Universal Healthcare Systems and Health Outcomes

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Abstract

In this study, I examined healthcare data and other potentially related variables across 25 countries in Europe and North America, which employ different levels of universal healthcare. The goal was to identify whether healthcare systems in these regions performed better, or more efficiently, when they are more universal in nature. The dependent variables identified are health outcomes and healthcare system efficiency, measured respectively by life expectancy at birth, and life expectancy at birth divided by healthcare spending per capita. Three models were designed to test various hypotheses. The first model strongly suggests that higher healthcare spending per capita is associated with better health outcomes within these countries. The second model found that more universal healthcare systems, in addition to greater healthcare spending, are even more predictive of better health outcomes. That is to say, more universal systems as well as increased spending per person on healthcare, are associated with higher life expectancies, even more so than increased spending alone. The final model could not show above a 95% confidence level, that universal healthcare systems are associated with greater efficiency.

Keywords: Healthcare, Policy, Universalism, Means-Testing

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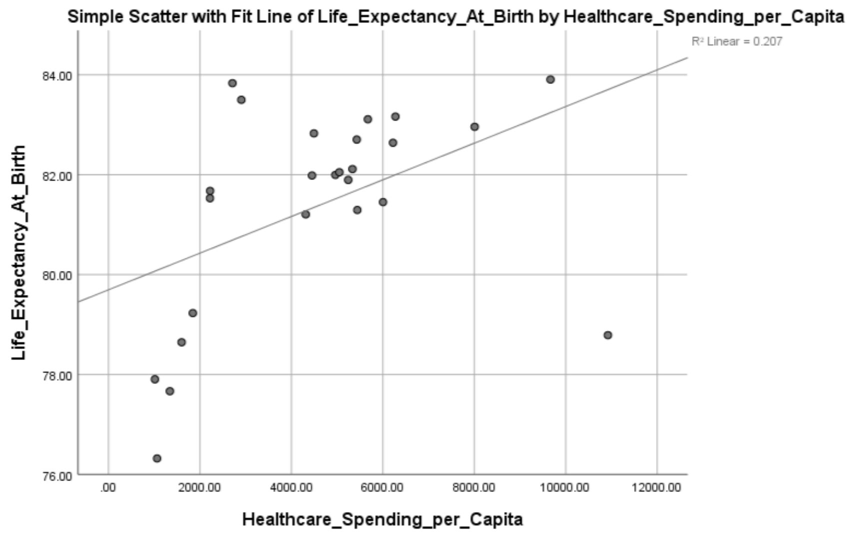
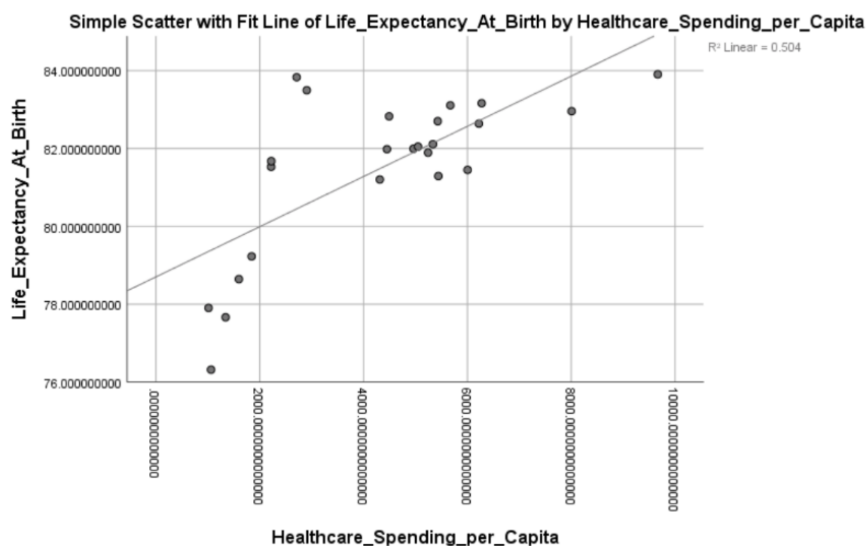
Introduction

A key concern when designing social programs is to determine how many, and which citizens should benefit from it. With limited resources, one may assume a very straightforward tradeoff between allowing more people to benefit from a program and the quality of benefits afforded to each recipient. Similarly, it seems natural that increasing the quality of benefits, or the quantity of recipients, without reducing the other, will increase the total cost of the program. However, examining health outcomes and healthcare expenditures across several nations complicates this assessment. The simplest explanation fails to explain the case of the United States which experiences higher healthcare expenditures, and worse health outcomes than other North American and European countries with similar levels of development. This study will investigate the theory of universalism which seeks to explain disparities among national healthcare systems. I will first examine academic literature and previous research on universalism in healthcare policies before utilizing healthcare data from the United States, Canada, and several European countries. The research questions I will investigate concern the relationship between healthcare spending and health outcomes, the degree to which universalism in healthcare systems explains health outcomes, and the correlation between universalism in a healthcare system and the efficiency of costs related to outcomes.

The Theory of Universalism in Healthcare Policy

When empirically examining the relationship between healthcare expenditures and health outcomes among European and North American countries, there is one identifiable anomaly which requires some explanation, as shown by this graph of life expectancy at birth by healthcare spending per capita. As shown in the first graph below, the United States is both the rightmost point, and one with a very low y value. This identifies the U.S. as having significant healthcare expenditures per capita alongside relatively low life expectancies, deviating noticeably from the rest of the data. The second graph presents the same data while excluding the United States, resulting in a better line of best fit.





When plotting states' healthcare spending per capita and life expectancy, most states follow a relative trend, which seemingly supports our expectations that increased healthcare expenditures per person, results in longer average life spans. While the relationship is not perfectly linear and there are definitely other factors at play, the assumption that more spending achieves better outcomes seems relatively true with one notable exception. The United States, which leads this dataset in healthcare spending by a sizeable margin, also experiences the fifth lowest health outcomes in the dataset, only exceeding those of countries which spend significantly less on healthcare.

The most obvious difference between the United States' healthcare system, and those of most other nations in North America and Europe is the lack of universal public coverage in the United States. Rather the United States' system provides federally funded insurance for elderly and disabled people through one program, very basic plans for those below a certain income level with another, and a closely related program for children in low-income families. While individual states have the option to expand these programs, many choose not to. Although public services cover large numbers of people, the United States still relies primarily on private insurance providers. Many political leaders reject universal policy proposals in the name of reducing taxes and spending or protecting individuals' freedom of choice among private insurers.

