# Demographic and socio-economic determinants of women's health insurance coverage in Zambia

*James N. Mulenga [1], Bupe B. Bwalya [2], Yordanos Gebremeskel [1]*

*(1) Department of Economics, School of Social Science, Mulungushi University*
*(2) Department of Mathematics and Statistics, School of Sciences, Engineering and Technology, Mulungushi University*

***CORRESPONDING AUTHOR:*** *James, N. Mulenga. Department of Economics, School of Social Sciences, Mulungushi University, Main Campus, P.O. Box 80415, Kabwe, Zambia. Phone: +260 977 596440; Email: nileshmulenga@gmail.com*

***DOI:*** ***10.2427/12094***
*Accepted on December 13, 2016*

## ABSTRACT

**Background:** The importance of health insurance to the individual and society at large cannot be overemphasized. It plays a critical role through enabling access to health care services and cushions the individual from catastrophic treatment costs. This study assessed the demographic and socioeconomic determinants of health insurance coverage among women in Zambia.
**Methods:** The study analysed data from the 2013-14 Zambia Demographic and Health Survey with a total sample size of 16178 women of child bearing age. Both univariate and bivariate analyses were performed to describe the study population. Binary logistic regression analysis was used to identify the demographic and socioeconomic characteristics associated with health insurance coverage among women of child bearing age in Zambia.
**Results:** The proportion of women in Zambia with health insurance was found to be very low (3%). The study also found that being married, access to media, higher age category, higher education level, and being employed have a positive influence on health insurance coverage. However, province and type of place of residence are negatively associated with health insurance coverage among women in Zambia. Women residing in Muchinga and Northern Provinces (AOR=0.1; P<0.001) had lower odds of being insured compared to their counterparts in Lusaka province; and ruralised women (AOR=0.5; p<0.01) had lower odds of being insured compared to their urban counter parts.
**Conclusion:** The study concludes that, health insurance providers should tailor their health insurance packages not only to the needs of the employed but also the unemployed, the younger age groups, the informal sector and those in the rural areas.

*Key words: Health insurance, private health insurance, demographic and socioeconomic factors, ZDHS, Zambia*

## INTRODUCTION

It is a fact of life that illness is unpredictable and there are a wide range of illnesses and consequently the cost of treatment an individual may have little knowledge about [1]. As a result, the individual faces risk and uncertainty regarding the timing and cost of treatment. The risk and uncertainty leads to demand for health insurance because health insurance coverage helps limit the uncertainty associated with catastrophic health costs that individuals

may face. Scholars argue that, health insurance enables the individual to transfer financial responsibilities associated with future health expenditures to a third-party against a fixed payment [2,3]. Health insurance can take many forms; social health insurance, private health insurance and community based health insurance. Social health insurance is mandatory for all citizens of a particular country and is managed or regulated by the state [4]. In a private insurance scheme, buyers voluntarily purchase insurance coverage from private, independent, competitive, for-profit or not-for-profit insurance companies [5]. While voluntary community-based health insurance (CBHI) schemes are voluntary, not-for-profit health insurance schemes organized at a community level that specifically target those outside the formal sector [6].

The importance of health insurance has been highlighted in various studies. The studies show that health insurance enhances access and utilization of healthcare services [7-11]. Through health insurance, the individual transfers the responsibility to the insurer and hence runs away from financial constraint of access and utilization. Improved access to health care services has the potential to enhance good health which is of critical importance to economic development. Further, a study by Peters [12] observed that in developing countries, illness is a major contributing factor to household impoverishment. Therefore, in these countries, health insurance can help avert impoverishment that may arise from catastrophic Out Of Pocket (OOP) healthcare expenses [13].

Notwithstanding the importance of health insurance to individuals and society at large, health insurance coverage is low in developing countries compared to developed countries [4, 14, 9]. In most developing countries, private health insurance is not common and is perceived to be a preserve of the rich. For example, in the United States of America, the total percentage of the population which did not have health insurance coverage during the year 2014 was 10.4 % [15]. While in Kenya among the population aged 15-49, 82 % of women and 79 % of men do not have health insurance [16].

