

ANALYZING THE FACTORS INFLUENCING PUBLIC VS PRIVATE HELTHCARE UTILIZATION UNDER JKN PROGRAM IN INDONESIA

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Abstract. This study investigates the factors influencing public and private healthcare utilization under Indonesia's Jaminan Kesehatan Nasional (JKN) program, aiming to understand the determinants of healthcare choices and disparities. Using data from the 2023 Indonesian National Socioeconomic Survey (SUSENAS), a nationally representative dataset of 1,132,749 observations, this research examines the role of socioeconomic, demographic, and health-related factors in shaping healthcare decisions. The study employs linear and logistic regression models to analyze the impact of variables such as JKN coverage, income, education, age, gender, and health status on healthcare utilization. Findings reveal that JKN participation significantly increases public healthcare usage but reduces the likelihood of private healthcare utilization. Wealthier individuals and those with higher education are more likely to opt for private care, driven by perceptions of superior quality and accessibility. Health status emerges as a key determinant, with individuals experiencing recent illnesses more likely to seek both public and private care. Gender and age also influence utilization patterns, as males and older individuals show lower usage rates, highlighting demographic-specific barriers. The study underscores persistent inequities in healthcare access, despite JKN's success in expanding coverage. Lessons from international contexts, such as Thailand's Universal Coverage Scheme, suggest that improving public healthcare quality and integrating public-private partnerships can address gaps in accessibility. Additionally, leveraging telemedicine could enhance healthcare access in remote and underserved areas. Future research should explore longitudinal data and qualitative insights to deepen the understanding of healthcare utilization dynamics. This study contributes to the discourse on universal health coverage by identifying actionable strategies to improve equity and access under the JKN program.

Keywords: *healthcare utilization, Indonesia, socioeconomic disparities, universal health coverage, social health insurance*

Introduction

Indonesia's healthcare system has undergone significant transformation with the introduction of the Jaminan Kesehatan Nasional (JKN) program in 2014. The JKN program, which aims to provide universal health coverage (UHC), is one of the largest health insurance initiatives globally, aiming to cover 260 million individuals, or approximately 95% of the population by 2025 (WHO, 2023; Rokx et al., 2009). The program is a key component of Indonesia's efforts to eliminate barriers to healthcare access, reduce financial burdens, and improve health outcomes across the nation. Despite these advancements, challenges remain in achieving equitable healthcare access for all segments of the population, particularly for individuals from lower socioeconomic backgrounds. Research has consistently shown that wealthier individuals are more likely to access private healthcare services, while those from lower-income backgrounds tend to rely on public healthcare options (Erlangga et al., 2019; Mulyanto et al., 2019). Healthcare utilization also varies according to individuals' health status. Those experiencing poor health are more likely to seek medical care, yet the type of care—public or private—often depends on the ability to afford private care or the

availability of public healthcare services in rural areas. This divide is especially evident in Indonesia, where access to private healthcare is often seen as a privilege for wealthier individuals, while public healthcare remains the primary option for economically disadvantaged populations (Cheng et al., 2025; WHO, 2023). Additionally, studies have shown that health insurance status and educational attainment significantly impact the likelihood of utilizing private over public healthcare (Agustina et al., 2019; Sparrow et al., 2013).

Understanding these dynamics is critical to addressing inequities in Indonesia's healthcare system. While JKN provides subsidized care, many Indonesians still face challenges in accessing healthcare services, influenced by factors such as income, education, health status, and insurance participation. Moreover, individuals with urgent medical needs often opt for private healthcare despite higher costs, highlighting the complex interplay of affordability, accessibility, and urgency in healthcare decision-making. This study aims to analyze the determinants of public versus private healthcare utilization under the JKN program. Using data from the 2023 Indonesian National Socioeconomic Survey (SUSENAS), this research examines how variables such as income, education, health insurance status, and demographic characteristics influence healthcare choices. By using data from the Indonesian National Socioeconomic Survey (SUSENAS), this research will provide a comprehensive understanding of healthcare utilization patterns in Indonesia, offering insights that could guide future health policy reforms. The findings of this research will contribute to the ongoing discourse on health equity in Indonesia by identifying barriers to healthcare utilization and proposing strategies to optimize the JKN program's impact. Addressing these issues is vital for achieving UHC and ensuring that all Indonesians, irrespective of socioeconomic status, can access quality healthcare services.