Globally, definitions and perceptions of universalism have shifted through the late 20th and early 21st century. "In the 1940s, universal social benefits were typically suggested to be uniform... Later, most countries extended benefits in universal social programs to incorporate... principles of income protection" (Blomqvist & Palme, 2020, p. 115). This change is representative of a shift from an ideal type based in equality, under which all citizens receive the same benefits, to a new ideal rooted in equity under which systems seek to understand the varied needs of individuals and allocate resources based on need instead.

In the broader international community "equity is widely accepted by the medical professions as a fundamental element of quality, and providing equitable care has been included in the 2030 Agenda for Sustainable Development promoted by the United Nations" (Grau, 2021, p. 2). The prioritization of equity over equality informs the healthcare and social policies of most developed countries to strive for universal benefits. "Universalism has been broadly understood as the principle through which social protection and services are offered to all citizens as a matter of social right, rather than through means-testing or systems that are segmented by, for example, occupation or income levels" (Blomqvist & Palme, 2020, p. 115). Such systems lessen the role of private enterprises that seek to provide basic services like healthcare inequitably by prioritizing individuals with more financial resources.

Despite different understandings of exactly what the theory of universalism entails with regard to equality and equity, the concept of universalism in healthcare is not new. Since the early twentieth century, "scholars embraced universality as an essential principle of health policy" (Derickson, 2002). In the face of wealth inequality that was made obvious by financial crises, many individuals and countries began to recognize the value of providing certain basic services to people regardless of wealth. Later, "many others came to justify universal medical care as a corollary of the traditional ideal of all-inclusive public health services." These advocates recognized that cost was the crucial factor discouraging many people from seeking care in life-threatening situations, but many ideas emerged as to the vehicle for achieving equal access.

Regardless of growing popularity throughout the early twentieth century, most of the developed world had yet to create any nationalized, universal system. In many European nations, "the obligation of democratically-elected governments to provide universal basic care was part of re-building citizens' trust in the state after the devastation of World War II" (Bradby, Humphries & Padilla, 2020, p. 1). The political conditions at the end of the war and rising tensions as the Cold War broke out left many citizens questioning if their governments could protect them. Revolutions against colonial powers around the world made democratic leaders more concerned with public opinion. Universal healthcare systems not only addressed the increased demand for healthcare resulting from the war, but generated support and restored trust in the government through this and other universal programs. Still today, "access to universal healthcare is a normative expectation of citizens in European welfare states" (p. 2) and "a universal welfare state retains popular support" throughout the European Union. "By the 1940s, most leaders in the field saw national health insurance as the best way to attain universal access." (Derickson, 2002). Free market healthcare, which withholds care from poorer classes, was widely seen as flawed throughout Europe. Universal systems were widely accepted across Europe as a solution to the failures of free market healthcare. Universal healthcare was generally favored by policymakers, rather than means-tested solutions which only addressed the needs of the neediest groups as strictly defined and tested.

While private insurance made healthcare access more attainable for those who could afford to buy into plans, the inequality between cheaper and expensive plans, as well as costs that prohibited many from purchasing any coverage, kept such programs from achieving equity or universality. Private insurance plans typically group customers into pools by wealth. Policymakers recognized that universality could only be realized if the inequality between private insurance plans was removed by creating a larger pool into which wealthier individuals paid more to achieve equity within the system. All of this was in service of "the final aim... to create the conditions that ensure good health and social care for an entire population through the definition of preventive strategies, promotion of healthy lifestyles, protection from diseases and design of targeted screening strategies" (Grau, 2021, p. 5).

It is important to note that universalism is always imperfect and "should be understood as an ideal type concept, rather than an empirical generalization" (Blomqvist & Palme, 2020, p. 115). Universalism exists on a spectrum, and it is the goal of many societies whose policies are rooted in equity. Countries and individuals may desire to move towards universalism due to moral considerations, increased efficiency, or a combination of both factors. Supporters of universalism and means-testing often disagree on the moral question of which system is fairest, or what constitutes fairness. However, proponents of each system typically claim that their solution is the most cost-effective when regarding the sum of private and public healthcare expenditures and the resultant health outcomes.

Literature Review

A primary criticism of means-tested programs, is the issue of "targeting errors" (Coady & Parker, 2005, p. 2) which take the form of 'errors of omission'... and 'errors of inclusion.'" Means-tested programs must answer the question of who is in enough need to qualify. Setting the bar for eligibility too high means that many on the borderline will still be unable to access healthcare. Additionally, when resources are scarce, setting the bar too low and including more individuals than absolutely necessary, reduces the capacity of the program to provide access to all who are eligible. The United States' system of healthcare under the Affordable Care Act is a means-tested program, which exists opposite from systems that serve entire populations on a spectrum of universalism in healthcare policy. The benefits of universalism are therefore often related to the failures of means-tested programs.

Shortcomings of Means-Tested Healthcare Policies

While scarcity always produces tradeoffs, in a system of universal coverage, the question becomes to what extent should the government raise taxes to provide healthcare to the entire population. When all members of a population are seeing the benefits of a program, increased taxation is more justifiable and amenable. Increased costs of means-tested programs are often unpopular among those who do not directly benefit, leaving the designers of such programs to weigh the costs and benefits of providing greater aid to fewer people, or vice versa.

Another "drawback of means-testing is that people who are entitled to receive welfare benefit may not come forward to claim it" (Hernandez, Pudney & Hancock, 2007). There are many reasons why eligible individuals may fail to apply for benefits including "social stigma... effort or unpleasantness entailed in the claim process... the costs of information gathering and processing and...the unpredictability of the claim outcome" . Some of these factors, particularly those regarding complicated processes for applying, can be mitigated with efforts by the public and other institutions to simplify the process, share information, or help cover fees. Still, little can be done within the confines of a means-tested program, to address social stigma that is largely perpetuated by those who are upset about paying taxes to a program from which they do not benefit. Additionally, means-tested programs cannot sidestep the potential for a rejected application, the possibility of which may be enough to convince an applicant that the rest of these concerns aren't worth the cost without any guaranteed benefit.

Means-tested programs are often touted as cheaper alternatives to universal ones. However, this is not always the case as is demonstrated by the high healthcare expenditures per capita and lack proportionally increased health outcomes under the United States' system. One reason is that "means-tested programmes may be costly to administer since they require a test of eligibility for claimants" (Besley, 1990). Such costs dedicated to handling applications and determining eligibility are unnecessary under universal systems, so more resources can instead be spent on benefits or saved on costs to taxpayers. Many of these costs are passed on in the form of application fees. In addition to such fees, complicated means-tested applications may require documentation and proof of income which can be costly and time-consuming to acquire. Programs could attempt to decrease the costs and burdens of application purposes, however, "means-tested benefit schemes do not, in general, reimburse individuals for the costs that are incurred in obtaining the benefit" (p. 119). Another financial consideration is that many of the costs which means-tested programs claim to save over universal programs, are simply spent instead on privatized programs which are less publicly accountable, operate for-profit, and often times achieve worse outcomes for higher costs than universal programs.

