Prestieesci Research Review

A STUDY TO EXPLORE THE IMPACT OF DEMOGRAPHIC AND ECONOMIC INEQUALITY ON HEALTHCARE UTILISATION AND HEALTH MEASURES AMONG AGEING POPULATIONS

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Abstract

These days, a lot of people are moving to cities very quickly, and demographic problems like population ageing and shrinking have big effects on sustainability. This view makes sense of how the Sustainable Development Goals (SDGs) will interact with urban populations that are getting older and smaller by (a) recognising the possibilities and obstacles that these changes will bring to achieving the SDGs and (b) discussing some new ways to make the most of the prospects and lessen the challenges to reach sustainability. For long-term survival, we believe that a lot of different technology, social, political, and government projects would need to be put in place to make the most of the benefits and lower the risks that come with cities' old and shrinking populations. Accessing tools and knowledge through the Internet is becoming a bigger part of modern life. Using cross-country panel data and the WHO Health Equity Analysis Toolkit (HEAT), this study looks at how Internet availability affects health gaps between people from different social groups. The results show that having access to the Internet makes people healthier on average and lowers health gaps. Using cross-country data from the Global Burden of Disease (GBD) database, this study also looks into the social and economic factors that affect access to health care. Specifically, it has been shown that having access to the Internet makes healthcare much easier to get and lessens the negative effects of differences in wealth on it.

Keywords: Health inequality, Healthcare access, Economic inequality, Ageing populations

INTRODUCTION

The median lifespan at birth worldwide was much lower than 40 years at the start of the 20th century, and the real GDP per capita was less than one-sixth of what it is now.

Numerous key factors propelling economic expansion during this time have been extensively detailed in the economics literature (Götmark, 2018). Similarly, it is widely known how the environment, personal habits, and medical treatment affect health. Nonetheless, there is still a lack of knowledge on the connections between economic development and health. The depiction of this link is complicated by the many economic and social channels through which health influences economic development and the reciprocal causal channel through which economic success fosters improved health. Additionally, factors like institutional advancements and technology advancements support both economic development and population health. Tractable scientific modelling and actual identification are hampered by each of these factors. According to the research, GDP and health have a significant positive relationship. According to a link known as the "Preston curve," nations with greater health tend to earn more than those with lower health (Bricker, 2019). This is by no means new; in fact, the public health movement has its roots in the historical recognition that a country's ability to develop depends in part on the health of its citizens. However, the 2001 release of the WHO's Commission on Macroeconomics and Health report, which showed that health improvement can be viewed as a crucial tactic for income expansion and the reduction of poverty in low- and middle-income countries, has recently provided a fresh impetus for this awareness. In 2005, an assessment of the evidence about the effect of health on the economy in high-income countries, especially the European Union, followed this study. According to the later research, there are compelling economic reasons to invest in health care; larger expenditures in human capital are required if Europe is to become more competitive on the world stage. According to both studies, spending on health care should be seen as both a possible source of economic development and a cost to society. The majority of studies on the connection between health and the economy concentrate on average health, although health is very unequally distributed across society (Nansai, 2020).

BACKGROUND OF THE STUDY

To fill in this important knowledge gap, this study uses a cross-country analysis to look into how the Internet affects health disparities and access to healthcare. First, this study looks at how access to the Internet affects health differences between people from different income groups. More people having access to the Internet has been shown to greatly reduce health gaps and improve health in general. The health gap between rich and poor would narrow if more people could connect to the Internet (Long, 2019). The trend is still there even after many things that might affect health inequality were taken into account in the estimate. Second, this study looks at the social and economic factors that affect people's ability to get health care. We focus on the effects of having access to the Internet, having unequal income, how these two things affect each other and the other factors that were used in the estimate. It has been shown that better Internet connections make it easier to get medical care, even

though bigger differences in wealth make it harder. Also, using the Internet makes the negative effects of differences in wealth on access to health care much smaller (Krick, 2020).