In the Zambian context, health insurance coverage is very low [17, 18]. According to the 2013-14 ZDHS, 97 % of women and men, in Zambia do not have any health insurance [8]. This shows an increase in the proportion of women and men without health insurance, in comparison to the 2007 ZDHS, which highlighted that 92% and 91 % of women and men, respectively, aged 15-49 did not have access to health insurance [19]. The low health insurance coverage implies that majority of the Zambians are required to pay for their health care out of pocket. Out-of-pocket health expenditure as a percentage of total expenditure on health stood at 30 % in 2014 [20], which was 8 percentage point lower than it's value in 2007. This fall in the percentage of OOP expenditure can be attributed to the abolition of user fees at the primary level of care between 2006 and 2012 [18]. Despite this drop, Zambians still spend far higher out-of-pocket health care expenses than their counterparts in other lower middle income countries in the region such as Lesotho (16 %) or Botswana (5 %) [21]. The government is currently working on plans to introduce a Social Health Insurance (SHI) scheme to replace the 'out of pocket' system, and it is hoped that this will close the financial gap [22]. It is envisaged that once enacted and implemented the social health insurance (SHI) scheme will provide comprehensive coverage for all Zambians and help achieve the Universal Health Coverage (UHC) [17].

Currently, health insurance in Zambia is mainly provided by private health insurers [23], and according to Pensions and Insurance Authority (PIA) - the regulatory authority, only seven out of the 22 registered insurance companies are offering health insurance [24]. The private health insurance sub-sector is very small and only contributed a mere 1.3 % of total health sector financing in 2012 – a too small contribution [25]. A study by Hougaard, et al [18] identified four categories of health financing providers in Zambia; medical insurers regulated under the life insurance act; medical schemes not regulated in Zambia, including a voluntary government employee medical scheme; hospitals offering their own unregulated plans; and employer-based health fund schemes (which do not technically amount to insurance, but may be administrated by an insurer). At present, there is no stand-alone policy on health insurance and no explicit reference to health insurance in the current law, the Insurance Act, No. 27 of 1997. The PIA, categorises health insurance as long-term insurance [23].

The demand for health insurance is a derived demand; it is derived from the demand for health and from the fact that illness occurs randomly [26]. Thus health care insurance is demanded because of the risk of incurring health care costs. Studies focusing on determinants of health insurance coverage in Zambia are, to the best of our knowledge, scarce. However, various studies have been undertaken in various countries, both developed and developing, on the determinants of health insurance coverage and there seems to be consensus on the determinants of demand for health insurance, although with some variation. Existing literature offers insights into the factors affecting the coverage of private health insurance for individuals.

According to a study by Foubister [27], the personal characteristics most often associated with a subscriber to private medical insurance (PMI) in the United Kingdom(UK) relate to age, *gender, income, educational level, employment and occupational status, area of residence and political attitude*. In addition to these factors, Smith and Medalia [15] observed *that nativity, race and Hispanic Origin, Income-to-Poverty ratios, work experience, disability and marital-status* determine the demand for private health insurance in the United States of America.

Studies in developing countries have noted

various socioeconomic and demographic predictors of health insurance coverage. These include; household heads level of education, [28-33] household income [28,30,34,31,33]; age [30-32,13,33,35]; household/ family size [13,30,36,37]; morbidity/chronic illnesses [35,28,38,30]; occupation [34]; being employed in the formal sector [29]; marital status [33,29,28,32,37,31]; exposure to the mass media[29]; household wealth index[29,36,9]; sex of household head [29,28,31]; region of residence [29,33]; religion [31]; expenditure/ cost of curative care [35,28]; education level [36,9]; type of place of residence[39 ]; price of insurance [37]; level of awareness of insurance [40]; risk awareness [40]; and cultural or sociological reasons [14].

This study was undertaken to establish the determinants of demand for health insurance in Zambia and thereby provide policy advice on how to enhance coverage. It is envisaged that if health insurance is enhanced, access to basic health care services would in turn be enhanced and this would help achieve the 2012 United Nations General Assembly landmark resolution on universal health coverage (UHC), which would in turn help achieve the Sustainable Development Goal (SDG) number 3. This study attempts to achieve two specific objectives:

a. To establish the demographic and socio-economic characteristics of health insurance among women of child bearing age (15-49 years) in Zambia.
b. To assess the effect of demographic and socio-economic characteristics on women's health insurance coverage in Zambia.

