

## To whom it may concern

Dr Dewi Anggraini has reviewed 1 submission in the journal *Journal of Multidisciplinary Healthcare* (journal Impact Factor: 1.913) during 2020.

This contribution is greatly appreciated.

Regards

**Angela Jones**

**General Manager, Dove Medical Press Ltd**

Dove Medical Press (NZ) Ltd, 44 Corinthian Drive, Albany, Auckland, New Zealand

PO Box 300-008, Albany, Auckland, 0752, New Zealand

**p** +649 443 3060 **f** +649 443 3061 **e** [info@dovepress.com](mailto:info@dovepress.com)

**Live Chat** [https://www.dovepress.com/live\\_help.t](https://www.dovepress.com/live_help.t)

**Twitter** <https://twitter.com/DovePress>

[www.dovepress.com](http://www.dovepress.com) - open access to scientific and medical research



invitation to review

Compose

Inbox 1,952

Starred

Snoozed

Sent

Drafts 77

dewi.anggraini@unlam....

Meet

New meeting

My meetings

Hangouts



Dewi



No recent chats

[Start a new one](#)

# Dove Medical Press invites you to review a Health Submission ID: 327750

External Inbox :



**Ms Eileen Dixon** <eileen@dovepress.com>

to me

Dear Dr Anggraini

We invite you to join our peer review community to complete a review of

Manuscript title: Extent of received antenatal care components in Ethiop

Article type: Original Research

Author: Mr Kasiye Shiferaw

Journal: International Journal of Women's Health (Journal impact factor <https://www.dovepress.com/international-journal-of-womens-health-jour>)

Abstract: Porpuse: this study aimed at identifying the extent of received  
Methods: A nationally representative performance monitoring for action pregnant or recently postpartum women nested within 217 enumeration the semi-structured questionnaire. We dichotomized the received ANC c ANC contents and inadequate otherwise. A multilevel poisson regression interval and a p-value of less than 0.05 was considered as a cut-off poin



Dewi Anggraini &lt;dewi.anggraini@ulm.ac.id&gt;

---

**Dove Medical Press invites you to review a paper for Journal of Multidisciplinary Healthcare Submission ID: 269389**

1 message

---

**Ms Anna Tozer** <anna.tozer@dovepress.com>  
Reply-To: Ms Anna Tozer <anna.tozer@dovepress.com>  
To: dewi.anggraini@ulm.ac.id

Mon, Jun 29, 2020 at 10:25 PM

Dear Dr Anggraini

We invite you to join our peer review community to complete a review of the following manuscript:

Manuscript title: The Predictor of Primary Healthcare Utilization in Islands Area: Case Study in Maluku Province in Indonesia

Article type: Original Research

Author: Dr Ratna Dwi Wulandari

Journal: Journal of Multidisciplinary Healthcare  
<https://www.dovepress.com/journal-of-multidisciplinary-healthcare-journal>

Abstract: appears at the end of this email

Our expert reviewers greatly contribute to the high standards of the journal, and we hope that you will be willing to provide your expert assessment on this article. If you agree to review this manuscript, we would appreciate receiving your comments 10 days from accepting the invitation.

Please confirm your willingness to undertake this review as soon as possible. To agree or decline to undertake this review please click on the following link this will automatically register your response online.  
<https://www.dovepress.com/reviews.php?l=icFmwbWhcgjGYE1q0mooKI0T1227974>

If you are unable to accept this request, I would be pleased if you were able to send me recommendations of another appropriate reviewer.

We provide a structured peer review form which guides the reviewer through the important points for consideration when evaluating a manuscript. This helps our peer reviewers to write an informed review of the paper to justify their recommendation as to whether it should be accepted for publication. You can view our advice on completing peer review here: [https://www.dovepress.com/peer\\_review\\_guidelines.php](https://www.dovepress.com/peer_review_guidelines.php)

Peer-review comments can only be accepted online via our reviewer system. We cannot accept downloaded manuscript files that you have annotated or modified in any way.

The author manuscript or existence of a manuscript is provided to you on a confidential basis. An author's manuscript may not be disclosed in whole, or in part, to any third party under any circumstances. In addition, you may not forward this invitation to any third party. It is a personal invitation to you alone.

I thank you for considering our invitation.

If you have any questions do not hesitate to contact me.

Yours sincerely

Ms Anna Tozer

Journal of Multidisciplinary Healthcare  
Dove Medical Press  
[www.dovepress.com](http://www.dovepress.com) - open access to scientific and medical research

**Abstract:**

**Background:** The archipelago is one area that requires attention in terms of access to health services. Maluku is one of the provinces in Indonesia which has 1,286 islands. The study was aimed at analyzing predictors of primary healthcare utilization in Maluku Province, Indonesia.

**Methods:** The sample big size was 788 respondents collected through an online survey. In addition to primary health care utilization, the variables analyzed as independent variables were age, gender, marital, education, work type, religion, health insurance, travel time, and transportation costs. In the final stage, a multivariate test is performed using binary logistic regression.

**Results:** Married respondents were 1.739 times more likely than singles to use primary healthcare. Respondents who work as army/police are 0.247 times more likely than those who do not work to use primary healthcare. Respondents covered by government-run insurance are 1.518 times more likely than respondents who are not insured to use primary healthcare. Travel time and transportation costs are not proven as predictors of primary healthcare utilization in the island area in Maluku Province, Indonesia.

**Conclusion:** Three variables proved to be significant as predictors of primary healthcare utilization in Maluku Province, Indonesia, namely marital status, work type, and health insurance.



Dewi Anggraini &lt;dewi.anggraini@ulm.ac.id&gt;

---

**Thank you for accepting to peer review**

2 messages

---

**Ms Tozer** <anna.tozer@dovepress.com>  
Reply-To: Ms Tozer <anna.tozer@dovepress.com>  
To: Dr Anggraini <dewi.anggraini@ulm.ac.id>

Tue, Jun 30, 2020 at 12:23 PM

Dear Dr Anggraini

Thank you for agreeing to review the manuscript:

Manuscript title: The Predictor of Primary Healthcare Utilization in Islands Area: Case Study in Maluku Province in Indonesia

Article type: Original Research

Author: Dr Wulandari

Journal: Journal of Multidisciplinary Healthcare

We would appreciate receiving your comments by 10 Jul 2020.