This study adds three important things. First, this study makes it clear how the Internet is linked to serious health effects. We show that having access to the Internet has a big effect on health disparities and healthcare access. Our study suggests that making it easier to get health information and giving more people access to the Internet may be good public health measures. Second, this study gives us a new point of view by looking at how the Internet affects the link between healthcare access and differences in wealth. Our data show how important the Internet is for health outcomes by showing that having access to the Internet lessens the negative effects of differences in wealth on healthcare access. Third, this work helps us learn more about the factors that affect health disparities and healthcare access by using sample data. This study looks into something based on facts by using cross-country group data from more than 20 years and a lot of developed and emerging countries. Thanks to the huge amount of data, we can fully use the changes over time and between countries in the estimates. It can be used as a useful tool for more research into health disparities in the past and how to use current technologies to close public health gaps (Roberts, 2019).

PURPOSE OF THE STUDY

This study's main goal is to investigate how economic and demographic disparities affect older people's health outcomes and healthcare use. To detect discrepancies in access to healthcare and outcomes, this study looks at how characteristics including poverty, education, and access to medical services affect older persons' health measurements. To create focused interventions that improve healthcare accessibility and health outcomes for older adults, the research ultimately seeks to educate politicians and healthcare professionals on the crucial connections between inequality and health.

LITERATURE REVIEW

This essay expands on two literary threads. The first body of research looks at how Internet access affects both health and economic growth (Gozgor, 2021). The second body of scholarship is on healthcare access, health inequalities, and the factors that influence and quantify these issues. The Internet is a worldwide network of linked computers that has transformed commerce and communication methods by making it easy to share and access information from any location. In addition to offering a vast array of goods and services, the Internet also has the strong and universal capacity to

facilitate access to electronic data for a multitude of applications. Technology advancements over the last several decades have led to notable gains in networking speed and a sharp drop in the cost per unit of information processing. Although there are still significant geographical differences, the spread of Internet access has been significantly expedited during the 1990s by this enhanced performance and the corresponding cost savings (Hussain, 2022). Because of the complementarities between dense networks, online services, and a variety of applications, economic activities are becoming more interconnected in the Internet era. Individual customers and small companies have benefited much from the Internet's empowering impact, even while national economies and giant corporations have benefited greatly from the technological revolution. The Internet has a significant impact on health outcomes alongside contributing to economic progress. People now have access to previously unheard-of sources of health information, and the spread of the Internet has significantly decreased informational barriers. Since doctors no longer control the flow of health data among people, the availability of health information online is changing the responsibilities of both patients and medical professionals. It is often known that a startlingly high percentage of Internet users search for health-related information online. Evidence supporting the increasing significance of the Internet as a useful source of health-related information has shown that Internet access is positively connected with healthcare use and, therefore, health outcomes (Patino, 2021).

RESEARCH QUESTIONS

How do demographic and economic inequalities influence healthcare utilization and health outcomes among ageing populations?

Top of Form

Bottom of Form

RESEARCH METHODOLOGY

China's many different organisations were responsible for carrying out the research. The researcher chose a quantitative technique because of the restricted resources and the short amount of time available. Using a random sampling process, every respondent was contacted for the survey. Following this, a sample size of 875 was determined using Rao Soft. Individuals confined to wheelchairs or who were unable to read and write would have the survey questions read aloud by a researcher, who would then record their answers word for word on the survey form. While participants waited to complete their surveys, the researcher would inform them about the project and field any

questions they may have. On occasion, it was asked that people finish and send back questionnaires simultaneously.

Sampling: Research participants filled out questionnaires to provide information for the research. Using the Rao-soft programme, researchers determined that there were 875 people in the research population, so researchers sent out 962 questionnaires. The researchers got 945 back, and they excluded 27 due to incompleteness, so the researchers ended up with a sample size of 918.

Data and Measurement: A questionnaire survey was used as the main source of information for the study (one-to-correspondence or Google-form survey). Two distinct sections of the questionnaire were administered: Both online and offline channels' (A) demographic information, and (B) replies to the factors on a 5-point Likert scale. Secondary data was gathered from a variety of sites, the majority of which were found online.

Statistical Software: SPSS 25 was used for statistical analysis.

Statistical Tools: To get a feel for the data's foundational structure, a descriptive analysis was performed. A descriptive analysis was conducted to comprehend the fundamental characteristics of the data. Validity was tested through factor analysis and ANOVA.

