



Analyzing the determinants of healthcare utilization inequity in the Vietnam economy

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ABSTRACT

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Ensuring the fair and equal availability of healthcare services is an important goal that every country strives for, including the Vietnam economy. The Vietnamese government has launched various strategies to reach healthcare utilization equity since 2008. This study aims to comprehensively investigate healthcare utilization equity trends and their determinants in Vietnam, employing the Concentration Index (CI) approach and decomposed analysis of data from the Vietnam Household Living Standards Survey (VHLSS) conducted in both 2008 and 2018. A decline in the CI from 0.0654 (2008) to 0.0400 (2018), indicating a lower level of healthcare utilization inequality, is evidence of the findings' significant improvements in healthcare access equity in Vietnam. Furthermore, the main determinants of inequality in healthcare utilization including gender (male), age, marital status (single or married), residency (urban), race (majority), education (under primary and primary certificates), household size, and insurance, have been empirically found. In order to mitigate healthcare access inequality, the current universal health insurance policy is workable. However, certain limitations within insurance programs, such as restricted coverage and provider networks, need to be addressed to ensure a comprehensive and accessible policy for all.

Contribution/Originality: This research identifies the trend of healthcare utilization equity in Vietnam during 2008-2018 and its determinants. While previous studies on this issue in Vietnam have emphasized the importance of healthcare utilization equity, this study provides quantitative evidence of health-related policy effectiveness and health care access disparity determinants.

1. INTRODUCTION

Governments around the world consistently strive to achieve equitable access to healthcare services as a crucial objective in their pursuit of sustainable development goals (SDGs). However, similar to other developing nations, Vietnam faces challenges in achieving equal access to healthcare services due to various social factors (Vuong, La, Nguyen, Nguyen, & Ho, 2021; Wagstaff & Doorslaer, 2003). These disparities in healthcare access often exacerbate inequalities in other aspects of life, negatively impacting economic growth and overall social development (Belak, Bobakova, Geckova, van Dijk, & Reijneveld, 2020; Häkkinen, 1991; Sabbir, 2022; Uddin, Akhtar, Masud, & Hye,

2020). Equity in health is a multifaceted concept that varies in interpretation depending on the specific context. It encompasses vertical and horizontal equity (Dei & Sebastian, 2018). Horizontal equity emphasizes the principle that individuals with equal healthcare needs should receive fair treatment. On the contrary, vertical equity recognizes that individuals with differing circumstances should be treated differently in order to achieve the highest level of fairness. Considering varying income levels may lead to different contributions in order to promote fairness in healthcare access.

The Vietnamese government has put much effort into its health care insurance policy to reach universal health coverage, a strategy to reduce the disparity in healthcare utilization. During the period from 2008 to 2018, the Vietnamese government implemented various initiatives to broaden the reach of social health insurance. One significant development took place in 2008 when the Vietnamese National Assembly passed Law No. 25/2008/QH12, introducing significant changes to the health insurance system. This law broadened the eligibility criteria for health insurance enrollment, encompassing a total of 25 categories of individuals. Out of these categories, 20 were compulsory for enrollment, while the remaining five were optional. Starting in 2010, there was an upward adjustment in the premium rate for health insurance. Depending on the type of coverage the insured person had, the rate increased from 3% to 4.5% of monthly salaries, base salaries, retirement pensions, or unemployment benefits. Moreover, from January 1, 2011, senior citizens aged 80 or older became eligible for free health insurance coverage under the senior healthcare program. In 2014, the National Assembly introduced further amendments to the health insurance law, bringing changes to the regulations governing the health insurance system. One notable amendment was the introduction of a family-based scheme for non-poor informal sector employees and their families (Le, Blizzard, Si, Giang, & Neil, 2020). However, it is worth mentioning that the objective of the government's public policy on universal health coverage is not only to provide healthcare services but also to reduce healthcare disparities among the population owing to varying healthcare needs and expectations (Goland, Hoa, & Mälqvist, 2012; Mälqvist, Thi Phuong Hoa, Thanh Liem, Thorson, & Thomsen, 2013). However, temporal analysis that coincides with policy changes (i.e., new health insurance law in 2008, health insurance premium rate adjustment in 2010, health insurance coverage for senior citizens in 2011, amended health insurance law in 2014) during the period of 2008–2018 has not been conducted, though it is useful to assess the effectiveness of health care reform policy (Xu et al., 2023). Moreover, geographical disparity, vulnerable populations, and socio-economic contributions to health care utilization inequality are essential for policymakers to address the key drivers (Ilinca, Di Giorgio, Salari, & Chuma, 2019). Therefore, monitoring the improvement of healthcare utilization inequality and its determinants is crucial for assessing progress as well as policy implications to achieve universal health coverage (Gilmour et al., 2022). This is also the objective of this study.

