

Determinants of Demand for Micro Health Insurance in Botswana

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Motivation

- Poor households face a number of uncertainties-food, clothing, shelter , especially good health, etc
- Poor health is not only a consequence of, but also a cause of extreme poverty
- Livelihood improvement ventures are constrained by loss of productive man-hour and frequent drain of financial resources to cover emergencies caused by illness (ILO, 2008)
- Uninsured risks leaves poor households vulnerable to shocks (Preker, 2007 ; Dercon, 1996; 2005; Pan, 2008 among others)
- Micro Health Insurance (MHI) has the potential to reduce these shocks thereby improving welfare for the poor

Motivation –*Cont.*

- Micro insurance generally could be defined as an insurance that
 - operates by risk-pooling
 - financed through regular premiums and
 - tailored to the poor who would otherwise not be able to take out insurance (Churchill, 2006).
- Micro Health Insurance is a risk management scheme based on insurance principles and operating at local community level.
 - It offers a predefined benefits package in exchange for a small and affordable prepaid premium (USAID, 2006).

Summary of the Debate

- Many researches on the determinants of demand and supply of Micro Health Insurance in Asia and some countries in sub-Saharan African (SSA), no known study has focused on Botswana.
 - Small size of the country -1.8 million people
 - State dominance in health care provision
 - However, Botswana is a upper middle income country with very great potentials for MHI development-
 - Less that 10% of the population are covered by formal health insurance schemes
 - High GDP per capita reflects high ability to pay
- Many of the existing literature on micro insurance focuses on supply and institutional issues causing insurance products to be more tailored to the providers' needs with little attention paid to demand side factors (Siegel *et al.*, 2001).
- Yet, it is our view that introduction of Micro Health Insurance products needs to give careful attention to households' needs, preferences and expectations if it is going to be successful (Ahuja and Jutting 2003).

Relevance of this Study

This study is important for a number of reasons:

- identify the needs and preferences of low income groups,
- it will provide a better understanding of the purchasing capacity of low income groups,
- determine the structure and income levels of work force with a view to identifying factors that may influence low income groups' decision to buy Micro Health Insurance.
- This will assist health insurance providers to better package their products to meet these needs.
- Finally, it will provide the government with insights into how to better regulate the insurance market with a view to attracting private sector organisations into Micro Health Insurance market.

Types of Health Insurance Schemes

- Health insurance can broadly be classified as private or public (WHO, 2004).
 - Private health insurance has historically been characterised as voluntary, for-profit and non-profit commercial coverage.
 - Public insurance is used here to encompass the full range of schemes that are variously described as "social insurance" or "national insurance".
- WHO (2004) suggested a spectrum between these two extremes, classified along three key dimensions:
 - Whether insurance is mandatory or voluntary.
 - Whether contributions are risk rated (minimal risk transfer), community-rated (transfer of risk between healthy and sick) or income-based (transfer of risk between healthy and sick; and higher income and lower income).
 - Whether management of the scheme is commercial for-profit, private non-profit, or public/quasi-public.

Structure of Health Insurance Market in Botswana

- In Botswana, health insurance market is a combination of public and private systems
- Insurance market in Botswana can also be classified as formal or informal
 - Formal market can be classified into
 - short term e.g. motor, fire, personal accident & sickness, marine & aviation and credit & surety ship. It targets middle and upper income groups thereby excluding the poor
 - long term markets- This include savings plans and life insurance- biased towards the middle & upper income groups
 - Informal insurance providers consist of those organizations such as burial societies and funeral parlours.

Structure of Health Insurance Market in Botswana- *Cont.*

- Insurance regulation in Botswana is efficient and flexible as there are no obstacles to making insurance market s work for the poor. The insurance Industries Act of 1987 provides that:
 - insurers may not deal in both life and non-life insurance business in Botswana
 - Insurers must be registered with the registrar of insurance and must have P2million paid up capital to register.
 - Insurers must transfer 25% (long-term) or 15% short-term) of their net profits (after taxation) to a Capital Reserve Account. These funds must be used (at least every five years) to increase the paid up share capital of the insurer in line with current and projected liabilities
 - A broker may not own more than 5% of any insurance provider that it brokers for.
 - Broker commission are not capped
 - Burial societies are exempted from the provisions of the Act.

