major block grants. On average, total grant funding equates to about $3164 million annually. SABG consistently accounts for about half of total SAMHSA grant funding, yet slips to approximately 40 percent of total funding in 2017. Annual funding for SABG is about $1681 million on average. MHBG funding hovers around 15 percent of total funding and increases to about 24 percent in 2017. Over the decade span shown in *Figure 4*, MHBG funding is consistently lower than SABG funding. Average MHBG funding is about $484 million annually.

Figure 4: SAMHSA Grant Funding 2007-2017 (in millions of USD)



To provide cross-state comparison of mental illness problem severity, *Table 2* and *Table 3* show the 50 states ranked from highest to lowest prevalence of any mental illness and serious mental illness, respectively. The level of any mental illness ranges widely, from 15.80 to 21.45 percent. A difference of almost six percent shows the disparity between states in terms of mental health. A disparity is also seen in the levels of serious mental illness, yet to a smaller degree. Among the states, serious mental illness ranges from 3.29 to 5.20 percent. This can potentially be explained by the political affiliation of each state. The ten states with the highest levels of mental illness are primarily Republican, for both any mental illness and serious mental illness. The ten

states with the lowest levels of mental illness are either Democratic or battleground states, for both any mental illness and serious mental illness (Jones, 2017). Healthcare, especially behavioral health care, is a central concern for the Democratic party, potentially resulting in lower levels of mental illness.

Table 2: Percentage of State Population with Any Mental Illness (%)

1	Utah	21.4531
2	Oregon	21.21
3	Idaho	21.1198
4	West Virginia	20.7888
5	Washington	20.2981
6	Kentucky	19.9762
7	Rhode Island	19.8372
8	Arkansas	19.749
9	Tennessee	19.6143
10	Indiana	19.5413
11	Oklahoma	19.5171
12	Vermont	19.3935
13	Montana	19.3387
14	Ohio	19.2778
15	New Hampshire	19.0637
16	Alabama	19.0588
17	Wyoming	18.9966
18	Maine	18.7897
19	Massachusetts	18.6272
20	Missouri	18.6103
21	Michigan	18.482
22	Alaska	18.3937
23	Colorado	18.2534
24	New Mexico	18.1723
25	Louisiana	18.172
26	Mississippi	18.15
27	Wisconsin	18.114
28	Nevada	17.9537
29	Delaware	17.9152
30	Minnesota	17.8375
31	Arizona	17.8243
32	New York	17.706
33	Virginia	17.6816
34	Iowa	17.6675
35	North Carolina	17.6002
36	South Carolina	17.5968
37	Pennsylvania	17.5264
38	Nebraska	17.4503
39	Kansas	17.3838
40	Georgia	17.2056
41	California	17.1272
42	Connecticut	17.0205
43	South Dakota	16.8779
44	Florida	16.521
45	Maryland	16.519
46	Hawaii	16.4959
47	North Dakota	16.4021
48	Texas	16.0029
49	Illinois	15.9973
50	New Jersey	15.8012

Table 3: Percentage of State Population with Serious Mental Illness (%)

1	West Virginia	5.19577
2	Arkansas	5.08747
3	Utah	5.03618
4	Idaho	4.91574
5	Vermont	4.82918
6	Kentucky	4.78604
7	Oregon	4.72756
8	Montana	4.72322
9	Indiana	4.70816
10	Ohio	4.65468
11	Washington	4.63833
12	Missouri	4.52946
13	Oklahoma	4.52024
14	New Hampshire	4.50527
15	Rhode Island	4.49716
16	Maine	4.48643
17	Tennessee	4.43224
18	Alabama	4.3984
19	Colorado	4.29817
20	Wyoming	4.29114
21	Michigan	4.28601
22	Mississippi	4.28122
23	Iowa	4.19856
24	North Carolina	4.17084
25	Arizona	4.16811
26	Nevada	4.16769
27	Wisconsin	4.15096
28	Nebraska	4.1292
29	New Mexico	4.12472
30	Alaska	4.11381
31	Minnesota	4.09798
32	Louisiana	4.08693
33	South Carolina	4.07208
34	Massachusetts	4.07208
35	Kansas	4.06905
36	Delaware	3.96566
37	Pennsylvania	3.91453
38	Virginia	3.89576
39	North Dakota	3.88641
40	South Dakota	3.82355
41	Georgia	3.8011
42	New York	3.69673
43	Florida	3.61078
44	Illinois	3.58511
45	Connecticut	3.5291
46	California	3.50616
47	Texas	3.46345
48	New Jersey	3.33769
49	Hawaii	3.32706
50	Maryland	3.29034