Some policymakers, in the name of equity and limited government influence, suggest an approach that lies between true universalism and means-testing, arguing for "'proportionate universalism' [which suggests that] action must be universal... but with a scale and intensity that is proportionate to the level of disadvantage." (Carey, Crammond, & De Leeuw, 2015). This is often seen as a theoretical attempt to find a middle-ground between universalism and means-testing by providing assistance to all, but scaling that assistance with need, although it has not been widely put into practice. Such a system may try to ensure all individuals have equal access to care that is equitably sourced through limited direct governmental action targeting those who may be unable to afford private insurance plans. This is often construed as a more cost-effective type of policy in terms of public spending. However, any means-tested programs tend to generate unfairness and inevitably become political targets if they exceed the benefits that the cheapest private alternatives offer. For this reason, universalists often prefer policies that provide equal benefits, but are equitably funded through progressive taxation.

Means-testing also creates inevitable disparities, both between poorer and richer citizens, as well as between the poorer citizens that qualify, and those who don't. By providing more equal coverage to all people, "Universal benefits can contribute to unity and stability within nations, [while] the alternative, means-tested systems can exacerbate social divisions" (Walker, 2011, p. 147).

Income and wealth disparities in non-universal systems result in significant inequality of outcomes. One study of life expectancies in the United States found that, "Between 2001 and 2014, life expectancy increased by 2.34 years for men and 2.91 years for women in the top 5% of the income distribution, but by only 0.32 years for men and 0.04 years for women in the bottom 5%" (Chetty et al., 2016). The increasing inequality of health outcomes only compounds onto existing disparities. By 2014, "the gap in life expectancy between the richest 1% and poorest 1% of individuals was 14.6 years." Even targeted means-testing programs have failed to meaningfully address inequalities and tend to exacerbate such disparities between socioeconomic groups. On the other hand, "Universal benefits [are] 'an efficient, economical and socially integrative mechanism' to prevent poverty" (Walker, 2011, p. 149). As a result, universal benefits have also been linked to "greater integration of certain social minorities, and a strengthening of the earning incentives of low-income households" "greater integration of certain social minorities, and a strengthening of the earning incentives of low-income households" (p. 149)

Universal systems are not inherently devoid of individual costs. "Co-payments, excess payments and retention fees apply in some countries dependent upon the Universal delivery model in place." (Burns, Dooley & Armstrong, 2014). Nevertheless, these systems are characterized by the overwhelming majority of costs being covered on the front end through taxes, rather than payments at or after the time of service which predominantly affect those with increased healthcare needs. Such fees are also likely to inhibit uninsured, underinsured, or low-income people from seeking care unless their symptoms are severe enough, often leading to worsened outcomes and death that are preventable with proper care.

However, studies have determined that, under universal systems, social class has significantly less impact on individual health outcomes. One such study in Spain sought to examine the influence of social class on healthcare by investigating "community-acquired pneumonia (CAP) [as] an important cause of morbidity and mortality in elderly people and those of any age with underlying diseases" (Izquierdo et al., 2010). The impact of social class on healthcare is more complex than simply affording care and seeking it when necessary. Many interactions, from exposure to unhealthy environments, to different types of labor and varying degrees of community interaction can all affect levels of health and risk of communicable disease. This study attempted to identify the degree to which social class impacted health outcomes under a universal system to better understand how well such systems address concerns beyond the cost of healthcare. Researchers "measured socioeconomic status using both individual and community data and found no association between social class, educational level or municipality family income and the variables of pneumonia outcomes." These results exceeded expectations for the impact of universal healthcare alone. "The lack of differences in pneumonia outcomes between social classes supports the provision of universal, equitable health care by the [Spanish] public health system." While there are still necessary steps to address equity beyond healthcare costs, it seems that just the existence of universal health coverage makes a significant difference.

The lack of cost efficiency of means-tested healthcare programs is exemplified by the high costs and poor outcome of "United States health policy [which] stands in stark contrast to policies adopted by other high-income countries." (Kimakova, 2010, p. 23). Most of Europe, with the exception of Switzerland, have adopted highly universal programs. Universalism may therefore explain why those countries, when compared to the United States, typically achieve higher life expectancies while spending less on healthcare per capita across the board. It is worth noting that the four countries with lower life expectancies than the U.S. spend under $1,600 per capita on healthcare, compared to $10,921 in the U.S. and are ranked just above the U.S. and Switzerland for universality.

Many proponents of the U.S. system argue that it reduces costs, or at least reduces the influence of government in funding healthcare services. While the latter is generally true, this actually comes at a significantly higher cost paid by citizens to private insurers and directly to healthcare providers from the uninsured and underinsured. This cost is also disproportionate even in the context of the United States' massive GDP. Prior to passing more expansive government programs, "U.S. health care expenditures represented 14% of GDP in 2001 compared to the OECD average of 8%" (Kimakova, 2010, p. 24). In the past two decades, healthcare spending has continued to increase faster than the economy as a whole, with expenditures making up "an all time high of 19.7% [of GDP]" (Statista, 2022).

As already established, increased healthcare expenditures do not inherently produce better results. "In terms of health outcomes, the U.S. typically corresponds to the OECD average, which indicates that this significantly higher level of spending does not translate into health improvement" (Kimakova, 2010, p. 24). Life expectancy within the United States, falls short of most countries with universal healthcare system in spite of significantly higher costs when measured in total, per capita, and proportional to GDP.

Universal policies cover large swaths of a country's population. By definition, means-tested programs only apply to small segments of a population and leave the rest to private programs. "Public health insurance covered only 25.3% of the total U.S. population in 2001 compared to the OECD point average of 93.2% for the same period." Despite significant expansion in government-run healthcare programs in the US in 2010, Medicare, Medicaid, and CHIPs only covered around 83 million people in the United States in 2021 (U.S. Dept of Health and Human Services, 2021) which still accounts for barely 25% of the country's population. Theoretically, the entire United States population has been covered privately or publicly since an individual mandate to purchase health insurance was passed in 2010. However, this rule does little to ensure coverage and leaves many people, on public and private plans alike, underinsured or lacking sufficient coverage for necessary care. Especially when economic downturn, or a lost job can mean a total loss of coverage, "investment in universally accessible and high-quality public health for all citizens regardless of social standing... is not just a matter of ethics or justice-it is also a matter of economic necessity" (Ibrahim, 2009).