Literature Review on Micro Health Insurance

- Studies in this area have taken several dimensions in the literature.
 - Those that try to develop theoretical models of Micro Health Insurance (Finn and Harmon, 2006),
 - Those that investigate the determinants of demand and supply of micro insurance (Bhat and Jain, 2006; Grignon and Kambia-Chopin, 2009),
 - Those that investigate the pricing policies of insurance products (Brown and Churchill, 2000a; Wipf et al. 2006; Leftly and Mapfumo, 2006; McCord et al. 2006 and Churchill and Cohen, 2006), &
 - Those that analyse the effect of Micro Health Insurance on welfare (Chankova, et al. 2008; Wagstaff, 2007).

Literature Review on Micro Health Insurance – *Cont.*

- Studies on the determinants of the demand for health insurance can be classified broadly into micro and macro studies
 - At the micro level, earlier studies identified socio-economic and demographic characteristics of household head as key determinants of health insurance (Ducker, 1969; Burnett and Palmer, 1984).
 - At the macro level, Truett and Truett (1990) concluded that per capita income, age distribution of the population, and median school years completed are factors that positively affect the demand for life insurance within families.
- Our study follows the micro approach – why? –
 - Household are not homogenous as implied by macro studies and determinants of the demand for micro health insurance is likely to vary across households

Methodology

1. Type and Sources of data

- Primary Data
- Structured questionnaire
- Five districts:
 - Central district, North East district, North West district, Kweneng district, and South east district
- 350 households sampled for this study
 - 25% Itekanele Micro Health Insurance Scheme (about 22,000 clients)
 - 25% Women's Finance House
 - 50% are non-clients of the two organisations above