Table 4: Community Mental Health Block Grant Per Capita (in USD)

1	Hawaii	$20.11
2	Arizona	$19.30
3	California	$19.30
4	Nevada	$19.17
5	Rhode Island	$19.04
6	Florida	$18.64
7	Oregon	$18.05
8	Georgia	$17.68
9	Washington	$17.43
10	New Jersey	$17.33
11	West Virginia	$17.32
12	Mississippi	$17.28
13	Michigan	$17.23
14	Maryland	$17.01
15	New York	$16.89
16	Arkansas	$16.84
17	Colorado	$16.76
18	Massachusetts	$16.71
19	Alabama	$16.71
20	Kentucky	$16.69
21	Idaho	$16.65
22	South Carolina	$16.64
23	Texas	$16.62
24	Maine	$16.58
25	Tennessee	$16.48
26	Wisconsin	$16.30
27	Montana	$16.17
28	Virginia	$16.11
29	Minnesota	$16.01
30	Vermont	$15.99
31	Connecticut	$15.90
32	New Mexico	$15.79
33	North Carolina	$15.65
34	New Hampshire	$15.64
35	Ohio	$15.49
36	Illinois	$15.48
37	Louisiana	$15.47
38	Missouri	$15.40
39	Pennsylvania	$15.24
40	Indiana	$14.70
41	Oklahoma	$14.67
42	Utah	$14.60
43	Iowa	$14.45
44	Kansas	$14.42
45	Alaska	$14.17
46	South Dakota	$13.88
47	Delaware	$13.87
48	Nebraska	$13.81
49	North Dakota	$13.77
50	Wyoming	$11.22

Table 5: Substance Abuse Prevention and Treatment Block Grant Per Capita (in USD)

1	Vermont	$101.38
2	North Dakota	$90.60
3	Delaware	$81.19
4	Alaska	$80.12
5	Montana	$73.94
6	Rhode Island	$73.78
7	Wyoming	$72.37
8	California	$72.35
9	South Dakota	$71.07
10	Utah	$64.83
11	New York	$63.66
12	Michigan	$62.81
13	Arizona	$62.67
14	Hawaii	$62.36
15	Ohio	$62.00
16	Maryland	$61.28
17	Louisiana	$60.86
18	Massachusetts	$60.33
19	Nevada	$59.36
20	Illinois	$58.62
21	Florida	$58.61
22	Texas	$58.38
23	New Jersey	$58.20
24	Georgia	$57.86
25	Washington	$57.25
26	Virginia	$57.09
27	New Hampshire	$56.26
28	Maine	$56.01
29	Colorado	$55.55
30	Indiana	$53.63
31	Alabama	$53.49
32	Connecticut	$53.29
33	Oregon	$52.43
34	Wisconsin	$52.31
35	Idaho	$52.10
36	Mississippi	$51.68
37	Tennessee	$51.35
38	Kentucky	$51.32
39	West Virginia	$50.96
40	Pennsylvania	$50.68
41	South Carolina	$50.63
42	Minnesota	$50.37
43	Arkansas	$49.89
44	Oklahoma	$49.04
45	New Mexico	$48.78
46	Missouri	$47.79
47	Iowa	$47.40
48	North Carolina	$46.79
49	Kansas	$46.15
50	Nebraska	$45.96

Table 6: Total SAMHSA Grant Funding Per Capita (in USD)