CONCEPTUAL FRAMEWORK

RESULT

Factor Analysis:

The process of verifying the underlying component structure of a set of measurement items was a widely used application of Factor Analysis (FA). The observed variables' scores were believed to be influenced by hidden factors that were not directly visible.

The accuracy analysis (FA) technique was a model-based approach. The primary emphasis of this study was on the construction of causal pathways that connect observable occurrences, latent causes, and measurement inaccuracies. The appropriateness of the data for factor analysis may be assessed by using the Kaiser-Meyer-Olkin (KMO) Method. The adequacy of the sampling for each model variable as well as the overall model was assessed. The statistics quantify the extent of possible common variation across many variables. Typically, data with lower percentages tends to be more suited for factor analysis.

KMO returns integers between zero and one. Sampling was deemed adequate if the KMO value falls within the range of 0.8 to 1.

It is necessary to take remedial action if the KMO is less than 0.6, which indicates that the sampling is inadequate. Use their best discretion; some authors use 0.5 as this, therefore the range is 0.5 to 0.6.

• If the KMO is close to 0, it means that the partial correlations were large compared to the overall correlations. Component analysis is severely hindered by large correlations, to restate.

Kaiser's cutoffs for acceptability are as follows:

A dismal 0.050 to 0.059.

• 0.60 - 0.69 below-average

Typical range for a middle grade: 0.70–0.79.

Having a quality point value between 0.80 and 0.89.

The range from 0.90 to 1.00 is stunning.

Table 1: KMO and Bartlett's

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.987
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

The overall significance of the correlation matrices was further confirmed by using Bartlett's Test of Sphericity. A value of 0.987 was the Kaiser-Meyer-Olkin sampling

adequacy. By using Bartlett's sphericity test, researchers found a p-value of 0.00. A significant test result from Bartlett's sphericity test demonstrated that the correlation matrix was not a correlation matrix.

TEST FOR HYPOTHESIS

Dependent Variable

Healthcare Utilization:

The degree to which people get and make use of healthcare services is referred to as healthcare utilisation. The number of visits to healthcare providers, the kinds of treatments received, and the general accessibility of these services are just a few of the many facets of how individuals interact with the healthcare system. How often a person sees their primary care physician or seeks specialised treatment for certain medical disorders, for example, might be an indicator of their healthcare use. Affordability, accessibility, and the existence of health insurance are further variables that impact healthcare use. Understanding these trends is especially crucial for ageing populations since older folks may have different healthcare demands and access limitations than younger people. Whether and how often people seek medical assistance is also greatly influenced by factors including perceived need for care, cultural views, and health literacy (Tan, 2019). Healthcare utilisation is a crucial measure of differences in access to essential services and general health outcomes when examining the effects of demography and economic inequality. Researchers may better understand the obstacles to equitable access to care and create focused interventions to enhance health outcomes for these vulnerable groups by looking at how different disparities affect healthcare use among ageing populations (Chao, 2019).

INDEPENDENT VARIABLE

Economic Inequality:

Economic inequality refers to the disparities in wealth, income, and resources among individuals or groups within a society (Seibert, 2020). It manifests in various ways, including differences in earnings, access to quality education, healthcare, and overall living conditions. Economic inequality can significantly affect individuals' quality of life and opportunities for upward mobility, creating a cycle where those with fewer resources face greater challenges in achieving better health and well-being. In the context of healthcare, economic inequality can lead to pronounced differences in

access to medical services. Individuals with lower income levels may struggle to afford health insurance or out-of-pocket expenses, leading to delayed or foregone care. This disparity can result in poorer health outcomes, as economically disadvantaged populations often have limited access to preventive care and are more likely to experience chronic health issues. Moreover, economic inequality can influence social determinants of health, such as housing stability, nutrition, and access to clean environments, further exacerbating health disparities. In ageing populations, the effects of economic inequality can be particularly pronounced, as older adults often rely on fixed incomes, making them more vulnerable to economic fluctuations. Understanding the interplay between economic inequality and healthcare utilization is essential for addressing the challenges faced by marginalized groups and for developing effective policies aimed at reducing disparities and improving health outcomes for all (Malik, 2020).