To access the manuscript and complete your review, please click on the following link:  
<https://www.dovepress.com/reviews.php?l=icFmwbWhcgjGYE1q0mooKI0T1227974>

Our expert reviewers greatly contribute to the high standards of the Journal, and we thank you for your participation.

- \* Your peer review should provide an objective critical evaluation on the technical aspects of the paper.
- \* Your report must contain a recommendation and a description of your reasons for that recommendation.
- \* If you believe the paper needs changes to be made before it is acceptable, please make suggestions on how to improve the paper.

Please note:

- \* Peer-review comments can only be accepted online via our reviewer system. We cannot accept downloaded manuscript files that you have annotated or modified in any way.
- \* On the review page there is an area for "Evaluation" comments for the author and an area for "Confidential Comments" comment intended for the Editor-in-Chief only. It is important to be careful to enter your comments in the correct section, so as to keep your anonymous comments intended for the authors separate from any confidential remarks intended for the Editor.
- \* When you have completed your review, and are ready to submit it to the Editor, click on "Submit."
- \* Please remember that all communications regarding this manuscript are privileged and confidential.

Many thanks for your assistance with this paper and I look forward to hearing from you.

Kind regards  
Ms Tozer

---

**Ms Tozer** <anna.tozer@dovepress.com>  
Reply-To: Ms Tozer <anna.tozer@dovepress.com>  
To: Dr Anggraini <dewi.anggraini@ulm.ac.id>

Tue, Jun 30, 2020 at 12:23 PM

[Quoted text hidden]



Dewi Anggraini &lt;dewi.anggraini@ulm.ac.id&gt;

---

## Thank you for the review

1 message

---

**Jenny Dalton** <jennydalton@dovepress.com>  
Reply-To: Jenny Dalton <jennydalton@dovepress.com>  
To: dewi.anggraini@ulm.ac.id

Mon, Jul 20, 2020 at 4:10 AM

Dr Anggraini

Journal Name: Journal of Multidisciplinary Healthcare  
Title: The Predictor of Primary Healthcare Utilization in Islands Area: Case Study in Maluku Province in Indonesia  
Submission ID: 269389

On behalf of the author(s) and Dove Medical Press I would like to thank you for providing peer review comments for this manuscript. The time and effort that you have put into this review is most appreciated.

You can now view and download your peer-reviewer acknowledgement certificate here (just click on "Journal of Multidisciplinary Healthcare" to view the PDF):

[https://www.dovepress.com/peer\\_reviewer\\_acknowledgement.php?l=icFmwbWhcgjGYE1q0mooKI0T1227974](https://www.dovepress.com/peer_reviewer_acknowledgement.php?l=icFmwbWhcgjGYE1q0mooKI0T1227974)

To see your current and previous reviewed contributions, you can also go to our reviewer summary page in your account; <https://www.dovepress.com/reviews.php?pa=history&l=icFmwbWhcgjGYE1q0mooKI0T1227974>

As one of our peer-reviewers you will receive a written acknowledgement for your efforts. In addition, each journal will publish an annual list of peer-reviewers that have contributed to the journal.

I would also like to take this opportunity to invite you to submit a manuscript to one of our journals through our Favored Author Program. This will give you the following benefits on any papers you submit to us:

- 10% discount on your publication processing fee.
- Fast-track processing of papers.
- Rapid delivery of a PDF of your paper for your personal use.

To join this program simply reply to this email. I will be in contact to make arrangements.

Regards

Jenny Dalton  
Dove Medical Press  
[www.dovepress.com](http://www.dovepress.com) - open access to scientific and medical research

# The Predictor of Primary Healthcare Utilization in Islands Area: Case Study in Maluku Province in Indonesia

Agung Dwi Laksono<sup>1</sup>, \*Ratna Dwi Wulandari<sup>2</sup>, Sahrir Sillehu<sup>3</sup>

<sup>1</sup> National Institute of Health Research and Development, the Indonesian Ministry of Health.  
Jl. Percetakan Negara 29 Jakarta 10560, Indonesia

<sup>2</sup> Faculty of Public Health, Universitas Airlangga, Surabaya, Indonesia. Universitas Airlangga  
Campus C Mulyorejo, Surabaya 60115, Indonesia

<sup>2</sup> Institute of Health Science Maluku Husada Ambon. Jl. Kebun Cengkeh, Batu Merah,  
Sirimau, Kota Ambon, Maluku, Indonesia

\*Corresponding Author  
Ratna Dwi Wulandari  
Email: [ratna-d-w@fkm.unair.ac.id](mailto:ratna-d-w@fkm.unair.ac.id)

## Abstract

**Background:** The archipelago is one area that requires attention in terms of access to health services. Maluku is one of the provinces in Indonesia which has 1,286 islands. The study was aimed at analyzing predictors of primary healthcare utilization in Maluku Province, Indonesia.

**Methods:** The sample big size was 788 respondents collected through an online survey. In addition to primary health care utilization, the variables analyzed as independent variables were age, gender, marital, education, work type, religion, health insurance, travel time, and transportation costs. In the final stage, a multivariate test is performed using binary logistic regression.

**Results:** Married respondents were 1.739 times more likely than singles to use primary healthcare. Respondents who work as army/police are 0.247 times more likely than those who do not work to use primary healthcare. Respondents covered by government-run insurance are 1.518 times more likely than respondents who are not insured to use primary healthcare. Travel time and transportation costs are not proven as predictors of primary healthcare utilization in the island area in Maluku Province, Indonesia.

**Conclusion:** Three variables proved to be significant as predictors of primary healthcare utilization in Maluku Province, Indonesia, namely marital status, work type, and health insurance.

**Keywords:** influential factors, primary healthcare, archipelago, ~~healthcare utilization,~~  
~~healthcare access, Indonesia~~ transportation cost.