This study makes contributions in both theoretical and practical aspects across four dimensions. Firstly, it applies concentration curves (CC) and CI to assess the enhancement in health care utilization using VHLSS data from 2008 and 2018. Secondly, it employs CI decomposition to investigate the effect of regressors on health care utilization disparities in the regressand. The third part shows real-world evidence of big improvements in healthcare access equity in Vietnam. This is shown by the CI going down from 0.0654 (2008) to 0.0400 (2018), which means there is less inequality in healthcare use. Finally, the research's findings show that regressors like age, gender (male), marital status (single and married), education, ethnicity, and insurance can explain the disparities in healthcare access in Vietnam. The results emphasize the impact of government policies, such as universal health insurance, on addressing healthcare access inequalities. However, limitations within insurance programs, such as restricted coverage and provider networks, need to be addressed to ensure comprehensive and accessible healthcare for all.

The paper is structured as follows: Section 1 provides a review of the literature that elucidates the model and methodology utilized in Section 2. Section 3 outlines the empirical findings, delving into the health care utilization inequality in Vietnam. This section also reports and discusses the results of the equality improvement in 2018

compared to 2008 and the decomposition analysis of healthcare inequality. Finally, the paper concludes with a final section that presents the conclusion.

2. LITERATURE REVIEW

Numerous researchers have expressed interest and conducted studies regarding the equity in utilization of health services by individuals. It is considered unfair when two individuals with equal medical care needs receive disparate treatment, favoring the wealthier individual (Culyer & Wagstaff, 1993; Wagstaff & Van Doorslaer, 2000). Misu and Alam (2023) found that inequality in healthcare among women in Pakistan and Bangladesh is based on variations in wealth and education. The analysis of the most recent Demographic Health Surveys (DHS) datasets from 2017 to 2018 in Bangladesh and Pakistan shows the concentration curves for all maternal healthcare utilization indicators fall below the equality line, which indicates that the inequality was predominantly centered among women with higher levels of education and those belonging to the wealthiest quintile. A similar finding has been reported by Zhang, Meng, and Chen (2023) when employing data from the 2018 China Health and Retirement Longitudinal Study survey to ascertain the factors influencing healthcare utilization patterns among the elderly with the application of a non-linear probit regression model rooted in the Andersen Health Care Utilization Model. The concentration index (CI) and a decomposition analysis of the CI have also been used to look at differences in how the elderly use healthcare and find out what causes those differences. Income played a substantial role in driving these disparities. Specifically, income contributed significantly to the observed inequalities in outpatient and inpatient service utilization, accounting for 73.68% of the disparity in outpatient service and 85.20% in inpatient service utilization. Research by Macinko and Lima-Costa (2012) in Brazil also reveals disparities that favor people with higher incomes. Furthermore, their study highlighted evidence of inequities in health insurance coverage, education, and the geographical location of healthcare users. Zhou et al. (2011) argued that inequalities in accessing health services are not solely limited to income levels or health insurance coverage but also extend to disparities based on place of residence. The study emphasizes the significance of addressing inequities in healthcare utilization, particularly in rural areas. Misu and Alam (2023) confirmed the significant rural-urban inequality in both Pakistan and Bangladesh.

The issue of inequality in inpatient and outpatient medical care in Vietnam has received considerable attention from numerous authors. Dang (2018) conducted an analysis using a regression discontinuity design to investigate the causal relationship between education and health care utilization. The findings indicated a statistically significant impact of education on health care utilization. He also confirmed the favor of high-income individuals in outpatient medical care with a positive concentration index (0.024) by analyzing the data obtained from the VHLSS conducted in 2010. The impact, however, varied in direction depending on the specific types of health care services analyzed. Notably, the study revealed that education led to an increase in inpatient utilization within the public health sector, but it also resulted in a decrease in outpatient utilization in both the public and private health sectors (Dang, 2018). Additionally, the study identified that the likelihood of having health insurance and income played crucial roles in connecting education with healthcare utilization in Vietnam.

