Micro-insurance at Scale: Evidence on Impact from Rwanda

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Trinity Economics Papers
Department of Economics

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September 24, 2018

Abstract

Health insurance protects households from costly health shocks, and by encouraging health seeking behaviour, can safeguard earnings and assets. We confirm that micro-insurance serves as a social safety net by increasing health seeking behavior and reducing out of pocket medical expenses. We find evidence for complementarity between health micro-insurance membership and formal savings activity, confirming positive spillovers between formal financial products. We find substitution between health micro-insurance and informal financial services, where micro-insurance crowds out both informal savings and informal borrowings. In obtaining these results, we use instrument variable estimation to correct for the issue of self-selection, an issue that undermines many previous studies. The study uses nationally representative cross-sectional data from Rwandan Integrated Living Conditions Survey conducted in 2005-06 and 2010-11.

Keywords: Micro-insurance, CBHI, Health Service Utilisation, OOP Expenses, Hardship Financing, Financial Status
JEL codes: I13, I31, O16, D81, G22

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1 Introduction

Health shocks are a major obstacle to economic progress in developing countries. At the aggregate level, poor health outcomes are associated with lower rates of savings, lower capital returns and lower levels of domestic and foreign investment (Ruger and Kim, 2006). The economic cost of health shocks at the household level undermines welfare through out of pocket (OOP) medical expenses and poor health seeking behaviour, and associated losses of earnings (Dercon and Krishnan, 2000; Gertler and Gruber, 2002). Pushed into cycles of poverty by costly health shocks, households often engage in expensive risk-coping activities such as sale of assets, and borrowings from family and friends (Wilkes et al., 1997; Sauerborn et al., 1996; Nahar and Costello, 1998).

Within the context of pervasive health risks and low levels of government investment in free health care provision in developing countries, health insurance offers households the potential to avoid health related poverty. Economic theory suggests insurance helps households achieve consumption smoothing and maximisation of intertemporal utility through improvement in health service utilisation and financial protection of households. Insurance as a risk-coping instrument insulates households from unanticipated individual and common risks, and helps in maintaining higher level of utility for a given health shock (Arrow, 1992; Mayers and Smith Jr, 1988; Farley and Wilensky, 1985). In parallel, through a second order effect, household financial decision-making may improve due to an informational or learning effect associated with the use of insurance, under the information advantage channel described by Giesbert et al. (2011).[1]

With this in mind, institutions such as the World Health Organisation (WHO) and International Labour Organisation (ILO) advocate for the adoption of prepayment and risk-pooling micro-insurance networks, such as the Community Based Health Insurance (CBHI).[2] However, the demand and adoption of micro-insurance in developing countries is severely diminished by economic constraints such as poverty and social-exclusion (Liu and Myers, 2016). The spread of micro-insurance is very limited in developing countries with an estimated coverage ratio of 5.43 percent in Africa, 6.96 percent in Asia and Oceania, and 8.52 percent in Latin America and Caribbean.[3]

The literature on micro-insurance focuses primarily on health service utilisation and financial protection of households. While this provides some evidence for policy-makers, the existing literature lacks credibility due to endogeneity resulting from self-selection and reverse-causation.[4] Moreover, there is gap in existing literature regarding the role of micro-insurance on financial behaviour with

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[1] The information advantage channel is interpreted as the learning effect due to spillovers from the use of one financial service which makes households aware of benefits other financial services (Giesbert et al., 2011).

[2] As put forward by Dror and Jacquier (1999), CBHI is a form of micro-insurance where "micro" refers to the level of society where the interaction is located, i.e. generally for the low income people, and "insurance" refers to the economic instrument like self-help schemes for social health insurance.

[3] Total Microinsurance Coverage Ratio, World Map of Microinsurance. Micro insurance Network. Retrieved from: http://worldmapofmicroinsurance.org/

[4] See Gumber (2001); Jütting (2004); Jütting et al. (2004); Ranson (2001), and Smith and Sulzbach (2008).

context to developing countries. To the best of our knowledge, there is no existing empirical evidence that establishes if micro-insurance acts as a substitute or as a complement for household savings and borrowings status.

This paper examines the role of micro-insurance on outcomes related to health service utilisation, financial protection, and financial status of households. We provide empirical evidence on the impact of CBHI enrolment on household health seeking behaviour, total OOP expenses, likelihood to sell assets, and the status of savings and borrowings, both formal and informal. Our empirical strategy allows us to test the following hypotheses; (i) micro-insurance membership increases health service utilisation of households, (ii) micro-insurance membership reduces total out of pocket (OOP) medical expenses and the likelihood to sale assets, (iii) micro-insurance membership increases savings, and (iv) micro-insurance membership reduces borrowing.

In addressing these hypotheses, we proceed as follows. First, building on the work of Dercon and Hoddinott (2003), we develop a conceptual framework that discusses the intertemporal utility maximisation of a household, as a result of integrating micro-insurance in the household health production function. Second, we use household enrolment profile in the Rwandan micro-insurance scheme Mutuelles de Sante (MdS) to derive causal impact of micro-insurance on outcomes such as formal health seeking behaviour, out of pocket medical costs, likelihood to sell assets, and savings and borrowing. The assessment of micro-insurance membership on status of formal and informal savings/borrowings provides new evidence for the role of micro-insurance on financial outcomes of the households in developing countries. Moreover, we use Instrumental Variable (IV) estimation to address issues of self-selection and reverse-causation and contribute to the existing body of empirical evidence on micro-insurance schemes in developing countries.

For the instrumental variable analysis, we employ intensity of micro-insurance penetration in each Principal Sampling Unit (PSU) as an instrument for our endogenous variable; household micro-insurance status. We choose this IV because first, higher micro-insurance penetration in a PSU should have a positive peer effect on the enrolment decision of a household, and second, PSU insurance rate is a good measure of the performance of community health workers in their effort to expand the membership in MdS (Lu et al., 2012).

The analysis for this paper is based on two cross-sectional data-sets from the Rwanda Integrated Living Conditions Survey (EICV) conducted for the periods 2005-06 and 2010-11.[5] The EICV data shows that membership of the Rwandan health micro-insurance scheme, "*Mutuelles De Sante*" (MdS), which was launched nationally in 2005, increased substantially between 2005-06 and 2010-11. We interpret this increase, in part, as a result of extensive enrolment campaigns and community

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[5]We chose this data-set over Rwandan Demographic and Health Surveillance (RDHS) data-set because RDHS was more related to health variables and general demographic information, thus providing no information about the financial activity. EICV, on the other hand provides comprehensive information about education, health indicators, migration, housing, economic activity, credits, durables and savings. It therefore allows for detailed analysis for different areas of research providing regional and national level evidence for policy-makers.

sensitization carried by district officials and community health workers, and the introduction of national insurance law in 2007.[6]

First, we find that micro-insurance leads to an increase in health service utilisation; captured by formal health seeking behaviour reported by the household. Insured households are 9 percent and 21 percent more likely to use a health care service in 2005-10 and 2010-11 respectively. This result holds across a range of robustness checks and is stronger in 2010; particularly for the extremely poor households. This result provides evidence for the achievement of equity in MdS and creation of social safety net for the medical care of the poorest. This result supports the branch of literature that finds positive impacts of micro-insurance on health seeking behaviour (Msuya et al., 2004; Chankova et al., 2008; Axelson et al., 2009; Aggarwal, 2010; Fitzpatrick et al., 2011; Mahal et al., 2013; Dror et al., 2016).

Second, we find evidence that micro-insurance membership reduces total out of pocket (OOP) medical expenses. There is a reduction of 901 RwF (124 percent) and 133 RwF (32 percent) in the mean of two week OOP expenses in 2005-05 and 2010-11 respectively.[7] This result confirms the role of micro-insurance in reducing illness related costs of the insured and supports the findings from Ghana, Cambodia, India, and Nigeria (Nguyen et al., 2011; Levine et al., 2016; Mahal et al., 2013; Gustafsson-Wright et al., 2013).

In terms of hardship financing of medical costs, we find no evidence for the impact of micro-insurance membership on the sale of assets such as farm land, farm equipment, or livestock. This may be due to very low sales activity in Rwanda, at least for land in 12 months prior to the EICV survey, or support from social networks that helps maintain assets in the family in times of crisis. This finding may be context specific as there exists some evidence which supports protection from hardship financing in Cambodia, India, and Kenya with an effective decrease of up to 9 percent in the sale of assets as a result of micro-insurance membership (Levine et al., 2016; Aggarwal, 2010; Janzen and Carter, 2013).

Third, micro-insurance leads to a reduced likelihood of being an active saver and lower total savings balances in 2010-11; however we find the opposite for both variables in 2005-06. This apparent contradiction is explained when we look at the relative impact of micro-insurance on formal and informal savings respectively. We find that micro-insurance membership increases the likelihood of formal savings in line with the predictions of Giesbert et al. (2011) and Starr-McCluer (1996). In 2010-11 we find strong evidence that micro-insurance reduced informal savings in community savings groups. This suggests that the impact of micro-insurance on savings needs to take into consideration the differential impacts on formal and informal savings devices. In summary, we find evidence that when MdS established itself as a successful national micro-insurance scheme by 2010-11, it

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[6]Law No. 62/2007 of December 30th, disseminated in March 2008.

[7]The larger magnitude of this result in 2005-06 may be attributed to; one, higher differential of OOP between the insured and uninsured in 2005-06, and two, overall larger OOP spending in 2005-06 due to higher incidence of illness episodes reported in that period, confirmed by the main indicator report on EICV2 survey.

acted as a complement for formal savings and a substitute for informal community savings.

For borrowing, we find a somewhat similar story. We found evidence that micro-insurance is negatively related to borrowing in 2010-11 but no impact in 2005-06. We specifically find that in 2010-11 micro-insurance membership reduced the likelihood of informal borrowings, either the decision to borrow informally or total informal loan amount. Much like the impact on savings status, this result suggests that insurance has a slow but real impact on financial behaviour. This result draws strength from the findings of FinScope (2008), which suggests that 22 percent of borrowers indicate medical expenses as one of the primary reason to borrow from informal sources.[8]

This paper is connected to two main strands of literature. First, studies assessing the impact of insurance on health seeking behaviour and OOP expenses, and second, studies focussing on the relationship between insurance membership and financial decision-making. For the first strand, there is an extensive literature on the impact of micro-insurance in developing countries of Asia and sub-Saharan Africa.[9] Specifically, for health service utilisation, Fitzpatrick et al. (2011) find that the Nicaraguan micro-insurance scheme for children increased health utilisation by 1.3 health visits, while (Gustafsson-Wright et al., 2013) estimate 15 percent increase in health service utilisation from the insured in Nigeria. Similar positive results were obtained from Tanzania, Ghana, Mali, Senegal, Vietnam, and India (Msuya et al., 2004; Chankova et al., 2008; Axelson et al., 2009; Aggarwal, 2010; Mahal et al., 2013; Dror et al., 2016). However, studies such as Levine et al. (2016), and Dercon et al. (2012) do not find any positive impact of micro-insurance on health utilisation in Cambodia and Kenya.

In terms of OOP expenses, there is evidence of a reduction in OOP from Ghana. (Nguyen et al. (2011) finds a decline of 67 percent in sample means of OOP), Cambodia (Levine et al. (2016) finds a 44 percent reduction in treatment costs), and Nigeria (Gustafsson-Wright et al. (2013) finds a 40 percent decline in health expenditures). However, Wagstaff et al. (2009) and Lei and Lin (2009) find no evidence on reduction in OOP in India and China, while Gumber (2001) and Chankova et al. (2008) find mixed evidence from west African countries.

For the second strand of literature, there are different mechanisms causing ambiguity on the direction of relationship between insurance and savings/borrowing. Research from Engen and Gruber (2001) and Chou et al. (2003) suggest the existence of a substitution effect between the adoption of insurance and savings/borrowing activity and vice-versa. This substitution effect exists because households, instead of adopting formal insurance, deplete precautionary savings and increase consumption credit when faced with health shocks. Similarly, insured households substitute savings activity and productive credit when uncertainty in income is reduced as a result of adopting formal insurance (Palumbo, 1999; Powers, 1998; Engen and Gruber, 2001; Chou et al., 2003).

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[8]According to FinScope (2008) report, the household informal savings increased from 38 percent in 2008 to 40 percent in 2012.

[9]The literature comprises of experimental and non-experimental studies, and systematic reviews suggests mixed evidence for health seeking behaviour and financial protection across Nicaragua, India, Democratic Republic of Congo, Uganda, Cameroon, Tanzania, Cambodia, and Senegal (Ekman, 2004).

In contrast, Starr-McCluer (1996) argues that the relationship between insurance and savings of a household extends beyond the precautionary motives or income uncertainty, thus reducing the substitution between the two due to factors such as occupation and wages. Further, the information advantage or learning view, as put forward by Giesbert et al. (2011) suggests a positive correlation between insurance and other forms of financial services due to an informational or learning effect associated with the expansion of financial markets. With exception of these few studies exploring the relationship between general insurance and savings/borrowings, we do not find any empirical evidence for the role of micro-insurance on financial outcomes in developing countries.

The rest of this paper is organised as follows: Section 2 presents conceptual framework for the intertemporal utility maximisation of a household as a result of CBHI. Section 3 provides a brief background of Mutuelles de Sante and its operation in Rwanda. Section 4 presents the summary statistics for key variables in the study and discusses the choice and arguments for the validity of IV. The results from the econometrics analysis are presented in Section 5, and robustness checks are discussed in Section 6. The paper concludes in Section 7.

2 Conceptual Framework

2.1 A Simple Framework on Health Stock and the Role of Micro-insurance

Modelling household health is essential to understand the link between insurance and household welfare. It can be shown using simple utility analysis that, given household aversion to unanticipated price changes and health shocks, welfare improvement can be obtained through social security nets such as the community based health insurance. The model presented here is based on Dercon and Hoddinott (2003) and links health shocks to the resulting wealth outcomes in a household. Here, households are assumed to maximise intertemporal expected utility, where utility in each period is a function of the health stock (H), consumption of goods (c), and some household characteristics (A); for example, the life-cycle position of household, its education, etc.

$$U_t = u_t(H_t, c_t, A_t) \tag{1}$$

Household preferences are assumed to be inter-temporally additive and utility functions are increasing and concave, thus implying risk-aversion. The assumption of health as a stock in the utility function is analogous to the analysis of durables or capital goods entering utility maximisation problem. The first constraint is the household health production function (as shown in Equation 2), where health (H) in time period 't' is determined by health in period 't-1' plus net investment in health. As health is taken as a stock, then focusing on net investment on health would include losses in this stock even if the body is in state of rest, much like the depreciation of capital goods. This is captured by the rate of metabolism or Basal Metabolic rate (BMR)[10] as the depreciation factor (represented by ρ)

[10]Basal Metabolic rate: A measurement of the number of calories needed to perform your body's most basic (basal) functions, like breathing, circulation and cell production. Source: Malia Frey in a report published in verywellfit on May 26, 2018. Retrieved from: https://www.verywellfit.com/what-is-bmr-or-

associated with heath stock (H) in period *'t-1'*. Further, the health function '$h(.)$' includes a positive addition to health stock through well-being and fitness induced from previous stock of health 'H_{t-1}', nutrient consumption (η), physical activity (ω), and specific unobserved health characteristics of the household such as inherent immunities (ϵ).

$$H_t = (1 - \rho)H_{t-1} + h(H_{t-1}, \eta_{t-1}, \omega_{t-1}, \epsilon_{t-1}) \tag{2}$$

The budget constraint, linking time period *'t'* and *'t-1'* is shown in Equation 3, where wealth (W) in period *'t'* is the sum of wealth in period in period *'t-1'*, plus the difference between income (y) and expenditure (c). Also, market prices are denoted by 'p' and interest rate on both savings and debt is shown by 'r'. Income (y) is a function of market wages (w), labour (l), and health stock (H); creating a link between health stock (H) and wealth (W).

$$W_t = W_{t-1}(1 + r_{t-1}) + y_{t-1}(w_{t-1}, l_{t-1}, H_{t-1}) - p_{t-1}.c_{t-1} \tag{3}$$

As put forward by Dercon and Hoddinott (2003), the assumptions so far imply that interior solutions for the optimum path of health stock involve constant expected marginal utilities over time. In order to write the solution, the user cost of the additional stock of health (or marginal cost) will be similar to the rental cost of capital stock. Thus, the optimal path for health will involve equal marginal benefits from additional health stock in each period, up to the discounted relative user cost of health. The user cost of health is affected by all sources of heterogeneity described in the household health production function (Equation 2). These sources include; one, adverse impact of unanticipated health shocks on household's well-being/fitness, level of physical activity, and individual immunity; and two, fluctuations in asset and food markets that affects nutrient consumption through change in prices.

