

Hospital Accessibility in Indonesia

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Abstract

The government's task is to ensure easy access for the public to the health facilities needed. The study aimed at analyzing ecologically the factors related to the accessibility of hospitals in Indonesia. The ecological analysis conducted using secondary data from the Ministry of Health of the Republic of Indonesia report in 2018. The study takes all provinces as samples. Apart from households easily accessible to the hospital, five other variables analyzed as independent variables were total population, population density, poverty depth index, poverty severity, and population percentage completing primary education. Data were analyzed using a scatter plot. The study results found that the higher the total population in a province, the higher the percentage of households easily accessible to the hospital in that province. The higher the population density in an area, the higher the percentage of households access to the hospital in that area. On the other hand, the higher the poverty depth index in a region, the lower the percentage of households easily accessible to the hospital in that province. Moreover, the higher the poverty severity index in a region, the lower the percentage of households easily accessible to the hospital in that region. Finally, the higher the percentage of the population completing primary education in a province, the higher the percentage of households easily accessible to the hospital in that province. It concluded that five independent variables were analyzed related to the accessibility of hospitals in Indonesia.

Keywords: hospital access, ecological analysis, equity, poverty, healthcare performance.

Introduction

Health services are a fundamental right for all people. The government is obliged to provide this. Health care is a broad concept that describes the dimensions of the relationship between supply and demand. The experts define access to health services as the timely use of health services by individuals to obtain the best health outcomes¹. Dimensions of public access or affordability to health services are one dimension of the quality of health services. These dimensions mean that public access to health services should not

be hindered by all conditions or easily reached by the community. Barriers may arise in geographical, social, economic, organizational, and linguistic conditions (communication)².

Accessibility of health care facilities is not the only factor that determines patients in choosing health services. The quality of medical personnel and the quality of health service facilities are the most determining factors for a person to go to a health service in a hospital³. We understand, however, that quality is a separate construction from access. Value building has much to do with the outcomes of the health care process^{4,5}. Moreover, ease of access is essential in using health service facilities, especially at the referral level⁶⁻⁸.

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Based on the 2018 Indonesia Basic Health Survey, the society seen that 37.1% of the public said access to

hospitals was easy to reach, 36.9% said it was difficult to get, and 26% said it was challenging to achieve. The difference between the people who said it was easy and difficult was only 0.2%. Hence, society assumed that a hospital's affordability based on people's knowledge is still a balance between comfort and difficulty. However, the large proportion of people who say it is complicated to access hospital services (26%) needs to be paid attention to by the government and hospitals⁹.

Currently, the government is trying to provide health service insurance through National Health Insurance (NHI). With the NHI's existence, we hoped that the community would get adequate access to proper health services. The cooperation system adopted by NHI requires all people to become members of this national insurance system. The government implements NHI as responsibility and protection for access to services and primary health needs^{10,11}.

However, gaps in access to health services still occur. The dominance of government policies in health development is one of the causes for the poor's low access to health service facilities. Communities experience administrative complexity, unreachable

costs, spatial disparities, discrimination, and other problems^{4,12}. Based on the background description, this study aims to conduct an ecological analysis related to the factors that affect hospital accessibility in Indonesia.

Materials and Methods

Study Design

The study design carries out using an ecological analysis approach. The environmental analysis uses an approach that focuses on comparisons between groups, not individuals. In this study, the research was the aggregate data at the provincial level. The purpose of the ecological analysis in this study was to make ecological conclusions about the effects on groups (provinces)^{13,14}.

Data Source

The study conducted using secondary data from the 2018 Indonesia Basic Health Survey report and the 2018 Data and Information of Indonesia Health Profile. Both stories were official reports of the Ministry of Health of the Republic of Indonesia. The unit of analysis in this study was the province. All provinces in Indonesia analyzed (34 regions).

Table 1. The data source of the factors related to the accessibility of hospitals in Indonesia, 2018

Source	Variables	Note
The 2018 Indonesia Basic Health Survey	Percentage of households easily accessible to the hospital	
The 2018 Data and Information of Indonesia Health Profile	Total population	Estimated at 2018
	Population density	Estimated at 2018
	Poverty depth index	Recorded in September 2018
	Poverty severity index	Recorded in September 2018
	Percentage of the population completing primary education	Graduated from Junior High School

Data Analysis

The dependent variable in this study is the percentage of households easily accessible to the hospital. The ease of accessing the hospitals is assessed based on household knowledge of the type of transportation, travel time, and transportation costs⁹. There were five independent variables analyzed in this study. The five variables were total population, population density, poverty depth index, poverty severity, and population percentage completing primary education.