Minh et al. (2016) have reported similar findings regarding the impact of education. Furthermore, Nguyen, King, Edwards, and Dunne (2022) conducted a comprehensive examination of the barriers faced by ethnic minorities in Vietnam when accessing maternal health care. The study utilized qualitative methods, including in-depth interviews and physical access audits, to explore the challenges faced by these women. The findings highlighted attitudinal barriers, limited specialized information, long waiting times, confusing referral systems, financial hardships, and inadequate infrastructure as significant obstacles to accessing maternal healthcare. Palmer (2014) has taken advantage of a unique situation in Vietnam to analyze the influence of social health insurance on health utilization of specific population groups. The findings reveal significant disparities in both utilization of services and protection against financial risks among different groups. Retired individuals demonstrated higher utilization rates and were particularly vulnerable to healthcare-related poverty. In general, inequality in health care utilization in previous

research highlights disparities based on income, insurance, gender, age group, place of residence, and illness conditions (Culyer & Wagstaff, 1993; Macinko & Lima-Costa, 2012; Zhou et al., 2011).

3. METHODOLOGY

We utilized data from two waves of Vietnam's Household Living Standard Survey (VHLSS), specifically the surveys conducted in 2008 and 2018 by the General Statistical Office of Vietnam. The year 2008 was a significant milestone as it marked the introduction of healthcare reform policies, commencing with Law No. 25/2008/QH12, which expanded compulsory health insurance compared to the previous social health insurance scheme established in 1993. Additionally, in 2010, there was an increase in the health insurance premium rate from 3% to 4.5% of monthly salaries. Subsequently, in 2011, senior citizens became eligible for free health insurance coverage. The inclusion of children under six years old and vulnerable groups into the health insurance scheme occurred in 2014 through an amendment to the health insurance law. To ensure a consistent temporal analysis of healthcare utilization equity following the series of universal health coverage initiatives launched by the government since 2008, we selected VHLSS datasets from 2008 and 2018 for our study. Although data from the 2020 wave is available, it was excluded due to potential outliers caused by the impact of the COVID-19 pandemic.

In our research, we applied a CI approach to assess the socioeconomic status disparities in healthcare utilization. The application of this approach is of paramount importance when assessing disparities in healthcare utilization based on socioeconomic status (Wagstaff, Paci, & Van Doorslaer, 1991). This quantitative tool offers a structured and objective means of measuring the extent of these disparities. By calculating the CI, it becomes feasible to pinpoint specific socioeconomic groups that bear a disproportionate burden of unequal healthcare access and utilization. This information is invaluable for policymakers, healthcare providers, and researchers as it aids in the efficient allocation of resources and the development of targeted interventions to bridge these disparities. Moreover, the CI enables the evaluation of the effectiveness of healthcare policies and interventions in mitigating socioeconomic disparities. It serves as a yardstick for assessing whether these measures are achieving their intended objectives, particularly in terms of enhancing access to healthcare services among disadvantaged populations.

Furthermore, the CI's standardized nature makes it conducive to international comparisons, facilitating the exchange of best practices and cross-country learning. Continuously monitoring the CI over time is instrumental in tracking progress in reducing healthcare disparities. This is especially critical in the pursuit of universal health coverage and ensuring that healthcare services are accessible to all, regardless of their socioeconomic status. In sum, the CI approach is a vital tool in the arsenal of policymakers and researchers working towards more equitable healthcare systems, underpinning evidence-based decision-making and equitable healthcare access for all members of society. This methodology, widely employed in existing studies, allows us to measure and quantify the extent of inequality in accessing healthcare services (D'Uva, Jones, & Van Doorslaer, 2009). The confidence interval (CI) comes from a CC, which shows how the total number of people who use health care over time is distributed compared to the total population, ranked by their income (Vásquez, Paraje, & Estay, 2013). By graphically presenting the CC, a pattern of the healthcare utilization dispersion among diverse socioeconomic cohorts has been illustrated. The CC integrates two pivotal parameters, namely the extent of healthcare utilization, and the indicator for an individual's socioeconomic status. This analytical approach facilitates an exploration into how the allocation of healthcare utilization diverges amidst various wealth statuses, thereby yielding insightful implications concerning the imbalances of socioeconomic nature inherent in the access to and use of healthcare services. To evaluate the discrepancies in healthcare access based upon individual wealth, a comparison is conducted between the CC and the "line of equality." The line of equality embodies a hypothetical scenario characterized by the absence of differentials in healthcare utilization attributed to socioeconomic position. In the ideal situation, the CC would perfectly align with the 45-degree line of equality. However, in reality, if individuals with lower economic status experience higher or lower levels of health care utilization compared to those with higher economic status, the CC will deviate from the equality line. If the

health care utilization variable exhibits higher values among individuals with lower economic status, the CC will be positioned above the equality line. Conversely, if the health care utilization variable shows lower values among individuals with lower economic status, the CC will fall below the 45-degree line. The extent of the deviation of the CC from the 45-degree line indicates the extent of disparity in the health care utilization distribution. A greater distance between the CC and the 45-degree line signifies a more pronounced inequality in health care utilization across different economic circumstances (Vásquez et al., 2013). By examining this relationship, we can gain a sound knowledge of the socioeconomic disparities in health care use and the magnitude of their unequal distribution among different groups.