## Introduction

Generally, the definition of health is a complete physical, mental, and social condition. This condition is not just the absence of disease or weakness (1). To keep the community healthy, a health system was formed to carry out health efforts ranging from preventive, promotive, curative, to rehabilitative. One of the health sub-systems is the health care system, which consists of basic services in primary healthcare and its network, to referral services in hospitals (2).

Puskesmas (Pusat Kesehatan Masyarakat/Center of Public Health) is a primary healthcare facility unique to Indonesia. Puskesmas is the main gateway to the health service system run by the government. Puskesmas is the gateway to basic services in Indonesia, in addition to general practice and basic clinics. In Indonesia, the standard for establishing primary healthcare is 30,000 residents, or every 1 sub-district (3). Until the end of 2018, there are at least 9,993 Puskesmas throughout Indonesia to serve 59 thousand families or around 250 million residents (4).

One of the government's targets in the health service system in addition to ensuring the availability of health service facilities is also to ensure its accessibility for the public. To



find out whether the health service system is working well or not, it is necessary to measure the performance of the health service system, one of which is access to health care facilities (5). Access is evidenced by the utilization of health service facilities, from basic services to referrals. Many factors affect the utilization of health service facilities. Especially with the geographical conditions of Indonesia which are archipelago (6,7). There are at least 17,504 islands that have been officially recorded in Indonesia (8).

Previous studies have found that access to health care facilities is influenced by many factors, in addition to availability. Some of these are demographic characteristics (9,10), health insurance ownership (11,12), and physical access (13,14). The most frequently examined physical access in addition to spatially, is the transportation cost and time travel (15,16).

Previous studies in Indonesia on access to healthcare found that access to healthcare in Indonesia still had many problems. Various disparities are found that color access to healthcare. Among the disparities between urban and rural areas (17), the disparity between socioeconomic status (18), including regional disparities (6,7). One that is often found to be a determinant of access to healthcare in Indonesia is transportation costs. Transportation cost is found as a determinant of access to healthcare-related to the geographical characteristics of Indonesia as an archipelago.

Maluku Province is one of the regions in Indonesia which has a natural barrier in the form of a vast archipelago. Of the 11 regencies/cities in Maluku Province, there are at least 1,286 islands that are part of the administrative region of the province which is located in eastern Indonesia. Eastern Indonesia is an area that is often left behind compared to other regions in Indonesia in achieving the health status of its population (19). Not only because it is more extreme geographical, but also because of socio-cultural factors that influence people's perceptions about modern health services (20,21).

This condition is a challenge for the local government to ensure the availability of healthcare for its residents. At present in Maluku Province, there are about 208 primary healthcare serving 1,774 million people (22). The proportion of the population served is not too large, it is still far from the standard set by the Ministry of Health (3). But the geographical stretch with so many islands becomes a challenge to provide primary healthcare that can be easily accessed by the community.

Based on the background description, this study is intended to analyze the predictors of primary healthcare utilization in Maluku Province, Indonesia. Information on the results of this study is important for local policymakers to accelerate the utilization of primary healthcare for all people in Maluku Province, Indonesia.

## **Materials and Methods**

### ***Data Source***

The study population consisted of all residents domiciled in Maluku Province, Indonesia. In this study, the rapid survey method with the internet was used to reach all regions in Maluku Province (23,24). Data collection was carried out for one week (June 6-12, 2020) by using Google Form. A total of 788 respondents participated in this study.

The rapid survey method was developed by researchers to serve policy-makers so that they can immediately get an overview of health status and other health information at the community level (25). The rapid online survey was chosen by utilizing the development of internet technology because it was considered far more efficient than traditional surveys to optimize research using survey methods (26,27).

## ***Variables***

The primary healthcare utilization was the respondent's recognition of visits made to primary healthcare, both outpatient (last 1 year) and inpatient (last 5 years). The primary healthcare utilization was divided into 2 categories, namely not utilized and utilized. The independent variables included in the analysis of this study were age, gender, education level, work type, marital status, health insurance, time travel, and transportation cost.

Age is the respondent's acknowledgment of the last birthday passed. Gender consists of two categories, male and female. The education level was the last diploma owned by the respondent. The education level consists of 3 categories, namely primary and under, secondary, and higher. Religion consists of 3 categories, namely Moslem, Christian, and Catholic. Work type is the respondent's acknowledgment of the type of work being undertaken. Work type was divided into 7 categories, namely not work, public servant, army/police, entrepreneur, employee, farmer/fisherman/labor, and others. Marital status consists of 3 categories, namely single, married, and widowed/divorced.

Health insurance was a respondent's acknowledgment of insurance covering health. Health insurance consists of 3 categories, namely not insurance, government-run insurance, and private-run insurance. Travel time was the respondent's acknowledgment of the time needed to visit the nearest primary healthcare. Travel time consists of 2 categories, namely  $\leq 10$  minutes and  $> 10$  minutes. Transportation cost was the respondent's acknowledgment of the costs incurred to visit primary healthcare. Transportation costs were divided into 2 categories, namely IDR 10,000 IDR and  $> 10,000$  IDR (amount 0.7 \$ US).

## ***Data Analysis***

In the initial stage, the co-linearity test was used to ensure there is no collinearity between variables. Then in the second stage, the chi-square test was used for dichotomous variables and t-test for continuous variables. This stage was for selecting variables that will be tested as predictors in the final stages. In the final stage, the multivariate tests were conducted using binary logistic regression because of the nature of the dependent variable. SPSS 22 software was used to help the entire analysis process.

## ***Ethical Approval***

The study has received ethical approval from the National Ethics Commission (No: RK.04/KEPK/STIK/V/2020). The respondents' identities have all been deleted from the dataset. Respondents have provided written approval for their involvement in the study.

## **Results**

Figure 1 is a map of the distribution of primary healthcare utilization among Mollucans by regency/municipality in Maluku Province, Indonesia. Seen a very random distribution pattern. There is no particular pattern in the use of primary healthcare that marks the tendency of a particular area to be spatially determined.