The Poverty Depth Index is an indicator to measure the average gap based on the costs incurred by each low population compared to the poverty line. A higher index value indicates the average expenditure of the downward moving away from the poverty line. The Poverty Severity Index is an indicator that shows the distribution of spending among the poor. The greater the poverty severity index value, the greater the expenditure inequality among the poor. The percentage of the population completing primary education is the proportion of people who have met or have a junior high school diploma.

Data were analyzed by univariate and bivariate. The research carries out bivariate analysis using a scatter plot. The study uses a fit-line to determine the relationship between the percentage of households easily accessible to the hospital with independent variables. The entire analysis process utilizes SPSS 21 software.

Ethical Approval

The analysis in this study was employed secondary data from published official government reports. For this reason, the study not required ethical clearance in the implementation of this study.

Results and Discussion

Table 2 shows the descriptive statistics of variables of the factors related to hospitals' accessibility in Indonesia. Table 2 provides a very high variation between provinces. The lowest percentage of households easily accessible to the hospital was 19.30% (Papua Province), while the highest prevalence was 70.60% (Yogyakarta Province). This analysis's descriptive analysis follows previous studies' results, which inform the backwardness of health development in the eastern compared to other regions in Indonesia^{15,16}.

Table 2. Statistics descriptive of variables of the factors related to the accessibility of hospitals in Indonesia, 2018

Statistics Descriptive	Percentage of households easily accessible to the hospital	Total population	Population density	Poverty depth index	Poverty severity index	Percentage of the population completing primary education
N	34	34	34	34	34	34
Mean	35.682	7794568.029	734.7144	1.8829	0.5071	76.747
Std. Deviation	11.455	11103978.632	2685.605	1.415	0.494	6.173
Range	51.30%	47967454	15754.85	6.00	2.27	29.29%
Minimum	19.30%	716407	9.41	0.50	0.11	57.09%
Maximum	70.60%	48683861	15764.26	6.50	2.38	86.38%

Source: The 2018 Indonesia Basic Health Survey and The 2018 Data and Information of Indonesia Health Profile