## METHODS

### Data

The data used in this study was obtained from the Demographic and Health Survey (DHS) which was conducted in Zambia between 2013 and 2014. The ZDHS utilised a cross-sectional study design and a nationally representative sample survey of women (aged 15 to 49) and men (aged 15 to 59) of reproductive age. The sampling frame for this survey was provided by the 2010 Zambia Population and Housing Census. The survey used a two-stage stratified cluster sample design, with Enumeration Areas (EAs) (or clusters) selected during the first stage and households selected during the second stage. In the first stage, 722 EAs (305 in urban areas and 417 in rural areas) were selected with probability proportional to size. In the second stage a representative sample of 18,052 households was drawn for the 2013-14 ZDHS of which 16,258 were occupied at the time of the fieldwork. Of the occupied households, 15,920 were successfully interviewed, yielding a household response rate of 98 %. Among the interviewed households, a total of 17,064 women aged 15-49 were identified as eligible for individual interviews, and 16,411 of these women were successfully interviewed indicating 96.2 % response rate across all the ten provinces of Zambia. The final sample which formed the analysis was 16178 women of child bearing age (7,454 from urban areas and 8,724 from rural areas).

### Outcome variable

The outcome variable was constructed from the question asked to the interviewed women; *"Are you covered by any health insurance/scheme?"* The response to this question was *"no or yes"*. The "no" responses were coded 0 while the "yes" responses were coded 1 (0 = Not Insured, 1 = Insured).

### Explanatory variable

A number of explanatory variables were considered for the analysis. These variables were selected from the literature reviewed and their availability in the 2013-14 ZDHS. Among the demographic variables, the explanatory variables were the following; sex of the household head (male or female), age of women (15-24, 25-34 and 35+) and marital status (recorded as not married or married). While among the socio-economic variables; educational level (grouped into; no education, primary education, secondary education or higher), respondents employment status (unemployed or employed); Media Access (a sum of; frequency of reading newspaper, listening to radio and watching television - recoded as no access or access to media), respondents household wealth index (recoded as poor, middle or rich); religion (catholic or protestant), place of residence (urban or rural), and region of residence (Central, Copperbelt, Eastern, Luapula, Lusaka, Muchinga, Northern, North Western, Southern and Western) provinces.

### Data analysis

A total of 16,178 women with responses on key explanatory variables formed part of the analysis. In order to ascertain the relationship between the explanatory variables and outcome variables, both univariate and bivariate analyses were performed to describe the study population. For univariate analysis frequency distributions were used to describe the study population while Pearson's Chi-Square test ($x^2$) was used to test the association between the dependent variable (health insurance coverage among women) and the various explanatory variables. On the other hand, binary logistic regression analysis was used to determine the demographic and socioeconomic characteristics associated with health insurance coverage

among women of child bearing age in Zambia. All the estimates were weighted to reflect the population. The effect of the complex multistage sampling design that was used in the 2013-14 ZDHS was considered. To test for multicollinearity, pairwise - correlation analysis was undertaken. The data was analyzed using STATA 13.0 software. The analysis considered the 0.001, 0.01 and 0.05 levels of significance.

## RESULTS

### Description of the study sample

Table 1 shows the percentages and frequencies of the variables used in the analysis. The table indicates that slightly less than three quarters (74.2%) belonged to male headed households, about sixty (59.9 %) of the women were married, forty one (40.6%) were aged between 15 and 24 years, 75.4 % had access to media, fifty two (51.8%) were employed, 81.5% belonged to protestant churches, 46.3 % belonged to households considered rich. In addition, less than half (44.8%) of the women only had primary school, (19.7%) of the women had region of residence as Lusaka and more than half (53.9%) resided in rural areas.

### Coverage of women's insurance in Zambia

Figure 1 shows the percentage of women of child bearing age (15 – 49). Overall, only 3% (473) of women have health insurance while, 97% (15705) do not have health insurance.