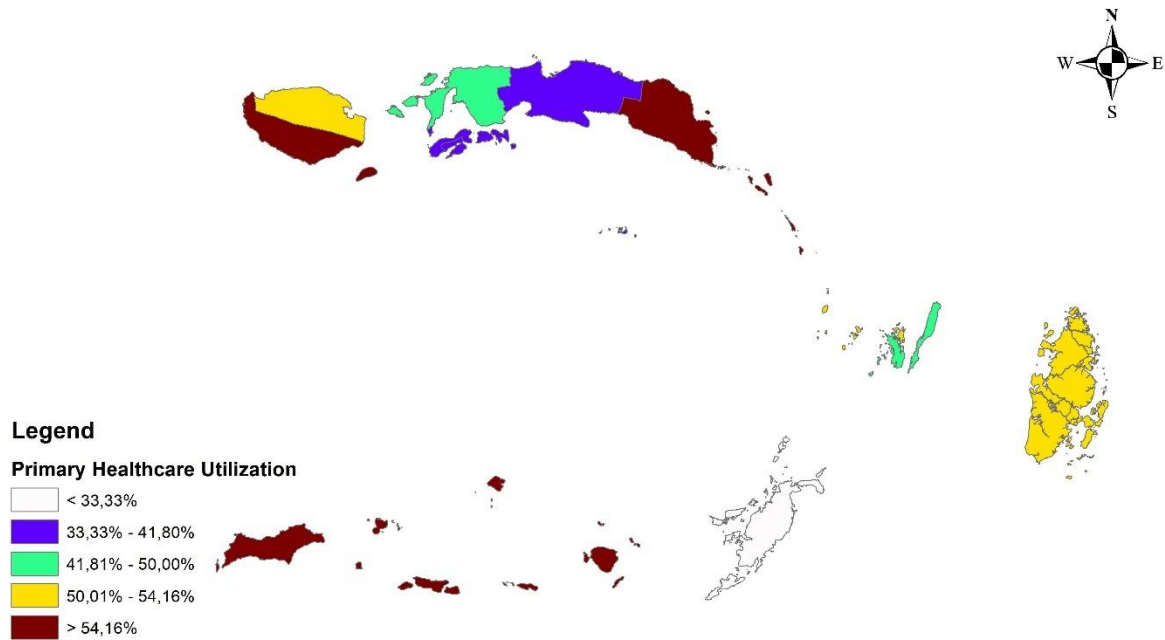


Figure 1. Distribution of Primary Healthcare Utilization by Regency/Municipal in Maluku Province, Indonesia, 2020 (n=778)

Table 1 displays the results for the co-linearity test of primary healthcare utilization in Maluku Province, Indonesia. The analysis found that there was no collinearity between variables. Table 1 shows that the tolerance values of all variables are greater than 0.10. While the VIF value for all variables is less than 10.00. Referring to the basis of decision making in the multicollinearity test, it can be concluded that there are no symptoms of multicollinearity in the regression model.

Table 1. Results for The Co-Linearity Test of Primary Healthcare Utilization in Maluku Province, Indonesia, 2020 (n=788)

Variables	Collinearity Statistics	
	Tolerance	VIF
Age group	0.356	2.806
Gender	0.893	1.119
Marital status	0.416	2.406
Education level	0.752	1.331
Work type	0.855	1.169
Religion	0.914	1.094
Health insurance	0.754	1.326
Travel time	0.711	1.406
Transportation cost	0.716	1.396

Dependent Variable: Primary healthcare utilization

Table 2 displays descriptive statistics of the respondents. It can be seen that respondents who use primary healthcare have an average age slightly older than those who do not. Based on gender, the two categories of primary healthcare utilization are dominated by female respondents. Based on marital status, it appears that those who use primary healthcare are dominated by married respondents, while those who do not utilize healthcare are dominated by respondents with a single status.

Tabel 2. Descriptive Statistics of Respondents (n=788)

Variables	Primary Healthcare Utilization				P
	Not utilized		Utilized		
	n	%	n	%	
Age (mean)	422	(29.21)	366	(32.54)	***< 0.001
Gender					0.667
● Male	146	34.6%	132	36.1%	
● Female	276	65.4%	234	63.9%	
Marital status					***< 0.001
● Single	258	61.1%	160	43.7%	
● Married	154	36.5%	199	54.4%	
● Divorced/Widowed	10	2.4%	7	1.9%	
Education Level					**0.001
● Primary and under	13	3.1%	7	1.9%	
● Secondary	158	37.4%	96	26.2%	
● Higher	251	59.5%	263	71.9%	
Work type					**0.001
● No work	209	49.5%	134	36.6%	
● Public servant	146	34.6%	169	46.2%	
● Army/Police	9	2.1%	3	0.8%	
● Entrepreneur	20	4.7%	20	5.5%	
● Private sector	37	8.8%	35	9.6%	
● Farmer/Fisher/Labor	1	0.2%	5	1.4%	
Religion					*0.021
● Moslem	309	73.2%	244	66.7%	
● Christian	104	24.6%	119	32.5%	
● Catholic	9	2.1%	3	0.8%	
Health insurance					***< 0.001
● Not insured	155	36.7%	85	23.2%	
● Government-run insurance	256	60.7%	271	74.0%	
● Private-run insurance	11	2.6%	10	2.7%	
Travel time					0.155
● ≤ 10 minutes	271	64.2%	217	59.3%	
● > 10 minutes	151	35.8%	149	40.7%	
Transportation cost					0.574
● ≤ 10,000 IDR	304	72.0%	257	70.2%	
● > 10,000 IDR	118	28.0%	109	29.8%	

Note: \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.

Table 2 informs that based on education level, the two categories of primary healthcare utilization are dominated by respondents who have higher education. Based on work type, it appears that those who use primary healthcare are dominated by respondents with public servant type work, while those who do not utilize healthcare are dominated by respondents who do not work. Based on religion, the two categories of primary healthcare utilization are dominated by Muslem respondents.

Table 2 shows that based on health insurance ownership, the two primary healthcare utilization categories are dominated by respondents who have government-run insurance.

Based on travel time, the two categories of primary healthcare utilization are dominated by respondents who have travel time  $\leq 10$  minutes to get to primary healthcare. Based on transportation costs, the two categories of primary healthcare utilization are dominated by respondents who have transportation costs  $\leq 10,000$  IDR to get to primary healthcare.