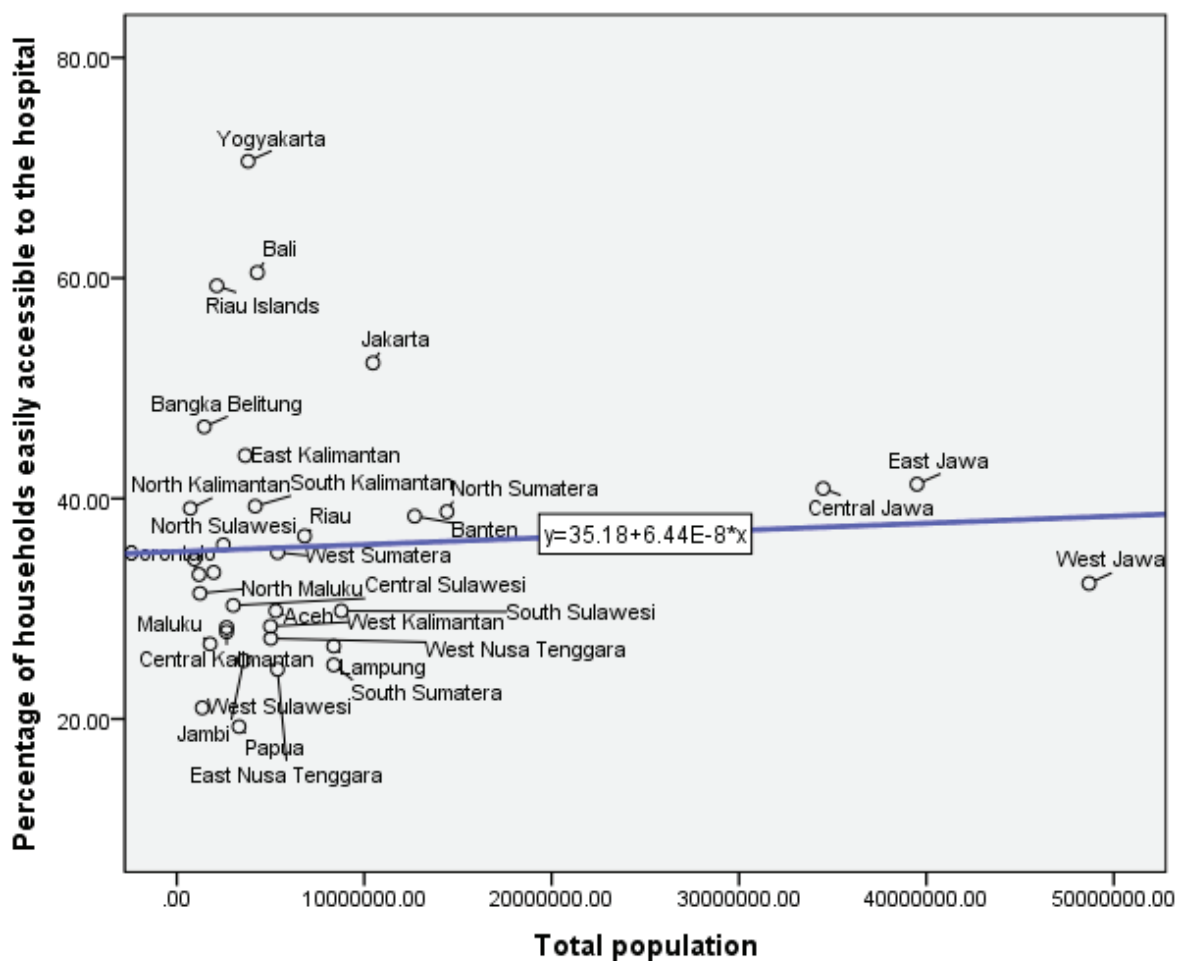


Figure 1. Scatter plot of the total population and the percentage of households easily accessible to the hospital in Indonesia, 2018

Source: The 2018 Indonesia Basic Health Survey and The 2018 Data and Information of Indonesia Health Profile

Figure 1 is a scatter plot between the total population and the percentage of households easily accessible to the hospital in Indonesia. The relationship between the two variables shows a positive trend. The situation indicates that the higher the total population in a province, the

higher the percentage of households easily accessible to the hospital in that province.

Figure 2 is a scatter plot between population density and the percentage of households easily accessible to Indonesia’s hospital. The relationship between the two variables shows a positive trend. The result means that the higher the population density in a province, the higher the percentage of households easily accessible to the hospital in that province.