The CI serves as a robust quantitative gauge of the disparities in health care access and socioeconomic differentials. This evaluative index is derived through the meticulous computation of the area demarcated between the CC and the reference 45-degree line, subsequently amplified twofold (Wagstaff, O'Donnell, Van Doorslaer, & Lindelow, 2007). The theoretical construct of the equality line furnishes a hypothetical equilibrium where socioeconomic strata exert no influence on health care access. Notably, the alignment of the CC in perfect concordance with this theoretical line culminates in a CI of zero. The interpretive spectrum of the CI embraces both negative and positive values, each bearing distinctive implications. We can clearly see that people with higher incomes use health care more than people with lower incomes when the CI is negative. This means that the CC is above the 45-degree line. Evidently, this configuration bespeaks an inequity that demonstrably favors those endowed with greater economic resources. A positive CI, on the other hand, means that the CC curve falls below the 45-degree line, which means that most health care use is concentrated among people from lower-income group. This configuration, in turn, emblemizes an inequity favoring individuals characterized by relatively diminished economic resources. Spanning the numeric range from -1 to +1, the CI encapsulates the entirely potential socioeconomic disparities of health care utilization. There are big differences between groups of people, and this metric is very important because it not only counts these differences, but it also gives a full and detailed picture of the size and direction of the bigger picture of socioeconomic differences that affect health care access (Do, Oh, & Lee, 2014).

The technique of decomposition analysis of the CI is a method used to assess the individual contribution of regressors like gender, income, educational attainment, age, and other household characteristics to observed inequalities in the outcome variable, such as health care utilization. Meanwhile, a deeper insight into the factors that drive health care utilization disparities can be explored. Decompositional analysis enables us to disentangle the factors contributing to observed inequalities in healthcare utilization. By scrutinizing individual regressors such as gender, income, educational attainment, age, and various household characteristics, we can investigate precisely which of these factors exert the most significant influence on the disparities (Costa-Font & Gil, 2008). This level of granularity is critical for policymakers and healthcare professionals because it allows them to identify the specific determinants that require targeted interventions. For instance, it can reveal whether gender-based discrimination, income disparities, or educational gaps are the primary drivers of unequal access to healthcare services. Armed with this knowledge, stakeholders can design and implement more effective and tailored policies and programs to address the root causes of inequality.

Central to this analysis is the contribution of each individual variable, which is determined by examining two key points: the impact coefficient of the given variable on health and the level of inequality associated with that particular variable. The impact coefficients refer to how strongly the regressors influence the regressand. The extent of inequality associated with a specific regressor indicates the level of disparity or variation caused by this predictor. Through the combination of these dual facets, the technique of decomposition analysis is useful in separately measuring the impact of various regressors on the regression model. Therefore, a wide consent of the research community has been reached when employing this technique to identify key areas for intervention and develop targeted strategies to reduce inequalities and improve health care utilization for vulnerable groups of the population (Wagstaff, Van Doorslaer, & Watanabe, 2003).

It's essential to assume a linear function in the process of decomposing healthcare inequality because the CI

calculation relies on predictions obtained from the regression model (Wagstaff et al., 2003). The decomposition analysis is initiated with the expression of a linear function that relates the regressand to other regressors. This step is the foundation for the subsequent algorithm and explores how different regressors contribute to healthcare inequality, allowing for a more comprehensive understanding of the drivers of inequality in the healthcare system. This is given as Equation 1:

$$y = a + \sum_k \beta_k x_k + \varepsilon \quad (1)$$

The vector of explanatory variables x includes income, insurance, gender, age group, marital status, education, place of residence, household sizes, and race in the VHLSS. Based on the methodology proposed by Wagstaff et al. (2003), Equation 2 presents the conventional CI for the regressand y :

$$CI(y) = \sum_k (\beta_k \bar{x}_k / \mu) c_k + GC_\varepsilon / \mu \quad (2)$$