A Relationship between Healthcare Utilization and Economic Inequality

Economic inequality and healthcare use have a complicated and multidimensional connection that reflects how differences in wealth and income affect people's ability to receive healthcare services. Barriers resulting from economic inequality often prevent those with lower incomes from accessing essential medical care. People with lower incomes can find it difficult to pay for health insurance or out-of-pocket expenses, which might result in fewer medical visits and less use of preventative care. The disparity in access to healthcare grows as economic inequality rises. Because they can afford excellent healthcare, routine checkups, and preventative treatments, people in higher income categories often have better health results. On the other hand, those in lower socioeconomic groups could have major challenges including lengthy wait times for public services, a lack of accessible healthcare facilities, and poor transportation alternatives. Economically disadvantaged communities often underutilise necessary medical treatments as a result of these obstacles (Ibbitson, 2019).

Based on the above discussion, the researcher formulated the following hypothesis, which was to analyse the relationship between Healthcare Utilization and Economic Inequality.

“H01: There is no significant relationship between Healthcare Utilization and Economic Inequality.”

“H1: There is a significant relationship between Healthcare Utilization and Economic Inequality.”

Table 2: H_1 ANOVA Test

ANOVA					
Sum					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	39488.620	533	5655.517	965.479	.000
Within Groups	592.770	384	5.356		
Total	40081.390	917			

In this study, the result is significant. The value of F is 965.479, which reaches significance with a p-value of .000 (which is less than the .05 alpha level). This means the "H1: There is a significant relationship between Healthcare Utilization and Economic Inequality." is accepted and the null hypothesis is rejected.

DISCUSSION

Improvements in health are seen as a crucial feature of business growth in general and the transition to sustainable economic growth in particular, notwithstanding some ongoing debate. The idea that health contributes to economic progress in wealthy nations is even more dubious. In fact, a lot of people believe that the high expenses of sophisticated healthcare systems might impede development. Two primary issues are at the heart of the discussion. First off, because the elderly are the main beneficiaries of longevity gains in industrialised nations, longer lifespans might reduce the financial assistance ratio and, therefore, individual consumption levels. A related issue is that the high medical expenses of the elderly are not properly compensated by productivity improvements, which hinders economic development. Second, the incorporation of productive resources by "oversized" healthcare sectors is thought to jeopardise economic performance, since health spending shares in many OECD nations are close to or beyond the 10% threshold. Particular issues include medical advancement as a major cost driver and health insurance as a source of inefficiency. The first part of this section explains how health impacts R&D-based economic development, total investment, and the accumulation of human capital in industrialised nations. Whether ageing inhibits economic development is also clarified by the research, which mostly views advances in health and lifespan as exogenous. An overlapping generations structure, in which people face a constant risk of death, was used in the first attempts to model the effects of an increase in the lifespan on financial performance in developed economies. This model replaces the standardised agent assumption of a standard neoclassical growth model. According to the processes in the neoclassical model of economic growth, a rise

in life expectancy improves collective savings in this context, which in turn raises the economy's growth rate during the steady state transition. However, in the steady state, life expectancy does not affect the long-term growth rate. The underlying neoclassical framework was then replaced with endogenous development theories based on learning-by-doing spillovers. This impact can only be shown statistically in the case of age-dependent mortality, even if it is derived analytically for age-independent mortality. The influence of mortality decreases on the accumulation of assets as a supply-side driver of economic development is the subject of debate so far. If consumption rises with age up to age groups that show notable mortality, this criterion is usually met. They demonstrate that this is true for nations including Finland, Germany, Japan, and the US using data from the National Transfer Accounts. Technological advancement cannot account for economic development in models that see learning-by-doing spillovers or the buildup of human capital as the only factors driving long-term growth. The main process is that as life expectancy rises, more money is saved overall, which pushes the rate of interest in equilibrium down. As a result, the discounted stream of revenue from investing in profitable R&D initiatives is increased. As a result, there is a greater motivation to do R&D, which advances technology and fosters long-term economic development. This effect is often powerful enough to counteract the detrimental impact of declining fertility on the overall accumulation of human capital, such that economic growth increases as fertility declines. To increase the amount of human capital and, thus, the primary input into the R&D industry, health and education must complement one another. As a result, health investments boost long-term economic development.