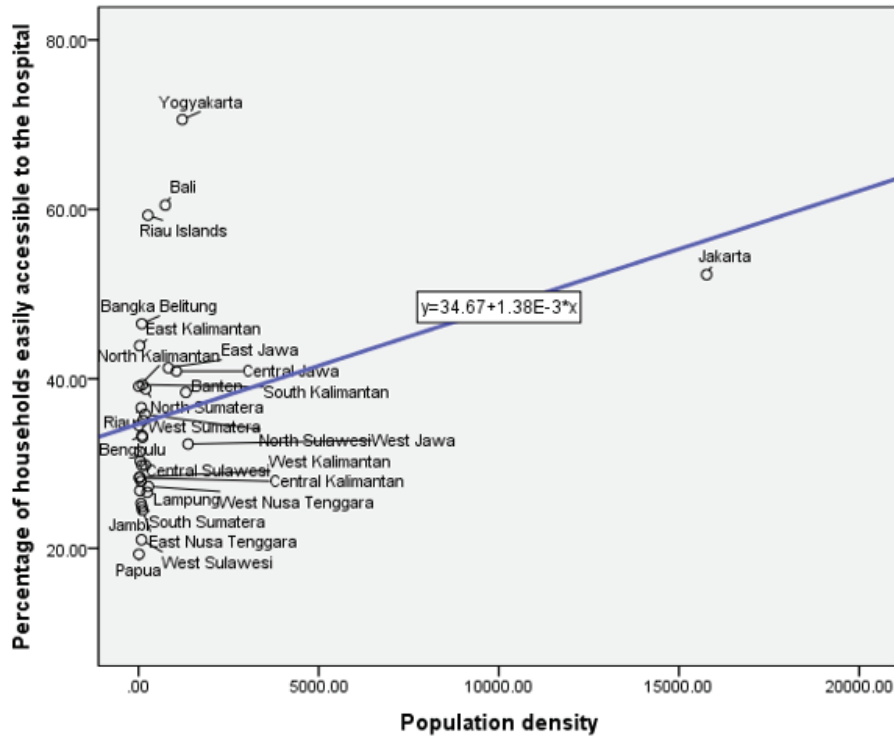


Figure 2. Scatter plot of the population density and the percentage of households easily accessible to the hospital in Indonesia, 2018

Source: The 2018 Indonesia Basic Health Survey and The 2018 Data and Information of Indonesia Health Profile

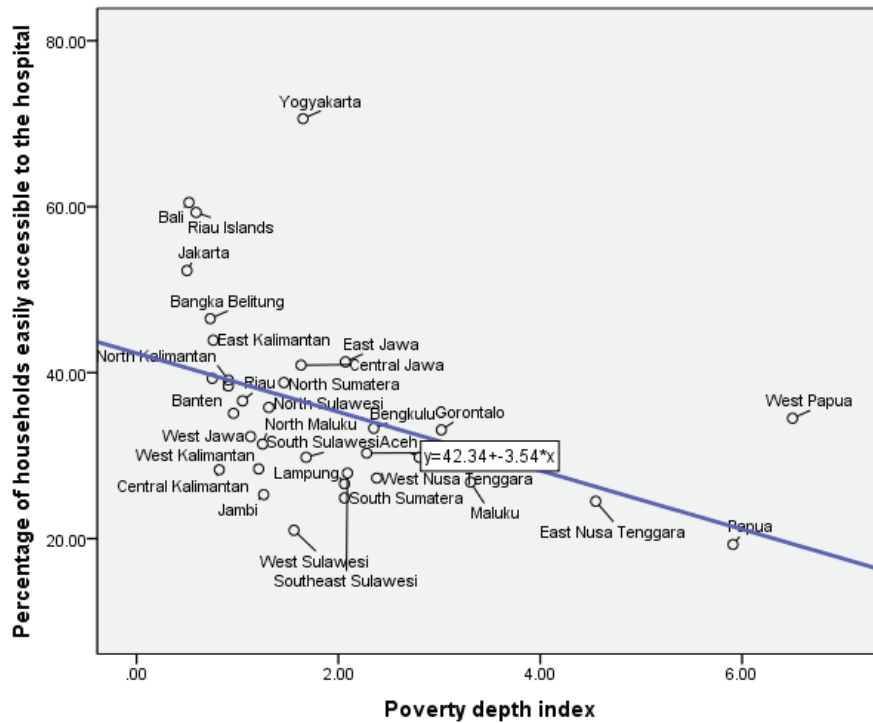


Figure 3. Scatter Plot of the poverty depth index and the percentage of households easily accessible to the hospital in Indonesia, 2018

Source: The 2018 Indonesia Basic Health Survey and The 2018 Data and Information of Indonesia Health Profile

Previous studies show similar information. The trend indicates that hospitals build in areas that are more numerous and more densely populated. This situation means that populations living in disadvantaged, peripheral, and island regions have low access to hospitals^{7,17}.

Figure 3 is a scatter plot between the poverty depth index and the percentage of households easily accessible to the hospital in Indonesia. The tendency of these two variables shows a negative relationship. The situation informs that the higher the poverty depth index in a province, the lower the percentage of households easily accessible to the hospital in that province.