In Equation 2, $CI(y)$ represents the standard CI for the regressand y . The term \bar{x}_k refers to the mean of x_k , while c_k represents the concentration index for x_k . Additionally, μ denotes the mean of y , and GC_ε represents the generalized concentration index for the error term (ε). Equation 2 allows for two important observations: (i) the first term on the right-hand side (RHS) demonstrates a weighted sum of the concentration indices of k regressions, with x_k serving as the weight and η_k as the elasticity of y with respect to x_k ($\eta_k = \beta_k x_k / \mu$). (ii) The second term on the RHS accounts for the residual element, which represents the portion of inequality that the regressors are unable to explain. To determine the statistical significance of the concentration indices and perform the decomposition analysis, the study employed the bootstrapping technique with a robustness of standard errors (Doorslaer, Koolman, & Jones, 2004).

4. RESULTS AND DISCUSION

The study draws upon data from the VHLSS, which was conducted in both 2008 and 2018. VHLSS is the nationwide survey conducted every two years with a multi-stage stratified random sample design. Its objective is to render a representative picture of households in Vietnam. The survey encompasses broad information, covering demographic attributes, socioeconomic dimensions, and health care utilization. In the VHLSS, households are operationally defined as collectives of individuals cohabiting and sharing meals within a shared dwelling. This definition allows for a comprehensive understanding of the household context and dynamics in relation to the variables under investigation.

The health data in the surveys has been collected via questionnaires on various aspects of healthcare engagement and health status among household members. A wide range of topics have been found in the questionnaires, such as medical visits for health-related reasons (prenatal checks, pregnancy termination, intrauterine device insertion, child birth, sickness, diseases, or injuries within the past 12 months prior to the survey). Information about the types of medical establishments visited, the categories of non-resident and resident treatments received, the affordability of medical check-ups or treatments by the household, and the households' possession of health insurance are available in the surveys. Health status is assessed through measures of medical checks, non-resident treatments, and resident treatments. For non-resident and resident treatments, the surveys collect information on visits and associated costs within the past 12 months. In this study, the measurement of health care utilization is the sum of outpatient and inpatient care services. Details of variables have been presented in Table 1. Statistical data shows that the male-female ratio in the survey sample of 2008 and 2018 did not exhibit a significant difference, with males and females comprising 49% and 51%, respectively. The majority of the surveyed individuals were concentrated in the age group below 64, accounting for 90%. The age group above 45 showed an increasing trend in 2018, sharing 35% compared to 28% in 2008, indicating an aging population. The marital status of the observed individuals in the sample focused on two main groups: singles and married, totaling of 90%. The proportion of the survey sample residing in urban areas tended to increase over the past 10 years, reflecting the urbanization trend.

Table 1. Description of the surveyed sample.

Year	2008	2018
N	38,250	35,080
Gender		
Male	49.17	49.08
Female	50.83	50.92
Ages		
< 18 (NT1)	30.82	28.71
18-34 (NT2)	26.63	22.08
35-44 (NT3)	14.63	14.17
45-64 (NT4)	20.23	25.72
65-74 (NT5)	4.24	5.20
>74 (NT6)	3.46	4.13
Marital status		
Single (HN1)	45.79	39.67
Married (HN2)	47.82	52.56
Divorced (HN3)	0.69	1.38
Separated (HN4)	0.36	0.34
Widow/Widower (HN5)	5.52	6.05
Residency		
Rural	74.98	70.38
Urban	25.02	29.62
Race		
Minority	18.51	20.00
Majority	81.49	80.00
Education		
Under primary	32.67	31.64
Primary completion	25.57	22.49
Lower secondary completion	23.81	23.32
Upper secondary completion	14.44	14.89
Degree	3.50	7.65
Income		
Mean	965.25	3615.37
Std. dev.	1288.67	3280.78
Min.	-649	-440
Max.	52787	63295
Household size		
Mean	4.82	4.42
Std.dev.	1.76	1.64
Min.	1	1
Max.	15	15
Insurance		
With insurance	57.78	88.75
Without insurance	42.22	1.25
Care services (CS)		
Mean	1.23	1.55
Std. dev.	3.32	4.48
Min.	0	0
Max.	87	337

The ethnic minority accounted for approximately 20% of the survey sample. Regarding educational attainment, the surveyed population with degrees increased by 217% over the 10-year period from 2008 to 2018. The average household size remained at 4 members, reflecting the prevalence of young families, typically consisting of a couple and two children.

