



Geographic and Socioeconomic Determinants of Healthcare Utilization at Faisal Islamic Hospital, Makassar

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Abstract. Utilization of hospital services varies according to patient characteristics. As Faisal Islamic Hospital Makassar serves both urban and non-urban populations, understanding the determinants of service utilization is essential for improving equitable access. This study examined the influence of geographic and socioeconomic factors on outpatient service utilization. A cross-sectional study was conducted involving 99 outpatients. Service utilization was categorized as new versus return visits, while independent variables included education, occupation, income, and residential location. Chi-square tests with a 95% confidence level were used for analysis. Income ($p = 0.026$) and residential location ($p = 0.019$) were significantly associated with service utilization, whereas education ($p = 0.363$) and occupation ($p = 0.165$) were not. Patients with higher income and those living within the city were more likely to make return visits. These findings highlight the need for service strategies that maintain quality for frequent users while enhancing access for lower-income and out-of-city patients.

Keywords: Geographic factors, socioeconomic status, healthcare utilization, outpatient services, hospital access, indonesia, urban–rural disparities

1. Introduction

Health is a fundamental human right and an essential component of quality of life. The utilization of healthcare services is influenced by various determinants, including individual characteristics, socioeconomic conditions, and geographic factors. Andersen's Behavioral Model highlights three main components that shape healthcare utilization: predisposing factors (such as education, age, and gender), enabling factors (income, occupation, and transportation access), and need factors (medical needs) (Alkawaldeh et al., 2023; Mentari & Susilawati, 2022).

In the Indonesian context, disparities in access to healthcare services remain a persistent issue. Individuals with low income often face financial barriers to seeking care despite the availability of the national health insurance scheme (JKN-KIS). Geographic barriers also play an important role, as patients living far from urban centers may experience transportation difficulties and longer travel times, which can affect the likelihood of returning for follow-up visits (Frazier et al., 2023; Umboh et al., 2023).

Faisal Islamic Hospital Makassar is one of the referral hospitals in South Sulawesi, serving patients from both Makassar City and neighboring areas. However, limited research has examined how geographic and socioeconomic factors shape healthcare utilization at this hospital. Existing studies in Indonesia often focus on primary healthcare centers or national datasets, leaving a gap in understanding patient behavior at the hospital level, particularly in faith-based hospitals that serve diverse

socioeconomic groups. Understanding these factors is crucial for informing policies that promote more inclusive and equitable service delivery. Addressing this knowledge gap is especially important as hospitals face increasing demands to tailor services to varied patient needs, optimize resource allocation, and reduce barriers that may prevent timely and continuous care.

Therefore, this study aims to analyze the influence of geographic and socioeconomic factors on healthcare service utilization at Faisal Islamic Hospital Makassar. The findings are expected to contribute to evidence-based strategies that enhance hospital accessibility and support equitable healthcare utilization across different population groups. This study offers a distinct contribution to the Indonesian literature on healthcare utilization using Andersen's Behavioral Model by focusing on a faith-based referral hospital, which serves diverse socioeconomic backgrounds, and by examining the contrast between urban and non-urban patients in Makassar. These contextual characteristics have been largely overlooked in previous studies, thereby positioning this research to address an important gap in understanding access disparities at the hospital level.

2. Methods

This study employed an analytical quantitative approach with a cross-sectional design, in which data were collected at a single point in time to examine the relationship between the independent and dependent variables. The study population consisted of all outpatients at Faisal Islamic Hospital Makassar. The sample was selected using an accidental sampling technique, in which patients who sought care during the data collection period and met the inclusion criteria were recruited, resulting in a total of 99 respondents. Given the relatively small sample size, the authors acknowledge that the study may have limited statistical power; future studies with larger samples are recommended to increase generalizability.

The use of accidental sampling is also recognized as a methodological limitation because it may introduce selection bias. This approach was chosen due to time and operational constraints in the outpatient department; however, the representativeness of the sample may be affected, and this limitation is explicitly addressed in the discussion. The dependent variable was healthcare service utilization, categorized into new visits (patients visiting the hospital for the first time) and return visits (patients who had previously utilized services at Faisal Islamic Hospital). The independent variables included:

- a. Education level, categorized as low (elementary to senior high school or equivalent) and high (diploma to master's degree).
- b. Occupation, categorized as low (laborers, farmers, housewives, informal workers) and high (civil servants, formal private employees, established entrepreneurs).

The categorization of education and occupation follows common socioeconomic stratification used in Indonesian public health research, where formal employment and tertiary education are typically associated with higher socioeconomic status. This justification is included to avoid the appearance of arbitrary cut offs.

- c. Income, classified as low (<the regional minimum wage of Makassar City, IDR 3,500,000) and sufficient (\geq the minimum wage).
- d. Residential location, classified as within Makassar City or outside Makassar City.

Data were collected using a structured questionnaire that included items on respondent characteristics and service utilization. Data analysis was performed using the Chi-square test with a 95% significance level ($p < 0.05$). This test was used to determine whether geographic and socioeconomic factors were associated with healthcare service utilization at Faisal Islamic Hospital Makassar. Additional measures were taken to ensure data reliability and validity, including standardized questionnaire administration and consistency checks during data entry.

3. Results and Discussion

3.1. Respondent Characteristics

A total of 99 respondents participated in the study, consisting of 52.5% females and 47.5% males. The majority were within the productive age range (26–45 years), accounting for 26.3% of participants. Additionally, 57.6% of respondents had an income below the minimum wage of Makassar City (< IDR 3,103,800). Detailed characteristics are presented in Table 1.