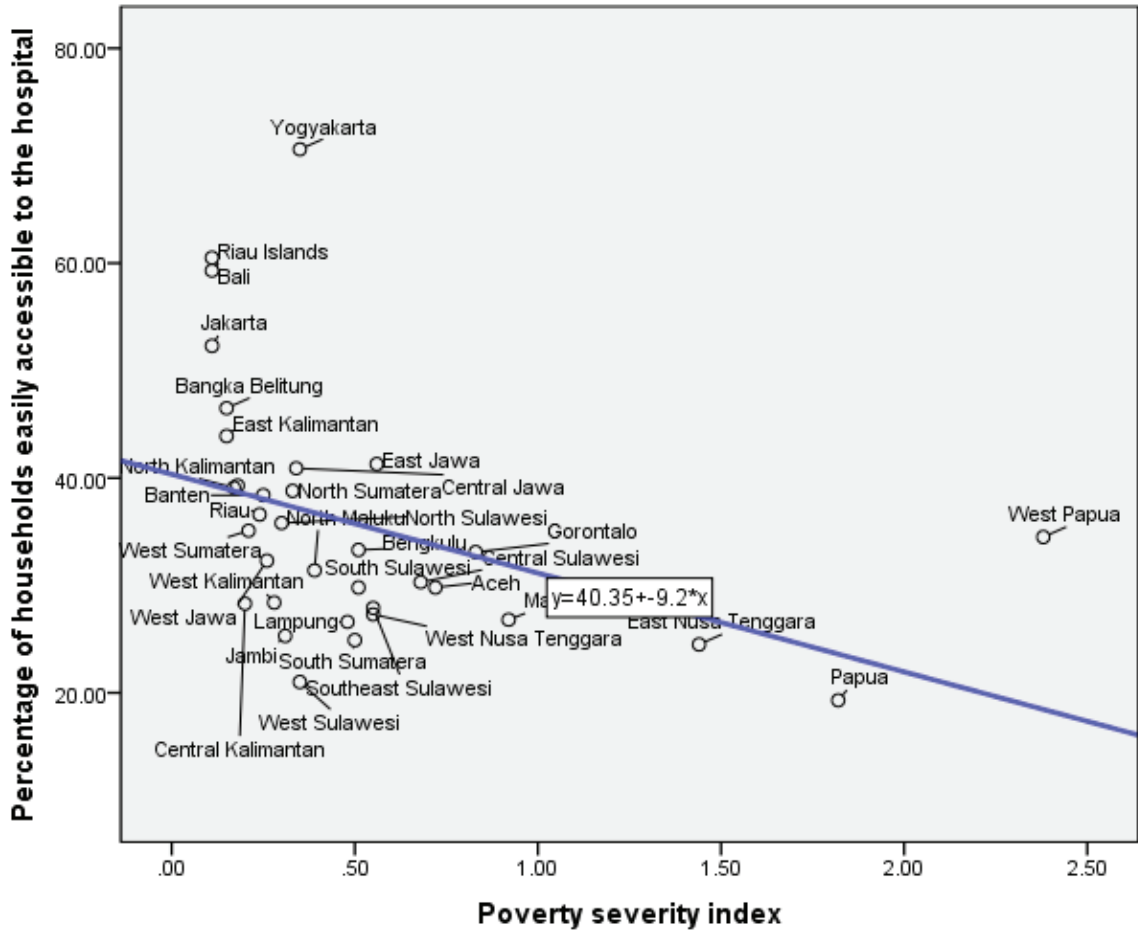


Figure 4. Scatter Plot of the poverty severity index and the percentage of households easily accessible to the hospital in Indonesia, 2018

Source: The 2018 Indonesia Basic Health Survey and The 2018 Data and Information of Indonesia Health Profile

Figure 4 is a scatter plot between the poverty severity index and the percentage of households easily accessible to the hospital in Indonesia. Based on the scatter plot, the two variables show a negative tendency. The scatter plot shows that the higher the poverty severity index in a province, the lower the percentage of households easily accessible to the hospital in that province.

The poverty index, both in-depth and severity, shows a negative relationship with the percentage of households easily accessible to the hospital in Indonesia. Poverty is closely related to the community's ability to pay service fees and transportation costs to get to hospitals¹⁸. The ability to pay for this community includes paying for health insurance contributions¹⁹⁻²¹.

Figure 5 is a scatter plot between the percentage of the population completing primary education and the rate of households easily accessible to the hospital in Indonesia. The relationship between the two variables shows a positive trend. It can interpret that the higher the portion of the population completing primary education in a province, the higher the percentage of households easily accessible to the hospital in that province.

The positive relationship between education and easy access to hospitals shows that the more educated, the more he can understand his needs, the better he can understand the health services available²². Several previous studies have also provided similar results. The studies found education as a positive determinant of performance in the health sector²³⁻²⁵. On the other hand, poor education informed as a barrier to achieving better health performance^{26,27}.