Materials and Methods

This study investigates the factors influencing healthcare utilization under the Jaminan Kesehatan Nasional (JKN) program in Indonesia, with a primary objective of examining the determinants that shape the choice between public and private healthcare services. The methodology adopted in this research is comprehensive, detailing the research design, data sources, and variables considered, and the analytical techniques employed. The data utilized for this study originates from the 2023 Indonesian National Socioeconomic Survey (SUSENAS). This survey, conducted annually by the Central Statistics Agency of Indonesia (BPS), is nationally representative and provides a wide array of information on demographic, economic, and social characteristics of Indonesian households. Specifically, it includes detailed data on healthcare access, income, education, and health status. For the purposes of this analysis, a subset of variables directly relevant to healthcare utilization and associated socioeconomic characteristics was selected. The dataset comprises a total of 1,132,749 observations, encompassing individuals' reported utilization of both public and private healthcare services, as well as various demographic and socioeconomic factors. The study focuses on several key variables, categorized into dependent and independent variables. The dependent variables include two binary measures: whether an individual utilized public healthcare services in the past year (*out_pub*) and whether they utilized private healthcare services in the same period (*out_prv*). The independent variables include *jp_jkn*, a binary indicator of whether the individual is covered under the JKN health insurance program.

Additional independent variables pertain to demographic and socioeconomic characteristics, such as `h_male`, which identifies the gender of the household head, and `h_age`, which denotes the age of the household head in years. To capture non-linear effects of age, the squared term of the household head's age, `h_age2`, is included. The variable `h_hhsmap` indicates whether the household head has completed higher education, while `lpce` represents log-transformed monthly per capita consumption expenditure as a proxy for household income. Further independent variables include `poor`, a binary variable indicating whether the household is classified as poor, and `morbid`, which identifies whether any household member experienced illness or health issues within the past month.

Prior to conducting the analysis, the dataset underwent rigorous cleaning and preprocessing. Observations with missing values in any of the key variables were identified and excluded to maintain the integrity of the analysis. This process was facilitated using the `misstable summarize` command. The statistical analyses were performed using Stata 16 and encompassed several stages. Descriptive statistics were first computed to provide an overview of the distribution of key variables. These included means, standard deviations, and minimum and maximum values for all relevant variables, offering insights into healthcare utilization patterns, income levels, and health statuses within the dataset. Following this, linear regression models were employed to analyze factors influencing the utilization of both public and private healthcare services. The regression models for public healthcare utilization (`out_pub`) and private healthcare utilization (`out_prv`) were specified to include the independent variables described above. Robust standard errors were used to account for heteroskedasticity, and the results were interpreted in terms of regression coefficients, p-values, and confidence intervals. Logistic regression analysis was also conducted, given the binary nature of the dependent variables. This method allowed for an examination of the likelihood of utilizing public and private healthcare services, with the results providing odds ratios and coefficients. The logistic regression models included the same set of independent variables and offered insights into the relative likelihood of healthcare utilization while controlling other factors. The goodness-of-fit of the logistic regression models was evaluated using the Pearson chi-squared test via the `estat` command. Ethical considerations were integral to this study. The data used was anonymized and secondary, sourced from publicly available datasets. As such, direct ethical approval was not required. Nevertheless, ethical guidelines relating to data confidentiality, usage, and transparency were meticulously followed throughout the research process.