1	Alaska	$322.52
2	Vermont	$251.45
3	Rhode Island	$228.45
4	Montana	$212.87
5	South Dakota	$212.21
6	Delaware	$184.08
7	North Dakota	$176.24
8	New Mexico	$158.41
9	New Hampshire	$155.13
10	Wyoming	$147.98
11	Hawaii	$145.55
12	Massachusetts	$137.48
13	Maine	$135.34
14	Connecticut	$134.72
15	Oklahoma	$129.03
16	West Virginia	$124.30
17	New York	$120.14
18	Maryland	$118.81
19	Nevada	$117.28
20	California	$115.85
21	Colorado	$115.17
22	Oregon	$114.73
23	Arizona	$113.54
24	Idaho	$113.30
25	Kentucky	$113.27
26	Washington	$112.54
27	Utah	$112.09
28	Michigan	$110.68
29	Ohio	$109.75
30	Tennessee	$108.82
31	Louisiana	$108.51
32	Wisconsin	$106.95
33	Illinois	$104.43
34	Iowa	$104.35
35	Florida	$103.87
36	Georgia	$102.46
37	Missouri	$100.45
38	Alabama	$99.85
39	Virginia	$99.60
40	Mississippi	$98.09
41	New Jersey	$97.09
42	Nebraska	$96.34
43	Indiana	$94.69
44	Texas	$92.91
45	South Carolina	$91.74
46	Pennsylvania	$91.61
47	Arkansas	$89.69
48	Minnesota	$87.26
49	Kansas	$82.47
50	North Carolina	$81.60

Table 7: Total State Mental Health Agency Funding Per Capita (in USD)

1	Maine	$4,096.79
2	Alaska	$3,443.06
3	Pennsylvania	$3,178.27
4	Vermont	$3,094.14
5	New York	$2,841.43
6	Arizona	$2,573.64
7	Connecticut	$2,327.38
8	Oregon	$2,142.31
9	Montana	$2,136.81
10	New Jersey	$2,085.55
11	Minnesota	$1,996.37
12	Maryland	$1,978.95
13	California	$1,826.52
14	Iowa	$1,667.21
15	New Hampshire	$1,599.98
16	Hawaii	$1,565.02
17	North Carolina	$1,504.39
18	Michigan	$1,438.24
19	New Mexico	$1,394.93
20	Kansas	$1,379.27
21	Washington	$1,376.00
22	Nevada	$1,351.53
23	Colorado	$1,313.44
24	Wyoming	$1,278.57
25	Massachusetts	$1,259.31
26	Rhode Island	$1,137.55
27	Mississippi	$1,123.71
28	Delaware	$1,116.92
29	Wisconsin	$1,071.81
30	Missouri	$1,041.82
31	Ohio	$1,025.27
32	Virginia	$1,017.17
33	Tennessee	$996.90
34	West Virginia	$963.79
35	North Dakota	$959.12
36	South Dakota	$942.70
37	Indiana	$901.77
38	Nebraska	$841.72
39	Alabama	$825.06
40	Illinois	$803.00
41	Utah	$749.43
42	South Carolina	$689.98
43	Louisiana	$635.63
44	Oklahoma	$628.55
45	Georgia	$596.11
46	Kentucky	$586.86
47	Arkansas	$463.29
48	Idaho	$437.39
49	Texas	$430.83
50	Florida	$419.18

There are a few states that have high levels of mental illness for both any mental illness and serious mental illness, appearing among the highest ten in both tables. Arkansas, Idaho, Indiana, Kentucky, Oregon, Utah, and West Virginia have among the ten highest levels of both any mental illness and serious mental illness, showing that both categories of mental illness are prevalent and related.

Table 6 ranks the states based on the total amount of SAMHSA funding per capita. This accounts for all funding, including the MHBG and SABG, among many other grant programs such as those of regional and national significance. The previously mentioned states, with high levels of both any mental illness and serious mental illness, are not among those receiving the highest amounts of total funding. In regards to all states, the total amount of funding ranges from $81.60 to $322.52 per capita, further emphasizing the gap between states in addressing behavioral health.