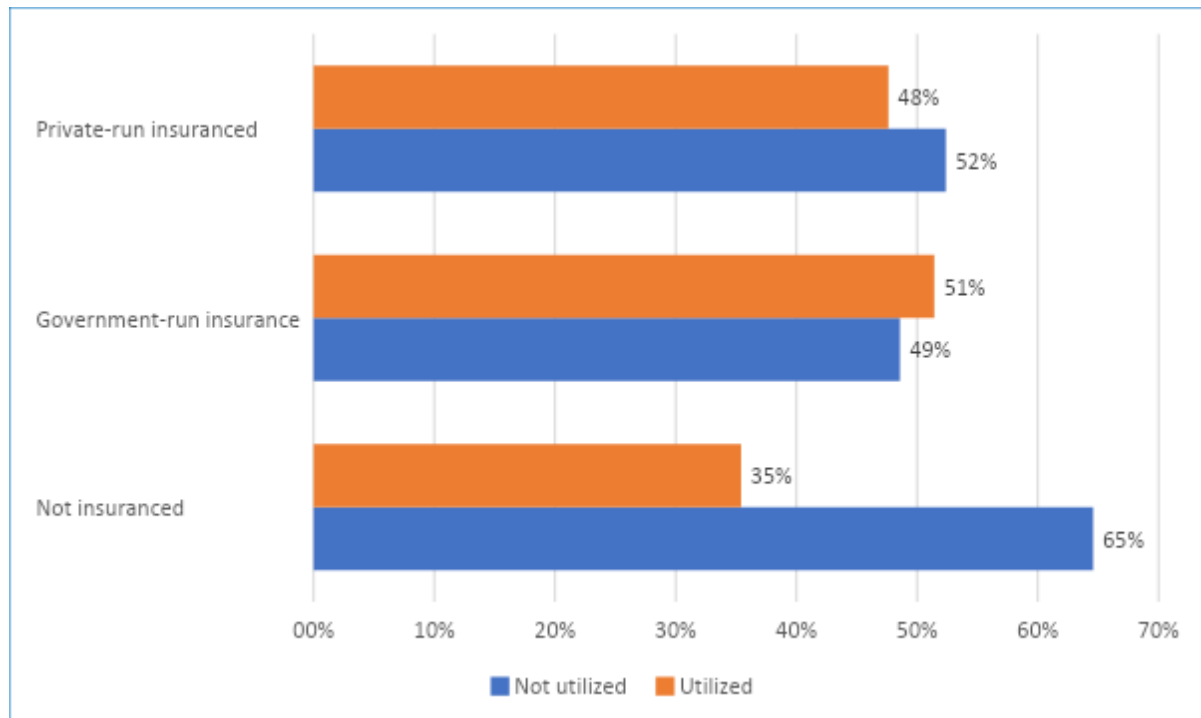


Figure 2. Distribution of Primary Healthcare Utilization by Health Insurance Ownership in Maluku Province, Indonesia, 2020 (n=788)

Figure 2 shows the distribution of primary healthcare utilization by health insurance ownership in Maluku Province, Indonesia. It can be seen that the proportion of utilization of all types of health insurance ownership is dominated by those who do not utilize primary healthcare, except those who have government-run insurance.

Table 3. The Result of Binary Logistic Regression of Primary Healthcare Utilization among Mollucans in Maluku Province, Indonesia, 2020 (n=788)

Predictor	Primary Healthcare Utilization			
	Sig.	OR	Lower Bound	Upper Bound
Age	0.602	1.007	0.982	1.032
Marital status: Single	-	-	-	-
Marital status: Married	*0.021	1.739	1.087	2.781
Marital status: Divorced/Widowed	0.753	0.839	0.281	2.506
Education level: Primary and under	-	-	-	-
Education level: Secondary	0.851	1.100	0.405	2.991
Education level: Higher	0.437	1.495	0.542	4.122
Work type: Not work	-	-	-	-
Work type: Public servant	0.300	0.761	0.454	1.276
Work type: Army/Police	*0.048	0.247	0.062	0.989
Work type: Entrepreneur	0.778	1.110	0.538	2.289
Work type: Private sector	0.785	0.922	0.512	1.657

Work type: Farmer/Fisher/Labor	0.098	6.544	0.706	60.707
Religy: Moslem	-	-	-	-
Religy: Christian	0.263	1.210	.867	1.689
Religy: Catholic	0.104	0.330	0.086	1.258
Health insurance: Not insureded	-	-	-	-
Health insurance: Government-run insurance	*0.035	1.518	1.029	2.239
Health insurance: Private-run insurance	0.660	1.236	0.481	3.178

Note: \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001.

Displaying the test results at the final stage using binary logistic regression can be seen in Table 3. It appears that married respondents have 1.739 times more likely than singles to use primary healthcare (OR 1.739; 95% CI 1.087-2.781). While there is no significant difference between respondents with divorced/widowed status and respondents with a single status.

Table 3 shows that respondents who worked as army/police were 0.247 times more likely than those who did not work to use primary healthcare (OR 0.247; 95% CI 0.062-0.989). While other types of work do not show significant differences compared to those who do not work.

Table 3 informs that respondents covered by government-run insurance are 1.518 times more likely than respondents who are not insured to use primary healthcare (OR 1.518; 95% CI 1.029-2.239). While respondents covered by private-run insurance did not show the use of primary healthcare that was significantly different from respondents who were not insured.

The analysis showed that there were 3 other variables involved in the multivariate test which proved to be statistically insignificant as predictors of primary healthcare utilization among Mollucans in Maluku Province, Indonesia. The three variables are age, education level, and religion.

## Discussion

Although the variables raised in this study are variables that have been frequently studied (28–30), but it turns out the results of this study can bring up specific information that if examined more deeply can show a picture of an attractive pattern of utilization of health services in the community. Analysis of the relationship between variables can produce complementary information.