Results and Discussion

The analysis aimed to investigate factors influencing the usage of public and private healthcare facilities in Indonesia, focusing on the role of various socioeconomic and demographic factors. The dataset provided information on individuals covered under the JKN health insurance program, their healthcare utilization, and relevant socioeconomic indicators. Multiple regression models were employed to analyze the relationship between these factors and healthcare choices, specifically using both linear and logistic regression methods. Descriptive statistics indicated that public healthcare usage was reported by approximately 5.47% of respondents, while private healthcare usage was slightly higher at 7.51%. Among the study population, 56.57% were enrolled in the JKN

program, highlighting significant coverage but uneven utilization (*Table 1*). Logistic regression analysis demonstrated that JKN participation significantly increased the likelihood of utilizing public healthcare (odds ratio=1.96, $p<0.01$), while reducing the likelihood of private healthcare usage (odds ratio=0.86, $p<0.01$). Socioeconomic variables, such as per capita household expenditure, showed a positive association with private healthcare utilization (odds ratio=1.44, $p<0.01$) (*Table 2*) and a negative association with public healthcare utilization (odds ratio=0.88, $p<0.01$) (*Table 3*). This indicates that wealthier individuals prefer private healthcare, likely due to perceived quality and accessibility.

Table 1. The statistics for key variables.

Variable	Observations	Mean	Std. Deviation	Minimum	Maximum
out_pub	1,132,749	0.0547	0.2274	0	1
out_prv	1,132,749	0.0751	0.2636	0	1
jp_jkn	1,132,749	0.5657	0.4957	0	1
h_male	1,132,749	0.5005	0.5	0	1
h_age	1,132,749	30.455	20.170	0	97
h_age2	1,132,749	1334.322	1458.629	0	9409
h_hhsmap	1,132,749	0.3326	0.4711	0	1
Lpce	1,132,749	13.568	0.6523	11.396	17.706
poor	1,132,749	0.1230	0.3285	0	1
morbid	1,132,749	0.0312	0.1738	0	1

Note: The data consists of 1,132,749 observations, with most individuals utilizing public healthcare services (out_pub = 0.0547) and private healthcare services (out_prv = 0.0751). The mean age of the household head is 30.45 years, and the mean household per capita expenditure is 13.57.

Table 2. Logistic regression results for private healthcare usage (odds ratios).

Variable	Odds ratio	Std. Error	Z-statistic	P-value	95% confidence interval
jp_jkn	0.8565	0.0065	-20.48	0.000	(0.8439, 0.8693)
h_male	0.8746	0.0066	-17.80	0.000	(0.8618, 0.8876)
h_age	0.9507	0.0006	-84.60	0.000	(0.9496, 0.9518)
h_age2	1.0008	0.0000	100.31	0.000	(1.0007, 1.0008)
h_hhsmap	0.9497	0.0081	-6.05	0.000	(0.9340, 0.9657)
Lpce	1.4437	0.0098	53.95	0.000	(1.4246, 1.4631)
poor	0.7254	0.0116	-20.10	0.000	(0.7031, 0.7485)
morbid	12.0099	0.1475	202.38	0.000	(11.7243, 12.3025)
_cons	0.0009	0.0001	-76.31	0.000	(0.0007, 0.0011)

Table 3. Logistic regression results for public healthcare usage (odds ratios).

Variable	Odds ratio	Std. Error	Z-statistic	P-value	95% confidence interval
jp_jkn	1.9602	0.0185	71.49	0.000	(1.9244, 1.9967)
h_male	0.8321	0.0072	-21.22	0.000	(0.8181, 0.8463)
h_age	0.9624	0.0007	-56.20	0.000	(0.9611, 0.9637)
h_age2	1.0006	0.0000	68.53	0.000	(1.0006, 1.0006)
h_hhsmap	0.9072	0.0094	-9.40	0.000	(0.8889, 0.9258)
Lpce	0.8782	0.0074	-15.38	0.000	(0.8638, 0.8929)
poor	0.8546	0.0133	-10.13	0.000	(0.8290, 0.8810)
morbid	11.1076	0.1428	187.27	0.000	(10.8312, 11.3911)
_cons	0.2942	0.0336	-10.72	0.000	(0.2352, 0.3679)