- Snow-ball sampling method was used in the selection of respondents
- The data was analysed using descriptive statistics and Probit econometric model.

Methodology

2. The Model

- The model estimated is of the form:

$$Pr ob(demand) = \beta_0 + \sum \beta_i X_i + \varepsilon \dots \dots \dots$$

Table 1: Definitions of Variables for Probit Model

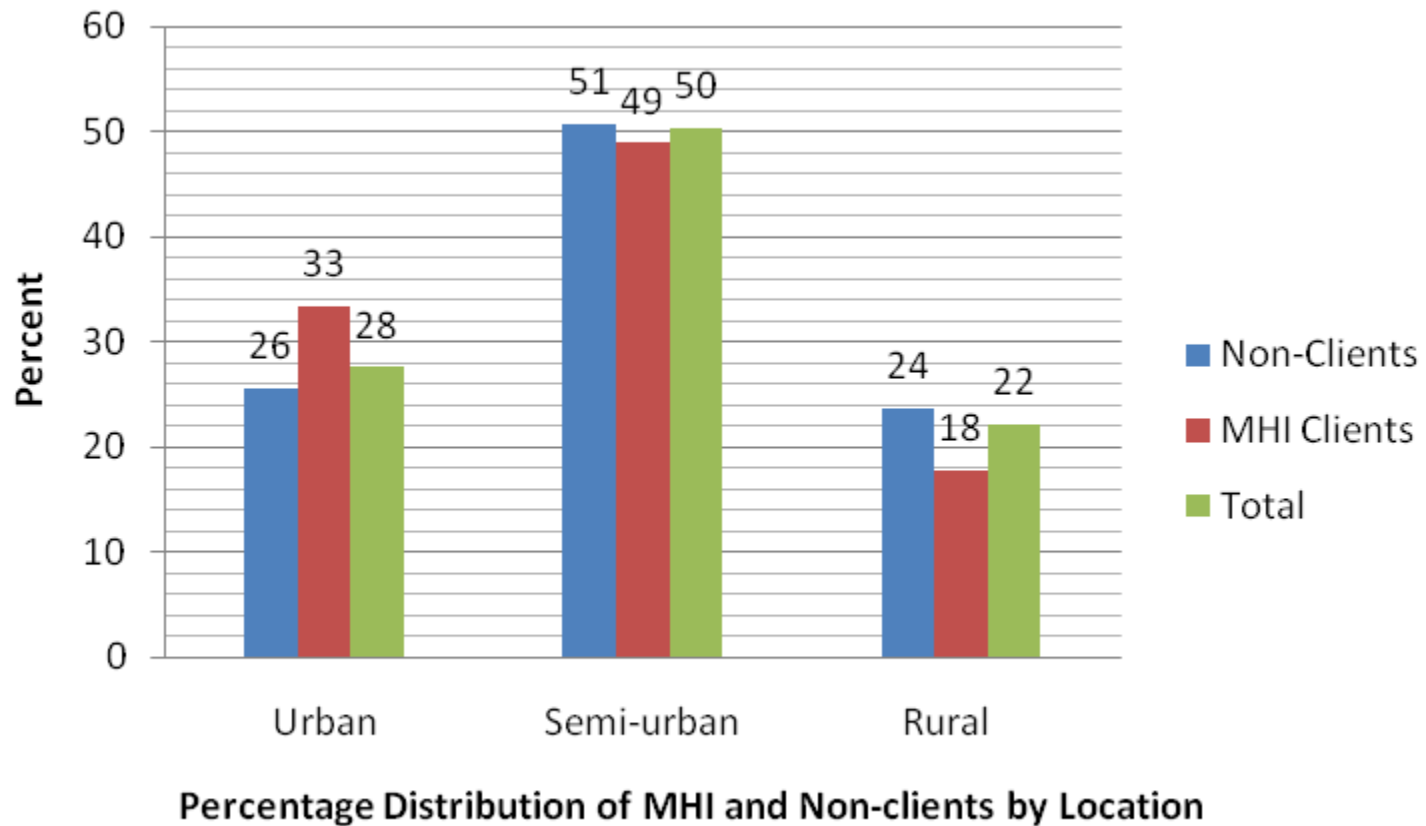
Variable	Definition
Age	Age of household head, measured in completed years
Urban	Dummy for household being located in the urban area (=1 if urban or semi-urban, otherwise zero)
Male	Dummy for male headed household (=1 if male headed, otherwise zero)
No education	Dummy for no formal education for household head (=1 if no formal education, otherwise zero). This was used as the reference category.
Primary	Dummy for highest education level of household head being primary (=1 if primary, otherwise zero)
Secondary	Dummy for highest education level of household head being secondary (=1 if secondary, otherwise zero)
University	Dummy for highest education level of household head being university (=1 if university, otherwise zero)
Unemployed	Dummy for employment status of household head being unemployed (=1 if unemployed, otherwise zero). This was used as the reference category.
Self Employment	Dummy for employment status of household head being self employed (=1 if self employed, otherwise zero)
Paid Employment	Dummy for employment status of household head being paid employment in public or private sector (=1 if in paid employment in public or private sector, otherwise zero)
Other Employment	Dummy for employment status of household head being other employment (=1 if in other employment, otherwise zero)
Household Income	Annual household income, measured in Pula
Premium	Annual premium paid on health insurance, measured in Pula