The results of multivariate analysis showed that travel time and transportation costs did not show a significant effect on primary healthcare utilization among Mollucans in Maluku Province, Indonesia. This condition is possible because respondents who live in Maluku Province show relatively similar perceptions about travel time and transportation costs so that although they are different, they are not significant enough. This finding is different from previous research information on Madura Island, Indonesia. The 2013 data-based study found that travel time and transportation costs are predictors of primary healthcare utilization in the Madura region (10). Another study in the Indonesian context nationally also found travel time and transportation costs as predictors of primary healthcare and hospital utilization (17,31).

The results of this analysis of travel time and transportation costs inform that the possibility of primary healthcare has been present equally in every district in Maluku Province. This information shows that although Maluku Province is an archipelago, access to basic health services to primary healthcare has shown a relatively equitable distribution

among the islands. This information is corroborated by empirical facts which show that travel time is dominated by time  $\leq 10$  minutes to get to primary healthcare, and transportation costs are dominated by transportation costs  $\leq 10,000$  IDR.

The analysis found that married Moluccans had higher primary healthcare utilization rates than those who were single. Several other previous studies also revealed the same thing (10,32,33). Many factors contribute to the increasing need for health services in married groups, which can be learned from this research. The first explanation is related to gender composition. The majority of respondents in this study were women. The second explanation is related to age. Respondents in this study were mostly in the productive age. The combination of these three variables can lead to the conclusion that married women of productive age will experience an increase in the need for health services (34). This condition causes the utilization of health services in the married group to be higher than the single group.

Married women of productive age will enter a level of life faced with many challenges. This challenge is in line with the human development cycle itself. After marriage, the greatest possibility that women will face is pregnancy. The pregnancy phase is a vulnerable period for a woman so that the need for health services will increase (35–37). The next phase is childbirth, which is no less risky with the pregnancy phase. The third phase is breastfeeding, where even though the level of risk has begun to decline, the psychological and physical burden of a nursing mother is heavy, it still raises the risk of health problems. This phase can be repeated 2-3 times, even more, depending on the frequency of pregnancy and the number of children born. The higher the frequency of pregnancy and the number of children, the greater the risk of health problems experienced, thus requiring intense contact with health care facilities (38–40). In terms of health program managers, this information is very important, because it can show which groups should receive more attention. After all, they have increased health service needs.

The second interesting information that can be raised from the results of this study is the effect of the type of work on the utilization of health services. Significant analysis results obtained on the type of army/police work. The level of utilization of health services in the army/police is much smaller than those who do not work. This finding contradicts previous research at the national level in Indonesia. It was informed that the army/police had slightly higher utilization of healthcare 1,015 times compared to those without jobs (17). While another study in Indonesia found no significant differences between work types in the use of primary healthcare in Indonesia (31).

The next interesting phenomenon that has been revealed is related to the use of insurance. The results showed that people who have government insurance tend to use more health services. The high utilization of health services in people who have social insurance also occurs in several countries (41,42). An important question to be answered to explain this finding is, what are the characteristics of people who have government insurance? Several previous studies that informed the dominant characteristics of most participants of health insurance managed by the government in Indonesia (43–45). The demographic characteristics of the respondents in this study, which were dominated by women with a high level of education, placed most of the respondents in a group who were aware of the risks of health problems that they might experience. This is what causes the level of insurance ownership of respondents is quite high. Someone who has insurance means that their health financing needs are guaranteed (12,46). The existence of financial guarantees owned by insurance participants, making the intention to use insurance increases, so the utilization rate of health services in this group also tends to be higher than other groups (11,47).

## Conclusions

Based on the results of the analysis it could be concluded that 3 variables have proven to be significant as predictors of primary healthcare utilization among Mollucans in Maluku Province, Indonesia. The three variables are marital status, work type, and health insurance ownership.

## Acknowledgments

The author would like to thank all the respondents who participated in this study.

## Conflict of Interest

The authors declare no conflict of interest, financial or otherwise.

## References

1. World Health Organization. The preamble to the Constitution of WHO. New York, Geneva; 1946.
2. Heryana A, Kurtanty D, Pujjyanti E, Bakri MA, Librianty N, Harjono Y. Omnibus Law Recommendation on Health Research and Development Subsystem according to the 2012 National Health System [Internet]. Jakarta; 2020. Available from: [https://www.researchgate.net/publication/338425459\\_Rekomendasi\\_Omnibus\\_Law\\_Subsistem\\_Penelitian\\_dan\\_Pengembangan\\_Kesehatan\\_sesuai\\_Sistem\\_Kesehatan\\_Nasional\\_2012](https://www.researchgate.net/publication/338425459_Rekomendasi_Omnibus_Law_Subsistem_Penelitian_dan_Pengembangan_Kesehatan_sesuai_Sistem_Kesehatan_Nasional_2012)
3. Ministry of Health of the Republic of Indonesia. Regulation of the Minister of Health of the Republic of Indonesia Number 75 of 2014 concerning Community Health Centers (Peraturan Menteri Kesehatan Republik Indonesia Nomor 75 Tahun 2014 tentang Pusat Kesehatan Masyarakat). Permenkes 75/2014 Jakarta, Indonesia: Kementerian Kesehatan Republik Indonesia; 2014.
4. Ministry of Health of the Republic of Indonesia. Puskesmas Basic Data; Conditions December 31, 2018 (Data Dasar Puskesmas; Kondisi 31 Desember 2018) [Internet]. Jakarta; 2019. Available from: [https://www.kemkes.go.id/resources/download/pusdatin/data-dasar-puskesmas/2018/00.Buku\\_Data\\_Dasar\\_Puskesmas\\_kondisi\\_31\\_des\\_2018-Nasional.pdf](https://www.kemkes.go.id/resources/download/pusdatin/data-dasar-puskesmas/2018/00.Buku_Data_Dasar_Puskesmas_kondisi_31_des_2018-Nasional.pdf)
5. Mubasyiroh R, Nurhotimah E, Laksono AD. Health Service Accessibility Index in Indonesia (Indeks Aksesibilitas Pelayanan Kesehatan di Indonesia). In: Supriyanto S, Chalidyanto D, Wulandari RD, editors. Accessibility of Health Services in Indonesia (Aksesibilitas Pelayanan Kesehatan di Indonesia). Jogjakarta: PT Kanisius; 2016. p. 21–58.
6. Laksono AD, Wulandari RD, Soedirham O. Regional Disparities of Health Center Utilization in Rural Indonesia. *Malaysian J Public Heal Med.* 2019;19(1).
7. Laksono AD, Rukmini R, Wulandari RD. Regional disparities in antenatal care utilization in Indonesia. *PLoS One.* 2020;15(2):e0224006.
8. United Nations Group of Experts on Geographical Names. United Nations Conference on the Standardization of Geographical Names , 11th [Internet]. 2017 [cited 2020 Jun 1]. Available from: <https://unstats.un.org/unsd/geoinfo/UNGEGN/ungegnConf11.html>
9. Barman B, Saha J, Chouhan P. Impact of education on the utilization of maternal health care services: An investigation from National Family Health Survey (2015–16) in India. *Child Youth Serv Rev.* 2020;108:Article number 104642.
10. Laksono AD, Wulandari RD. Determinant of the Puskesmas Utilization in Madura Island. *Indian J Public Heal Res Dev.* 2019;10(11):576–81.