### Bivariate analysis of women's insurance coverage in Zambia

Table 2 shows the results of the bivariate analysis of the association between demographic and socioeconomic factors and women having health insurance. Among the insured women, 3.3 % were married while 2.3 % were not married. Women aged 25 to 34 and 35 to 49 years had twice as high the proportions of being insured compared to those aged 15 to 24 years (3.8 % and 3.7 % vs. 1.8 %).

Similarly, a higher proportion of women with health insurance had access to media (3.7 %) compared to those that did not have access to media (0.5 %). About four (3.6 %) of the employed women had health insurance compared to (2.2 %) of the unemployed. Women from rich households equally had higher proportions of having health insurance as compared to the poor (5.7% vs. 0.6%). The proportion of insured women was higher among those with secondary and tertiary level of education compared to those with no education (5.4 % vs. 0.4 %).

In terms of region of residence, Copperbelt region had a higher proportion of insured women (6.4 %) compared to Muchinga and Northern region (0.2%). Disaggregated by place of residence, 5.4 % of women in urban areas compared to 0.8% in rural areas had health insurance.

### Regression analysis results

The logistic regression results for socioeconomic and demographic determinants of health care insurance coverage among Zambian women are presented in Table 3. The results indicate that on average, the odds of being covered by health insurance are 50 % higher for married women than women that are not married. Further, the odds of having health insurance, increased with age, with those aged 25 to 34 and 35 or more years having 70 % and 100% higher odds of having health insurance than those aged 15 to 24 years. Similarly, women with access to media had 100 % higher odds of having health insurance than those who had no access to media.

Further, the employed women had 70 % higher odds of having health insurance than the unemployed women. Besides, the level of education of the women was also a significant predictor of having health insurance. Results indicate that women with Secondary and higher education had on average 510 % higher odds of having health insurance.

On the contrary, with regard to region of residence, women in Muchinga and Northern regions had 90%

**FIGURE 1. Percentage of women ((15-49) years) with health insurance in Zambia.**

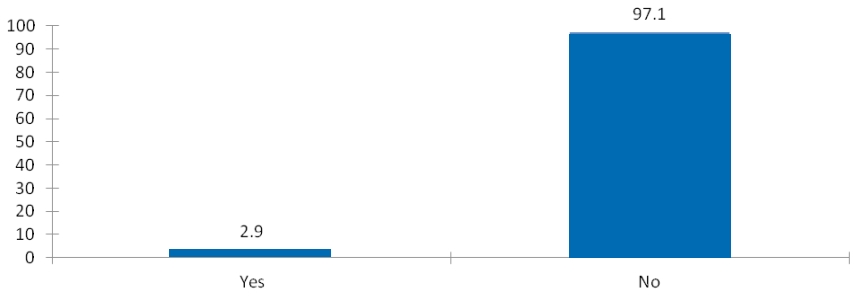

**TABLE 1. Percentage distribution of the sample by demographic and socioeconomic characteristics.**

| | % | N |
|---|---|---|
| **Sex of Head** | | |
| Male | 74.2 | 12,004 |
| Female | 25.8 | 4,174 |
| **Marital Status** | | |
| Not married | 40.1 | 6,482 |
| Married | 59.9 | 9,696 |
| **Age Group of Respondent** | | |
| 15-24 | 40.6 | 6,571 |
| 25-34 | 32.2 | 5,204 |
| 35+ | 27.2 | 4,403 |
| **Media Access** | | |
| No access | 24.6 | 3,973 |
| Access to media | 75.4 | 12,205 |
| **Respondents Employment Status** | | |
| Unemployed | 48.2 | 7,792 |
| Employed | 51.8 | 8,387 |
| **Religion** | | |
| Catholic | 18.5 | 2,988 |
| protestant | 81.5 | 13,191 |
| **Wealth Quintile** | | |
| Poor | 34.8 | 5,638 |
| Middle | 18.9 | 3,054 |
| Rich | 46.3 | 7,486 |
| **Educational Level** | | |
| No education | 8.2 | 1,323 |
| Primary | 47 | 7,594 |
| Secondary & Tertiary | 44.8 | 7,249 |
| **Region of Residence** | | |
| Central | 9 | 1,451 |
| Copperbelt | 17.4 | 2,809 |
| Eastern | 11.8 | 1,904 |
| Luapula | 6.9 | 1,123 |
| Lusaka | 19.7 | 3,184 |
| Muchinga | 5.4 | 868 |
| Northern | 7.3 | 1,187 |
| North Western | 4.4 | 706 |
| Southern | 12.3 | 1,988 |
| Western | 5.9 | 958 |
| **Type of Place of Residence** | | |
| Urban | 46.1 | 7,454 |
| Rural | 53.9 | 8,724 |
| **Total** | 100 | 16,178 |