Given household aversion towards these fluctuations (implied by concave utility function), welfare improvements can be obtained by; first, reducing the negative effect of unanticipated health shocks on the well-being/fitness 'H_{t-1}', physical activity 'ω', and immunity of households 'ϵ', and second, having stability in the asset and food markets to reduce variability in nutrient prices and consumption 'η'. The former can be achieved by integrating a safety net, such as household membership to a CBHI in household health production function, shown in Equation 2. This addition of 'Ω' representing household membership in CBHI modifies Equation 2, as shown in Equation 4.

$$H_t = (1 - \rho)H_{t-1} + h(H_{t-1}, \Omega_{t-1}, \eta_{t-1}, \omega_{t-1}, \epsilon_{t-1}) \tag{4}$$

The integration of health insurance membership 'Ω' to health production function 'H' shall induce stability in user cost of health stock over time since insurance improves household health seeking behaviour and health outcomes (Msuya et al., 2004; Chankova et al., 2008; Axelson et al., 2009; Aggarwal, 2010). Moreover, stability in asset and food markets would also reduce variability in the health production function by reducing fluctuation in nutrient prices (Dercon and Hoddinott, 2003).

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basal-metabolic-rate-3495380

Although, membership of health insurance is critical to achieve stability in user-cost of health stock, there are many challenges faced by developing countries to expand insurance coverage. Primarily, these challenges are related to the supply-side constraints related to poorly developed insurance markets (Islam and Maitra, 2012), and demand-side constraints due to unaffordability (Liu and Myers, 2016). As a solution, CBHI in developing countries can over-come supply-side constraints by implementing insurance at the community level, while the demand-side constraints can be reduced by targeting the most vulnerable in terms of poverty and social exclusion.[11]

Clarke and Dercon (2009) suggest two competing views for the limiting effect of poverty on a household. The first view is termed as traditional view of poverty and it fundamentally concentrates on the lack of capital by the poor, thus constraining the accumulation of assets (Ray, 2007). An important implication of this view is that a supply-side policy intervention, such as implementation of CBHI, can increase poor's access to health and well-being, and break the health poverty trap.

The second view of poverty is termed as the vulnerability view, where unanticipated household risk is an important feature. According to this view, poor households are forced to build precautionary savings in liquid assets, which limits productive capital investment. However, with the membership of CBHI, the reliance of households on precautionary savings shall reduce, providing opportunity for more productive capital investments (Dekker and Wilms, 2010).

In addition to poverty, CBHI also reduces social exclusion by operating on the principles of solidarity and equity (Health and Financing Systems Review, 2008). With context to Rwanda, CBHI intervention is aimed at strengthening inter-sectoral coordination, community participation, decentralisation of its operations, and partnership between policy makers and the local community to provide a well-functioning health system (Ministry of Health, 2012). Moreover, MdS favours the membership of poor in rural areas and informal service sector by providing subsidies to the poorest of poor (Makaka et al., 2012). Thus, CBHI in Rwanda evolved as an important instrument of social inclusion and cohesion.

Based on this discussion of the intertemporal utility of households, the health production function, and the role of CBHI in reducing poverty and social exclusion, we propose the following hypotheses:

Hypothesis 1: Micro-insurance membership leads to increase in the health service utilisation of households.

Hypothesis 2: Micro-insurance membership leads to fall in the total out of pocket (OOP) medical expenses and reduces the likelihood to sell assets.

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[11]In line with Clarke and Dercon (2009), we define poverty as non-access to goods and services due to unaffordability, while we outline social exclusion as lower social standing, and low outcomes for income, human capital, access to employment and services and voice in both local and national decision-making (World Bank, 2013).

2.2 Framework for the Role of Micro-insurance on Financial Behaviour of Households

Multiple channels link insurance membership with household financial status. These channels induce ambiguity in the direction of the relationship between insurance and household decision to save and borrow.

Precautionary saving helps households manage unanticipated income shocks (Browning and Lusardi, 1996; Giles and Yoo, 2007; Palumbo, 1999; Powers, 1998). Moreover, further empirical evidence shows a substitution effect between insurance and household savings (Engen and Gruber, 2001; Chou et al., 2003). This substitution may exist because the motivation for saving is reduced when households obtain formal insurance against unanticipated illness events in the future. Little is known if this substitution operates for the poor in developing countries.

The evidence for substitution between insurance and financial decision-making is further explored in Starr-McCluer (1996), where the findings suggest non-existence of substitution between insurance and savings. On the contrary, the results suggest complementarity between health insurance and savings/wealth. The study interprets this result as evidence that savings activity of a household extends beyond the precautionary motives or uncertainty, and insured households maintain much higher wealth and savings due to factors such as occupation and wages.

Further, the non-existence of substitution between insurance and savings/borrowings is also explained from the view of information or learning effect as put forward by Giesbert et al. (2011). According to this view, there is a positive correlation between insurance and other forms of financial services. There are two main reasons for this phenomenon to exist. First, insured households may be introduced to other financial products that offer savings and credit and learn the benefits of integrated financial services. Second, expansion of a pioneering formal financial product opens up new opportunities for product bundling. Together, these factors indicate existence of the learning or informational effect associated with the demand of financial products.

Lastly, for household borrowing, credit serves as an important risk-coping mechanism against unanticipated income shocks. Hence, insurance should reduce the demand for credit and vice-versa; a channel explored in empirical studies such as Kruk et al. (2009); Zeller (2001), and Eswaran and Kotwal (1989). Within the context of Rwanda, medical emergency is an important income shock that contributes almost 22 percent of household to borrow (FinScope, 2008). Thus, there is potential for household borrowing status and loans to reduce in Rwanda, as a result of CBHI membership.

In light of the above discussion we propose the following hypotheses:

Hypothesis 3: Micro-insurance membership leads to increase in savings decision and saving deposits of the households.

Hypothesis 4: Micro-insurance membership leads to fall in the likelihood to borrow and total loan amount of households.

3 Background: *Mutuelles de Sante* in Rwanda

Rwanda is a small country in Africa, with a population of around 12 million people, of which about 90 percent are involved in subsistence agriculture.[12] The country faced a civil-war and genocide in 1994, which led to economic turmoil that continued for many years. However, Rwandan economy has been stable in the last decade and per capita income increased from 204 USD in 1996 to 445 USD in 2014 (constant 2015 USD), with the real GDP growth rate of 8 percent per year between 2001 and 2015 (Harrison, 2017).

The genocide crippled the health infrastructure of the country and in response the government abolished medical user fees between 1994 and 1996; providing free medical care in their effort to fight ill health and diseases (Kayonga, 2007). However, the system was heavily under-resourced. Free medical care ended in 1996 and this severely affected health service utilisation of Rwandans. Evidence suggests that medical service use in public and church-owned health facilities dropped from 0.3 consultations per capita per year in 1997 to 0.25 in 1999 (Schneider, 2005). As a response, the government decided to establish a pre-payment community based health insurance scheme to improve health care coverage.

Figure 1: Enrolment in *Mutuelles de Sante* (2003-2012)
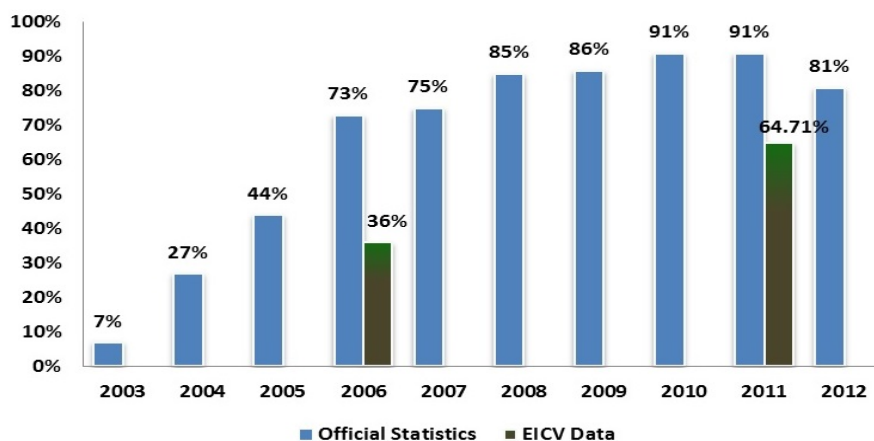
Source: Ministry of Health, Rwanda 2012.

CBHI was first piloted in 1999 in three districts namely; Byumba, Kabgayi, and Kabutare covering 52 health centres and three district hospitals (Ministry of Health, 2012). This pilot was used to learn lessons on the organisation and implementation of micro-insurance, and gradually it was introduced in other districts in the following years. Finally, the programme was launched nationally as Mutuelles de Sante (MdS) in all 30 districts of Rwanda in 2006. Awareness campaigns through community health workers (CHWs), local leaders and radio programmes were undertaken to increase the membership in the scheme (ODI, 2012).

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[12]The World Fact-book, Central Intelligence Agency. Link: https://www.cia.gov/library/publications/the-world-factbook/geos/rw.html

Operating for almost 18 years, MdS has scaled up considerably and now is one of the largest CBHIs in the world. USAID estimates that the coverage of MdS increased from about 10 percent in 1999 to 91 percent in 2010 (see Figure 1). However, MdS still qualifies as a CBHI scheme due to extensive role of local community in making MdS an instrument of social cohesion and inclusion in Rwanda.

3.1 Subscription and Services

Initially, enrolment in MdS required household subscription in order to limit the problem of adverse selection. The annual premium payment for MdS was fixed at 2500 RwF (around 4.5 USD in 2007) for a family of 7 members. However, the family payment structure was discontinued in 2007 and annual premiums of 1000 RwF (around 1.8 USD in 2007) were introduced for each member in the household.[13]

MdS requires co-payment in order to limit the problem of moral hazard.[14] The co-payment was fixed at 100 to 150 RwF (0.18 to 0.28 USD in 2006) per visit to the health centre and up to 50 percent of the hospitalisation fees. In 2007, the co-payments were increased to 200 RwF (0.28 current USD) for visit to the health centre, while decreased to 10 percent of the total charges for hospitalisation (Lu et al., 2012).

Table 1: Components of PMA and PCA

Service Provided	Contents
Minimum Service Package (**PMA**)	Prevention Activities: Prenuptial examination, prenatal and postnatal consultations, voluntary consultation and testing for HIV, family planning, vaccination, screening and epidemiological surveillance, water and sanitation. Curative Activities: Curative consultations, child health care, chronic diseases, HIV/AIDS patient treatment, nutritional rehabilitation, inpatient care, minor surgery, laboratory tests, drug provision. Health Promotion Activities: Information, education and communication for health, child-growth monitoring, psychological support. Maternal Health Activities: Deliveries, post- abortion treatment.
Complementary Service package (**PCA**)	Provision of services and treatment to patients referred by health centres for consultation and surgery. Provision of obstetric cases. Emergency services. Ambulatory services. Provision of drugs. Child Health Laboratory imaging and testing. Training of health centre staff. Planning, implementation, surveillance and evaluation of health centre activities.
Source: Health Financing Systems Review (2008), Ministry of Health, Rwanda.	

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[13]The payment of flat premium was discontinued in 2011 and a new stratification system was introduced. Under this new system, the lowest income category pays annual contribution of 2,000 RwF (USD 2.68), second income category pays 3,000 RwF (USD 4), and the highest income category pays 7,000 RwF (USD 9.40). Moreover, the government subsidises the premium payments for the lowest income groups.

[14]Co-payment is the amount that the insured pays as out-of-pocket expense for health-care services at the time when medical service is rendered with the insurer paying the remaining costs. Co-payments are necessary to reduce the problem of moral hazard. Source: Investopedia. Link: http://www.investopedia.com/terms/c/copay.asp

In terms of health services offered under MdS, an exhaustive set of rules were introduced in 2007 with clear distinction of services offered by the health-centres and hospitals. The health-centres provided services listed under the minimum service package (PMA), while the hospitals provided services under the complementary service package (PCA) (Lu et al., 2012). These services provided comprehensive set of medical facilities under MdS and therefore were critical in attracting enrolment in MdS (Health Financing Systems Review, 2008). Table 1 shows the components of PMA and PCA at health centres and district hospitals respectively.

3.2 Organisational Structure of *Mutuelles de Sante*

The management of MdS includes different roles played by the central and district governments, communities, health facilities, and international donors. The central government manages the national and district financial pool of MdS and leads on policy development. It is also responsible for strengthening the technical and logistical requirements of district health centres, and provides premium subsidies to the poorest of poor. In addition to the central government, MdS is also managed at the district level, where community mobilisation and expansion of MdS is one of the major responsibilities of district officials. Further, it also provides essential logistics and validates the invoices of district hospitals.

MdS incentivises its officials by offering performance contracts, called Performance Based Financing (PBF). These incentives relate to all arms of administrative decentralisation in Rwanda and expansion of CBHI is one of the key indicators for the performance of district mayors and officials (Samuels and Pose, 2013). The PBF also exists at lower levels of administration where incentives are offered to village Community Health Workers (CHWs) who reside and work in their respective communities.[15]

4 Data and Methodology

4.1 Membership in *Mutuelles de Sante*

This study uses two nationally representative data-sets from Integrated Household Living Conditions Survey (EICV) for 2005-06 and 2010-11.[16] The total number of households surveyed in 2005-06 and 2010-11 was 6,900 and 14,310 respectively.[17]. The primary sampling unit for the survey was villages, defined as enumeration zones, as per the census.[18]

Under the official rules of MdS, the enrolment requires household subscription to avoid the prob-

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[15]A village has three CHWs: a male-female pair that provides basic care against illnesses and one CHW in-charge of maternal health. They are elected at the village level and have an important role to play in creating awareness towards community participation in MdS.

[16]The dataset provides comprehensive information about education, health indicators, migration, housing, economic activity, credits, durables and savings.