11. Suparmi, Iram Barida Maisya HL. Health Insurance as a Solution for Barriers to Maternal Healthcare Access in Indonesia. Jakarta; 2019.
12. Müllerschön J, Koschollek C, Santos-Hövenner C, Kuehne A, Müller-Nordhorn J, Bremer V. Impact of health insurance status among migrants from sub-Saharan Africa on access to health care and HIV testing in Germany: A participatory cross-sectional survey 11 Medical and Health Sciences 1117 Public Health and Health Services 11 Medical and Health. BMC Int Health Hum Rights. 2019;19(1).
13. Emerson P, Green DR, Stott S, Maclennan G, Campbell MK, Jansen JO. Equity of access to critical care services in Scotland: A Bayesian spatial analysis. J Intensive Care Soc. 2020;In press:In press.
14. Reshadat S, Zangeneh A, Saeidi S, Teimouri R, Yigitcanlar T. Measures of spatial accessibility to health centers: investigating urban and rural disparities in Kermanshah, Iran. J Public Heal. 2019;27(4):519–29.
15. Varela C, Young S, Mkandawire N, Groen RS, Banza L, Viste A. Transportation Barriers to Access Health Care for Surgical Conditions in Malawi: a cross sectional nationwide household survey 11 Medical and Health Sciences 1117 Public Health and Health Services. BMC Public Health. 2019;19(1):Article number 264.
16. Munir BA, Hafeez S, Rashid S, Iqbal R, Javed MA. Geospatial assessment of physical accessibility of healthcare and agent-based modeling for system efficacy. GeoJournal. 2020;85(3):665–80.
17. Laksono AD, Wulandari RD, Soedirham O. Urban and Rural Disparities in Hospital Utilization among Indonesian Adults. Iran J Public Health [Internet]. 2019;48(2):247–55. Available from: <http://ijph.tums.ac.ir/index.php/ijph/article/view/16143>
18. Wulandari RD, Qomarrudin MB, Supriyanto S, Laksono AD. Socioeconomic Disparities in Hospital Utilization among Elderly People in Indonesia. Indian J Public Heal Res Dev. 2019;10(11):1800–4.
19. Ipa M, Widawati M, Laksono AD, Kusriani I, Dhewantara PW. Variation of preventive practices and its association with malaria infection in eastern Indonesia: Findings from community-based survey. PLoS One. 2020;15(5):e0232909.
20. Tripathi V, Singh R. Regional differences in usage of antenatal care and safe delivery services in Indonesia: Findings from a nationally representative survey. BMJ Open. 2017;7(2).
21. Pratiwi NL, Fitrianti Y, Nuraini S, Rachmawati T, Laksono AD, Afreni M, et al. Concealed Pregnant Women or Kemel of Gayo Ethnic in Blang Pegayon District, Gayo Lues District, Aceh. Bull Heal Syst Res. 2019;22(2):81–90.
22. Statistics Indonesia/Badan Pusat Statistik. Maluku Province in Figures 2019 [Internet]. Ambon; 2020. Available from: <https://maluku.bps.go.id/publication/download.html?nrbvfeve=MTQ5MWZkNWl0NWZhODVhOGE5NGI3OWI3&xzmn=aHR0cHM6Ly9tYWx1a3UuYnBzLmdvLmlkL3B1YmtpY2F0aW9uLzlwMTkvMDgvMTYvMTQ5MWZkNWl0NWZhODVhOGE5NGI3OWI3L3Byb3ZpbmNpLW1hbHVrdS1kYWxhbS1hbmdrYS0yMDE5Lmh0bWw%3D&twoadf>
23. Bostan S, Akbolat M, Kaya A, Ozata M, Gunes D. Assessments of anxiety levels and working conditions of health employees working in COVID-19 pandemic hospitals. Electron J Gen Med. 2020;17(5):Article number em246.
24. Kramer B, Hartmann C, du Toit F, Hutchinson E, Pather N. Supporting early career anatomists: An international challenge. Ann Anat. 2020;231:Article number 151520.
25. Frerichs RR, Tar KT. Computer-assisted rapid surveys in developing countries. Public Health Rep. 1989;104(1):14–23.