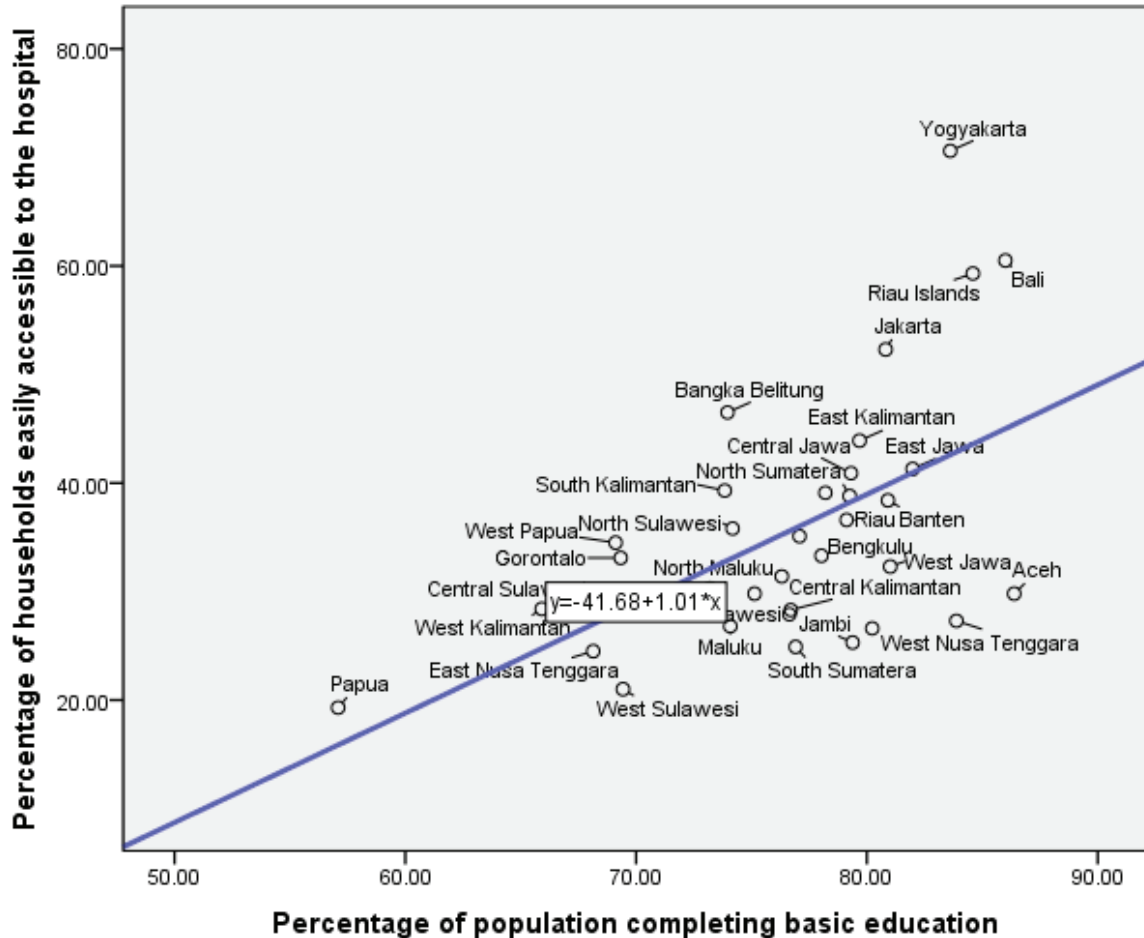


Figure 5. Scatter Plot of the percentage of the population completing primary education and the rate of households easily accessible to the hospital in Indonesia, 2018

Source: The 2018 Indonesia Basic Health Survey and The 2018 Data and Information of Indonesia Health Profile

Conclusion

The research result concludes that the five independent variables analyzed ecologically were related to the percentage of households easily accessible

to the hospital in Indonesia. The five variables were total population, population density, poverty depth index, poverty severity index, and population percentage completing primary education.

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Ethical Clearance: The study was conducted by utilizing secondary data from published reports. For this reason, the study not required ethical clearance in the implementation.

Conflicting Interests: Nil

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