[17]The total individuals surveyed in EICV were 34,789 in 2005-06 and 68,398 in 2010-11.

[18]The choice of the sample of these zones was based on the probability proportional to the number of households in the zones. Following this procedure, the second step involved the selection of a set of 9 households in each urban zone and 12 sample households in the rural zone.

lem of adverse selection; however, the EICV data shows that some households do not have all their family members enrolled in the scheme. The proportion of partially enrolled households was recorded as 16.5 and 23.6 percent for 2005-06 and 2010-11 respectively. The EICV data shows that majority of non-enrolled in the family were children, grand-children or child in custody of the household head (59.20 percent), followed by the household head (20 percent), and the spouse of the head (12 percent), as shown in Figure 2. This is further confirmed by the age distribution of the non-enrolled and we find that the age-group less than 12 months of age has highest share of non-enrolled, followed by the age distribution from 10 to 20 years (see Figure 3).

Thus, it appears that the majority partial enrolment in MdS is due to infants in the family who were either delivered after the family had already enrolled in the scheme or household preferences to enrol adults. The possibility of within household adverse selection in the scheme is also supported by the findings of Health Financing Systems Review of Rwanda, (2008).

Figure 2: Relationship of Uninsured with HH Head
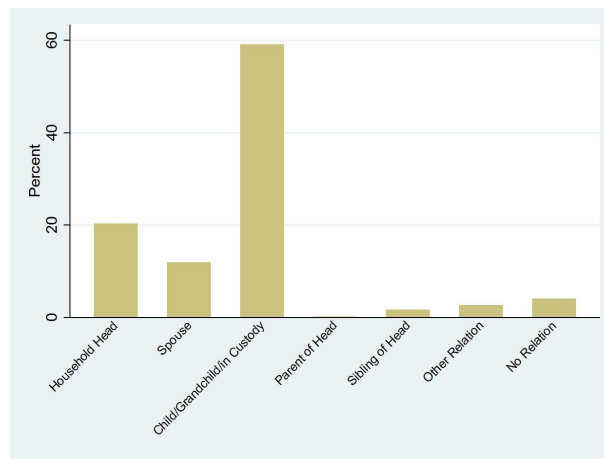
Source: EICV Data.

Furthermore, partial enrolment can also be a result of exemption given to certain members in the household if they are part of any other insurance scheme. We check this on the EICV data and find that only 15.44 percent of non-enrolled individuals from partially enrolled households had membership of any other insurance service. Other than the possibility of adverse selection in the scheme, non-enrolment may also exist due to the financial incapacity of households to pay the cost of premium for all members of the family at the same time (Kalk, 2008).[19]

Heterogeneity of household membership in MdS is accounted for by constructing the measure of insurance intensity; derived as the mean of insurance membership at the household level. The measure ranges as a continuous variable from zero to one.[20] A similar kind of approach has been

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[19]The EICV data shows that proportion of partially enrolled members was highest in the extremely-poor households in 2010-11 (25.80 percent as shown in Table 2); while in 2005-06, the financial incapacity is highlighted by highest non-enrolment from extremely poor households (65 percent as shown in Table 2).

[20]Table 2 suggests that there were 1,129 and 3,380 households in 2005-06 and 2010-10 respectively who

Figure 3: Age of uninsured in the Household
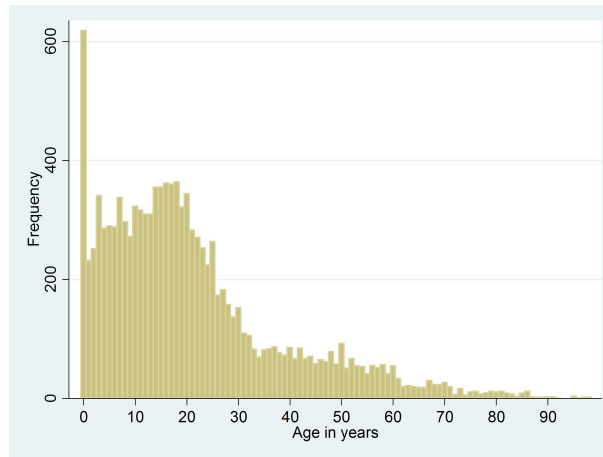
Source: EICV Data.

used by Parmar et al. (2012) and we consider the constructed intensity measure as a direct proxy of insurance penetration at the household level. However, in one of the robustness checks employed in this paper, we drop the partially enrolled households to verify if the main results are affected by the issue of adverse selection in the scheme (see Appendix B).

The descriptive statistics for insurance membership at the household level are shown in Table 2. The EICV data on MdS enrolment suggests that membership increased at all levels of income groups in the five year period from 2005-06 to 2010-11.[21] The increase was substantial for non-poor households where enrolment (partial or full) increased from 45 percent in 2005-06 to 80 percent in 2010-11. For poor households, the enrolment (partial or full) increased from 46 percent to 73 percent, while for extremely poor households the increase in enrolment was from 35 percent in 2005-06 to 65.80 percent in 2010-11. Thus, it can be deduced that enrolment in MdS became more equitable in later years as compared to the initial phase. For households with partial enrolment in MdS, the overall proportion increased to almost 24 percent in 2010-11 as compared to 16.5 percent in 2005-06, mostly driven by extremely poor households.

At the individual level, the proportion of individuals having no insurance reduced significantly from 57.23 percent in 2005-06 to 31.56 percent in 2010-11 (see Table 3). This reduction can be attributed to the strong political commitment by the central and district government to expand CBHI and the subsidies offered for the poorest of the poor (Ministry of Health, 2012).[22] Further, the increase was also due to the introduction of insurance law no. 62/2007 in December 2007; making health insurance mandatory for all Rwandans. It should be noted that the enrolment was made compulsory for any health insurance offered in Rwanda, and not to just MdS per se. However, most people being poor, and in the informal sector found CBHI as the most suitable insurance scheme

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did not have full enrolment of MdS.

[21]The classification is done as per the poverty and extreme poverty status provided in the data-set.

[22]CBHI is an important indicator of performance based contracts.

Table 2: Insurance Intensity in the Household

Sample	2005-06 (N=6,900)			2010-11 (N=14,308)		
	CBHI=0	0<CBHI<1	CBHI=1	CBHI=0	0<CBHI<1	CBHI=1
Entire Sample	4,007	1,129	1,764	3,467	3,380	7,461
	58%	16.50%	25.50%	24.23%	23.62%	52.15%
Extremely Poor	1,351	265	461	1,018	771	1,188
	65%	13%	22%	34.20%	25.80%	40%
Poor	708	210	390	765	658	1,428
	54%	16%	30%	26.80%	23.20%	50%
Non-Poor	1,948	654	913	1,684	1,951	4,845
	55%	20%	25%	19.86%	23%	57.13%

Source: Author calculation using EICV data.

(Chemouni, 2016). This is reflected in the EICV data, where membership in MdS increased from 36.42 percent in 2005-06 to 64.71 percent in 2010-11, while membership to any other forms of insurance reduced from 6.34 percent in 2005-06 to 3.74 percent in 2010-11 (RAMA, MMI, employer insurance, etc.).[23]

Table 3: Insurance profile at the Individual Level

Enrolment in Insurance	2005-06 (N=34,789)	2010-11 (N=68,398)
Mutuelles de Sante	36.42%	64.71%
Other Insurance	6.34%	3.74%
No-insurance	57.23%	31.56%

Source: Author calculation using EICV data.

Despite the official law for mandatory health insurance in Rwanda (either MdS or any other form of insurance), substantial number of individuals remained uninsured in 2010-11 (see Table 4). The majority of these individuals belonged to the lowest income group in both periods of EICV survey, thus indicating the need for continued subsidisation of MdS for the poorest of poor.

Table 4: Income profile of Non-enrolled (MdS or any other Insurance)

Year	Extremely Poor	Poor	Non-Poor
2005-06	65.66% (N=11,377)	56.37% (N=6,652)	51.86% (N=16,760)
2010-11	46.55% (N=16,321)	36.74 (N=14,215)	23.14% (N=37,862)

Source: Author calculation using EICV data.

The membership numbers from the nationally representative EICV are significantly lower than the figures supplied by the Ministry of Health that claimed MdS enrolment being close to 91 percent in 2010 (see Figure 1). This discrepancy may have occurred due to misreporting of the actual figures by the ministry and it must be noted that charges of inflating records were made on some mayors and MdS officials. The false reporting may be driven by pressure on authorities to expand the coverage of insurance (Chemouni, 2016).[24]

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[23]Categories reported for other forms of insurance in data include RAMA (La Rwandaise d'Assurance Maladie), MMI (Military Medical Insurance), Employer Insurance, and other.

[24]Rwanda operates on Performance Based Financing (PBF), therefore there is incentive to misreport the statistics to derive rewards. An example was seen when several resignations and arrests were made in late

4.2 Household profile across Insured and non-Insured in MdS

The difference of means t-test results for demographic variables at the household level are presented in Table 5. The difference is obtained between the mean values of relevant variables for households having positive enrolment (partial or full) in MdS (MdS>0) and households having zero enrolment (MdS=0).

We find statistically significant differences in the mean values of the variables in 2005-06 and 2010-11. It can be deduced from the test that households with higher intensity of MdS enrolment have significantly higher rates of male and older household heads. In terms of household composition and household size, MdS enrolment is significantly higher for bigger households having larger number of adults, children, and women in the family. Also, the proportion of MdS enrolment is significantly higher for households having higher proportion of family members attending primary school.

Further, households who do not have MdS membership report higher participation in other forms of insurance such as RAMA, Military Medical Insurance (MMI), or any other employer insurance. In order to control for the effect arising from the membership in any other form of insurance, the regression analysis for the main results employs membership in other insurance as one of the control variables. In addition, we conduct second set of robustness check by dropping individuals who report to have other forms of insurance membership from the EICV data (see Appendix C).

The results from the difference of means analysis suggest significant differences in the characteristics of enrolled versus non-enrolled households indicating the possibility of self-selection in the scheme. Therefore, it is imperative to control for individual and household level factors and correct for the endogeneity issues in order to obtain meaningful results for the impact of MdS.

Table 5: Difference of Means for Demographic Variables for Insured and non-Insured in MdS

Variables	2005-06				2010-11			
	Mean		Diff.	P-Value	Mean		Diff.	P-Value
	MdS>0 (N=2,893)	MdS=0 (N=4,007)			MdS>0 (N=10,841)	MdS=0 (N=3,467)		
Gender of HH Head	0.74	0.7	0.04***	0.00	0.73	0.71	0.02*	0.04
Age in years	45.23	43.22	2.01***	0.00	45.51	43.87	1.64***	0.00
Size of Household	5.39	4.79	0.59***	0.00	4.88	4.47	0.41***	0.00
Other Insurance	0.02	0.08	-0.07***	0.00	0.02	0.07	-0.05***	0.00
Adults	3.07	2.73	0.34***	0.00	2.84	2.43	0.41***	0.00
Children	2.71	2.58	0.13***	0.00	2.5	2.59	-0.08**	0.01
Women	1.63	1.52	0.11***	0.00	1.53	1.35	0.18***	0.00
Married	0.6	0.47	0.13***	0.00	0.58	0.48	0.09***	0.00
Mean Schooling in HH	0.8	0.76	0.04***	0.00	0.82	0.78	0.04***	0.00

Source: Author calculation using EICV data.

4.3 Main Outcomes of Interest

The focus of this paper is to derive the causal impact of MdS membership on outcomes such as health services utilisation, out of pocket medical expenses, hardship financing, and financial status. The difference of means for these outcomes for insured and non-insured households is reported

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2014 and 2015, covered extensively by media and print (Chemouni, 2016).

in Table 6. In most cases, the differences are statistically significant across the micro-insurance membership profile of the households.

To capture health services utilisation, a measure of formal health seeking behaviour is constructed at the household level such that it takes the value 1 if any member in the household seeks medical attention in the two weeks period prior the survey, and zero otherwise. The result of the t-test shows that enrolled households are significantly more likely to seek formal medical care as compared to uninsured households in both 2005-06 and 2010-11 respectively. The differential is higher in 2010-11 indicating some evidence for improved health seeking behaviour in over the years of MdS operation in Rwanda.

OOP includes all expenses made on medical services such as health check-up fee, purchase of medicines, imaging, pathological expenses, etc. reported for any health conditions in the period of two weeks prior the survey. We find that non-enrolled households incur higher OOP expenses in 2005-06 with the difference being statistically significant. The OOP expenses in 2010-11 are lower compared to 2005-06 and the difference between MdS and non-MdS households in 2010-11 is statistically insignificant.

For hardship financing, the data on sale of assets, irrespective of the reason for the sale, shows that enrolled households have higher proportion of the sale activity in 12 months prior the EICV survey; being statistically significant for both periods. Further, the majority of the sale activity takes place for livestock with very few insured and uninsured households engaging in the sale of farm-land and farming equipment. The results from difference of mean t-test do not provide any evidence for the relationship between insurance membership and the sale of assets. However, it is essential to control for unobserved factors and self-selection through formal regressions in order to make any final deductions.

The financial behaviour of the households is captured by savings and borrowing status using both formal and informal sources, and total savings deposits and loans, reported in Rwandan Francs. Savings status (borrowing status) is binary variable where the variable takes the value as 1 if a household saves (borrow) and zero otherwise in 12 month prior to the EICV survey. Formal savings pertain to any savings made by the household using savings account, while informal savings imply participation of households in community savings group called Tontine.[25]

Existence of savings is significantly higher for enrolled households in both years with the differential being 14 and 11 percent in 2005 and 2010. Moreover, the likelihood of formal and informal community savings is also higher for insured households. These results provide a first indication that membership of insurance is associated with higher savings; however, the issue of self-selection and

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[25]Usually a tontine is formed with friends or work mates. The group agrees on a monthly amount that each member will contribute to the tontine, and each month the pool of money is given to one individual from the group to do with as he or she pleases. The amount is usually enough to start a project, make an investment (livestock, for example), or simply a lump sum to put in the bank. Retrieved from: Tontine: A Home-grown answer to Micro-finance, Link: https://rwandanights.wordpress.com/2012/06/16/tontine-a-homegrown-answer-to-microfinance/

reverse causality cannot be excluded. Therefore, results from IV estimation are necessary to make any conclusive argument regarding the causality between insurance and savings. Further, overall savings activity is recorded much higher in 2010 as compared to 2005.[26] Finally, we do not find any significant differences in the amount of savings-formal or informal between insured and non-insured households in 2005 and 2010.

For borrowing status, it is noted that insured households borrow 2 percent less in 2010, the differential being significant at 5 percent level. This reduction seems to be driven by the decrease in informal borrowings made by insured households from sources such as parent or friend, tontine, NGO, employer, and other traditional or modern lenders. However, this result also needs further inspection from regression estimation before any final deductions can be made.