The moral justification for universal healthcare coverage is often obscured in accusations of overuse or overconsumption. The primary "moral hazard is conventionally viewed as a demand-side phenomenon in which insurance causes patients to use more care because it reduces the price they have to pay for care" (Kreier, 2019, p. 205). However, this consideration would also assume that less access and higher costs would discourage unnecessary consumption of healthcare resources. Such a phenomenon would drive down prices and decrease expenditures while prices in universal systems would skyrocket due to citizens freely consuming health resources that they may not explicitly need.

This claim however "cannot explain why U.S. per capita health care costs are much higher than those of countries with universal coverage and lower out-of-pocket charges." An alternative proposed by economists to explain these cost disparities, examines a "supply-side moral hazard... [which] occurs when third party payment removes the constraints the demand curve would otherwise exert over the prices providers charge, and the quantity of expensive services they can sell." This consideration suggests that private insurers, who control which healthcare providers and services are covered for their customers, are able to exert significant economic power over healthcare markets to increase profits and costs to consumers. This is one possible explanation as to why nations "with single-payer... multi-payer... and all-payer [policies] spend much less per capita than the United States" because such systems reduce or eliminate the unchecked influence of private insurers on healthcare costs.

Benefits of Universal Healthcare Policy

Advocates of universal healthcare programs maintain that applying universalism to a system can "aid in reducing... inequality as well as stabilize variation in resource use across socio-economic groups providing more efficient and equitable delivery of health care" (Burns, Dooley & Armstrong, 2014). The largest part of most healthcare systems is relatively basic care such as general checkups and maintaining prescriptions, but the benefits of universal healthcare systems are not limited to these key services. "Generally, the basic bundle of health care across countries with Universal entitlement ensures comprehensive medical care for everyone including GP services, access to tertiary care, post-natal care and medications." (Burns, Dooley & Armstrong, 2014). In addition to general medicine, universal systems have found great success in early screening and prevention of illnesses.

One experiment involving data for colorectal cancer (CRC) screenings and patients in Taiwan, found that the implementation of a government funded, large scale screening process "had remarkable effects on the stage shift towards earlier diagnosis" (Lee et al., 2019) among groups who were eligible for the screening program. Early diagnosis is crucial to effectively treating many illnesses like CRC and researchers assert that "in addition to the contribution of universal healthcare that is conducive to improving CRC survival, results of the present study demonstrate a significant reduction in CRC mortality occurring only 10 years after the implementation of a FIT-based screening programme in the eligible subpopulation" (Lee et al., 2019).

The overwhelming consensus of scholarly literature supports the idea that universalism is beneficial when applied to healthcare systems. Not only do such systems promote equity and reduce the impact of wealth and income disparities on health outcomes, they also typically result in better overall health outcomes at lower costs per capita.

Methodology

The first research question I intend to address is a more basic assumption of healthcare policy in general: Does increased healthcare spending result in better health outcomes? Second, I want to examine the impact of varying degrees of universalism in healthcare policy, in addition to healthcare spending, on health outcomes. Finally, I will examine the impact of universalism on healthcare system efficiency. These questions will be investigated based on data gathered for twentyfive cases including the United States, Canada, and twenty-three European countries, with varying degrees of universality. These were selected because of the nature of their healthcare policies being varied along the spectrum of universality and easily classifiable in this aspect. The ease of classification was also true of several nations outside North America and Europe, but these were excluded to limit the impact of other geographic and cultural variables that are similar among the regions included. Therefore, any conclusions drawn from this research cannot responsibly be assumed to apply outside of North America and Europe. Among other factors, these states vary in the size of their economies, the financial resources dedicated to healthcare and the degree to which their healthcare systems embrace universalism.

Models and Dependent Variables

The first model put forward will examine the relationship between healthcare expenditures and health outcomes. The dependent variable in this model will therefore be health outcomes, measured by life expectancy at birth. "Life expectancy at certain ages represents the mean number of years still to be lived by a person who has reached a certain exact age, if subjected throughout the rest of his or her life to the current mortality conditions" (Jaba, Balan & Robu, 2014, p. 109). Therefore, life expectancy at birth accounts for mortality and risks at all ages. A second model will also utilize health outcomes as a dependent variable in examining the degree to which universalism, in addition to healthcare expenditures per capita, can predict life expectancy.

The final model presented will attempt to examine the role that universalism plays in the healthcare system efficiency. The dependent variable in this model, efficiency, is not one whose measure is inherently well defined. Generally, "one health care system may be considered more efficient than another if, for the same level of health care expenditures (costs), it produces either better health outcomes or the same health outcomes with fewer resources." (Elola, Daponte & Navarro, 1995). In an effort to measure this as a numerical value, I divided states' life expectancies (as defined earlier) by their healthcare spending per capita. Healthcare spending per capita is measured as sum of private and public expenditures on healthcare consumption during 2019. The spending amounts are represented in constant 2022 USD. The figure resulting from this division will be referred to here as healthcare spending efficiency. In service of the conceptual definition provided by Elola, Daponte & Navarro (1995), this measure of efficiency increases when life expectancy increases or healthcare expenditures decreases, and spending efficiency decreases when life expectancy decreases or healthcare expenditures increase.

Independent Variables

The primary independent variable in the first model of life expectancy is healthcare expenditures measured as healthcare spending per capita. The methodology of this has already been described. The independent variable which is most crucial to the second and third research questions proposed, is the degree to which a healthcare system adheres to universalism. This factor was determined by first examining a non-ordinal classification scheme described by Rydland et al. (2020), then ranking the definitions of those classifications in a directional manner. The researchers grouped the healthcare systems of several countries into 5 types, labeled as "healthcare system" in the data source.

The first type described by Rydland et al (2020), combines "primarily public funded social insurance systems"(p. 3) with "medium to high levels of financial and human resources, free choice, and access regulation only by cost sharing" (p. 3-4). This describes the systems of France, Germany and Slovenia among others, which range from less than $2,000 to over $6,000 USD in healthcare spending per capita and mostly experience life expectancies between 81 and 83 years, with the exception of Czechia's 79 year life expectancy. Czechia also spends the least on healthcare per capita of this group and the relationship between spending and life expectancy seems straightforward.

Type two refers to entirely "public funded high-performing healthcare systems" (p. 4) like those in Norway, Sweden and Finland, where "the state has a strong role in regulating access and in the payment of medical specialists". This group sees life expectancies in the same range as type one without Czechia, and spends similar amounts as well with the exception of Norway spending $8,000 USD per capita to achieve similar outcomes.