Empirical Results and Discussion

Descriptive Statistics:

- MHI status decomposes respondents into two classes:
- MHI Clients (Itekanele clients), and
- Non-clients (Clients of other formal insurance companies)
 - 25% MHI clients
 - 74% non-clients (Botswana Medical Aid, Botswana public Officer Medical Aid, Pula medical Aid)
 - 1% has no medical insurance at all.

Location of Respondents by Micro Health Insurance Status

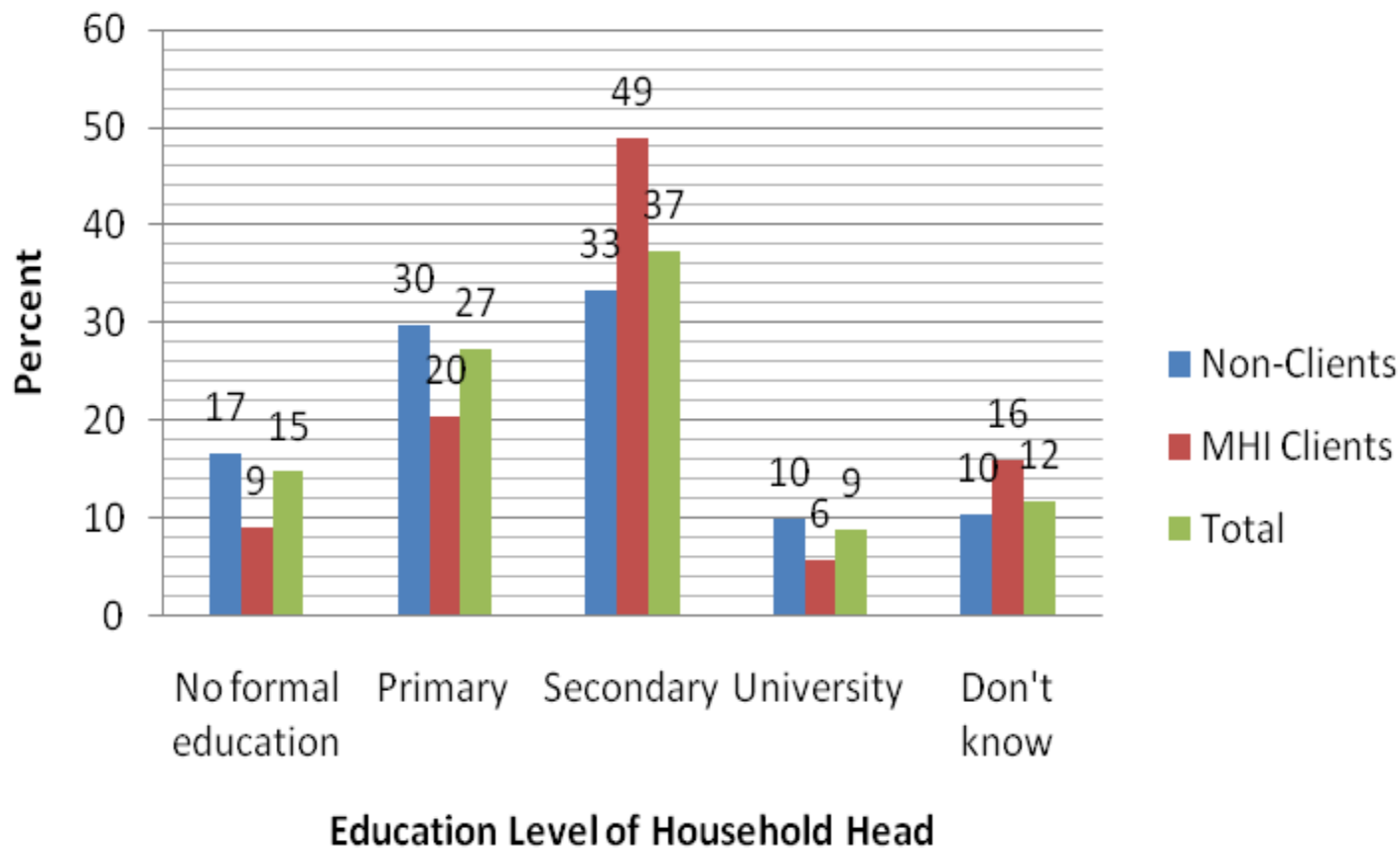


Gender of Household Head by Micro Health Insurance Status

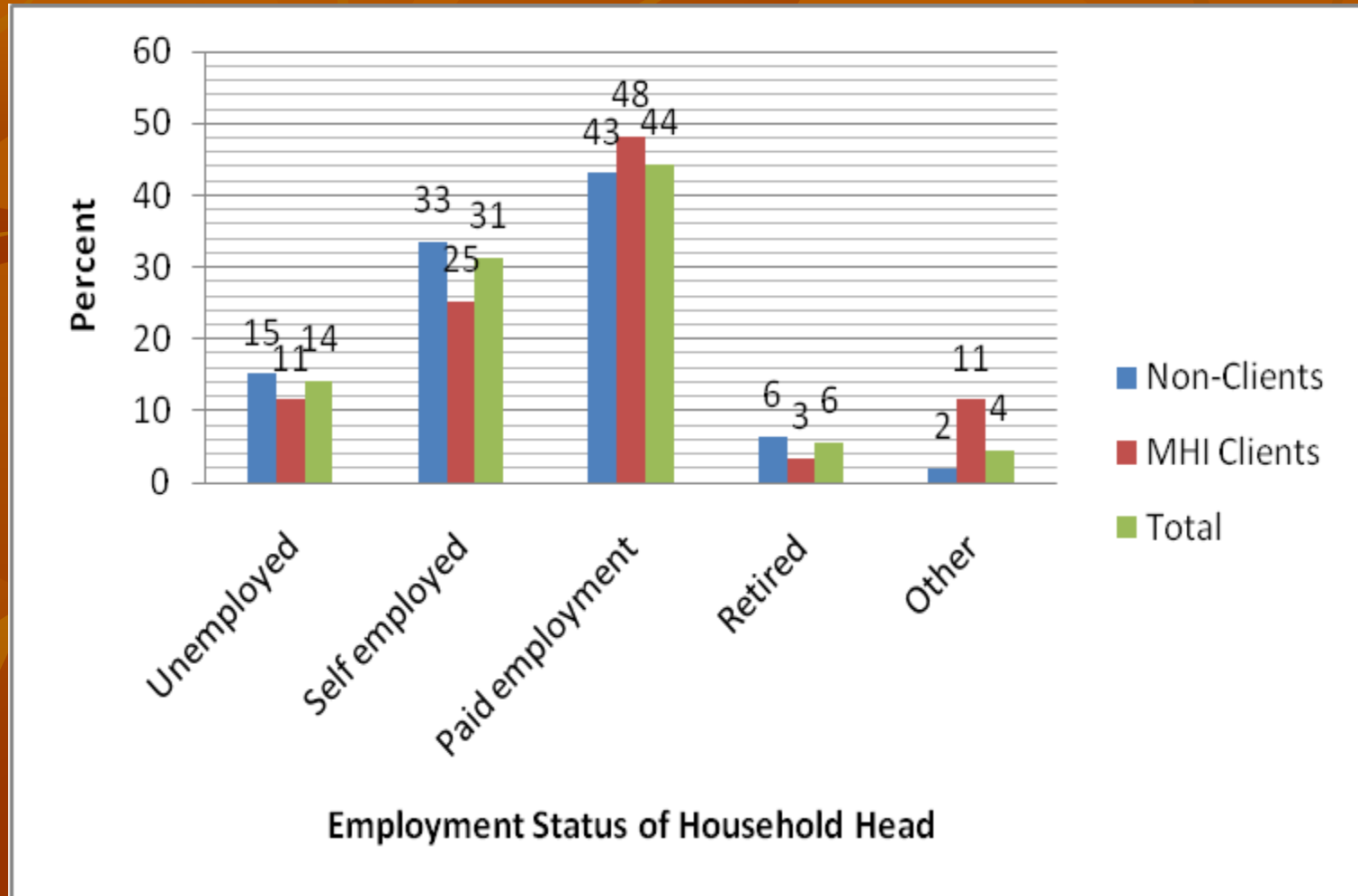


Distribution of MHI and Non-Clients by Gender of Household Head

Education Level of Household Head by Micro Health Insurance Status



Employment Status of Household Head by Micro Health Insurance Status



Age of Household Head by Micro Health Insurance Status

- Mean age for all respondents was 45 years.
- Mean age for MHI clients was lower (42 years)
- Mean age for non-clients (47 years).
- The mean age differences between the MHI Clients and Non-clients are statistically significant at 1 percent significance level (F-value = 7.2 and Prob > F = 0.0076).

Household Income by Micro Health Insurance Status

- Mean annual household income for all respondents was P74,029.
- Mean annual household income for MHI clients was P60,854
- Mean income for Non-clients was P78,554.
- However the difference in mean income between MHI Clients and Non-clients was not statistically significant ($F=0.88$ and $\text{Prob}>F=0.3488$).

Econometric Model Results

Table 3: Probit Regression Results on Determinants of Demand for Micro Health Insurance

Explanatory Variables	Coefficient	z	P>z