lower odds of having health insurance than those in Lusaka. Similarly, rural women had 50% lower odds of having health insurance than to urban women.

## DISCUSSION

The objective of this paper was to examine the demographic and socioeconomic determinants of women's health insurance coverage in Zambia. The findings indicate that a very low proportion of women have health insurance coverage (3%). Disaggregated by place of residence, more urban than rural women are insured (6% vs. 1%). The provincial distribution of health insurance coverage further shows that, regions which are pre-dominantly rural (Muchinga, Northern, Western and Eastern) had lower proportions of women with health insurance. This is particularly because most of the insurance firms are concentrated along the line of rail and mostly target the urban dwellers. These results are consistent with the ZDHS 2013-14 results which revealed that only (3%) of Zambia women of child bearing age have health insurance [7]. On the other hand, those who had access to media, had secondary or higher education, were employed, belonged to wealthier households, were in the older age group and were married had higher proportions of having health insurance coverage.

The study also reveals that, various demographic and socioeconomic factors have significant influence on the insurance coverage of the Zambian women. Being married was found to be positively associated with insurance coverage in comparison to not being married. The plausible explanation for this is that married women may benefit from their husbands' health insurance policies [29] and also the fact that husbands may encourage their wives to get health insurance. The finding is consistent with other studies [28, 41, 42] which found that married couples had higher likelihood of having health insurance than unmarried individuals in Ghana.

Another important observation was that health insurance coverage increases with age. This implies that as one advance in terms of age, there is an increase in the rate of illness and hence the utilization of health care insurance to cover the risk [35]. In addition, mostly the older groups are employed. Income from employment enables them to purchase health insurance. This finding agrees with the study by Mathur [34] which revealed that age of the respondents' acts as a significant determinant to one's insurance status, in Lucknow, India.

Health insurance coverage was also positively associated with media access. Information about the importance and presence of health insurance is usually found in the newspapers, on radios and TVs. The finding is in agreement with a study by Kimani, et al.[29] which posited that exposure to the media through reading newspapers; listening to radio or watching television was

**TABLE 2. Percentage of women (15-49 years) with health insurance according to demographic and socio-economic characteristics.**