26. Macintyre K. Rapid assessment and sample surveys: trade-offs in precision and cost. *Health Policy Plan.* 1999;14(4):363–373.
27. Sivaraman S, Soni P. Leveraging Technology for Optimization of Health Survey Research. *J Health Manag.* 2019;21(4):Article number 097206341988444.
28. Yaya S, Da F, Wang R, Tang S, Ghose B. Maternal healthcare insurance ownership and service utilisation in Ghana: Analysis of Ghana demographic and health survey. *PLoS One.* 2019;14(4):1–13.
29. Laksono AD, Wulandari RD, Efendi F. Determinants of hospital utilisation among urban poor societies in Indonesia. *Int J Innov Creat Chang.* 2020;12(9):375–87.
30. Uldbjerg CS, Schramm S, Kaducu FO, Ovuga E, Sodemann M. Perceived barriers to utilization of antenatal care services in northern Uganda: A qualitative study. *Sex Reprod Healthc.* 2020;23:Article number 100464.
31. Wulandari RD, Laksono AD. Urban-Rural Disparity: The Utilization of Primary Health Care Center Among Elderly in East Java, Indonesia. *J Adm Kesehat Indones [Internet].* 2019;7(2):147–54. Available from: <https://e-journal.unair.ac.id/JAKI/article/view/11267>
32. Saenphansiri X, Wyant DK, Wofford LG. Barriers to health care among Laotian Americans in Middle Tennessee. *J Health Care Poor Underserved.* 2017;28(4):1537–58.
33. Tillmann J, Puth M-T, Weckbecker K, Klaschik M, Münster E. Prevalence and predictors of having no general practitioner - Analysis of the German health interview and examination survey for adults (DEGS1). *BMC Fam Pract.* 2019;20(1):Article number 84.
34. Li H, Gao Y, Mao Q, Chen A, Xu A. Health Status and Utilization of Health Services in Low-income People. *Chinese Gen Pract.* 2020;23(20):2576–81.
35. Sumankuuro J, Mahama MY, Crockett J, Wang S, Young J. Narratives on why pregnant women delay seeking maternal health care during delivery and obstetric complications in rural Ghana. *BMC Pregnancy Childbirth.* 2019;19(1):Article number 260.
36. Ghosh A, Ghosh R. Maternal health care in India: A reflection of 10 years of National Health Mission on the Indian maternal health scenario. *Sex Reprod Healthc.* 2020;25:Article number 100530.
37. Wulandari RD, Laksono AD. Education as predictor of the knowledge of pregnancy danger signs in Rural Indonesia. *Int J Innov Creat Chang.* 2020;13(1):1037–51.
38. Haftu A, Hagos H, Mehari M-A, Gher B. Pregnant women adherence level to antenatal care visit and its effect on perinatal outcome among mothers in Tigray Public Health institutions, 2017: Cohort study 11 Medical and Health Sciences 1114 Paediatrics and Reproductive Medicine 11 Medical and Heal. *BMC Res Notes.* 2018;11(1):Article number 872.
39. Sumankuuro J, Crockett J, Wang S. Sociocultural barriers to maternity services delivery: a qualitative meta-synthesis of the literature. *Public Health.* 2018;157:77–85.
40. Maleya A, Kakudji YK, Mwazaz RM, Nsambi JB, Ngwej HI, Mukuku O, et al. Maternal and fetal outcomes of unattended pregnancies in lubumbashi, Democratic Republic of Congo. *Pan Afr Med J.* 2019;33:Article number 66.
41. Miraldo M, Propper C, Williams RI. The impact of publicly subsidised health insurance on access, behavioural risk factors and disease management. *Soc Sci Med.* 2018;217:135–51.
42. Huang J, Yuan L, Liang H. Which matters for medical utilization equity under universal coverage: Insurance system, region or ses. *Int J Environ Res Public Health.* 2020;17(11):Article number 4131.

43. Agustina R, Dartanto T, Sitompul R, Susiloretni KA, Suparmi, Achadi EL, et al. Universal health coverage in Indonesia: concept, progress, and challenges. *Lancet*. 2019;393(10166):75–102.
44. Nasution SK, Mahendradhata Y, Trisnantoro L. Can a National Health Insurance Policy Increase Equity in the Utilization of Skilled Birth Attendants in Indonesia? A Secondary Analysis of the 2012 to 2016 National Socio-Economic Survey of Indonesia. *Asia-Pacific J Public Heal*. 2020;32(1):19–26.
45. Mahendradhata Y, Trisnantoro L, Listyadewi S, Soewondo P, MArthias T, Harimurti P, et al. The Republic of Indonesia Health System Review. *Heal Syst Transit*. 2017;7(1):1.
46. Zhang F, Shi X, Zhou Y. The impact of health insurance on healthcare utilization by migrant workers in China. *Int J Environ Res Public Health*. 2020;17(6):Article number 1852.
47. Aizawa T. The impact of health insurance on out-of-pocket expenditure on delivery in Indonesia. *Health Care Women Int*. 2019;40(12):1374–95.



# Source details

## Journal of Multidisciplinary Healthcare

Open Access ⓘ

Scopus coverage years: from 2008 to Present

Publisher: Dove Medical Press

ISSN: 1178-2390

Subject area: Nursing: General Nursing

Source type: Journal

CiteScore 2021

2.7 ⓘ

SJR 2021

0.626 ⓘ

SNIP 2021

1.303 ⓘ

[View all documents >](#)

[Set document alert](#)

[Save to source list](#)

[CiteScore](#) [CiteScore rank & trend](#) [Scopus content coverage](#)

### i Improved CiteScore methodology ⓘ

CiteScore 2021 counts the citations received in 2018-2021 to articles, reviews, conference papers, book chapters and data papers published in 2018-2021, and divides this by the number of publications published in 2018-2021. [Learn more >](#)

CiteScore 2021 ▾

$$2.7 = \frac{1.878 \text{ Citations 2018 - 2021}}{687 \text{ Documents 2018 - 2021}}$$

Calculated on 05 May, 2022

CiteScoreTracker 2022 ⓘ

$$3.0 = \frac{2.243 \text{ Citations to date}}{743 \text{ Documents to date}}$$

Last updated on 05 August, 2022 • Updated monthly

### CiteScore rank 2021 ⓘ

Category	Rank	Percentile
Nursing		
General Nursing	#30/123	76th

[View CiteScore methodology >](#) [CiteScore FAQ >](#) [Add CiteScore to your site ↗](#)

## About Scopus

[What is Scopus](#)

[Content coverage](#)

[Scopus blog](#)

[Scopus API](#)

[Privacy matters](#)

## Language

[日本語版を表示する](#)

[查看简体中文版本](#)

[查看繁體中文版本](#)

[Просмотр версии на русском языке](#)

## Customer Service

[Help](#)

[Tutorials](#)

[Contact us](#)

---

## ELSEVIER

[Terms and conditions](#) ↗ [Privacy policy](#) ↗

Copyright © [Elsevier B.V](#) ↗. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the [use of cookies](#) ↗.