Log of age of household head	-0.8723908	-2.31	0.021
Log of household income	-0.3322873	-2.89	0.004
Dummy: urban	0.4683708	1.87	0.062
Dummy: Male Headed Household	-0.1091254	-0.56	0.575
Dummy: Primary Education Level of Household Head	0.0763779	0.27	0.789
Dummy: Secondary Education Level of Household Head	0.1848696	0.73	0.466
Dummy: University Education Level of Household Head	-0.5010691	-1.29	0.199
Dummy: Self Employment Status of Household Head	-0.1602351	-0.53	0.593
Dummy: Paid Employment Status of Household Head	-0.3770744	-1.23	0.218
Dummy: Other Employment Status of Household Head	1.219808	2.19	0.029
Log of Medical Expenditure	-0.0017258	-0.05	0.959
Log of Insurance Premium	0.3593304	8.17	0.000
Constant	4.099043	2.26	0.024

Number of observations	340
LR chi2(12)	154.1
Prob > chi2	0.0000
Pseudo R2	0.3963

Concluding Remarks

- Younger household heads are more likely to have Micro Health Insurance products compared to older ones
- Household income has a negative and significant effect on the demand for Micro Health Insurance
- Being located in an urban area (city/town/urban village) increases the probability of demand for Micro Health Insurance.
- Being in other employment status (students, other) has a positive and significant effect on the probability of demand for Micro Health Insurance
- The insurance premium paid has a positive and significant effect on the probability of demand for Micro Health Insurance contrary to the theory of demand.
- the design and packaging of micro health insurance product in Botswana must give careful considerations to these factors in new product development if new entry into this market shall be successful.

Thank you for Your Attention