| | Not Insured | | Insured | | p-value |
|---|---|---|---|---|---|
| | % | CI | % | CI | |
| **Sex of Head** | | | | | |
| male | 96.9 | [96.2,97.4] | 3.1 | [2.6,3.8] | **0.07** |
| female | 97.7 | [96.8,98.3] | 2.3 | [1.7,3.2] | |
| **Marital Status** | | | | | |
| Not married | 97.7 | [96.9,98.3] | 2.3 | [1.7,3.1] | **0.008** |
| Married | 96.7 | [95.9,97.3] | 3.3 | [2.7,4.1] | |
| **Age Group** | | | | | |
| 15-24 | 98.2 | [97.6,98.6] | 1.8 | [1.4,2.4] | **0.000** |
| 25-34 | 96.2 | [95.2,96.9] | 3.8 | [3.1,4.8] | |
| 35+ | 96.5 | [95.6,97.3] | 3.5 | [2.7,4.4] | |
| **Media Access** | | | | | |
| No access | 99.5 | [99.2,99.7] | 0.5 | [0.3,0.8] | **0.000** |
| Access to media | 96.3 | [95.5,97.0] | 3.7 | [3.0,4.5] | |
| **Respondents Employment Status** | | | | | |
| Un Employed | 97.8 | [97.1,98.3] | 2.2 | [1.7,2.9] | **0.000** |
| Employed | 96.4 | [95.6,97.1] | 3.6 | [2.9,4.4] | |
| **Religion** | | | | | |
| Catholic | 97.4 | [96.4,98.1] | 2.6 | [1.9,3.6] | **0.412** |
| Protestant | 97 | [96.3,97.6] | 3.0 | [2.4,3.7] | |
| **Wealth Quintile** | | | | | |
| Poor | 99.5 | [98.9,99.7] | 0.5 | [0.3,1.1] | **0.000** |
| Middle | 99.4 | [98.9,99.7] | 0.6 | [0.3,1.1] | |
| Rich | 94.3 | [93.1,95.4] | 5.7 | [4.6,6.9] | |
| **Educational Level** | | | | | |
| No Education | 99.6 | [98.9,99.9] | 0.4 | [0.1,1.1] | **0.000** |
| Primary | 99 | [98.6,99.3] | 1.0 | [0.7,1.4] | |
| Secondary & Tertiary | 94.6 | [93.4,95.5] | 5.4 | [4.5,6.6] | |
| **Region/Province** | | | | | |
| Central | 98.1 | [97.0,98.9] | 1.9 | [1.1,3.0] | **0.000** |
| Copperbelt | 93.6 | [91.0,95.5] | 6.4 | [4.5,9.0] | |
| Eastern | 99.3 | [98.7,99.6] | 0.7 | [0.4,1.3] | |
| Luapula | 97.9 | [96.8,98.7] | 2.1 | [1.3,3.2] | |
| Lusaka | 95.6 | [93.8,96.9] | 4.4 | [3.1,6.2] | |
| Muchinga | 99.8 | [99.5,99.9] | 0.2 | [0.1,0.5] | |
| Northern | 99.8 | [99.6,99.9] | 0.2 | [0.1,0.4] | |
| North western | 97.8 | [96.2,98.7] | 2.2 | [1.3,3.8] | |
| Southern | 96.9 | [94.0,98.4] | 3.1 | [1.6,6.0] | |
| Western | 99.2 | [98.4,99.6] | 0.8 | [0.4,1.6] | |
| **Type of Place of Residence** | | | | | |
| Urban | 94.6 | [93.3,95.6] | 5.4 | [4.4,6.7] | **0.000** |
| Rural | 99.2 | [98.9,99.5] | 0.8 | [0.5,1.1] | |
| | | | | | |
| **Total** | 97.1 | [96.5,97.6] | 2.9 | [2.4,3.5] | |

associated with having health insurance.

Further, the results showed that employed women are more likely to be insured than unemployed women. There are various reasons for this result. Firstly, income enables an individual to purchase health insurance; secondly, a number of employers provide health insurance to their employees; thirdly, the target market for most insurance companies is the employed. This finding is consistent with other similar studies [33, 32].

The results also showed that those with secondary or higher education have significantly higher odds of having health insurance coverage. These findings are similar to those observed by other researchers [9, 36]. The results underscore the fact that health education plays a critical role enlightening individuals about the importance of health insurance coverage. Education also helps individuals make informed choices on health related matters, among them purchase of health insurance to avoid catastrophic health expenditures when they fall sick.

In terms of region, the results show that ruralised

**TABLE 3. Adjusted odds ratios (AORs) of the demographic and socio-economic determinants of women's health insurance in Zambia.**