Table 7 portrays state mental health agency expenditures per capita, ranked by state. The range of funding varies greatly, from $419.18 to $4096.79 per capita. This gap is likely a result of population differences and behavioral health prioritization within states, as well as state revenue. In relation to levels of mental illness, a few states have among the highest state mental health agency expenditures and among the top levels of any mental illness and serious mental illness. This shows that these states are attempting to combat such high levels of mental illness with state funding. Although, there are a few states that have among the top highest state mental health agency expenditures, yet the lowest levels of any mental illness and serious mental illness. This could suggest that these states are more effective in abating mental illness with state funding.

On the opposite end of the spectrum, there are a few states that have relatively high levels of any mental illness and serious mental illness, but have low levels of state mental health agency expenditures. This suggests that these states do not provide enough financial support from their respective mental health agencies in combating mental illness, thus resulting in higher mental illness prevalence.

Regression Model and Results

I use regression analysis to empirically examine the effect of my hypothesized factors on federal grants allocated to states. Specifically, I construct a pooled cross-sectional time-series data set. The unit of analysis is state-year. I estimate equation 1 as specified using an Ordinary Least Squares model with standard errors clustered at the state level. The model provides R^2 values ranging from 0.395 to 0.894.

$$Y_{st} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + a_1 + \varepsilon_{st} \qquad (1)$$

Three types of funding are included as dependent variables, y_{ST}, including MHBG per capita funding, SABG per capita funding, and total SAMHSA funding received by a state, s, in a given year, t. These three dependent variables are measured as the natural logarithms of the

funding per capita. Problem severity variables are represented by x_1, state government capacity is represented by x_2, political motivation variables are represented by x_3, and control variables are represented by x_4. The variable a_1 denotes year dummies to account for common changes and shocks to all states in a given year. Lastly, ε_{ST} represents the error term.

To examine the correlation between the independent variables, *Table 8* reports the correlation matrix. As expected, *Table* 8 shows that levels of any mental illness have a strong positive correlation with levels of serious mental illness. Among other variables, there are moderate correlations. As suggested in the literature, higher levels of mental illness are related to lower income (Hollingshead and Redlich, 1958; Linn et al., 1985; Sturm and Gresenz, 2002). *Table* 8 shows that levels of any mental illness and serious mental illness are negatively correlated with personal income, meaning lower income is related to higher levels of mental illness.

In terms of negative relationships, levels of any mental illness and serious mental illness are both negatively and weakly related to state mental health agency expenditures. If expenditures were obtained and allocated based on public choice theory, levels of mental illness would be positive and strongly related to state mental health agency expenditures.

Table 8: Correlation Matrix

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}
X_1	1.0000												
X_2	0.8275	1.0000											
X_3	-0.0711	-0.1126	1.0000										
X_4	0.1154	0.0134	0.2371	1.0000									
X_5	-0.2142	-0.2608	-0.1580	-0.0908	1.0000								
X_6	-0.2097	-0.2897	-0.0456	0.0096	0.4780	1.0000							
X_7	0.0543	0.0278	0.1910	0.1142	-0.1211	0.0222	1.0000						
X_8	0.2144	0.0483	-0.0742	0.0684	0.2028	0.1400	-0.0181	1.0000					
X_9	-0.3783	-0.3601	0.4159	0.1194	-0.0115	0.2343	0.1771	-0.4046	1.0000				
X_{10}	0.1346	0.1498	-0.3482	-0.1551	0.2229	-0.0074	-0.1950	0.4519	-0.5930	1.0000			
X_{11}	-0.2009	-0.2670	-0.1499	0.0360	0.7799	0.6079	-0.0399	0.2948	0.0157	0.2420	1.0000		
X_{12}	-0.1446	0.0142	0.2630	0.1161	-0.1074	-0.0277	-0.0243	-0.3625	0.4285	-0.1728	0.0031	1.0000	
X_{13}	-0.1949	-0.2132	-0.2830	-0.1234	0.2429	0.2191	-0.0546	0.2470	-0.1576	0.4155	0.4002	-0.1040	1.0000