Table 6: Difference of means for Main outcomes between Insured and non-Insured in MdS

Variables	2005-06				2010-11			
	Mean		Difference	P-Value	Mean		Difference	P-Value
	MdS>0 N=2,893	MdS=0 N=4,007			MdS>0 N=10,841	MdS=0 N=3,467		
Seek Formal Medical Care	0.25	0.16	0.08***	0.00	0.29	0.11	0.18***	0.00
Total OOP Expenses	519.3	884.9	-365***	0.00	444.37	327.51	116.86	0.17
Sold Assets	0.58	0.53	0.05***	0.00	0.68	0.65	0.03*	0.01
Sold Livestock	0.54	0.48	0.07***	0.00	0.63	0.58	0.05***	0.00
Sold Farm Equip.	0.002	0.00	-0.000	0.73	0.02	0.02	-0.01***	0.00
Sold Farmland	0.06	0.06	0	0.97	0.1	0.1	0	0.93
Household Saves	0.53	0.39	0.14***	0.00	0.67	0.56	0.11***	0.00
Saves Formal	0.24	0.18	0.05***	0.00	0.42	0.28	0.15***	0.00
Saves Informal (Tontine)	0.41	0.27	0.13***	0.00	0.48	0.42	0.07***	0.00
Total Savings (RwF)	40,801.65	34,671.48	6,130.18	0.24	1,088,426.7	1,781,074.42	-692,647.60	0.38
Total Formal Savings (RwF)	26,070.38	24,329.65	1,740.73	0.72	77,032.80	67,450.63	9,582.20	0.42
Total Informal Savings (RwF)	14,749.30	10,353.97	4,395.32*	0.01	1,044,868.8	1,750,510.56	-705,641.60	0.37
Household Borrows	0.59	0.56	0.03*	0.01	0.73	0.75	-0.02**	0.01
Borrows Formally	0.16	0.14	0.03***	0.00	0.1	0.08	0.02***	0.00
Borrows Informally	0.42	0.42	0.01	0.65	0.63	0.68	-0.04***	0.00
Total Borrowings (RwF)	93,507.73	75,635.24	17,872.49	0.37	517,386.10	153,254.04	364,132.04	0.22
Total Formal Borrowings (RwF)	69,565.90	54,102.66	15,463.23	0.36	198,740.50	129,079.90	69,660.60	0.46
Total Informal Borrowings (RwF)	17,492.80	14,036.96	3,455.85	0.65	217,362.20	20,150.60	197,211.61	0.39
Source: Author calculation using EICV data.								

4.4 Methodology

While health insurance is officially mandatory in Rwanda, the reality on the ground is different allowing for possible self-selection of enrolees, based on individual and household level observed and unobserved factors. Endogeneity may also occur due to reverse-causation when for example higher health seeking behaviour may lead to higher micro-insurance membership. As a consequence, Ordinary Least Square (OLS) estimation gives biased results; due to endogeneity. In order to deal with these empirical issues, this paper uses instrumental variable (IV) estimation with an exhaustive set of household and district level controls to derive the causal impact of micro-insurance.

Our identification strategy requires identification of an instrumental variable which satisfies two conditions; first, correlated with the key explanatory variable; micro-insurance membership, and

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[26]This is in line with the official statistics from Rwanda suggesting an increase of 163.1 percent in savings deposits from 2005 to 2010 as suggested by the National Bank of Rwanda data. Source: Statistical Article published on 9th January, 2013. Retrieved from: http://www.statistics.gov.rw/publication/tremendous-growth-savings-culture-rwanda

second, uncorrelated with the outcomes of interest, in the process satisfying the exclusion restriction principle.[27] The paper follows the approach adopted by Lu et al. (2012) to identify a valid IV. Accordingly, we construct the measure "PSU insurance rate" for the household; the mean of insurance intensity in primary sampling unit excluding the household for which the IV is being constructed.[28]

The PSU insurance rate helps in satisfying the first stage requirement of the IV for two reasons. First, it determines the penetration of MdS in the zone where the household resides; capturing the peer-effect behind a household's decision to enrol or not in MdS. Second, the PSU insurance rate determines the performance of the Community Health Workers (CHWs), since a higher magnitude of this variable in a PSU would imply effective awareness campaigns carried out by CHWs; thereby increasing the chances for a household's decision to enrol in MdS and vice-versa. In absence of any other variable to capture the awareness campaign and performance of CHWs, this measure acts as a good indicator of CHW operations; given that every CHW is incentivised to expand MdS coverage under Performance Based Financing (PBF).[29] Also, there is enough variation for the IV in different PSUs as every PSU has its own mobilisation committee which trains CHWs to deliver awareness of CBHI; in exchange of monetary incentives and social recognition (Health Financing Systems Review, 2008).

Our choice of instrument should satisfy the exclusion restriction principle because the PSU insurance rate should only affect the household's decision to enrol in MdS and remain uncorrelated with the outcomes such as OOP, hardship financing, and existence of savings and borrowings. However, the IV might be correlated with the outcome for utilisation of health services and therefore we do not use this instrument for the assessment of the impact of MdS on health seeking behaviour. We do this as a precaution because CHW operation in a PSU might have some unobserved effect on the health seeking behaviour of households. Nonetheless, we expect that this IV does not affect the OOP expenses, hardship financing, and existence of savings and borrowings because these outcomes are beyond the scope of CHW operations or any peer effect of PSU insurance intensity on the households.

In order to assess whether the IV is uncorrelated with the aforesaid outcome variables, we explore if there are any significant systematic differences in the PSUs having higher and lower intensity of MdS enrolment. We do this to check for the possibility of correlation between the instrument and outcome variables due to institutional and administrative factors of the respective PSUs that can affect MdS enrolment and outcome variables simultaneously. To assess this, we obtain the difference of means t-test between high intensity PSUs and low intensity PSUs on the variables that capture the administrative and health institutional setup.[30]

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[27]Exclusion Restriction Principle: The instrument Z should not affect Y when X is held constant. The effect of Z on Y should only be through X.

[28]Considered as zones de dnombrement (ZD) for EICV 2 and 3.

[29]As mentioned previously, Rwanda operates on Performance Based Financing (PBF) at every level of administrative disaggregation. This makes CHWs at the lowest administrative level well incentivised to carry out effective awareness campaign and a variable which can record the performance though insurance penetration would have a greater validity and strength.

[30]The assignment of a PSU into high insurance or low insurance zone is based on the mean values of the

The variables chosen for the difference of means t-test include time to district administrative office and health centre, and the satisfaction derived from the use of these services, as reported by the households in EICV data. The time is recorded in minutes and the satisfaction is a binary variable that takes the value as 1 if the household is satisfied with the service and zero otherwise. Ideally, time to banking institutions or financial services would be more appropriate to assess the relation between the insurance intensity in a PSU and the financial protection/existence of savings and borrowing. However, this was not possible since the EICV data does not provide any information on time to financial institutions or banking services. In light of this limitation, we consider time to administrative office as an imperfect proxy for the financial integration of households in Rwanda, assuming that the district administrative office should be in the close proximity of major financial institutions. The results for the t-tests for 2005 and 2010 are shown in Table 7.

Table 7: Difference of means test for checking the exclusion restriction principle

Variables	2005-06				2010-11			
	Mean		Difference	P-Value	Mean		Difference	P-Value
	Low Inten. PSU	High Inten. PSU			Low Intensity PSU	High Intensity PSU		
Time: Adm. Office	120.52	120.24	0.27	0.9	73.82	71.76	2.06*	0.06
Time: Health Cen.	66.81	64.99	1.81	0.12	186.65	189.32	-2.67	0.19
Satisfaction: Adm. Office	0.08	0.06	0.01*	0.05	0.96	0.95	0.00	0.42
Satisfaction: Health Cen.	0.22	0.2	0.02*	0.06	0.93	0.92	0.01*	0.08
Source: Author calculation using EICV data.								

Here, the difference in means between low intensity PSU and high intensity PSU for the time to district administrative office is small and insignificant for 2005. Although, this differential is significant in 2010, however the level of significance is 10 percent with a small differential of only 2 minutes. For the time to health centre, the difference in the mean values of time is also small and insignificant for both 2005 and 2010.

In terms of the satisfaction derived from these services, the difference between the mean values is significant for 2005 at 10 percent level. However, it is important to consider the positive signs of the satisfaction differentials because they imply that satisfaction derived from administrative or health services is higher in a low intensity PSU. If the satisfaction from these services was to affect simultaneously the enrolment decision in MdS and outcomes variables, it was necessary that the satisfaction and quality of these institutions was higher in high intensity PSU. Since, we do not find any evidence for this, the possibility for the satisfaction and quality of these institutions to determine both enrolment in MdS and outcome variables is limited.[31]

We present the first-stage reduced form regression Equation 5. Here, our endogenous variable is the household intensity of insurance; represented by the variable 'CBHI'. This is regressed on the

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PSU insurance intensity. If a PSU has insurance intensity lower (higher) than the mean value, it is assigned as low (high) intensity PSU.

[31]We also conduct a simple univariate regression (controlling for district level fixed effect) between the outcomes variables of OOP expenses, total savings, loan amount, and decision to sale assets with the PSU Insurance rate as the independent variable. The results show no significant relationship between the Instrumental variable and the key outcomes; further strengthening the argument for exclusion restriction.

instrument PSU insurance rate, represented by the variable 'Ins.Rate PSU' and other co-variates.

$$CBHI_i = \alpha_i + \beta(Ins.RatePSU)_i + (Demo)_i\gamma + (ECON)_i\delta + \tau + \epsilon \tag{5}$$

The predicted values of CBHI from the first stage reduced form regression (Equation 1) are used to estimate the structural equations, as shown in Equation 6 and Equation 7. Here, the assessment for binary dependent variables such as health seeking behaviour, sale of assets, existence of savings, and borrowing status is conducted by obtaining marginal effects following probit and IV probit estimation, as shown in Equation 6. However, for continuous variables such as OOP expenses and amounts for saving deposits and loans, the assessment is conducted using OLS and IV two-staged least square regression (IV2SLS), as shown in Equation 7.

$$Pr(Outcomes)_i = \alpha_i + \beta(CBHI)_i + (Demo)_i\gamma + (ECON)_i\delta + \tau + \epsilon \tag{6}$$

$$Outcomes_i = \alpha_i + \beta(CBHI)_i + (Demo)_i\gamma + (ECON)_i\delta + \tau + \epsilon \tag{7}$$

The key variable of interest in the specifications is '*CBHI*' and therefore 'β' represents the magnitude of the impact of MdS. Several set of controls are used to deal with the problem of omitted variable bias, hence the vector '*DEMO*' represents demographic features such as the household size, proportion of adults and children in the house, age and schooling of the household head, and household features such as the type of dwelling, and sources for household water, lighting, and cooking fuel. '*ECON*' captures economic characteristics such as total value of short as well as long term harvests, possession of household items such as TV and Radio, material of floor, and ownership of other insurance products (RAMA, MMI or employment insurance). In addition to these, we control for district level fixed effects, as shown by 'τ', by including district level dummies. This is done to control for unobserved factors at the district level affecting the decision of households to enrol in the scheme. Standard errors are adjusted for 30 clusters at district level and regression equations are weighted in order to derive representative estimates at the national level; as per the recommendation of the EICV survey reports.

5 Results

5.1 Hypothesis 1: Impact of Mutuelles de Sante on Health Service Utilisation

The first hypothesis relates to the impact of micro-insurance membership on health service utilisation of households. We investigate this through probit regression with formal health seeking behaviour as the dependent variable and MdS intensity of insurance, as our main variable of interest (CBHI). The results are reported as marginal effects in Table 8. As mentioned earlier, we do not attempt IV estimation due to the concerns of the violation of exclusion restriction principle.

It can be inferred from the marginal effects that there is a positive and significant relationship between health seeking behaviour and micro-insurance intensity with the magnitude of 9 percent

and 21 percent in 2005-06 and 2010-11 respectively. The coefficients on CBHI can be interpreted as the likelihood of seeking formal medical care when the micro-insurance intensity in the household changes from zero to 1, i.e. from being uninsured to fully insured. Further, health seeking behaviour is also positively correlated with the characteristics such as membership of other forms of insurance and the number of adults and children in the household. These results provide evidence for hypothesis 1, and the effect of CBHI is stronger in 2010-11. This can be credited to various outreach strategies for community sensitization and awareness carried out on national as well as local levels, such as radio programmes, leaflets, posters, and introduction of Mutual Insurance Law in 2007 (Ministry of Health, 2012; Chemouni (2016).

Table 8: Health Seeking Behaviour and Insurance Intensity

| Variables | Formal Health Seeking (2005-06) | | | Formal Health Seeking (2010-11) | | |
	Probit	Probit	Probit	Probit	Probit	Probit
CBHI	0.078***	0.078***	0.090***	0.181***	0.181***	0.214***
	(0.015)	(0.015)	(0.015)	(0.016)	(0.015)	(0.016)
Radio		0.031**	0.025*		0.018*	0.009
		(0.012)	(0.013)		(0.009)	(0.010)
TV		0.029	-0.001		0.075***	-0.013
		(0.032)	(0.060)		(0.021)	(0.031)
Adults		0.019***	0.019***		0.018***	0.026***
		(0.006)	(0.006)		(0.006)	(0.006)
Children in HH		0.016***	0.016***		0.014***	0.017***
		(0.003)	(0.004)		(0.004)	(0.004)
Women in HH		0.014	0.007		0.016*	0.005
		(0.008)	(0.010)		(0.008)	(0.009)
Age of HH head		-0.006**	-0.006**		-0.010***	-0.012***
		(0.003)	(0.003)		(0.002)	(0.002)
Age Sq.		0.000*	0.000		0.000***	0.000***
		(0.000)	(0.000)		(0.000)	(0.000)
HH Mean Schooling			0.050*			0.036
			(0.027)			(0.029)
Urban			-0.008			0.020
			(0.027)			(0.019)
Other Insurance			0.139***			0.311***
			(0.032)			(0.038)
Time to Health Centre			-0.000			-0.000
			(0.000)			(0.000)
Harvest Small		-0.026	-0.047		-0.000	-0.003
		(0.135)	(0.132)		(0.000)	(0.002)
Harvest Large		-0.004	0.007		0.000	0.000
		(0.078)	(0.074)		(0.000)	(0.002)
Observations	6,900	5,265	4,526	14,308	10,959	9,910
Controls	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

The main results in Table 8, may suffer from reverse causation due to unobserved factors such as adverse selection. This is because higher health seeking behaviour can positively induce households to purchase the membership of MdS. We check for this particular issue within the household by conducting a robustness check by dropping households that have partial membership of MdS. We do this because partially enrolled households are suspected for causing adverse selection in the scheme (Health Financing Systems Review of Rwanda, 2008). Under the robustness checks, the results as discussed in section 6, hold and are consistent with the main findings, giving some evidence against adverse selection within households; however we acknowledge that adverse selection across households still remains a concern due to absence of IV estimation. Thus, these results should be interpreted with caution and should be deemed as a measure of correlation and not the causal impact of micro-insurance on health seeking behaviour.