Type three describes the systems of states like the UK, Spain, and Canada which, like type one states, have "Primarily public funded healthcare systems". Types one and three differ primarily in that type three involves "medium level of resources, low levels of out-of-pocket payments, and high level of access regulation and limitation of choice." These states also spend and experience life expectancies in similar ranges to types one and two. The relationship between spending and life expectancy does vary from earlier groups in that Spain and Italy, which are lower spenders among their groups, actually see higher life expectancy than countries with similar systems.

Type four moves further from universalism than the previous three types, involving only "mostly public funded healthcare systems" as well as low levels of financial and human resources, high levels of out-of-pocket spending, strong access regulations." States from this group that are included in this study are Estonia, Hungary, Poland, and Slovakia. These states spend significantly less money on healthcare than previous groups, not exceeding $1,600 USD per capita. They also see experience much lower life expectancies ranging from 76.3 to 78.6 years.

Type five has the most significant variance between members within a group. This type is characterized by "a strong role of private financing and out-of-pocket payments... with high supply and expenditures." Under these systems government involvement is limited and "access is regulated by sharing regulations such as deductibles." The only states included from this group are the United States and Switzerland, which become peculiar data points. Each state spends more on healthcare per capita than any other countries included, between $9,000 and $11,000 USD. However, while Switzerland experiences the highest life expectancy of the dataset just below 84 years, the United States sees one of the lowest, only exceeding type four states.

While these classifications provide useful information, they do not quite suffice as rankings of universalism in healthcare systems and they lack directionality along this metric. The most universal systems of these were classified by Rydland et al. (2020) as a type two, rather than the most universal being at one end of the spectrum opposite the least universal. Therefore, a ranking was developed based on these descriptions provided. Each system classification was ranked in terms of the involvement of the state pursuant to universalism. The resulting directional measure, ranked level of state involvement, ranges from one to four in such a way that higher numbers represent more universal systems. Rydland's type five states were ranked as ones, type fours were ranked as twos, type ones and threes were ranked as threes, and type twos were ranked as twos, as is demonstrated in the dataset. Only this ranking, labeled as "ranked level of state involvement" in the data source, was used to represent universalism in linear regression models, rather than the non-directional classifications labeled as "healthcare system".

In terms of additional independent variables, it is important to note that the data utilized and the predictive models generated will fail to identify all factors involved and will not explain all of the variance in life expectancy and healthcare spending efficiency. "Health of a population is influenced by many factors: biology environment, lifestyles, and the health care system". (Elola, Daponte & Navarro, 1995). Any research that seeks to identify most, or all of the factors that determine life expectancy or healthcare system efficiency must include more independent variables than those presented here. The research questions proposed here seek to determine whether specific independent variables impact life expectancy and healthcare spending efficiency. They do not seek to identify all of the factors which explain changes in these dependent variables. Therefore, additional independent variables are limited to gross domestic product and population density as the most basic factors, the impact of which should be accounted for to ensure that, change in healthcare spending efficiency can be demonstrated beyond that explained by the size of the economy and compactness of the population.

Economic size was first measured by gross domestic product "purchaser's prices [calculated as] the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products" (World Bank, 2022). Similar to health expenditures, the data presented for all countries uses 2019 figures represented in 2022 USD. While the United States' GDP was an outlier more than three standard deviations above the mean, the relevance of the United States in this question discouraged me from throwing out the data entirely. Instead, the measure of GDP was transformed and economic size was instead measured as the natural log of GDP. This ensured that the data remained proportional between states but was scaled down sufficiently to bring the United States' GDP within an acceptable range. However, even with the problem of outliers addressed, models including the natural log of GDP were also less significant than those that excluded it as an independent variable.

Population density was also initially included in the second model which deals with healthcare spending efficiency. In spite of literature that suggests population density may impact health outcomes and spending efficiency, the variable did not predict efficiency in a statistically significant way. This may be due to multiple underlying effects that have opposing impacts on health outcomes. Some researchers emphasize the role of proximity to healthcare services, recognizing that "persons living in... isolated rural areas have fewer... service providers available to them" (Holzer III, Goldsmith & Ciarlo, 2000). Others discuss the role of overcrowding acknowledging that "poor sanitation is an important mechanism by which population density influences... health outcomes" (Hathi, Haque, Pant, Coffey & Spears, 2017).

Without examining the degree to which each of these factors impacts health outcomes and therefore spending efficiency, it is difficult to pinpoint the directionality of any impact. Proximity to services should theoretically increase health outcomes in dense regions, while overcrowding would have the opposite effect. Additional research is needed to determine the extent to which factors of population density, such as overcrowding and proximity to healthcare providers, impacts healthcare spending efficiency. Such research, however, exceeds the scope of this study, and population density was ultimately removed from the model for healthcare spending efficiency due to its impact on said model not being statistically significant.

Control Variables

While no control variables were utilized, efforts were made to remove the impact of the COVID-19 pandemic on data and models. The pandemic, and states varied responses to it, have significantly impacted factors like GDP, healthcare spending, and life expectancies in the cases of many states. While updated data is valuable, there is limited research as to the exact impacts of the pandemic on these factors and, for that reason, all variables are represented with 2019 data to remove significant variations that may otherwise result from COVID-19.

Hypotheses

All data for GDP, life expectancy, population density, and healthcare spending per capita, were retrieved from the World Bank. The hypotheses, which will be tested using SPSS for linear regression modelling, are as follows:

H_1: There is a direct relationship between healthcare expenditures and health outcomes

H_0: There is no relationship between healthcare expenditures and health outcomes

H_2: There is a direct relationship between universalism in healthcare policy and health outcomes

H_0: There is no relationship between universalism in healthcare policy and health outcomes

H_3: There is a direct relationship between universalism in healthcare policy and healthcare spending efficiency
H_0: There is no relationship between universalism in healthcare policy and healthcare spending efficiency

Analysis
The first step in examining this data was identifying any outliers that lay beyond three standard deviations in either direction from the mean. As already mentioned, the United States' GDP was more than three standard deviations above the mean of other states. This was addressed by transforming the data and using the natural log of GDP for each state, rather than GDP itself. The Netherlands' population density also exceeded three standard deviations above the mean and the Netherlands was removed while testing early models. Each of these variables, even after addressing the outliers, were ultimately removed from models as the models including them were not statistically significant. No other outliers existed within this dataset and descriptive statistics for all variables are shown in Table 1 in the appendix.