Note:
X_1 denotes the proportion of the state population with any mental illness
X_2 denotes the proportion of the state population with serious mental illness
X_3 denotes annual state mental health agency (SMHA) expenditures per capita
X_4 denotes a state with a Democratic governor
X_5 denotes the proportion of representatives from a state in the House majority party
X_6 denotes that a state has at least one Representative on the House Ways and Means Committee
X_7 denotes that a state has at least one Senator on the Senate Health, Education, Labor, and Pensions Committee
X_8 denotes the unemployment rate
X_9 denotes personal income per capita
X_{10} denotes the poverty rate
X_{11} denotes state population
X_{12} denotes a state's Medicaid expansion status
X_{13} denotes the proportion of the state population that is black

Table 9 reports the estimation results based on the regression analysis. Overall, the results point to political motivation as having a strong influence on grant funding.

Table 9: Pooled Cross-Sectional Time-Series Analysis Results

Variable	Column 1 SABG Funding	Column 2 MHBG Funding	Column 3 Total Funding
Proportion of state population with any mental illness	0.00665 (0.0118)	0.00350 (0.00497)	0.0221 (0.0167)
Proportion of state population with serious mental illness	-0.0287 (0.0380)	-0.0259 (0.0232)	-0.0675 (0.0547)
SMHA expenditures per capita	0.0176 (0.0306)	0.0104 (0.0129)	0.0397 (0.0413)
State has a Democratic Governor	-0.00469 (0.0242)	0.0140 (0.0107)	0.0109 (0.0330)
Proportion of Representatives from a state in House majority party	0.0404*** (0.0106)	-0.00590 (0.00389)	0.0464*** (0.0138)
State has at least one Representative on House Ways and Means Committee	0.0106 (0.0323)	-0.00908 (0.0106)	-0.0231 (0.0358)
State has at least one Senator on Senate Health, Education, Labor and Pensions Committee	-0.00670 (0.0281)	-0.0208* (0.0120)	0.0142 (0.0423)
Unemployment rate	0.00929 (0.00967)	0.0133** (0.00499)	0.0324* (0.0174)
Personal income per capita	0.00528 (0.00335)	-0.00204 (0.00132)	0.0121** (0.00457)
Poverty rate	-0.00131 (0.00658)	0.000477 (0.00203)	0.0109 (0.00684)
Population	-0.145*** (0.0349)	0.0305** (0.0138)	-0.270*** (0.0442)
State Medicaid expansion	0.0968** (0.0363)	0.0291 (0.0181)	0.0588 (0.0428)
Proportion of state population that is black	0.00171 (0.00188)	-0.000980 (0.000840)	-0.00333 (0.00204)
Constant	3.578*** (0.569)	0.313 (0.230)	5.350*** (0.612)
Observations	500	500	500
R^2	0.395	0.894	0.521

Note: All specifications include year fixed effects. *** = p < .01, ** = p < .05, * = p < .10
Values in parentheses represent standard errors clustered by state.

In regards to my hypotheses, this study provides mixed results. *Hypothesis 1* states that greater levels of any mental illness and serious mental illness in a state lead to greater grant funding for that state. However, I do not find a statistically significant effect between these variables. This may be due to individuals with serious mental illness receiving financial support from other programs such as Medicaid or the Department of Veterans Affairs. This could also be due to a state injecting more of its own funding into combating mental illness, rather than receiving support from the federal level. Although a central purpose of the MHBG is to support services for individuals with serious mental illness, this result shows an opposite effect. All coefficients for any mental illness and serious mental illness lack statistical significance.

Hypothesis 2 predicts greater state mental health agency financial capacity, measured by annual spending, to be related to greater funding. The results do not show a statistically significant relationship between the variables. Therefore, *Hypothesis 2* is also not supported by my estimation results.

State Medicaid expansion accounts for whether a state has expanded their Medicaid program under the Affordable Care Act. *Hypothesis 3* argues that a state with expanded Medicaid receive less federal funding through SAMHSA-funded programs. The coefficients show that Medicaid expansion is positively related to funding (statistically significant) through the SABG. The estimated coefficients suggest that a state with Medicaid expansion is expected to experience a 10% increase in its receipt of SABG funding. This finding is not consistent with my hypothesis and could be associated with the fact that states with expanded Medicaid programs are likely more politically liberal. Therefore, these states are more likely to apply for and receive grants that combat social issues such as behavioral illness. A state with expanded Medicaid likely holds substance abuse prevention and treatment as a central government value. A state's Medicaid expansion status is therefore related to greater federal SAMHSA grant funding.