The results for health seeking behaviour are economically meaningful, as household consumption is found to be negatively associated with the employment days lost due to illness, as shown in Table 9.[32]

Table 9: Consumption in the household, days lost during illness, and household insurance intensity

Variables	Household Consumption (2005-06)		Household Consumption (2010-11)	
	OLS	OLS	OLS	OLS
Days lost during Illness	-0.050***	-0.029**	-0.024***	-0.011**
	(0.017)	(0.013)	(0.008)	(0.004)
CBHI		0.311**		0.291***
		(0.126)		(0.072)
Adults		0.308***		0.183***
		(0.058)		(0.036)
Children in HH		-0.014		0.054**
		(0.039)		(0.025)
Women in HH		0.118		0.072
		(0.096)		(0.067)
Age of HH head		-0.005		-0.022*
		(0.041)		(0.013)
Age Sq.		-0.000		0.000
		(0.000)		(0.000)
HH Mean Schooling		0.334**		0.601***
		(0.155)		(0.147)
Urban		1.408***		0.127
		(0.397)		(0.137)
Time to Health Centre		0.001		0.000
		(0.001)		(0.000)
Harvest Small		4.454***		0.029
		(1.44)		(0.036)
Harvest Large		1.066		0.128***
		(0.814)		(0.043)
Constant	10.102***	7.942***	10.759***	9.821***
	(0.149)	(1.072)	(0.121)	(0.552)
Observations	1,224	759	1,724	1,169
Controls	No	Yes	No	Yes
Household Controls	No	Yes	No	Yes
District FE	No	Yes	No	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Notes: Standard Errors clustered at cluster level, shown in brackets.
Harvest Small/Large: RwF Values/1,000,000.
*** p<0.01, ** p<0.05, * p<0.1

5.2 Hypothesis 2: Impact of Mutuelles de Sante on Out of Pocket Expenses and Hardship Financing

After controlling for possible confounders and instrumenting, we find that higher intensity of MdS membership household negatively impacts OOP expenses (see Table 10) and this is consistent across different specifications and estimation techniques for both 2005-06 and 2010-11. The results show that moving from zero membership to all household members enrolled leads to a fall in OOP expenses by 124 percent in 2005-06 and 32 percent and 2010-11. With the average two week OOP expenses of 731 RwF (1.38 USD)[33] and 416 RwF (0.72 USD)[34] in 2005-06 and 2010-11, the results indicate an average fall of 906 RwF (1.82 USD) and 133.2 RwF (0.23 USD). These figures represent sizable sums over fifty-two weeks; 10.3 percent and 1 percent of GDP per capita in their respective years. Other significant predictors of OOP expenses include household size, incidence of diseases, and medical consultation; having positive relationship with OOP, while the effect of membership in other insurance is negative and significant, much like the effect of MdS membership.

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[32]Consumption in the household is taken for the non-food consumption only. The data for food consumption in 2010 could not be retrieved from EICV.

[33]Exchange Rate 1USD=528.16 RwF, as on 31st August, 2006. Retrieved from: https://currencies.zone/historic/us-dollar/rwanda-franc/p69.

[34]Exchange Rate 1USD=574.58 RwF, as on 31st December, 2010. Retrieved from: https://currencies.zone/historic/us-dollar/rwanda-franc/p69

Table 10: Impact of MdS on Out of Pocket Medical Expenses (OOP)

Variables	Out of Pocket Exp. (2005-06)						Out of Pocket Exp. (2010-11)					
	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS
CBHI	-0.209**	-0.314***	-0.519***	-1.188***	-1.305***	-1.240***	-0.271***	-0.249***	-0.327***	-0.580***	-0.325*	-0.328*
	(0.091)	(0.101)	(0.069)	(0.321)	(0.357)	(0.249)	(0.060)	(0.064)	(0.061)	(0.175)	(0.180)	(0.175)
HH Size		0.224***	0.098***		0.221***	0.096***		0.107***	0.052**		0.106***	0.052**
		(0.041)	(0.027)		(0.041)	(0.027)		(0.024)	(0.023)		(0.024)	(0.023)
HH Mean Schooling		0.240	-0.024		0.376	0.084		-0.058	-0.057		-0.052	-0.057
		(0.223)	(0.145)		(0.230)	(0.148)		(0.111)	(0.106)		(0.111)	(0.105)
Age of HH Head		-0.014	0.004		-0.014	0.005		-0.026***	-0.010		-0.026***	-0.010
		(0.020)	(0.013)		(0.020)	(0.013)		(0.009)	(0.009)		(0.009)	(0.009)
Age Sq.		0.000	-0.000		0.000	-0.000		0.000***	0.000		0.000***	0.000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Children in HH		-0.025	-0.039		-0.009	-0.029		-0.018	0.001		-0.019	0.001
		(0.054)	(0.037)		(0.054)	(0.037)		(0.029)	(0.028)		(0.029)	(0.028)
Disease in HH			2.124***			2.059***			1.344***			1.344***
			(0.086)			(0.088)			(0.063)			(0.064)
Other Insurance			-0.793***			-1.174***			-0.670***			-0.670***
			(0.194)			(0.235)			(0.200)			(0.240)
Medical Consultation			3.836***			3.926***			0.452***			0.452***
			(0.103)			(0.106)			(0.098)			(0.098)
Harvest Small		0.423	0.211		0.722	0.430		-0.015	-0.010		-0.014	-0.010
		(1.319)	(0.762)		(1.265)	(0.718)		(0.014)	(0.015)		(0.014)	(0.015)
Harvest Large		-0.691	-0.279		-0.597	-0.228		0.024	0.020		0.025	0.020
		(0.802)	(0.472)		(0.784)	(0.475)		(0.018)	(0.017)		(0.019)	(0.017)
Constant	2.402***	2.058**	-0.092	2.758***	1.907**	-0.167	1.237***	2.529***	1.883***	1.438***	2.577***	1.884***
	(0.063)	(0.907)	(0.532)	(0.131)	(0.905)	(0.537)	(0.052)	(0.491)	(0.416)	(0.122)	(0.502)	(0.430)
Observations	6,900	4,892	4,889	6,900	4,892	4,889	14,308	10,509	10,506	14,308	10,509	10,056
R-squared	0.001	0.058	0.571	-0.018	0.039	0.562	0.002	0.072	0.18	-0.001	0.072	0.18
First Stage F-stat	-	-	-	1,313	551	485	-	-	-	5,216	1,882	1,584
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
OOP Expenses: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

We do not find evidence of changes in levels of hardship financing attributable to MdS (see Table 11). There is no significant impact of micro-insurance membership (MdS or other insurance) on the decision to sell assets, irrespective of the asset type we consider (see section 6).

This finding may be for one of three reasons. First, the differential between the cost of uninsured medical care and insured medical care may not be as significant in Rwanda, as it might be in other countries. Second, ill members of an uninsured family may go untreated rather than sell productive assets that the rest of the family depends on. Third, households without formal health insurance may rely instead on social networks to overcome unexpected medical bills. Practically, there are a small proportion of households engaging in sale of assets in last 12 months (as shown previously in Table 6) which also undermines our ability to pick up an effect.

5.3 Hypothesis 3: Impact of MdS on Existence of Savings and Savings Deposits

After correcting for self-selection through IV estimation, it is found that existence of savings in the household and amount of savings (formal and informal) are negatively affected by micro-insurance intensity in 2010-11; however, opposite results are obtained for 2005-06, as shown in Table 12.[35]

Our prior was that micro-insurance either acts as a substitute through precautionary savings channel (Engen and Gruber, 2001; Chou et al., 2003) or as a complement through the information or learning effect (Giesbert et al., 2011). However, conflicting results in 2005-06 and 2010-11 limit

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[35]We only present the full regression model for findings on hypothesis 3 and 4; however results hold for different specifications using several combinations of control variables.

Table 11: Impact of MdS on Decision to Sell Assets (Hardship financing)

Variables	Sale of Land or Livestock or Farm Equipment (2005-06)						Sale of Land or Livestock or Farm Equipment (2010-11)					
	Probit	Probit	Probit	IVProbit	IVProbit	IVProbit	Probit	Probit	Probit	IVProbit	IVProbit	IVProbit
CBHI	0.048***	0.026	0.023	-0.011	-0.062	-0.066	0.018	0.007	0.004	-0.005	0.038	0.032
	(0.018)	(0.019)	(0.019)	(0.057)	(0.065)	(0.070)	(0.014)	(0.014)	(0.015)	(0.031)	(0.035)	(0.036)
HH Size		0.028***	0.026***		0.027***	0.025***		0.009*	0.008*		0.009*	0.008*
		(0.007)	(0.007)		(0.007)	(0.007)		(0.005)	(0.005)		(0.005)	(0.005)
HH Mean Schooling		0.097**	0.090**		0.109***	0.104**		0.065**	0.063**		0.062**	0.061**
		(0.040)	(0.040)		(0.040)	(0.041)		(0.028)	(0.028)		(0.028)	(0.028)
Age of HH Head		0.000	0.001		0.000	0.001		0.001	0.002		0.001	0.002
		(0.003)	(0.003)		(0.003)	(0.003)		(0.002)	(0.002)		(0.002)	(0.002)
Age Sq.		-0.000	-0.000		-0.000	-0.000		-0.000	-0.000		-0.000	-0.000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Children in HH		-0.014	-0.014		-0.012	-0.013		-0.000	-0.000		-0.000	0.000
		(0.009)	(0.009)		(0.009)	(0.009)		(0.006)	(0.006)		(0.006)	(0.006)
Disease in HH			0.025			0.016			-0.010			-0.007
			(0.018)			(0.020)			(0.012)			(0.013)
Other Insurance			0.003			-0.047			0.023			0.046
			(0.053)			(0.064)			(0.047)			(0.055)
Medical Consultation			0.059***			0.071***			0.028*			0.022
			(0.021)			(0.023)			(0.015)			(0.017)
Harvest Small		1.452***	1.458***		1.470***	1.476***		0.022***	0.022***		0.021***	0.021***
		(0.243)	(0.243)		(0.244)	(0.244)		(0.005)	(0.005)		(0.005)	(0.005)
Harvest Large		0.174	0.179		0.176	0.180		0.040***	0.040***		0.040***	0.040***
		(0.121)	(0.121)		(0.121)	(0.121)		(0.006)	(0.006)		(0.006)	(0.006)
Observations	4,699	3,934	3,933	4,699	3,934	3,933	10,101	8,303	8,300	10,101	8,303	8,300
First Stage F-Stat	-	-	-	1,313	551	485	-	-	-	5,216	1,882	1,584
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 12: Impact of MdS on Existence of Savings and Amount of Savings (Formal and Informal)

	Existence of Savings (Formal and Informal)				Amount of Savings (Formal and Informal)			
	2005-06		2010-11		2005-06		2010-11	
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.122***	0.118*	0.062***	-0.096**	1.219***	1.211*	0.829***	-0.969**
	(0.016)	(0.065)	(0.013)	(0.039)	(0.163)	(0.645)	(0.140)	(0.417)
HH Size	0.036***	0.036***	0.028***	0.027***	0.332***	0.332***	0.225***	0.209***
	(0.006)	(0.006)	(0.005)	(0.005)	(0.054)	(0.054)	(0.044)	(0.045)
HH Mean Schooling	0.163***	0.164***	0.162***	0.173***	1.549***	1.550***	1.957***	2.111***
	(0.030)	(0.033)	(0.021)	(0.022)	(0.275)	(0.291)	(0.227)	(0.233)
Age of HH Head	0.006**	0.006**	0.005**	0.006***	0.040	0.040	0.057***	0.063***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.026)	(0.026)	(0.022)	(0.022)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.011	-0.011	-0.018***	-0.019***	-0.059	-0.059	-0.097*	-0.116**
	(0.008)	(0.008)	(0.006)	(0.006)	(0.076)	(0.076)	(0.056)	(0.056)
Disease in HH	0.007	0.007	0.011	-0.006	0.052	0.051	-0.010	-0.204
	(0.016)	(0.017)	(0.012)	(0.012)	(0.150)	(0.160)	(0.124)	(0.127)
Other Insurance	0.107**	0.105*	0.336***	0.203***	0.969**	0.965*	2.977***	1.476***
	(0.046)	(0.056)	(0.061)	(0.068)	(0.475)	(0.558)	(0.367)	(0.483)
Medical Consultation	0.036**	0.037*	0.019	0.049***	0.317*	0.318*	0.258**	0.604***
	(0.017)	(0.019)	(0.012)	(0.013)	(0.170)	(0.184)	(0.121)	(0.135)
Harvest Small	0.421**	0.423**	0.027***	0.028***	4.941***	4.943***	0.252***	0.272***
	(0.187)	(0.192)	(0.005)	(0.005)	(1.787)	(1.814)	(0.036)	(0.039)
Harvest Large	0.316**	0.317**	0.045***	0.046***	3.638***	3.639***	0.294***	0.313***
	(0.127)	(0.127)	(0.008)	(0.008)	(1.216)	(1.206)	(0.041)	(0.044)
Constant					2.778**	2.777**	0.866	2.107***
					(1.216)	(1.208)	(0.768)	(0.790)
Observations	4,887	4,887	10,488	10,488	4,889	4,889	10,506	10,506
R-Squared	-	-	-	-	0.189	0.189	0.189	0.170
First Stage F-Stat	-	485	-	1,584	-	485	-	1,584
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

our ability to identify the true channel between micro-insurance and household savings. Thus, in order to fully understand the causal mechanism of micro-insurance on savings, we isolate formal and informal savings from the total.

The results show that there is positive impact of micro-insurance membership on existence of formal savings and associated amounts for both 2005-06 and 2010-11 (see Table 13). The regression coefficient on CBHI indicates that household micro-insurance membership from none to all increases the likelihood that an individual has formal savings by 8 percent and 7 percent in 2005-06 and 2010-11 respectively. Further, an associated increase of 67 percent and 77 percent is noted for formal savings amount. These results are in line with the predictions of Starr-McCluer (1996) regarding the complementarity between insurance and savings. Moreover, since the increase is noted for formal savings, it confirms the existence of informational or learning effect from the use of micro-insurance for formal financial behaviour; as highlighted in the information or learning effect channel by Giesbert et al. (2011).