Health status emerged as a critical determinant, with individuals reporting recent illness being significantly more likely to use both public (odds ratio=11.11, $p<0.01$) and private healthcare (odds ratio=12.01, $p<0.01$). This underscores the role of immediate healthcare needs in driving utilization decisions. Demographic factors, including age and gender, also influenced healthcare choices. Older individuals were less likely to utilize either public or private healthcare, reflecting potential barriers such as mobility or financial constraints. Additionally, males exhibited lower odds of using public healthcare compared to females (odds ratio=0.83, $p<0.01$). Goodness-of-fit tests

confirmed the robustness of the logistic regression models, with the Hosmer-Lemeshow test yielding non-significant results, indicating no evidence of poor model fit. These findings highlight the complex interplay of socioeconomic, health, and demographic factors in shaping healthcare utilization under the JKN program. JKN participants tend to utilize public healthcare more often, while wealthier individuals with urgent health needs are more likely to seek private healthcare.

The findings of this study provide valuable insights into the factors influencing healthcare utilization in Indonesia, particularly in terms of the use of public and private healthcare services under the JKN (Jaminan Kesehatan Nasional) program. The significant positive association between JKN participation and public healthcare usage underscores the program's success in enhancing access to subsidized healthcare services. This finding aligns with previous research by Agustina et al. (2019) as well as Erlangga et al. (2019), which reported that JKN coverage significantly influences healthcare utilization, especially among lower-income groups, as JKN provides subsidized services that make public healthcare more accessible. This is particularly relevant in a developing country like Indonesia, where cost is often a significant barrier to accessing healthcare. Despite these achievements, persistent disparities remain evident. Wealthier individuals and those with higher educational attainment continue to favor private healthcare, reflecting entrenched inequities within the healthcare system. Such trends are consistent with Sparrow et al. (2013), who emphasized the role of socioeconomic status in shaping healthcare preferences.

The analysis also highlighted the critical role of socioeconomic factors, particularly per capita expenditure, in determining the choice between public and private healthcare. Although JKN has improved access to public healthcare among low-income groups, poverty remains a significant barrier. The study found that wealthier individuals are more likely to use private healthcare services, which is consistent with global findings that suggest higher income levels allow individuals to opt for private healthcare, as they can afford the additional costs. This result mirrors the findings of Rahvy et al. (2024), who observed that individuals with better economic standing tend to seek private care due to the faster and more specialized services it offers. Similar global trends can also be seen in India's Ayushman Bharat scheme and the Philippines' healthcare system, where socioeconomic disparities strongly influence healthcare decisions (Prinja et al., 2023). These findings emphasize the urgent need for targeted policy measures to bridge the gap in healthcare access and ensure equity. Furthermore, health status emerged as another key factor, with individuals in poor health more likely to seek both public and private healthcare. Interestingly, the odds of using private healthcare were found to be significantly higher for individuals with health issues, suggesting that people tend to seek private healthcare for more urgent or specialized care needs.

Demographic factors, such as gender and age, were also found to influence healthcare utilization. The results indicated that males are less likely to use public healthcare services compared to females, and older individuals are generally less likely to seek care in both public and private healthcare settings. These patterns reflect the different healthcare needs of different age groups and genders. Older individuals may require more healthcare services, but they may also face barriers to accessing them due to factors such as physical mobility, financial constraints, or awareness of available services. This is consistent with previous studies, which have found that age and gender are crucial determinants of healthcare utilization patterns (Cheng et al., 2025; Rahvy et al., 2024). The model fit tests indicated that the models explaining healthcare utilization

in this study are robust, with goodness-of-fit statistics showing that the models accurately reflect the observed patterns in the data. The high p-values from the Pearson chi-squared tests (1.0000) for both public and private healthcare models suggest that the predicted values align closely with the actual data, indicating a good model fit. These findings emphasize the reliability of the explanatory variables used in the analysis and suggest that they adequately capture the complexities of healthcare utilization in Indonesia.