| Variable | AOR | CI |
|---|---|---|
| **Sex of Household Head** | | |
| Male | 1 | |
| Female | 0.7 | 0.5 - 1.1 |
| **Marital Union** | | |
| Not married | 1 | |
| Married | 1.5* | 1.0 - 2.3 |
| **Age Group of Respondents** | | |
| 15 – 24 | 1 | |
| 25-34 | 1.7** | 1.2 - 2.5 |
| 35+ | 2.0*** | 1.4 - 2.9 |
| **Media Access** | | |
| No access | 1 | |
| Accessed to media | 2.0* | 1.1 - 3.6 |
| **Employment Status** | | |
| Unemployed | | |
| Employed | 1.7*** | 1.3 - 2.4 |
| **Religion** | | |
| Catholic | 1 | |
| Protestant | 1.1 | 0.8 - 1.6 |
| **Wealth Quintile** | | |
| Poor | 1 | |
| Middle | 0.5 | 0.2 - 1.4 |
| Rich | 2.1 | 0.9 - 5.2 |
| **Level of Education** | | |
| No Education | 1 | |
| Primary Education | 1.6 | 0.5 - 4.8 |
| Secondary & Tertiary | 6.1*** | 2.2 - 16.9 |
| **Region/Province** | | |
| Lusaka | 1 | |
| Central | 1.0 | 0.6 - 1.8 |
| Copperbelt | 1.6 | 1.0 - 2.6 |
| Eastern | 0.7 | 0.3 - 1.4 |
| Luapula | 1.8 | 1.0 - 3.2 |
| Muchinga | 0.1*** | 0.0 - 0.4 |
| Northern | 0.1*** | 0.0 - 0.3 |
| North Western | 1.3 | 0.7 - 2.5 |
| Southern | 1.6 | 0.7 - 3.8 |
| Western | 0.6 | 0.3 - 1.3 |
| **Type of Place of Residence** | | |
| Urban | 1 | |
| Rural | 0.5** | 0.3 - 8 |

*** p<0.001, ** p<0.01, * p<0.05

provinces have lower odds of having health insurance coverage compared to Lusaka. This is because most of the insurance companies are concentrated in the capital city – Lusaka and very few in poor provinces like Muchinga and Northern. An earlier study by Kimani, et al. [29] got similar findings concluding that women residing in the geographical regions of Central, North Eastern and Western had a lower likelihood of having health insurance compared to Nairobi province.

Lastly, the women residing in rural areas have lower odds of having health insurance compared to the urban based women. The reason for this is that health insurance companies are mostly found in urban areas and these companies have tailored their products to the urban dwellers. This is consistent with common sense and previous studies.[39,32]

## CONCLUSION

The findings from this study highlight the fact that health insurance coverage among women is low in Zambia. Various factors have been examined and it has been established that being married, access to media, higher age category, higher education level, being employed have a positive influence on health insurance coverage while province of residence and type of place of residence are negatively associated with health insurance coverage among women in Zambia.

## POLICY IMPLICATION

The study's findings provide important pointers to policy formulation and implementation. The study provides insights into the factors that government and the players in the health insurance/life assurance industry should target.

In order to enhance private health insurance in Zambia, policies and strategies should be aimed at enhancing the factors that are positively associated with health insurance coverage and work on the factors that negatively affect insurance coverage. In addition to this, private health insurance companies should market their health insurance /life assurance services in all companies.

Further, they should tailor their health insurance products for various categories of people, not only targeting the employed but also the unemployed, the younger age groups, the informal sector and those in the rural areas.

Moreover, as Zambia implements the Social Health Insurance (SHI) scheme, Government should bear in mind the established factors. Considering the fact that the rural areas have lower odds of having health insurance, the implementation of SHI is critical to ensure that even the rural dwellers are covered, although this may pose a challenge as most of the rural dwellers are in informal employment. Considering that SHI may be difficult to implement among the informal rural based dwellers, government and other stakeholders should try and encourage community based insurance schemes.

The low levels of health insurance should be of serious concern to everyone. They highlight the need for private health insurance companies and government to work on policies and strategies to increase the levels of health insurance coverage. To stimulate the demand for health insurance, private insurance companies should step up

their efforts on sensitizing the general populace on the importance of health insurance coverage through various media; radio, TV and newspapers. Government through the Ministry of health can also help with the sensitization.

To have a balanced understanding of the factors that affect health insurance coverage (health insurance market), it would be important to study both the demand side and supply side factors. Further studies should be done to understand the factors that affect the supply of insurance coverage.

## STUDY LIMITATION

The study had a number of limitations which include the following;

The variables used for this study were obtained from the 2013-14 ZDHS. This was a limitation in the sense that not all the variables are included in the ZDHS like morbidity, health insurance premiums etc;

The ZDHS is a cross-sectional survey, as such, it is difficult to assess or make claims about the determinants of health insurance coverage.

### Funding

This paper did not receive any specific grant from any funding organisation.

### Conflict of interest

The authors declare that they have no conflicts of interest in this study.

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