Table 13: Impact of MdS on Existence of Savings and Amount of Savings (Formal)

	Existence of Savings (Formal and Informal)				Amount of Savings (Formal and Informal)			
	2005-06		2010-11		2005-06		2010-11	
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.077***	0.085**	0.119***	0.073**	0.701***	0.673*	1.237***	0.777***
	(0.011)	(0.039)	(0.013)	(0.036)	(0.105)	(0.352)	(0.099)	(0.293)
HH Size	0.014***	0.014***	0.029***	0.028***	0.042	0.042	0.128***	0.124***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.037)	(0.036)	(0.039)	(0.039)
HH Mean Schooling	0.138***	0.137***	0.196***	0.201***	0.822***	0.826***	1.587***	1.626***
	(0.023)	(0.024)	(0.023)	(0.024)	(0.149)	(0.159)	(0.171)	(0.171)
Age of HH Head	0.003	0.003	0.003	0.003	0.006	0.006	0.017	0.019
	(0.002)	(0.002)	(0.002)	(0.002)	(0.017)	(0.016)	(0.015)	(0.015)
Age Sq.	-0.000	-0.000	-0.000	-0.000*	-0.000	-0.000	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.002	0.002	-0.014***	-0.015***	0.127**	0.127**	0.037	0.033
	(0.005)	(0.005)	(0.005)	(0.005)	(0.051)	(0.051)	(0.048)	(0.048)
Disease in HH	-0.000	0.001	0.008	0.004	0.021	0.018	-0.032	-0.083
	(0.011)	(0.011)	(0.010)	(0.011)	(0.096)	(0.099)	(0.092)	(0.095)
Other Insurance	0.143***	0.147***	0.580***	0.545***	1.793***	1.778***	5.173***	4.789***
	(0.026)	(0.033)	(0.061)	(0.066)	(0.414)	(0.442)	(0.342)	(0.411)
Medical Consultation	0.023**	0.022*	0.031**	0.040***	0.167	0.171	0.279***	0.370***
	(0.011)	(0.013)	(0.013)	(0.014)	(0.114)	(0.125)	(0.108)	(0.115)
Harvest Small	0.218***	0.216***	0.019***	0.020***	2.560**	2.568**	0.189***	0.194***
	(0.083)	(0.083)	(0.004)	(0.004)	(1.170)	(1.164)	(0.034)	(0.034)
Harvest Large	0.211***	0.211***	0.039***	0.040***	3.597***	3.599***	0.333***	0.338***
	(0.069)	(0.069)	(0.006)	(0.006)	(1.068)	(1.059)	(0.050)	(0.051)
Constant					3.040***	3.037***	1.271*	1.590**
					(0.914)	(0.911)	(0.659)	(0.686)
Observations	4,887	4,887	10,487	10,487	4,889	4,889	10,059	10,059
R-Squared	-	-	-	-	0.245	0.245	0.293	0.291
First Stage F-Stat	-	485	-	1,584	-	485	-	1,584
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Finally, we interpret these results as one of the explanations for the overall increase in formal savings accounts and savings deposits held in Rwanda between 2005-06 and 2010-11, as suggested by FinScope (2012) and statistics from National Bank of Rwanda.[36]

The positive impact of micro-insurance membership on formal savings implies that the negative

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[36]There was an increase in savings accounts from 6.8 percent to 18.2 percent in rural areas and from 20.3 percent to 33.2 percent for urban areas from 2005-06 to 2010-11 (FinScope, 2012). Also, there was an increase of 163.81 percent in savings deposits from 2005 to 2010 (NBR, retrieved from: http://www.statistics.gov.rw/publication/tremendous-growth-savings-culture-rwanda).

impact on overall savings in 2010-11 (formal and informal as shown in Table 12) must be driven from the informal component of savings status and amount of savings. This is confirmed from the IV results in Table 14, where we find that micro-insurance membership negatively affects household decision to save in informal community groups in 2010-11, with no effect in 2005-06.

The household micro-insurance membership from none to all reduces the decision to save in informal community groups by almost 14 percent with associated decline of 138 percent in the amount of community savings. The presence of this negative relation in 2010-11 highlights the role of micro-insurance membership in shifting the focus of households from saving in informal sources to more formal sources. This provides clear evidence of substitution between health insurance and informal community savings.

Table 14: Impact of MdS on Existence of Savings and Amount of Savings (Informal)

	Existence of Savings (Formal and Informal)				Amount of Savings (Formal and Informal)			
	2005-06		2010-11		2005-06		2010-11	
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.087***	0.078	0.037**	-0.139***	0.903***	0.983	0.428***	-1.380***
	(0.017)	(0.072)	(0.014)	(0.044)	(0.165)	(0.687)	(0.143)	(0.471)
HH Size	0.031***	0.031***	0.015***	0.013**	0.333***	0.333***	0.213***	0.197***
	(0.006)	(0.006)	(0.005)	(0.005)	(0.056)	(0.056)	(0.051)	(0.052)
HH Mean Schooling	0.142***	0.144***	0.119***	0.131***	1.243***	1.231***	1.323***	1.478***
	(0.030)	(0.032)	(0.024)	(0.025)	(0.268)	(0.284)	(0.236)	(0.243)
Age of HH Head	0.006**	0.006**	0.007***	0.008***	0.044*	0.043*	0.057***	0.063***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.024)	(0.024)	(0.022)	(0.022)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.012	-0.012	-0.006	-0.007	-0.134*	-0.135*	-0.103	-0.122*
	(0.008)	(0.008)	(0.006)	(0.006)	(0.077)	(0.078)	(0.065)	(0.065)
Disease in HH	0.009	0.008	0.009	-0.010	0.087	0.095	0.074	-0.121
	(0.016)	(0.017)	(0.012)	(0.013)	(0.146)	(0.160)	(0.128)	(0.132)
Other Insurance	-0.027	-0.031	-0.009	-0.155***	-0.035	0.007	0.297	-1.212*
	(0.046)	(0.058)	(0.048)	(0.058)	(0.459)	(0.565)	(0.581)	(0.688)
Medical Consultation	0.022	0.024	0.009	0.042***	0.196	0.186	0.103	0.451***
	(0.018)	(0.020)	(0.014)	(0.015)	(0.172)	(0.189)	(0.143)	(0.159)
Harvest Small	0.297*	0.300*	0.030***	0.031***	3.844**	3.819**	0.269***	0.290***
	(0.173)	(0.177)	(0.005)	(0.004)	(1.785)	(1.812)	(0.035)	(0.037)
Harvest Large	0.228*	0.229*	0.015***	0.016***	2.190*	2.184*	0.192***	0.210***
	(0.121)	(0.121)	(0.005)	(0.005)	(1.260)	(1.248)	(0.051)	(0.054)
Constant					0.480	0.488	-0.394	0.854
					(1.296)	(1.287)	(0.766)	(0.817)
Observations	4,887	4,887	10,497	10,497	4,889	4,889	10,506	10,506
R-Squared	-	-	-	-	0.135	0.135	0.123	0.104
First Stage F-Stat	-	485	-	1,584	-	485	-	1,584
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

5.4 Hypothesis 4: Impact of MdS on Status of Borrowing and Loan Amounts

As shown in Table 15, the IV estimates for 2010-11 suggest that micro-insurance intensity in the households negatively affects the borrowings status and associated loan amounts (formal and informal). However, there is no evidence for this relationship in 2005-06 when MdS was in its infancy as a national programme.

We find that increased household membership in MdS from none to all reduces the borrowing status by 15 percent, with reduction in loan amount by 122 percent. This result indicates a substitution effect between insurance and household borrowings as suggested by Kruk et al. (2009); Zeller (2001), and Eswaran and Kotwal (1989).

Table 15: Impact of MdS on Borrowing Status and Amount of Loans (Formal and Informal)

| | Borrowing Status (Formal and Informal) | | | | Amount of Loans (Formal and Informal) | | | |
| | 2005-06 | | 2010-11 | | 2005-06 | | 2010-11 | |
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.009	0.044	-0.056***	-0.153***	0.247	0.476	-0.319**	-1.224***
	(0.017)	(0.057)	(0.013)	(0.034)	(0.162)	(0.534)	(0.125)	(0.344)
HH Size	0.013**	0.013**	0.007*	0.006*	0.223***	0.224***	0.230***	0.222***
	(0.006)	(0.006)	(0.004)	(0.004)	(0.054)	(0.054)	(0.041)	(0.040)
HH Mean Schooling	0.144***	0.138***	0.035*	0.043**	1.606***	1.571***	0.768***	0.845***
	(0.032)	(0.033)	(0.021)	(0.021)	(0.294)	(0.296)	(0.211)	(0.212)
Age of HH Head	-0.002	-0.002	0.003*	0.004**	-0.017	-0.017	0.049**	0.052***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.027)	(0.026)	(0.020)	(0.020)
Age Sq.	-0.000	-0.000	-0.000***	-0.000***	-0.000	-0.000	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.006	-0.006	0.001	-0.000	-0.092	-0.095	-0.111**	-0.120**
	(0.008)	(0.008)	(0.005)	(0.005)	(0.072)	(0.072)	(0.056)	(0.056)
Disease in HH	0.061***	0.064***	0.058***	0.047***	0.488***	0.509***	0.556***	0.459***
	(0.016)	(0.017)	(0.011)	(0.011)	(0.151)	(0.158)	(0.111)	(0.114)
Other Insurance	0.043	0.062	0.113***	0.030	0.978**	1.099**	3.110***	2.355***
	(0.044)	(0.052)	(0.042)	(0.049)	(0.453)	(0.518)	(0.414)	(0.485)
Medical Consultation	0.003	-0.002	0.025**	0.043***	0.158	0.130	0.307***	0.481***
	(0.018)	(0.020)	(0.012)	(0.013)	(0.170)	(0.185)	(0.114)	(0.129)
Harvest Small	0.203	0.192	0.003	0.005*	2.656	2.587	0.094***	0.104***
	(0.182)	(0.183)	(0.003)	(0.003)	(1.742)	(1.739)	(0.030)	(0.030)
Harvest Large	-0.272**	-0.274**	0.001	0.002	-2.246*	-2.262*	0.078*	0.088*
	(0.117)	(0.117)	(0.003)	(0.003)	(1.227)	(1.222)	(0.044)	(0.045)
Constant					7.131***	7.155***	5.735***	6.359***
					(1.309)	(1.303)	(0.848)	(0.883)
Observations	4,887	4,887	10,493	10,493	4,889	4,889	10,506	10,506
R-Squared	-	-	-	-	0.073	0.073	0.116	0.110
First Stage F-Stat	-	485	-	1,584	-	485	-	1,584
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

We reproduce these results by differentiating formal and informal borrowings from the total. This is done to ascertain if reduction in borrowing status and amount of loans follow from the introduction of micro-insurance. We find no impact of MdS membership on formal borrowing and this is an unsurprising result given that formal loans in Rwanda are given out either in the context of collateral (long term asset purchase) or seasonal agricultural investment, often with the context of a cooperative (see Table 16).

The result for no impact on formal borrowings (as shown in Table 16) indicates that the negative impact of micro-insurance on overall borrowings (as shown in Table 15) is driven from the reduction in its informal component. This is confirmed from results in Table 17, where we find that increase in insurance membership of households from zero to all negatively affects the status of informal borrowings and loan amounts in 2010-11.

With these results, we establish that micro-insurance membership reduced informal borrowing by 15 percent in 2010-11, with an associated decline of 123 percent in informal loan amounts. With annual mean value of loans of 169,572 RwF (295 USD) as recorded in the EICV 2010 data, the co-efficient of -1.23 on the CBHI indicates a decline of almost 208,573 RwF (363 USD) in the informal loans.

This result further solidifies the argument for slow but real impact of insurance on financial behaviour of households. Specifically, in Rwandan context, this result has important policy implication since findings from FinScope (2008) survey shows that 22 percent of borrowers in Rwanda indicate medical expenses as one of the primary reason to borrow from informal sources.

Table 16: Impact of MdS on Borrowing Status and Amount of Loans (Formal)

| | Borrowing Status (Formal) | | | | Amount of Loans (Formal) | | | |
| | 2005-06 | | 2010-11 | | 2005-06 | | 2010-11 | |
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.016	-0.040	0.025***	0.005	0.171	-0.243	0.255***	0.034
	(0.013)	(0.042)	(0.007)	(0.019)	(0.132)	(0.419)	(0.069)	(0.225)
HH Size	0.002	0.001	0.013***	0.013***	0.054	0.053	0.220***	0.218***
	(0.004)	(0.004)	(0.002)	(0.002)	(0.047)	(0.047)	(0.038)	(0.038)
HH Mean Schooling	0.096***	0.104***	0.046***	0.048***	0.774***	0.836***	0.249**	0.268**
	(0.024)	(0.024)	(0.015)	(0.015)	(0.190)	(0.195)	(0.116)	(0.117)
Age of HH Head	0.010***	0.010***	0.005***	0.005***	0.077***	0.078***	0.032***	0.033***
	(0.002)	(0.002)	(0.001)	(0.001)	(0.018)	(0.018)	(0.012)	(0.012)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.002	-0.001	-0.010***	-0.010***	-0.030	-0.025	-0.187***	-0.189***
	(0.006)	(0.006)	(0.003)	(0.003)	(0.065)	(0.065)	(0.052)	(0.052)
Disease in HH	-0.007	-0.012	-0.005	-0.007	-0.058	-0.095	-0.071	-0.095
	(0.012)	(0.013)	(0.006)	(0.006)	(0.116)	(0.124)	(0.074)	(0.076)
Other Insurance	0.073**	0.043	0.230***	0.213***	1.337***	1.119**	7.425***	7.240***
	(0.028)	(0.034)	(0.017)	(0.022)	(0.435)	(0.473)	(0.532)	(0.563)
Medical Consultation	0.033**	0.040***	0.014*	0.018**	0.392***	0.444***	0.156	0.199**
	(0.014)	(0.015)	(0.008)	(0.008)	(0.143)	(0.156)	(0.098)	(0.109)
Harvest Small	-0.126	-0.108	0.001	0.001	-1.029	-0.903	0.017	0.019
	(0.105)	(0.107)	(0.001)	(0.001)	(0.972)	(0.985)	(0.025)	(0.025)
Harvest Large	0.001	0.005	0.003**	0.003**	0.149	0.178	0.077**	0.079**
	(0.081)	(0.081)	(0.002)	(0.002)	(1.004)	(0.993)	(0.037)	(0.037)
Constant					2.190*	2.147*	-0.349	-0.196
					(1.206)	(1.195)	(0.569)	(0.582)
Observations	4,887	4,887	10,493	10,493	4,889	4,889	10,506	10,506
R-Squared	-	-	-	-	0.073	0.071	0.216	0.215
First Stage F-Stat	-	485	-	1,584	-	485	-	1,584
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 17: Impact of MdS on Borrowing Status and Amount of Loans (Informal)

| | Borrowing Status (Informal) | | | | Amount of Loans (Informal) | | | |
| | 2005-06 | | 2010-11 | | 2005-06 | | 2010-11 | |
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	-0.006	0.082	-0.077***	-0.152***	0.073	0.082	-0.574***	-1.237***
	(0.018)	(0.057)	(0.013)	(0.036)	(0.157)	(0.057)	(0.125)	(0.362)
HH Size	0.012*	0.012*	-0.008**	-0.009**	0.174***	0.012*	0.002	-0.004
	(0.006)	(0.006)	(0.004)	(0.004)	(0.056)	(0.006)	(0.043)	(0.043)
HH Mean Schooling	0.061*	0.047	0.011	0.017	0.775***	0.047	0.499**	0.556***
	(0.033)	(0.034)	(0.023)	(0.023)	(0.286)	(0.034)	(0.211)	(0.213)
Age of HH Head	-0.010***	-0.010***	0.001	0.001	-0.098***	-0.010***	0.016	0.018
	(0.003)	(0.003)	(0.002)	(0.002)	(0.025)	(0.003)	(0.020)	(0.020)
Age Sq.	0.000**	0.000**	-0.000*	-0.000*	0.001**	0.000**	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.005	-0.007	0.013**	0.012**	-0.070	-0.007	0.086	0.079
	(0.008)	(0.008)	(0.006)	(0.006)	(0.071)	(0.008)	(0.059)	(0.059)
Disease in HH	0.067***	0.074***	0.066***	0.057***	0.550***	0.074***	0.635***	0.563***
	(0.017)	(0.017)	(0.012)	(0.012)	(0.146)	(0.017)	(0.113)	(0.119)
Other Insurance	-0.054	-0.007	-0.446***	-0.505***	-0.418	-0.007	-4.436***	-4.990***
	(0.048)	(0.056)	(0.042)	(0.048)	(0.433)	(0.056)	(0.421)	(0.490)
Medical Consultation	-0.034*	-0.045**	0.009	0.024*	-0.265	-0.045**	0.132	0.260*
	(0.018)	(0.019)	(0.013)	(0.014)	(0.162)	(0.019)	(0.120)	(0.135)
Harvest Small	0.306*	0.278	0.002	0.003	3.454**	3.260**	0.076**	0.083**
	(0.173)	(0.175)	(0.003)	(0.003)	(1.604)	(1.610)	(0.034)	(0.033)
Harvest Large	-0.292**	-0.295**	-0.005**	-0.004*	-2.338**	-2.383**	-0.001	0.006
	(0.132)	(0.132)	(0.003)	(0.003)	(1.124)	(1.120)	(0.030)	(0.030)
Constant					5.056***	4,887	6.144***	6.602***
					(1.322)	485	(0.921)	(0.946)
Observations	4,887	4,887	10,493	10,493	4,889	Yes	10,506	10,506
R-Squared	-	-	-	-	0.047	Yes	0.102	0.099
First Stage F-Stat	-	485	-	1,584	-	Yes	-	1,584
Controls	Yes	Yes	Yes	Yes	Yes	0.082	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	(0.057)	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	0.012*	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

5.5 Heterogeneous Analysis

For the heterogeneous analysis, we split the main data into three income groups; extremely poor, poor, and non-poor, as categorised by the EICV. The categorisation of households in respective income groups is based on total consumption expenditure of each household. This includes purchase of food and the value of food consumed from own production, non-food expenditure, and rental value of houses. The results are reported in Appendix E.