The percentage of people with insurance significantly increased from 58% in 2008 to 89% in 2018, reflecting the government's efforts in implementing universal health insurance. The nominal income of the population also experienced a substantial increase, multiplying by 3.75 over the 10-year period. However, access to healthcare services

did not undergo significant changes over the past 10 years, averaging 1.23 visits and 1.55 visits in 2008 and 2018, respectively.

Figure 1 presents CC, illustrating the health care use distribution relative to the cumulative income of the survey respondents. These curves provide insights into the relationship between income and the share of health care services utilized. Upon analyzing the concentration curves for both 2008 and 2018, it becomes apparent that health care utilization was slightly below the equality line. The position of the concentration curves below the equality line implies that there were disparities favoring the non-poor individuals in terms of their wealth-related status. It means that higher income individuals tend to utilize a larger proportion of health care services in comparison with those with lower incomes. However, it is worth noting that there has been significant improvement over time.

The observation that the concentration curves in both years were slightly below the equality line indicates a reduction in the wealth-related disparities in health care utilization. This implies the government effectiveness (GE) in addressing the inequities and enhancing access to health care services for marginalized individuals. However, further actions are expected to help lower-income groups enjoy a more equitable distribution of health care utilization. The target of bringing the concentration curves closer to or even above the equality line pushes policymakers and health care providers to put more efforts into reducing the disparities and ensuring that individuals from all income levels have equal access to health care services.

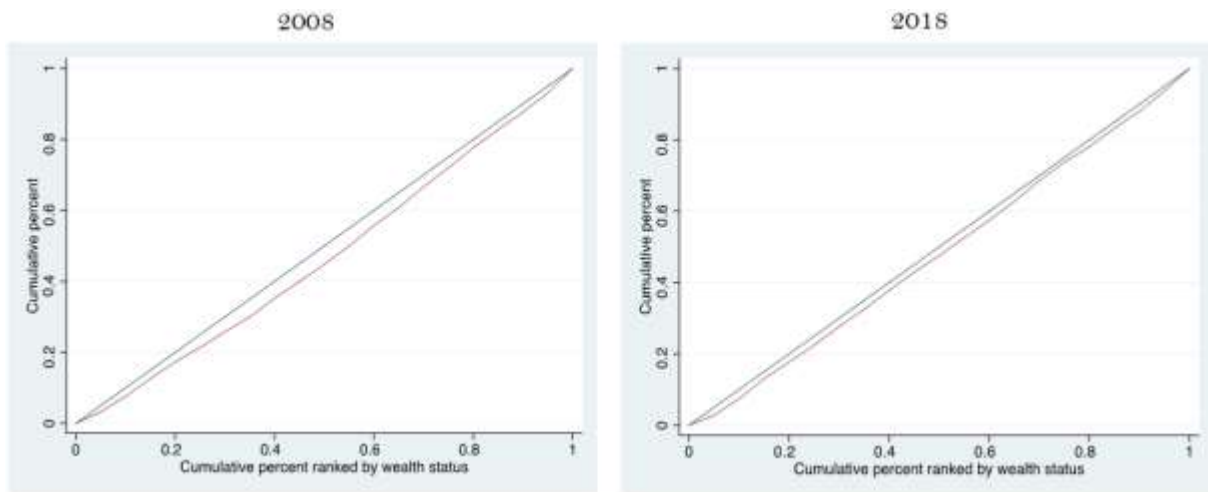


Figure 1. Concentration curve for health care utilization in Vietnam.

The positive CI in Table 2 implies the existence of health care utilization inequality towards the poor, though a slight improvement in CI in 2018 (0.04) compared to 2008 (0.06) has been recorded. It is noted that the CI magnitude is relatively small, suggesting the disparity in utilization between the poor and the non-poor is not substantial. This finding confirms the significant efforts GE made to reduce inequality during the previous 10 years (2008–2018). Therefore, more initiatives are encouraged towards the objective of ensuring that individuals from all economic backgrounds have equal access to health care services.

Table 2. Inequalities in health care utilization in Vietnam.