As for political factors, my results indicate that the presence of a Democratic governor has no statistically significant effect on a state's receipt of federal mental health program funding. I find that the proportion of Representatives in the House majority party has a positive correlation (statistically significant at one percent level) with the grant a state receives through SABG and total grant awards from SAMHSA, which is consistent with *Hypothesis 5*. Column 1 shows that a one percent increase in house majority representation results in a four percent increase in SABG funding per capita. Column 3 shows that a one percent increase in house majority representation also results in a nearly five percent increase in total SAMHSA funding per capita.

Hypothesis 6 states the importance of congressional committee membership. The first part of this measures whether a state has at least one representative on the Ways and Means Committee. The effect of this variable on SAMHSA funding is not statistically significant. The House Ways and Means Committee is comprised of six subcommittees, including Health, Oversight, Social Security, Select Revenue Measures, Trade, and Worker and Family Support. A

representative on this committee may be a member of a subcommittee unrelated to health, diverting funds for their state to non-health sectors.

The Senate committee variable shows whether a state has at least one Senator on the Health, Education, Labor and Pensions Committee. HELP membership is positively related to Total Funding, as expected, yet is negatively related to the two block grants. Column 2 shows that membership on this committee is related to a decrease of two percent for MHBG funding per capita. Senators on this committee may obtain healthcare funding for their state through programs other than SAMHSA, such as Medicaid. Medicaid remains the largest source of funding for mental health services in the nation. Senators on this committee likely prioritize healthcare and likely obtain funding for mental health through Medicaid, accounting for this decrease in funding through the MHBG.

Aside from political motivation, this study finds multiple control variables to have significance as well. State unemployment rate is positively related with all three types of funding, and the variable's coefficients are statistically significant for MHBG funding and total funding per capita, evident in Column 2 and Column 3. A one percent increase in the unemployment rate is related to a one percent increase in MHBG funding per capita and a three percent increase in total funding per capita. This is consistent with my expectation that greater levels of unemployment are related to greater levels of federal funding.

Personal income per capita has a positive, statistically significant effect for total SAMHSA funding, shown in Column 3. A one-dollar increase in personal income per capita is related to a one percent increase in total funding per capita. This is inconsistent with the previous expectation that personal income would have an inverse relationship with federal funding. Low income is a qualifying factor for Medicaid enrollment, likely driving Medicaid funding to low income areas. Therefore, higher income areas may receive more funding from SAMHSA since they have fewer low income residents qualifying for Medicaid.

I also find that a one percent increase in a state's population is related with a decrease in SABG funding by over 14 percent and a decrease in total funding by over 27 percent, seen in Column 1 and 3, respectively. Although, Column 2 shows that population is positively related to MHBG, with a one percent increase in population resulting in a three percent increase in MHBG funding.

Conclusion and Discussion

This study evaluates the impact of several factors on the allocation of federal SAMHSA grants for mental health and substance use. The results show that states with certain characteristics receive more support through federal grants from SAMHSA. Namely, this study finds that states with a higher proportion of representatives in the House majority, lower participation on the Senate HELP committee, higher unemployment rates, higher income per capita, lower population levels, and enacted Medicaid expansion receive greater levels of grants from SAMHSA.

Mental illness prevalence was hypothesized to be highly correlated with SAMHSA funding. However, the mental illness variables are generally insignificant for predicting federal funding on mental health programs. This finding is likely due to funding from other programs such as Medicaid, Medicare, and through the Department of Veterans Affairs (VA). It may also suggest that the formula utilized by SAMHSA needs revision to include a more accurate measurement of public healthcare needs.

The relationship between state capacity and funding is positive, as expected, but also lacks significance. Perhaps a state that spends more on mental health does not need federal assistance. Considering state capacity per capita, perhaps a less populous state needs less federal support due to the low population. Some states may also prioritize social welfare programs more than others, resulting in a decreased need for federal support due to higher state spending.