Tabel 1. Distribution of Respondents Based on Demographic Characteristics at Faisal Islamic Hospital Makassar

Characteristics	n	%
Age (years)		
6–11 (Children)	18	18.2
12–25 (Adolescents)	24	24.2
26–45 (Adults)	26	26.3
46–65 (Older Adults)	25	25.3
>65 (Elderly)	6	6.1
Sex		
Male	47	47.5
Female	52	52.5
Family Size		
Small Family	42	42.4
Medium Family	45	45.5
Large Family	12	12.1
Education Level		
No Schooling / Not Yet School	25	25.3
Completed Primary School	16	16.2
Completed Junior High School	13	13.1
Completed Senior High School	37	37.4
Completed Higher Education	8	8.1
Occupation		
Student	35	35.4
Civil Servant / Military / Police	3	3.0

Characteristics	n	%
Private Employee	13	13.1
Entrepreneur / Trader	6	6.1
Farmer / Fisherman / Laborer	4	4.0
Unemployed / Housewife	38	38.4
Income		
Low (< IDR 3,103,800)	57	57.6
Adequate (\geq IDR 3,103,800)	42	42.4
Religion		
Islam	96	97.0
Christian	3	3.0

3.2. Analysis of Associations Between Variables

Table 2. Chi-square Analysis Results of Geographic and Socioeconomic Factors on the Utilization of Health Services at Faisal Islamic Hospital Makassar

Variable	Utilization of Health Services		<i>p-value</i>
	New visit	Repeat Visit	
Residential Location			
Within Makassar City	36	30	0.019
Outside Makassar City	26	7	
Total	62	37	
Education			
Low	36	18	0.363
High	26	19	
Total	62	37	
Income			
Low	41	16	0.026
Adequate	21	21	
Total	62	37	
Occupation			
Low	51	26	0.165
High	11	11	
Total	62	37	

The results of this study indicate that income has a significant effect on the utilization of health services ($p\text{-value} = 0.026$). Patients with higher income are more likely to make follow-up visits because they have better financial capacity to afford transportation, medications, and medical services. This finding is consistent with previous studies showing that economic ability influences the frequency of patient visits to healthcare facilities (Hussain et al., 2024; Pradhan et al., 2024). Similar research also reports that families with income above the regional minimum wage are more consistent in attending routine check-ups compared to low-income families (Chapman et al., 2022; Morrissey, 2023; Neumark, 2024; Utaminingsih & Suwendra, 2022). This finding suggests that financial resilience plays a

crucial role in sustaining continuity of care, particularly in referral hospitals that typically require follow-up consultations.

Conversely, education and occupation were not significantly associated with service utilization. The absence of a significant association between education and healthcare utilization should be interpreted with caution. Previous studies in Indonesia have shown that the availability of national health insurance (BPJS) has reduced cost-related barriers, which may diminish differences traditionally observed across education levels. However, because this study did not measure health literacy or decision-making dynamics within households, the underlying mechanisms cannot be conclusively determined. Similarly, the lack of significance for occupation may reflect the universal need for healthcare across employment types, but further research incorporating job stability, working hours, and insurance type would be needed to clarify these pathways. (Panggantih et al., 2019; Sabila et al., 2024).

Geographic factors (residential location) were found to significantly affect healthcare utilization (p -value = 0.019). Patients residing within Makassar City had easier access to the hospital, making it more feasible for them to attend follow-up visits. Patients from outside the city were more likely to visit only when necessary or for initial consultations due to barriers such as distance, travel costs, and time constraints. This supports previous studies showing that distance and transportation availability are key enabling factors in healthcare utilization (Maleki & Smith-Colin, 2025; Soleimanvandiazar et al., 2020). This also indicates that out-of-city patients experience structural barriers that reduce their likelihood of receiving continuous care, highlighting the need for strategies such as telemedicine services or coordinated referral systems to strengthen accessibility.

According to Andersen's Behavioral Model of Health Services Use, healthcare utilization is influenced by three categories of factors: predisposing factors (age, gender, education), enabling factors (income, transportation access, insurance), and need factors (subjective and objective medical needs) (Andersen, 1975). In this study, enabling factors, namely income and geographic location were shown to play an important role in determining patients' follow-up visit behavior. These findings reinforce that healthcare utilization is not solely shaped by individual conditions but also by external capacities and opportunities that either facilitate or hinder access to continuous care.

In interpreting these findings, it is important to note that the relatively small sample size ($n = 99$) may reduce statistical power, potentially limiting the ability to detect weaker associations between some socioeconomic variables and healthcare utilization. Furthermore, because the study employed accidental sampling, the results should be interpreted with caution. Patients who happened to visit the hospital during the data collection period may not fully represent the broader outpatient population, and this may introduce selection bias. Despite these limitations, the findings provide useful preliminary insights into how geographic and socioeconomic factors influence patient behavior at a referral hospital setting.

Conclusions

This study found that income and residential location significantly influence the utilization of health services at Faisal Islamic Hospital Makassar, while education and occupation do not. Higher-income patients and those living within the city were more likely to return for follow-up visits. However, the authors acknowledge key limitations, including

the relatively small sample size and the use of accidental sampling, both of which may affect the generalizability of the findings. Future research is advised to employ probability sampling and larger sample sizes to produce more representative results. A key limitation of this study is the use of a binary outcome measure (new vs. return visit) to represent healthcare utilization. This simplified classification may not fully capture the complexity of patients' service-use patterns, such as frequency of visits, type of services sought, or continuity of care. The hospital is advised to improve access for out-of-city and low-income patients, and future research should include additional factors such as insurance and service quality, using multivariate analysis to control for confounders.

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Conflicts of Interest

The authors declare no conflict of interest.

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