The heterogeneous analysis for the first hypothesis shows that the magnitude of health seeking behaviour is similar for all income groups in 2005-06; however in 2010-11, the impact of micro-insurance membership is highest for the extremely poor households. This result draws further strength from the assessment of OOP expenses (hypothesis 2), where the IV estimates for extremely poor households suggest a reduction of 65 percent in OOP expenses. The negative impact on OOP expenses, together with the positive impact for health seeking behaviour, confirms the role of micro-insurance as a social safety net for the poorest of poor in successive years of MdS operation in Rwanda. The heterogeneous analysis does not provide any evidence for the sale of assets across three income groups, much like the results from the main analysis.

For hypothesis 3, we find significant variation across income categories. The IV estimates suggest that micro-insurance increased the existence of formal savings and their respective amounts for only non-poor households in 2005-06. However, in 2010-11, the increase is significant only for the lowest income category. This is an interesting finding and provides an excellent check for the existence of informational learning effect from micro-insurance towards the use of formal financial services by the poorest of poor.

Similar to the results on savings, we find that the reduction in informal borrowings in 2010-11 is primarily driven from the extremely poor households and non-poor households. However, the magnitude and significance of this negative impact is stronger for the extremely poor households. This is again a very interesting finding, underlining inclusivity in the role of MdS for reducing risk-coping borrowings, particularly for the poorest of poor.

6 Robustness Checks

We conduct three sets of robustness checks in this paper. First, we exclude households with partial membership of MdS to address the possible issue of adverse selection within the household. Second, we exclude individuals who are enrolled in other insurance schemes (RAMA, MMI, or employer insurance) to ascertain if the main findings are not affected by insurance membership other than MdS. Third, we remove the top 5 percent observations from the outcome variables related to OOP expenses, savings, and borrowings to verify if our main results are not plagued by outliers for these variables.[37] The results for our first set of robustness checks are reported in Appendix B, while

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[37]The outliers in binary variables for decision to save and borrow are removed by recoding these variables to missing values if the associated amounts of savings and loans fall in the top 5 percent observations. Our

Appendix C and D report the second and third set of robustness checks respectively.[38]

The robustness checks confirm the positive relationship between health seeking behaviour and micro-insurance membership (hypothesis 1). Further, the estimates are similar to the main results. For hypothesis 2, the robustness checks confirm reduction in out of pocket expenses in 2005-06; however we lose significance for the result in 2010-11 when outliers are removed from the data (robustness check 3). This might be due to one or a mix of the followings factors; one, the fall in the number of observation reducing statistical power to pick any significant impact, and two, small differential for OOP expenses between the insured and non-insured in 2010-11. Thus, it can be concluded that the negative impact of insurance on OOP expenses in 2010-11 is sensitive to changes made in the data.

In terms of hardship financing, we continue to find no evidence for the impact of micro-insurance on the decision to sell assets in the first and third robustness check. In the second robustness check, we conduct the analysis for different set of assets (farm-land, farm-equipment, and livestock); however there is no impact of micro-insurance on sell decisions, as shown by the IV estimates.

The three robustness checks also validate results for hypothesis 3. The results confirm positive impact of micro-insurance membership on formal savings status and associated deposits in 2005-06 and 2010-11, and negative impact on informal savings in 2010-11. Lastly, robustness results confirm hypothesis 4 and provide validation for the negative impact of micro-insurance on informal borrowings and loan amounts in 2010-11. The consistency of results across these three robustness checks confirms that the main results of this paper are not affected by issues such as partial enrolment in MdS, membership in other insurance services, or outliers in the data.[39]

7 Conclusion

This study provides evidence that micro-insurance not only acts as a social safety-net against unanticipated illness events, but it also induces positive financial behaviour amongst the most vulnerable. Further, the assessment of MdS confirms that micro-insurance increases the inclusion of extremely poor households leading to equitable gains against adverse effects of poverty, social exclusion, and unavailability of insurance markets. The case of Rwanda is an excellent example that government intervention by engaging local community is essential to achieve the goal of Universal Health Coverage. Nonetheless, micro-insurance is yet to achieve scale in many other developing countries and therefore it calls for further innovation in the distribution channels and services.

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ability to remove outliers for the sale of assets is limited due to its binary nature, however we conduct the robustness check by splitting the assets into respective constituents, viz. sale of livestock, farm-land, and farm-equipment.

[38] Having partial enrolment and outliers removed from the main data leads to changes in the distribution of our key independent variable (MdS membership). As a result, the first stage reduced form regression results for IV estimation also change; however the reported F-statistics still confirm validity of our instrument in all robustness checks.

[39] All robustness checks hold for the main results, except reduction in OOP expenses in 2010-11 for robustness three.

Our first set of results contributes to the literature on the impact of micro-insurance membership on health seeking behaviour and out of pocket medical expenses. We are able to confirm that micro-insurance membership is associated with increase in health seeking behaviour, and leads to fall in out of pocket medical expenses, particularly for the poorest of poor. These results are consistent across robustness checks conducted in the paper and align with the findings of Msuya et al. (2004); Chankova et al. (2008); Axelson et al. (2009); Aggarwal (2010); Nguyen et al. (2011); Levine et al. (2016) and Gustafsson-Wright et al. (2013).

The second set of results for this paper contribute to the literature assessing the role of insurance on household financial decisions related to savings and borrowing. We explore if insurance and savings are substitutes or complements and find that within the context of low savings activity and lack of formal financial services in developing countries, insurance membership acts as a complement for formal saving status. We interpret these findings as a result of the informational or learning effect, as suggested under the information advantage channel by Giesbert, Steiner, and Bendig (2011). To the best of our knowledge, this is the first study which investigates the impact of micro-insurance on savings behaviour of households in developing countries. In terms of household decision to borrow, we provide evidence for reduction in informal borrowings for the extremely poor as a result of micro-insurance membership. This result highlights the role of insurance in reducing risk-coping through borrowings from family, friends, and informal community groups in developing countries.

References

(2008). *Health Financing Systems Review prepared by World Health Organisation.*

(2012). Health sector annual report. Technical report, Ministry of Health Rwanda.

(2012). Overseas development institute annual report: Impact and priorities.

(2013). Inclusion matters the foundation for shared prosperity. Technical report, World Bank: Washington D.C.

Aggarwal, A. (2010). Impact evaluation of india's yeshasvini community-based health insurance programme. *Health Economics*, 19(S1):5–35.

Arrow, K. J. (1992). Insurance, risk and resource allocation. In *Foundations of insurance Economics*, pages 220–229. Springer.

Axelson, H., Bales, S., Minh, P. D., Ekman, B., and Gerdtham, U.-G. (2009). Health financing for the poor produces promising short-term effects on utilization and out-of-pocket expenditure: evidence from vietnam. *International Journal for Equity in Health*, 8(1):20.

Browning, M. and Lusardi, A. (1996). Household saving: Micro theories and micro facts. *Journal of Economic Literature*, 34(4):1797–1855.

Chankova, S., Sulzbach, S., and Diop, F. (2008). Impact of mutual health organizations: evidence from west africa. *Health Policy and Planning*, 23(4):264–276.

Chemouni, B. (2016). The political path to universal health coverage: Elite commitment to community-based health insurance in rwanda. Technical report, Social Science Research Network.

Chou, S.-Y., Liu, J.-T., and Hammitt, J. K. (2003). National health insurance and precautionary saving: evidence from taiwan. *Journal of Public Economics*, 87(9-10):1873–1894.

Clarke, D. and Dercon, S. (2009). Insurance, credit and safety nets for the poor in a world of risk. Technical report, DESA Working Paper No. 81.

Dekker, M. and Wilms, A. (2010). Health insurance and other risk-coping strategies in uganda: the case of microcare insurance ltd. *World Development*, 38(3):369–378.

Dercon, S., Gunning, J. W., Zeitlin, A., and Lombardini, S. (2012). The impact of a health insurance programme: Evidence from a randomized controlled trial in kenya. *Micro Insurance Facility Research Paper Number 24, ILO*, (24).

Dercon, S. and Hoddinott, J. (2003). Health, shocks and poverty persistence. Technical report, United Nations University- WIDER Discussion Paper No. 2003/08.

Dercon, S. and Krishnan, P. (2000). In sickness and in health: Risk sharing within households in rural ethiopia. *Journal of political Economy*, 108(4):688–727.

Dror, D. M., Chakraborty, A., Majumdar, A., Panda, P., and Koren, R. (2016). Impact of community-based health insurance in rural india on self-medication & financial protection of the insured. *The Indian journal of medical research*, 143(6):809.

Dror, D. M. and Jacquier, C. (1999). Micro-insurance: Extending health insurance to the excluded. *International social security review*, 52(1):71–97.

Ekman, B. (2004). Community-based health insurance in low-income countries: a systematic review of the evidence. *Health policy and planning*, 19(5):249–270.

Engen, E. M. and Gruber, J. (2001). Unemployment insurance and precautionary saving. *Journal of Monetary Economics*, 47(3):545–579.

Eswaran, M. and Kotwal, A. (1989). Credit as insurance in agrarian economies. *Journal of Development Economics*, 31(1):37–53.

Farley, P. J. and Wilensky, G. R. (1985). Household wealth and health insurance as protection against medical risks. In *Horizontal equity, uncertainty, and economic well-being*, pages 323–358. University of Chicago Press.

FinScope (2008). Finscope rwanda. Technical report.

FinScope (2012). Finscope rwanda. Technical report.

Fitzpatrick, A., Magnoni, B., and Thornton, R. (2011). Microinsurance utilization in nicaragua: A report on effects on children, retention and health claims.

Gertler, P. and Gruber, J. (2002). Insuring consumption against illness. *American Economic Review*, 92(1):51–70.

Giesbert, L., Steiner, S., and Bendig, M. (2011). Participation in micro life insurance and the use of other financial services in ghana. *Journal of Risk and Insurance*, 78(1):7–35.

Giles, J. and Yoo, K. (2007). Precautionary behavior, migrant networks, and household consumption decisions: An empirical analysis using household panel data from rural china. *The Review of Economics and Statistics*, 89(3):534–551.

Gumber, A. (2001). Hedging the health of the poor: The case for community financing in india. Technical report, HNP Discussion Paper No.

Gustafsson-Wright, E., Van der Gaag, J., and Tanovic, Z. (2013). A short-term impact evaluation of the health insurance fund program in central kwara state, nigeria. Technical report, Amsterdam Institute for International Development.

Harrison, G. (2017). Rwanda and the difficult business of capitalist development. *Development and Change*, 48(5):873–898.

Islam, A. and Maitra, P. (2012). Health shocks and consumption smoothing in rural households: Does microcredit have a role to play? *Journal of development economics*, 97(2):232–243.

Janzen, S. A. and Carter, M. R. (2013). After the drought: The impact of microinsurance on consumption smoothing and asset protection. Technical report, National Bureau of Economic Research.

Jütting, J. P. (2004). Do community-based health insurance schemes improve poor people's access to health care? evidence from rural senegal. *World development*, 32(2):273–288.

Jütting, J. P., Msuya, J. M., and Asfaw, A. (2004). Impacts of community health insurance schemes on health care provision in rural tanzania. Technical report, ZEF Discussion Papers on Development Policy Bonn No 82.

Kalk, A. (2008). Rwanda's health system: some concerns. *Lancet*, 372(9651):1729–1729.

Kayonga, C. (2007). Towards universal health coverage in rwanda–summary notes from briefing at brookings institution.

Kruk, M. E., Goldmann, E., and Galea, S. (2009). Borrowing and selling to pay for health care in low-and middle-income countries. *Health Affairs*, 28(4):1056–1066.

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Lei, X. and Lin, W. (2009). The new cooperative medical scheme in rural china: Does more coverage mean more service and better health? *Health economics*, 18(S2):S25–S46.

Levine, D., Polimeni, R., and Ramage, I. (2016). Insuring health or insuring wealth? an experimental evaluation of health insurance in rural cambodia. *Journal of Development Economics*, 119:1–15.

Liu, Y. and Myers, R. J. (2016). The dynamics of microinsurance demand in developing countries under liquidity constraints and insurer default risk. *Journal of Risk and Insurance*, 83(1):121–138.

Lu, C., Chin, B., Lewandowski, J. L., Basinga, P., Hirschhorn, L. R., Hill, K., Murray, M., and Binagwaho, A. (2012). Towards universal health coverage: an evaluation of rwanda mutuelles in its first eight years. *PLoS One*, 7:e39282.

Mahal, A., Krishnaswamy, K., and Ruchismita, R. (2013). The impact of out-patient health insurance and preventive & promotive products in a randomized controlled trial experiment. *University of Twenete Research Paper*, (25).

Makaka, A., Breen, S., and Binagwaho, A. (2012). Universal health coverage in rwanda: a report of innovations to increase enrolment in community-based health insurance. *The Lancet*.

Mayers, D. and Smith Jr, C. W. (1988). Ownership structure across lines of property-casualty insurance. *The Journal of Law and Economics*, 31(2):351–378.

Msuya, J. M., Jütting, J. P., and Asfaw, A. (2004). Impacts of community health insurance schemes on health care provision in rural tanzania. Technical report, ZEF Discussion Papers on Development Policy.

Nahar, S. and Costello, A. (1998). The hidden cost of 'free' maternity care in dhaka, bangladesh. *Health policy and planning*, 13:417–422.

Nguyen, H. T., Rajkotia, Y., and Wang, H. (2011). The financial protection effect of ghana national health insurance scheme: evidence from a study in two rural districts. *International Journal for Equity in Health*, 10(1):4.

Palumbo, M. G. (1999). Uncertain medical expenses and precautionary saving near the end of the life cycle. *The Review of Economic Studies*, 66(2):395–421.

Parmar, D., Reinhold, S., Souares, A., Savadogo, G., and Sauerborn, R. (2012). Does community-based health insurance protect household assets? evidence from rural africa. *Health services research*, 47(2):819–839.

Powers, E. T. (1998). Does means-testing welfare discourage saving? evidence from a change in afdc policy in the united states. *Journal of Public Economics*, 68(1):33–53.