The next step was to determine if any independent variables were significantly correlated with each other. While some correlations do exist, these will not affect the models produced because correlated variables were not used in conjunction with each other. The only model that utilizes multiple independent variables involves healthcare spending per capita and ranked level of state involvement, which are not correlated in a statistically significant way. It should be noted that healthcare spending per capita and the ranked level of state involvement were not correlated in a statistically significant way, therefore these can be used together without issue in the second model presented. A correlation matrix is provided as Table 2 in the appendix.

Model #1: Health Outcomes ~ Healthcare Expenditures
The first model I designed to address my first research question, sought to identify whether increased healthcare spending per capita

relates to better health outcomes, measured by life expectancy. This model examines the first hypotheses, and the significance level of the F statistic was 0.022.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.386	1	21.386	5.997	.022[b]
	Residual	82.016	23	3.566		
	Total	103.403	24			

a. Dependent Variable: Life_Expectancy_At_Birth

b. Predictors: (Constant), Healthcare_Spending_per_Capita

This model also yielded an adjusted R Square value of 0.172. suggesting that 17.2% of the change in health outcomes among these countries, can be explained by healthcare expenditures. This is relatively low meaning that, while increased healthcare expenditures have a notable, positive impact on health outcomes, there are additional factors at play which are not present in this model. The theory of universalism would suggest that the structure of a system may impact the effectiveness of each dollar spent, per capita, on improving health outcomes, but other factors may also be relevant.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.455[a]	.207	.172	1.888368164453

a. Predictors: (Constant), Healthcare_Spending_per_Capita

b. Dependent Variable: Life_Expectancy_At_Birth

The t statistic for healthcare spending is also statistically significant at 97.8% confidence. This further suggests that healthcare spending is a significant factor in predicting health outcomes. The coefficient for the constant suggests that, with zero dollars spent per capita on healthcare, life expectancy would be approximately 79.696. The relatively large t statistic suggests that there are likely other factors that also account for some of the variation in life expectancy that is currently attributed to the constant. The coefficient for healthcare spending seems to be zero, but is actually simply a very low number because each additional dollar per capita spent on healthcare would only increase life expectancy by a very small percentage of a year.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	79.696	.783		101.836	.000
	Healthcare_Spending_per_Capita	.000	.000	.455	2.449	.022

Because the p value for the F statistic measuring the entire model is 0.022, the model can be trusted with a confidence level of 97.8%. Therefore, the first null hypothesis should be rejected in favor of the first alternative hypothesis that there is a direct relationship between healthcare expenditures and health outcomes.

Model # 2: Health Outcomes ~ Universalism and Healthcare Expenditures

The second model, which seeks to address the second research question, adds another independent variable to the first model, universalism in the healthcare system. This model had an even greater significance level, achieving effectively 100% confidence, exceeding even the first model in this way. The F statistic itself is almost double that of the first model. Each of these statistics suggest that this model, which includes a measure of universalism, is more statistically significant than the first model using healthcare spending alone.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.854	2	26.927	11.956	.000[b]
	Residual	49.548	22	2.252		
	Total	103.403	24			

This model also achieved an adjusted R squared of 0.477, meaning that healthcare expenditures and universalism together can predict 47.7% of the variation in health outcomes among the 25 states included in the dataset. This is a significant improvement from the predictive power of just healthcare expenditures alone, which could only account for 20.7% of the variation in health outcomes.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722[a]	.521	.477	1.500728958818

When examining the coefficients associated with each independent variable in this model, it seems to be the case that both healthcare expenditures and universalism had a roughly equal role in predicting health outcomes. The p values of the t statistics for each of the independent variables are also statistically significant, with 99.9% confidence. The high t statistic for the constant suggests that there are likely other factors accounting for additional variance in health outcomes. However, this model's t statistic is significantly lower than that of the first model, implying that universalism accounts for some amount of the variance that was unaccounted for in the first model. This model suggests that, the base value of life expectancy, with no spending and effectively no state involvement towards universalism, is 75.199 years. The equation then suggests that life expectancy should increase by 1.471 years for each rank increase in state involvement towards universalism, and effectively zero or each additional dollar spent per capita on healthcare for the same reason as was explained alongside the first model. However, this is a less than perfect explanation of the impact of one rank increase because, while the difference in ranks has ordinal direction, the difference between two ranks is not mathematically defined and varies between different subsequent rankings. Since this model has multiple independent variables, the variance inflation factor is also included to detect multicollinearities that may affect the reliability of the model. The VIF for the two independent variables in this model is 1.024. Since this is well below a threshold of 2.0, we can assume that any collinearity between ranked level of state involvement and healthcare spending per capita is negligible.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	75.199	1.338		56.210	.000		
	Ranked_Level_of_State_Involvement	1.471	.387	.567	3.797	.001	.977	1.024
	Healthcare_Spending_per_Capita	.000	.000	.541	3.625	.001	.977	1.024

a. Dependent Variable: Life_Expectancy_At_Birth

Given the confidence level of this model, the second null hypothesis should be rejected in favor of the second alternative hypothesis, that there is a direct relationship between universalism in healthcare policy and health outcomes. Additionally, there is other statistical evidence that this model accounts for a greater amount of the variance in life expectancy than the first model which used healthcare spending per capita as its sole predictor. This means that considering the degree of universalism, in addition to healthcare expenditures, allows us to explain and predict more of the variance in health outcomes than attempting to do so based on healthcare expenditures alone.

Models #3-5: Healthcare Spending Efficiency ~ Universalism
The final set of models, which attempt to address the final research question, differ from the previous models primarily in their dependent variable. These models seek to explain a change in healthcare spending efficiency rather than health outcomes. The third model, which is intended to test the third hypotheses, sought to predict healthcare spending efficiency using only universalism as an independent variable. This model was not significant when calculated using the entire dataset. It achieved a confidence interval of 81%, well below the threshold required to reject the third null hypothesis, meaning that there is no proof of a direct relationship between universalism and healthcare spending efficiency. The low F statistic also suggests that a universalism ranking is barely able to explain healthcare spending efficiency better than a model that did not include such a ranking.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	1.823	.190[b]
	Residual	.008	23	.000		
	Total	.009	24			

This model also achieved an adjusted R squared value of only 0.033, meaning that the independent variable can only explain about 3% of the change in efficiency.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271[a]	.073	.033	.01914

a. Predictors: (Constant), Ranked_Level_of_State_Involvement

b. Dependent Variable: Healthcare_Spending_Efficiency

Although this experiment was unable to identify any relationship between universalism and efficiency, there are several considerations that should be examined and possibly corrected in further research. The first consideration deals with the calculation of healthcare spending efficiency, which was relatively arbitrary. While the equation used did achieve a measure which relates positively to life expectancy and inversely to healthcare spending per capita, it did little to account for the fact that an increase of one unit in life expectancy is undeniably more valuable than the cost of an increase in one unit of spending per capita. It is likely that there is a better method that could be developed to represent efficiency in a more realistic way and future research may benefit from examining new answers to the question of this calculation.