CS	Coef.	Std. err.	t	P>t	95% conf. interval	
CI 2008	0.0654	0.0077	8.51	0.000	0.0504	0.0805
CI 2018	0.0400	0.0096	4.16	0.000	0.0211	0.0588

More research in Table 3 into the factors that lead to this small concentration among the non-poor based on the CI decomposition of healthcare utilization in Vietnam in 2018 can help policymakers and health care providers come up with targeted interventions to reduce the differences in healthcare utilization and make sure that everyone,

regardless of their socioeconomic status, has equal access. In general, gender contributes to 0.15% of overall inequality. Compared to females, males experience less inequality in healthcare utilization. This result has confirmed the findings of [Cameron, Song, Manheim, and Dunlop \(2010\)](#). This can be explained through the role of men in traditional Vietnamese families. Men are seen as the pillars of the family, both spiritually and materially. As a result, they tend to seek timely healthcare or medical examinations to ensure their health and take care of their families.

Among the age groups, the age group under 18 and the age group from 18–32 contribute to the highest inequality, corresponding to 1.7% and 1.5%, respectively. Compared to the age group over 74, three age groups, including those under 18, 35–44, and 45–64, experience less inequality in accessing healthcare services. The age group under 18 is considered a dependent in the family. According to tradition in Vietnam, children are always prioritized in terms of health protection and care ([Ekman, Liem, Duc, & Axelson, 2008](#)). The age groups 35–44 and 45–64 are typically in the working stage with high family responsibilities. Additionally, health requirements to ensure employability make them less likely to delay seeking healthcare due to concerns that illnesses may become more serious, affecting both work and family. On the other hand, inequality falls within the age group of 65–74. The inequality in accessing healthcare services in this age group may be related to issues such as finances, age-related impairments, and mobility challenges. This age group often faces difficulties in transportation and may require assistance to access healthcare services. Moreover, they have retired but are not yet eligible for free government insurance coverage. Financial issues can also affect their ability to access healthcare services ([Nguyen, 2022](#)).

Table 3. Results for decomposition of health care utilization CI in Vietnam.

Description	Coef.	Contribution	% Contribution
Male	-0.2527*** (0.0474)	0.0043	0.1473
< 18 (NT1)	-2.1313*** (0.1651)	0.0486	1.6824
18-34 (NT2)	-1.8077*** (0.1501)	0.0447	1.5477
35-44 (NT3)	-1.8377*** (0.1465)	0.0130	0.4499
45-64 (NT4)	-1.0375*** (0.1365)	-0.0224	-0.7742
65-74 (NT5)	0.6662*** (0.1572)	0.0128	0.4431
Single (HN1)	-0.6249*** (0.1443)	0.0225	0.7786
Married (HN2)	-0.1891* (0.1155)	-0.0034	-0.1183
Divorced (HN3)	-0.1607 (0.2281)	-0.0001	-0.0030
Separated (HN4)	-0.4403 (0.4156)	-0.0000	-0.0004
Urban	0.2623*** (0.0554)	0.0024	0.0831
Majority race	0.77016*** (0.0663)	0.0145	0.5004
Under primary	1.1330*** (0.1104)	0.0217	0.7497
Primary completion	0.5961*** (0.1066)	0.0011	0.0394
Lower secondary completion	0.0890 (0.1032)	-0.0008	-0.0279
Upper secondary completion	-0.1033 (0.1053)	0.0010	0.0351
Ln income	0.0299 (0.0368)	0.0004	0.0149
Household size	-0.0645*** (0.0153)	0.0047	0.1638
Insurance	0.7997*** (0.0763)	0.0077	0.2682
Cons	1.6819*** (0.3538)	-	-

Note: Standard errors are expressed in bracket; *** and * imply significant levels of 1% and 10%, respectively.

In terms of marital status, the two groups of individuals, namely singles and married individuals, experience less inequality compared to the widow or widower group. For single individuals, their independent financial capability, along with their self-reliance, tends to make them more attentive and proactive in taking care of their health. Married individuals, on the other hand, often have the care and support of their spouse, who can play a role in supporting each other in seeking healthcare and medical treatment. The widow or widower group may face difficulties in affording healthcare services due to financial constraints or the lack of others in the family to share the financial responsibilities. This can pose challenges for widows or widowers in terms of paying for healthcare services.

One special finding of this study is that urban residents experience greater inequality in accessing healthcare services compared to rural residents. This is different from a similar study in the Chinese context ([Liu, Hsiao, &](#)

Eggleston, 1999). The inequality in healthcare access for urban residents can be attributed to the uneven distribution of healthcare facilities, which can result in disparities in accessing healthcare services. Some urban areas have more developed and abundant healthcare systems, while others have fewer healthcare facilities or insufficient service provision. Sometimes, healthcare services in urban areas are more costly compared to rural areas (Giang, Pham, Phi, & Nguyen, 2023). Individuals with low incomes or inadequate health insurance may face difficulties affording high-quality and expensive healthcare services in urban areas. Healthcare facilities in urban areas often face congestion and overload due to the dense population, leading to long waiting times and challenges in scheduling appointments and accessing healthcare services. This can result in inequalities in receiving timely and effective healthcare, especially for those without resources or social networks to prioritize healthcare access.