The financial capacity of a state mental health agency may boost federal funding because the agency has sufficient capacity to apply for federal grants; however, the MHBG and SABG are not reimbursable grants, meaning the recipient state mental health agency does not need to match funding from these programs.

There are a handful of limitations to this study. The first is regarding the grant data utilized in the analysis. Grant data is obtained from USA Spending and spans from 2007-2017. Although the MHBG was created in 1981, the SABG created in 1993, and SAMHSA itself created in 1992, the grant data available is patchy. There are very few grant awards listed through USA Spending in the early 2000s, despite SAMHSA's distribution of funds beginning almost a decade prior. Because of this gap in grant data, it is likely that the entire grant data set is flawed.

The second weakness in this study is in analyzing the effects of key congressional committee membership on grant allocation. While the House Ways and Means and Senate HELP Committees have influence over state and locality funding through bills and resolutions, they have little influence over agency funding. These two committees affect other grants and programs applied for by SMHAs and localities, therefore affecting funding on a potentially smaller scale. Congresspersons on these two committees can "send" funding to their state or district, but they lack influence over SAMHSA and other federal agency funding. Instead, SAMHSA operates within the Department of Health and Human Services (HHS), which is administered by the Secretary of Health and Human Services within the executive branch. In order to remedy this limitation, this study could have included the effects of membership on the House and Senate Appropriations Committees instead. The House and Senate Appropriations Committees are the groups that receive annual budget proposals from SAMHSA directly and approve or disapprove requests.

The third limitation in this study regards the formula used by SAMHSA to determine block grant funding to states and localities. Although there is a supposed formula to determine these grants, this formula is not explicitly stated anywhere. The SAMHSA website lists a few main factors in the SABG formula, including "total personal income, resident population, total taxable resources, population data for the territories, and a cost of services index comprised of

fair market rents and mean hourly (non-manufacturing) wages" (SAMHSA, Fact Sheet, para. 5). There are other pieces taken into account when allocating these grants though, including details within the application required for funding. Having access to the full formula would allow for a more clear direction of this research, with potentially new variables not analyzed in this study. Not having access to the full formula creates obscurity and leaves room for influence based on political motivation.

Lastly, this study is affected by the potential omitted variable bias. In addition to other variables included in the vaguely described SAMHSA grant formula, there may be other influences on these grants. This study provides a combination of factors affecting grant allocation as based on the literature. While this study focuses on the impact of political factors, among others, there may be omitted variables that have a major impact on grant allocation.

Future research can be conducted to fill the gaps in this study, and to expand on the current findings. Inclusion of more variables might explain the trends in grant allocation and eliminate the omitted variable bias of this study. A more granular study of grants to localities and local explanatory variables may diminish variability. Finally, an inclusion of qualitative methods, such as interviews, may more accurately pinpoint how funding decisions are made at the federal level. Interviews of funding stakeholders may provide information on unobserved factors, especially to supplement an empirical analysis.

The results of this study may provide useful implications for policy makers. First, political motivation is a factor affecting grant allocation for programs aimed at helping unwell populations. Funding for social programs should not be based on politics, especially programs related to health. With politics as a primary factor determining federal funding, many populations may not receive appropriate support for health concerns as needed.

Second, grants for behavioral health are not related to the levels of behavioral illness in a state. Although there are other programs that provide funding to lower level governments for behavioral health, funding from SAMHSA should be related to the populations it serves. Despite the inclusion of population data in block grant formulas, the data does not reflect the problem severity within states. Grant formulas should include the most recent mental illness prevalence data, such as that of the NSDUH.

Similarly, the final lesson for policy makers is the importance of funding mechanisms. SAMHSA has a vaguely stated grant allocation formula, and the results of this study point to political influences on grant allocation as well. Federal funding is important for many sectors and lower level governments and should operate through public choice theory. Federal funding mechanisms should be strongly related to the problems they address, in order to truly combat such social problems through public choice theory. Grant writers and policy makers should consider the populations they are serving when allocating federal funding for social programs.

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