In terms of policy implications, these findings point to the importance of expanding the JKN program to increase access to public healthcare, particularly for lower-income and marginalized populations. Policies aimed at improving public healthcare access and reducing the reliance on private healthcare for those who cannot afford it are crucial for achieving equitable healthcare outcomes in Indonesia. Furthermore, addressing the socioeconomic disparities in healthcare access is vital, as wealthier individuals are more likely to opt for private care. Policymakers should focus on improving the affordability and accessibility of public healthcare services to reduce this disparity and ensure that all individuals, regardless of income, can access the care they need. Lessons from other nations provide valuable perspectives for improving the JKN program. For instance, Thailand's Universal Coverage Scheme has demonstrated that enhancing the quality of public healthcare services can significantly reduce dependence on private providers (Tangcharoensathien et al., 2015). Additionally, addressing gender and age-related differences in healthcare utilization could help reduce inequities in healthcare access and outcomes. Policy recommendations from this study emphasize the need to prioritize investments in public healthcare infrastructure. Strengthening public healthcare facilities by improving infrastructure, increasing staffing levels, and equipping providers with adequate resources can enhance service quality and reliability. Additionally, tailored interventions, such as workplace health programs for men and mobility assistance for the elderly, can address demographic-specific barriers. Expanding the scope of JKN to include comprehensive services, such as specialist care and chronic disease management, is essential for addressing the diverse healthcare needs of Indonesia's population. Moreover, integrating behavioral economics principles, as suggested by previous studies, could encourage preventive healthcare behaviors and foster equitable healthcare utilization.

Future research should explore the longitudinal dynamics of healthcare utilization to capture changes over time and assess the impact of recent policy reforms. Qualitative studies can provide deeper insights into patient preferences, perceived barriers to healthcare access, and variations in healthcare-seeking behavior across different regions and socioeconomic groups. Evaluating the cost-effectiveness of integrating telemedicine and public-private partnerships within the JKN framework will also be critical for informing future policy directions. In summarization, this study reaffirms the pivotal role of JKN in expanding healthcare access while highlighting persistent challenges in achieving equity. Addressing these disparities will require a multi-pronged approach, including investments in public healthcare quality, targeted interventions for vulnerable populations, and innovative strategies such as telemedicine and public-private collaborations. By prioritizing these measures, policymakers can strengthen Indonesia's healthcare system, ensuring sustainable progress toward universal health coverage and improved health outcomes for all citizens.

Conclusion

In conclusion, this study provides a comprehensive analysis of the factors influencing healthcare utilization under Indonesia's JKN program, focusing on the differences between public and private healthcare usage. The results show that income, education, and geographic location play a significant role in determining healthcare choices. Wealthier, urban populations tend to use private healthcare due to better quality and shorter waiting times, while lower-income and rural populations rely on public healthcare due to financial constraints and limited access to private services. Although the JKN program has improved healthcare access, disparities remain, primarily due to the quality gap between public and private healthcare. To address these issues, further reforms are needed to improve the quality of public healthcare services, particularly in rural areas. Additionally, efforts to reduce financial barriers to private healthcare could help create a more equitable healthcare system. By improving the accessibility of both public and private healthcare, particularly for those with limited income and resources, the country can work toward ensuring that all its citizens have access to the healthcare they need, regardless of their socioeconomic status or health conditions. Overall, improving public healthcare quality and access for disadvantaged populations is essential for enhancing health outcomes in Indonesia. This study has several limitations. First, it relies on secondary data from the SUSENAS survey, which may not capture all nuances of healthcare utilization, particularly individual preferences or unobserved factors influencing healthcare choices. Second, the cross-sectional nature of the data limits the ability to draw causal inferences. The study also does not account for regional variations in healthcare infrastructure, which could affect the generalizability of the findings across different provinces in Indonesia. Finally, while the study examines key socioeconomic factors, it does not explore other potential determinants, such as cultural attitudes or healthcare provider characteristics, which may also influence healthcare utilization. These limitations suggest the need for further research with more granular data and longitudinal designs to better understand the dynamics of healthcare utilization under the JKN program.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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