Compared to ethnic minorities, the Kinh (majority) encounters higher levels of inequality in accessing healthcare services. This indicates the impact of government policies that prioritize ethnic minority populations on benefiting from an equitable healthcare system (Nguyen, 2020). These policies include investments and development of healthcare infrastructure in remote and underserved areas, provision of healthcare facilities in ethnic minority regions, subsidized or free healthcare services for this group, and enhanced training and recruitment of healthcare professionals from ethnic minority communities. The interesting finding of the study is that income does not explain the inequality in accessing healthcare services, which contradicts the other studies. The government's universal health insurance policy can help explain why vulnerable people without income can still access healthcare services. Under the universal health insurance policy, the government provides health insurance packages to all vulnerable citizens in a country (Le et al., 2020). These health insurance packages are typically designed to ensure access to basic and quality healthcare services.

The household size helps reduce inequality in accessing healthcare services. Conversely, insurance contributes to increased inequality in accessing healthcare services because some insurance programs may have limitations in coverage and level of verge. This can lead to certain healthcare services not being covered by insurance or being only partially covered. Accessing specialized or complex healthcare services that their insurance does not cover or does not fully cover may be challenging for insured individuals. Additionally, healthcare insurance programs can limit the network of healthcare providers for participants. This means that participants can only access services from a selected number of healthcare facilities. If there are no suitable healthcare facilities within the network, insured individuals will have difficulties accessing healthcare services near their place of residence.

5. CONCLUSION

The research on healthcare access inequity in Vietnam reveals several key findings. It highlights the improvement of health care utilization equity in 2018 compared to 2008. It further explores that certain demographic groups, such as those below 18 years old, individuals aged 35-44 and 45-64, and the 65-74 age group, experience varying degrees of inequality in accessing healthcare services. Moreover, the study emphasizes the significant disparities in healthcare access between urban and rural residents. Uneven distribution of healthcare facilities, higher costs in urban areas, and congestion issues further exacerbate the inequality faced by urban dwellers. This situation poses a challenge to achieving the government's goal of equal access to health care services. Furthermore, the research underscores the impact of government policies, such as universal health insurance, on addressing healthcare access inequalities. Universal health insurance programs can help mitigate disparities by providing basic and affordable healthcare services, especially for individuals with low incomes or no health insurance coverage. However, limitations within insurance programs, such as restricted coverage and provider networks, need to be addressed to ensure comprehensive and accessible healthcare for all. Overall, this research sheds light on the complex factors contributing to healthcare access inequities in Vietnam. It affirms the importance of targeted policies, including investments in healthcare infrastructure, expansion of insurance coverage, and the provision of quality healthcare services, to bridge the gaps and achieve a more equitable healthcare system. Addressing these issues will not only enhance individual

well-being but also contribute to the overall health and development of the nation.

While the research on healthcare access inequity in Vietnam provides valuable insights, it is essential to acknowledge its limitations and consider potential areas for future research. One of the limitations of this study is the measurement of healthcare utilization. The research highlights disparities in access to healthcare services but does not distinguish between outpatient and inpatient care. Future research could benefit from a more thorough analysis that differentiates between the two types of care, as they may have distinct patterns of inequality. For example, outpatient services might be more accessible but could still exhibit disparities in quality or affordability, while inpatient services might face issues related to capacity and waiting times. Additionally, future research could go deeper into the specific determinants of healthcare access inequities within demographic groups. Understanding the underlying factors driving disparities among age groups or between urban and rural residents would provide policymakers with more targeted interventions. Factors such as health literacy, awareness of available services, and cultural beliefs about healthcare could be explored to gain a more comprehensive understanding of the root causes. In conclusion, while the research on healthcare access inequity in Vietnam provides significant insights, future studies can build upon its findings by addressing the limitations and exploring the nuances of healthcare utilization disparities. This includes a more detailed analysis of outpatient and inpatient care and a deeper examination of the determinants within demographic groups. By addressing these areas, researchers can contribute to a more comprehensive understanding of healthcare access disparities and guide policymakers in developing targeted interventions for a more equitable healthcare system in Vietnam.

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