CONCLUSION

The possibilities and problems that an ageing and declining urban population will provide for long-term sustainability have been critically examined from this perspective, along with some potential new interventions to take advantage of the chances and lessen the difficulties. The implementation of various SDGs will be significantly impacted by this demographic shift, according to our research. Some of the most promising new interventions include (a) improvements in health care and accessibility, (b) enhancements to the extent and design of green and public spaces, and (c) social inclusion through co-production of urban knowledge and social participation. It will be necessary to combine context-specific policy and practice programs to both take advantage of the opportunities and lessen the challenges presented by population ageing and decreasing for sustainability, given that the underlying mechanisms vary greatly between SDG targets and geographical contexts. Urgent action is required given the rapidity of these changes, particularly as official figures may understate the rate of population decline and ageing. The clearest evidence for the positive relationship between health and economic development is found in less

developed, post-demographic transition nations, as well as with the health of women and children. Improvements in these populations' health lead to lower fertility, more female labour force involvement, and more investment in human capital. When combined, these factors have the potential to start a long-term economic development trajectory and provide a demographic dividend. Therefore, specific measures to enhance the health of mothers and children, such as iodine supplementation or human papillomavirus vaccine, are probably going to have a significant positive impact on long-term development, well-being, and economic growth. For developed economies, the situation becomes a little more complicated. Although there are significant productivity benefits when the burden of chronic illnesses is reduced, older people, who are less likely to be economically engaged, benefit disproportionately from these improvements. The specific architecture of social security programs and the possibly counterbalancing effects of a prolonged working life will determine how much longer life expectancy subsequently translates into more capital development and productivity growth. The negative effects of unnecessary healthcare expenditure on economic performance are the subject of further worries. Even if there is a need to improve the overall effectiveness of healthcare systems, economic growth is not a reliable indicator of how desirable health and health care are. The advantages of even little health gains in industrialised countries probably exceed the costs of lost consumption. These beneficial effects are further enhanced by the rise in medical innovation brought about by the extensive supply of healthcare. Ultimately, rather than the amount of money spent on health care, the main issue should be the growing disparity in the distribution of health benefits.

REFERENCES

1. Brondizio, E. S., Settele, J., Díaz, S. & Ngo, H. T. (eds) Global Assessment Report On Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES Secretariat, 2019).
2. Chen T, Gozgor G, Koo CK. Pandemics and income inequality: what do the data tell for the globalization era? Front Public Health. (2021) 9: 674729. doi: 10.3389/fpubh.2021.674729
3. Nansai, K., Fry, J., Malik, A., Takayanagi, W. & Kondo, N. Resources, Conservation & recycling carbon footprint of Japanese health care services from 2011 to 2015. Resour. Conserv. Recycle. 152, 104525 (2020).
4. Nansai, K., Fry, J., Malik, A., Takayanagi, W. & Kondo, N. Resources, Conservation & recycling carbon footprint of Japanese health care services from 2011 to 2015. Resour. Conserv. Recycle. 152, 104525 (2020).

5. Ohashi, H., Fukasawa, K., Ariga, T., Matsui, T. & Hijioka, Y. High-resolution national land use scenarios under a shrinking population in Japan. Trans. GIS 23, 786–804 (2019).
6. Tan, Z., Lau, K. K.-L., Roberts, A. C., Chao, S. T.-Y. & Ng, E. Designing urban green spaces for older adults in Asian cities. Int. J. Environ. Res. Public Health 16, 4423 (2019).
7. Vollset, S. E. et al. Fertility, mortality, migration, and population scenarios for 195 countries and territories from 2017 to 2100: a forecasting analysis for the Global Burden of Disease Study. LANCET 396, 1285–1306 (2020).
8. Wei, T., Zhu, Q. & Glomsrød, S. How will demographic characteristics of the labour force matter for the global economy and carbon dioxide emissions? Ecol. Econ. 147, 197–207 (2018).
9. Zheng L, Elhai JD, Miao M, Wang Y, Wang Y, Gan, Y. Health-related fake news during the COVID-19 pandemic: perceived trust and information search. Internet Res. (2022) 32:768–89. doi: 10.1108/INTR-11-2020-0624.