The other consideration revolves around the United States and Switzerland; the only two states to be classified by Rydland as type five healthcare systems, and subsequently ranked one out of four in terms of universalism. While data points for healthcare spending per capita and life expectancy at birth were relatively consistent within other groups with few exceptions, these two states varied significantly in life expectancy despite similar spending rates. Such a disparity suggests that there are likely other factors at play in the way these two states' healthcare systems function with different levels of success for similar levels of spending. While the missing factor or factors may have nothing to do with universalism, this merits rethinking of these models. A more focused, comparative study of these states' healthcare systems may identify crucial factors that are missing from these models. When considering all of the data except the United States (left), then all of the data except Switzerland (right), a model predicting healthcare spending efficiency with the ranking of universalism was statistically significant in both cases, at 96.4% and 95.9% respectively. The unanswered questions about these exclusionary models suggest that the unexplained variance in life expectancy between The United States and Switzerland, whose healthcare systems were categorized together, is worthy of further investigation in order to explain why these countries with similar systems and healthcare expenditures achieved drastically different health outcomes.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	5.011	.036[b]
	Residual	.007	22	.000		
	Total	.009	23			

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	4.729	.041[b]
	Residual	.007	22	.000		
	Total	.009	23			

Conclusion

The implications of this study support the benefits of universalism within a healthcare system. The first model suggested that there is a positive relationship between increased healthcare spending per capita and higher life expectancy. Furthermore, the second model suggested that an increased level of universalism raises life expectancy in addition to the impact of healthcare spending per capita. This study was unable to determine a significant relationship between universalism and the cost efficiency of healthcare systems. Therefore, such a claim requires further investigation to determine whether such a relationship exists. Additionally, even the strongest predictive model of life expectancy using the ranked system type and healthcare spending per capita, was only able to explain 47.7% of the variation in life expectancy within this dataset. Therefore, more research is warranted in order to identify other determinants of life expectancy which can be translated into policy to increase states' life expectancies beyond the impacts of universalism and healthcare spending per capita. Additional research is still needed to determine how well the theory of universalism applies to policy areas beyond healthcare and to regions that are culturally and developmentally different than Europe and North America.

References

Baker, D., & Rho, H. J. (2011). The potential savings to social security from means testing. Center for Economic and Policy Research.

Barber, Fullman, N., Sorensen, R. J. D., Vollset, S. E., Ellingsen, C. L., Savic, M., Skirbekk, V., Hailu, A., Norheim, O. F., Htet, A. S., Neupane, S. P., & Weiderpass, E. (2017). Healthcare Access and Quality Index based on mortality from causes amenable to personal health care in 195 countries and territories, 1990-2015: a novel analysis from the Global Burden of Disease Study 2015. The Lancet (British edition), 390(10091), 231–. https://doi.org/10.1016/S0140-6736(17)30818-8

Besley, T. (1990). Means Testing versus Universal Provision in Poverty Alleviation Programmes. *Economica*, 57(225), 119–129. https://doi.org/10.2307/2554085

Blomqvist, & Palme, J. (2020). Universalism in Welfare Policy: The Swedish Case beyond 1990. *Social Inclusion*, 8(1), 114–. https://doi.org/10.17645/si.v8i1.2511

Bradby, Humphris, R., & Padilla, B. (2020). Universalism, diversity and norms: gratitude, healthcare and welfare chauvinism. *Critical Public Health*, 30(2), 166–. https://doi.org/10.1080/09581596.2018.1522420

Burns, Dooley, B., & Armstrong, J. (2014). Towards universal health care- a review of the basic basket of care associated with universal health care delivery models. Value in Health. https://doi.org/10.1016/j.jval.2014.08.1015

Carey, G., Crammond, B., & De Leeuw, E. (2015). Towards health equity: a framework for the application of proportionate universalism. *International Journal for Equity in Health*, 14(1), 1-8.

Chetty, R., Stepner, M., Abraham, S., Lin, S., Scuderi, B., Turner, N., Bergeron, A., & Cutler, D. (2016). The Association Between Income and Life Expectancy in the United States, 2001-2014. *JAMA*, 315(16), 1750–1766. https://doi.org/10.1001/jama.2016.4226

Coady, D. P., & Parker, S. W. (2005). Program participation under means-testing and self-selection targeting methods (No. 583-2016-39709).

Derickson. (2002). "Health for Three-Thirds of the Nation": Public Health Advocacy of Universal Access to Medical Care in the United States. *American Journal of Public Health* (1971), 92(2), 180–190. https://doi.org/10.2105/AJPH.92.2.180

Elola, J., Daponte, A., & Navarro, V. (1995). Health indicators and the organization of health care systems in western Europe. *American Journal of Public Health*, 85(10), 1397-1401.

Freeman, T., Gesesew, H.A., Bambra, C. et al. (2020) Why do some countries do better or worse in life expectancy relative to income? An analysis of Brazil, Ethiopia, and the United States of America. Int J Equity Health 19, 202. https://doi.org/10.1186/s12939-020-01315-z

Grau. (2021). High-quality universal public healthcare: beneficial for patients and much more. https://doi.org/10.1093/eurjpc/zwab107

Hathi, P., Haque, S., Pant, L., Coffey, D., & Spears, D. (2017). Place and child health: The interaction of population density and sanitation in developing countries. *Demography*, 54(1), 337-360.

Hernandez, M., Pudney, S., & Hancock, R. (2007). The welfare cost of means-testing: Pensioner participation in income support. *Journal of Applied Econometrics*, 22(3), 581-598.

Holzer III, C. E., Goldsmith, H. F., & Ciarlo, J. A. (2000). The availability of health and mental health providers by population density. Journal of the Washington Academy of Sciences, 25-33.

Ibrahim. (2009). Health Inequities: A Global Concern. *American Journal of Public Health* (1971), 99(7), 1162–1162. https://doi.org/10.2105/AJPH.2009.168591

Izquierdo, Oviedo, M., Ruiz, L., Sintes, X., Vera, I., Nebot, M., Bayas Rodríguez, J. M., Carratalà, J., Varona, W., Sousa, D., Celorrio, J. M., Salleras i Sanmartí, L., Domínguez García, À., & Working Group for the Study of the Prevention of CAP in the Elderly. (2010). Influence of socioeconomic status on community-acquired pneumonia outcomes in elderly patients requiring hospitalization: a multicenter observational study. BMC Public Health.

Jaba, E., Balan, C. B., & Robu, I. B. (2014). The relationship between life expectancy at birth and health expenditures estimated by a cross-country and time-series analysis. *Procedia Economics and Finance*, 15, 108-114.

Kimakova. (2010). A Political Economy Model of Health Insurance Policy. *Atlantic Economic Journal*, 38(1), 23–36. https://doi.org/10.1007/s11293-009-9200-z

Kreier. (2019). MORAL HAZARD: It's the Supply Side, Stupid. World Affairs (Washington), 182(2), 205–223. https://doi.org/10.1177/0043820019841436

Lee, Hsu, C.-Y., Chen, S. L.-S., Yen, A. M.-F., Chiu, S. Y.-H., Fann, J. C.-Y., Chuang, S.-L., Hsu, W.-F., Chiang, T.-H., Chiu, H.-M., Wu, M.-S., & Chen, H.-H. (2019). Effects of screening and universal healthcare on long-term colorectal cancer mortality. International Journal of Epidemiology, 48(2), 538–548. https://doi.org/10.1093/ije/dyy182

Rydland, Fjær, E. L., Eikemo, T. A., Huijts, T., Bambra, C., Wendt, C., Kulhánová, I., Martikainen, P., Dibben, C., Kalėdienė, R., Borrell, C., Leinsalu, M., Bopp, M., & Mackenbach, J. P. (2020). Educational inequalities in mortality amenable to healthcare. A comparison of European healthcare systems. PloS One, 15(7). https://doi.org/10.1371/journal.pone.0234135

Samwick, A. A. (2018). Means Testing Federal Health Entitlement Benefits. *Tax Policy and the Economy*, 32(1), 173-210.

Statista. (2022, July 27). *U.S. health expenditure as GDP share 1960-2020*. Published by Statista Research Department, & 27, J. Retrieved November 6, 2022, from https://www.statista.com/statistics/184968/us-health-expenditure-as-percent-of-gdp-since-1960/

U.S. Dept of Health and Human Services. (2021, December 21). *News alert CMS releases latest enrollment figures for Medicare, Medicaid, and Children's Health Insurance Program (CHIP)*. Centers for Medicare & Medicaid Services. Retrieved November 6, 2022, from https://www.cms.gov/newsroom/news-alert/cms-releases-latest-enrollment-figures-medicare-medicaid-and-childrens-health-insurance-program-chip

World Bank. (2022, October 14). *World Bank Open Data*. Data. Retrieved November 6, 2022, from https://data.worldbank.org/

Appendix

Table 1

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean
	Statistic	Statistic	Statistic	Statistic	Statistic
GDP	25	21347714.700000003000	24857.740000000000	21372572.440000000000	92233.72036854776000
Population_Density	25	511	4	515	137.64
Life_Expectancy_At_Birth	25	7.585365800	76.319512200	83.904878000	81.37502439200
Life_Expectancy_Minus_Mean	25	7.585365799999990	-5.055512191999990	2.529853608000000	.000000000000000
Healthcare_Spending_per_Capita	25	9906.9700000000010	1014.0400000000000	10921.0100000000000	4575.758000000001000
Healthcare_Spending_Efficiency	25	.069611904434799	.007214333188963	.076826237623762	.026501088242893
Healthcare_System	25	4	1	5	2.44
lggdp	25	6.76	10.12	16.88	13.0669
Ranked_Level_of_State_Involvement	25	3	1	4	2.84
Valid N (listwise)	25				

Table 2

Correlations

		GDP	Population_Density	Life_Expectancy_At_Birth	Healthcare_Spending_per_Capita	Healthcare_Spending_Efficiency	Healthcare_System	Ranked_Level_of_State_Involvement	lggdp
GDP	Pearson Correlation	1	-.101	-.198	.522**	-.262	.367	-.455*	.660**
	Sig. (2-tailed)		.631	.344	.007	.205	.071	.022	.000
	N	25	25	25	25	25	25	25	25
Population_Density	Pearson Correlation	-.101	1	.111	.019	-.123	-.044	-.068	.206
	Sig. (2-tailed)	.631		.599	.929	.558	.834	.746	.324
	N	25	25	25	25	25	25	25	25
Life_Expectancy_At_Birth	Pearson Correlation	-.198	.111	1	.455*	-.759**	-.431*	.484*	.133
	Sig. (2-tailed)	.344	.599		.022	.000	.032	.014	.525
	N	25	25	25	25	25	25	25	25
Healthcare_Spending_per_Capita	Pearson Correlation	.522**	.019	.455*	1	-.829**	.068	-.153	.404*
	Sig. (2-tailed)	.007	.929	.022		.000	.748	.467	.045
	N	25	25	25	25	25	25	25	25
Healthcare_Spending_Efficiency	Pearson Correlation	-.262	-.123	-.759**	-.829**	1	.322	-.271	-.346
	Sig. (2-tailed)	.205	.558	.000	.000		.116	.190	.090
	N	25	25	25	25	25	25	25	25
Healthcare_System	Pearson Correlation	.367	-.044	-.431*	.068	.322	1	-.700**	.243
	Sig. (2-tailed)	.071	.834	.032	.748	.116		.000	.242
	N	25	25	25	25	25	25	25	25
Ranked_Level_of_State_Involvement	Pearson Correlation	-.455*	-.068	.484*	-.153	-.271	-.700**	1	-.155
	Sig. (2-tailed)	.022	.746	.014	.467	.190	.000		.459
	N	25	25	25	25	25	25	25	25
lggdp	Pearson Correlation	.660**	.206	.133	.404*	-.346	.243	-.155	1
	Sig. (2-tailed)	.000	.324	.525	.045	.090	.242	.459	
	N	25	25	25	25	25	25	25	25

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Summary of Variables

Variable	Measure
Economic Size	Gross domestic product during 2019, measured in USD 2019
Economic Size (Adjusted)	The natural log of gross domestic product during 2019, measured in USD 2019
Population Density	Population density in 2019
Health Outcomes	Life expectancy at birth in 2019
Healthcare Expenditures	Healthcare spending per capita during 2019, measured in USD 2019
Healthcare Spending Efficiency	Life expectancy at birth in 2019 divided by healthcare spending per capita during 2019, measured in USD 2019
Healthcare System Type	Healthcare system types defined by Rydland et, al. (2020)
Universalism in Healthcare System	A ranked ordering of state efforts towards universalism, extrapolated from the definitions of healthcare system types defined by Rydland et, al. (2020)