Ranson, M. K. (2001). *The impact of sewa's medical insurance fund on hospital utilization and expenditure: a household survey.* The World Bank.

Ray, D. (2007). *New Palgrave Dictionary of Economics*, chapter Development Economics. Palgrave Macmillan.

Ruger, J. P. and Kim, H.-J. (2006). Global health inequalities: an international comparison. *Journal of Epidemiology & Community Health*, 60(11):928–936.

Samuels, F. and Pose, R. R. (2013). Why neglected tropical diseases matter in reducing poverty. *Development Progress.*

Sauerborn, R., Adams, A., and Hien, M. (1996). Household strategies to cope with the economic costs of illness. *Social science & medicine*, 43(3):291–301.

Schneider, P. (2005). Trust in micro-health insurance: an exploratory study in rwanda. *Social science & medicine*, 61(7):1430–1438.

Smith, K. V. and Sulzbach, S. (2008). Community-based health insurance and access to maternal health services: evidence from three west african countries. *Social science & medicine*, 66(12):2460–2473.

Starr-McCluer, M. (1996). Health insurance and precautionary savings. *The American Economic Review*, 86(1):285–295.

Wagstaff, A., Lindelow, M., Jun, G., Ling, X., and Juncheng, Q. (2009). Extending health insurance to the rural population: an impact evaluation of china's new cooperative medical scheme. *Journal of Health Economics*, 28(1):1–19.

Wilkes, A., Hao, Y., Bloom, G., and Xingyuan, G. (1997). Coping with the costs of severe illness in rural china. Technical report, IDS Working Paper Series 58.

Zeller, M. (2001). *The safety net role of microfinance for income and consumption smoothing.* Brookings Institution Press.

Appendices

A Variables used in the study:

1) Household Insurance Intensity (MdS/CBHI): The proportion of households enrolled in Mutuelles de Sante. Continuous variable from 0 to 1 where 0 indicates zero enrolment, 1 indicates full enrolment and values between 0 and 1 indicate partial enrolment.

2) Other Insurance: The proportion of households enrolled in insurance schemes such as RAMA, Military Medical Insurance (MMI), employment insurance, and other services. Continuous variable from 0 to 1 where 0 indicates zero enrolment, 1 indicates full enrolment and values between 0 and 1 indicate partial enrolment.

3) Health Seeking Behaviour: Binary variable that takes the value as 1 is a member of the household reported illness to a doctor or medical practitioner for period of two weeks prior the survey.

4) Out of Pocket Medical Expenses (OOP): The amount of money spent by households on medical expenses related to health check-up, purchase of medicines, imaging, pathological expenses, etc. reported for any health conditions in the period of two weeks prior the survey. Amount reported in RwF, the local currency of Rwanda.

5) Sale of Land: Binary variable taking the value as 1 if a household sold any farm land in last 12 months.

6) Sale of Livestock: Binary variable taking the value as 1 if a household sold or killed any livestock in last 12 months for consumption.

7) Sale of farm Equipment: Binary variable taking the value as 1 if a household sold any farm equipment in last 12 months.

8) Savings and Amount of total Savings: Binary variable taking the value as 1 if a household has positive savings amount (reported in RwF) and zero otherwise. Amount of Savings: Total current formal savings and contributions in Tontine group in last 12 months reported in RwF.

9) Formal Savings and Amount of Formal Savings: Binary variable taking the value as 1 if a household saves in established savings institutions such as Commercial Banks, Microfinance Savings and Credit Cooperative. Amount of Formal Savings: current savings amount (net of deposits and withdrawals made in last 12 months reported in RwF).

10) Informal Savings and Amount of Informal Savings: Binary variable taking the value as 1 if a household contributed in Tontine Savings Group in last 12 months. Amount of Informal Savings: Contributions made to Tontine Savings Group in last 12 months.

11) Borrowing and Total Loans: Binary variable for borrowing taking the value as 1 if a household borrowed formally or informally. Total Loans: The loan amount borrowed in last 12 months reported in RwF.

12) Formal Borrowing and Total Formal Loans: Binary variable for formal borrowing taking the value as 1 if a household borrowed from formal sources such as State Bank, Commercial Bank, Credit Co-operative and Microfinance. Total Formal Loans: The formal loan amount borrowed in last 12 months reported in RwF.

13) Informal Borrowing and Total Informal Loans: Binary variable for informal borrowing taking the value as 1 if a household borrowed from informal sources such as relative, tontine, and informal lender. Total Informal Loans: The informal loan amount borrowed in last 12 months reported in RwF.

14) Radio: Dummy variable representing ownership of Radio in the household.

15) TV: Dummy variable representing ownership of TV in the household.

16) Children: Number of children in the household.

17) Women: Number of women in the household.

18) Adults: Number of adults in the household.

19) Age of Household Head: Reported in Years.

20) HH Mean Schooling: The proportion of households that attended primary school.

21) Urban: Dummy variable to indicate if the household resided in urban or rural area.

22) Time to Health Centre/Administrative Office: Reported in minutes.

23) Disease in HH: The incidence of disease in the household for two weeks prior the survey was conducted.

24) Harvest Small: Total value of Harvests for crops cultivated on small scale, reported in RwF.

25) Harvest Large: Total value of Harvests for crops cultivated on large scale, reported in RwF.

26: PSU Insurance Rate: The IV used in the study. Proportion of enrolment in Mutuelles de Sante for a zone/village excluding the enrolment of a household for which the IV is constructed.

B Robustness Results 1

The followings results exclude partial enroled households (Table 18 to Table 26).

Table 18: Health Seeking Behaviour and Insurance Intensity (Robustness 1)

| Variables | Formal Health Seeking (2005-06) | | | Formal Health Seeking (2010-11) | | |
	Probit	Probit	Probit	Probit	Probit	Probit
CBHI	0.062***	0.073***	0.081***	0.203***	0.197***	0.232***
	(0.015)	(0.015)	(0.016)	(0.016)	(0.014)	(0.015)
Radio		0.016	0.009		0.008	0.003
		(0.012)	(0.014)		(0.010)	(0.009)
TV		0.023	0.012		0.089***	0.032
		(0.031)	(0.063)		(0.032)	(0.041)
Adults		0.015*	0.015**		0.009	0.018***
		(0.008)	(0.007)		(0.007)	(0.007)
Children in HH		0.014***	0.016***		0.012**	0.016***
		(0.004)	(0.004)		(0.005)	(0.005)
Women in HH		0.016	0.006		0.018**	0.008
		(0.011)	(0.012)		(0.008)	(0.009)
Age of HH head		-0.006**	-0.006*		-0.007***	-0.009***
		(0.003)	(0.003)		(0.003)	(0.002)
Age Sq.		0.000	0.000		0.000**	0.000***
		(0.000)	(0.000)		(0.000)	(0.000)
HH Mean Schooling			0.036			0.017
			(0.031)			(0.034)
Urban			-0.009			0.010
			(0.031)			(0.024)
Other Insurance			0.103***			0.329***
			(0.033)			(0.049)
Time to Health Centre			-0.000			0.000
			(0.000)			(0.000)
Harvest Small			-0.022			-0.003
			(0.129)			(0.003)
Harvest Large			0.005			-0.003
			(0.086)			(0.002)
Observations	5,771	4,385	3,765	10,928	8,318	7,616
Controls	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 19: Impact of MdS on Out of Pocket Expenses (OOP) (Robustness 1)

Variables	Out of Pocket Exp. (2005-06)						Out of Pocket Exp. (2010-11)					
	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS
CBHI	-0.350***	-0.368***	-0.530***	-1.306***	-1.364***	-1.121***	-0.251***	-0.270***	-0.334***	-0.342**	-0.143	-0.205
	(0.093)	(0.105)	(0.070)	(0.314)	(0.344)	(0.246)	(0.062)	(0.068)	(0.065)	(0.149)	(0.159)	(0.153)
HH Size		0.192***	0.097***		0.174***	0.087***		0.101***	0.054*		0.100***	0.054*
		(0.048)	(0.031)		(0.048)	(0.031)		(0.030)	(0.029)		(0.030)	(0.029)
HH Mean Schooling		0.257	0.026		0.393	0.115		-0.096	-0.103		-0.108	-0.116
		(0.235)	(0.154)		(0.243)	(0.156)		(0.122)	(0.114)		(0.123)	(0.115)
Age of HH Head		-0.019	0.005		-0.018	0.006		-0.034***	-0.020*		-0.035***	-0.020*
		(0.021)	(0.014)		(0.021)	(0.014)		(0.012)	(0.011)		(0.012)	(0.011)
Age Sq.		0.000	-0.000		0.000	-0.000		0.000***	0.000		0.000***	0.000*
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Children in HH		0.035	-0.023		0.064	-0.009		0.006	0.013		0.009	0.015
		(0.063)	(0.041)		(0.064)	(0.042)		(0.034)	(0.033)		(0.034)	(0.032)
Disease in HH			2.163***			2.101***			1.372***			1.389***
			(0.093)			(0.094)			(0.071)			(0.072)
Other Insurance			-0.795***			-1.094***			-0.639***			-0.522**
			(0.206)			(0.239)			(0.227)			(0.254)
Medical Consultation			3.843***			3.923***			0.388***			0.358***
			(0.114)			(0.117)			(0.110)			(0.111)
Harvest Small		1.034	0.400		1.332	0.583		-0.023	-0.013		-0.024	-0.015
		(1.482)	(0.834)		(1.414)	(0.785)		(0.016)	(0.015)		(0.016)	(0.015)
Harvest Large		-0.221	-0.045		-0.127	-0.007		0.006	0.007		0.004	0.006
		(0.854)	(0.522)		(0.839)	(0.531)		(0.019)	(0.018)		(0.019)	(0.018)
Constant	2.343***	2.858***	0.115	2.653***	2.678**	0.030	1.143***	2.619***	1.994***	1.206***	2.535***	1.907***
	(0.064)	(1.037)	(0.610)	(0.120)	(1.053)	(0.624)	(0.054)	(0.525)	(0.421)	(0.107)	(0.528)	(0.428)
Observations	5,771	4,062	4,059	5,771	4,062	4,059	10,928	7,992	7,989	10,928	7,992	7,989
R-squared	0.003	0.062	0.572	-0.017	0.041	0.565	0.002	0.070	0.181	0.002	0.070	0.180
First Stage F-stat	-	-	-	1,119	457	407	-	-	-	4,276	1,808	1,461
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
OOP Expenses: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 20: Impact of MdS on Decision to Sale Assets (Robustness 1)

Variables	Sale of Land or Livestock (2005-06)						Sale of Land or Livestock (2010-11)					
	Probit	Probit	Probit	IVProbit	IVProbit	IVProbit	Probit	Probit	Probit	IVProbit	IVProbit	IVProbit
CBHI	0.031*	0.014	0.010	-0.001	-0.032	-0.031	0.021	0.007	0.005	0.019	0.052	0.049
	(0.018)	(0.020)	(0.020)	(0.057)	(0.065)	(0.069)	(0.014)	(0.015)	(0.016)	(0.027)	(0.034)	(0.036)
HH Size		0.025***	0.023***		0.024***	0.022***		0.006	0.006		0.006	0.006
		(0.008)	(0.008)		(0.008)	(0.008)		(0.006)	(0.006)		(0.006)	(0.006)
HH Mean Schooling		0.095**	0.089**		0.102**	0.096**		0.061**	0.060*		0.058*	0.056*
		(0.044)	(0.044)		(0.044)	(0.045)		(0.031)	(0.031)		(0.031)	(0.031)
Age of HH Head		-0.000	0.000		-0.000	0.000		-0.001	-0.001		-0.001	-0.001
		(0.004)	(0.004)		(0.004)	(0.004)		(0.003)	(0.003)		(0.003)	(0.003)
Age Sq.		-0.000	-0.000		-0.000	-0.000		0.000	0.000		0.000	0.000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Children in HH		-0.006	-0.007		-0.004	-0.006		0.005	0.005		0.006	0.006
		(0.011)	(0.011)		(0.011)	(0.011)		(0.007)	(0.007)		(0.007)	(0.007)
Disease in HH			0.027			0.022			-0.007			-0.001
			(0.019)			(0.021)			(0.015)			(0.015)
Other Insurance			-0.005			-0.028			0.022			0.063
			(0.055)			(0.065)			(0.057)			(0.065)
Medical Consultation			0.069***			0.075***			0.019			0.008
			(0.024)			(0.026)			(0.019)			(0.021)
Harvest Small		1.649***	1.639***		1.664***	1.653***		0.022***	0.022***		0.022***	0.022***
		(0.296)	(0.297)		(0.297)	(0.297)		(0.005)	(0.005)		(0.005)	(0.005)
Harvest Large		0.112	0.112		0.113	0.112		0.036***	0.036***		0.036***	0.035***
		(0.134)	(0.134)		(0.134)	(0.134)		(0.006)	(0.006)		(0.006)	(0.006)
Observations	3,858	3,224	3,223	3,858	3,224	3,223	7,758	6,330	6,327	7,758	6,330	6,327
First Stage F-Stat	-	-	-	1,119	457	407	-	-	-	4,276	1,808	1,461
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 21: Impact of MdS on the Existing of Savings and Amount of Savings (Formal and Informal) (Robustness 1)

Variables	Existing of Savings (Formal and Informal)				Amount of Savings (Formal and Informal)			
	2005-06		2010-11		2005-06		2010-11	
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.122***	0.106*	0.062***	-0.072*	1.236***	1.079*	0.802***	-0.597
	(0.016)	(0.063)	(0.014)	(0.038)	(0.168)	(0.627)	(0.151)	(0.404)
HH Size	0.035***	0.035***	0.030***	0.029***	0.325***	0.322***	0.253***	0.249***
	(0.007)	(0.007)	(0.005)	(0.005)	(0.066)	(0.066)	(0.051)	(0.051)
HH Mean Schooling	0.188***	0.191***	0.173***	0.185***	1.673***	1.697***	2.060***	2.201***
	(0.033)	(0.035)	(0.024)	(0.024)	(0.291)	(0.306)	(0.255)	(0.263)
Age of HH Head	0.006*	0.006*	0.004	0.004*	0.034	0.035	0.039	0.044*
	(0.003)	(0.003)	(0.002)	(0.002)	(0.028)	(0.028)	(0.025)	(0.025)
Age Sq.	-0.000**	-0.000***	-0.000**	-0.000**	-0.001**	-0.001**	-0.001**	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.008	-0.008	-0.020***	-0.022***	-0.032	-0.028	-0.118*	-0.146**
	(0.009)	(0.009)	(0.007)	(0.007)	(0.088)	(0.088)	(0.069)	(0.068)
Disease in HH	0.014	0.012	0.006	-0.012	0.110	0.093	-0.044	-0.226
	(0.017)	(0.018)	(0.014)	(0.014)	(0.163)	(0.174)	(0.138)	(0.146)
Other Insurance	0.097**	0.089	0.291***	0.168**	0.884*	0.805	2.479***	1.206**
	(0.048)	(0.057)	(0.073)	(0.080)	(0.500)	(0.568)	(0.468)	(0.572)
Medical Consultation	0.027	0.030	0.017	0.049***	0.294	0.315	0.270*	0.602***
	(0.020)	(0.021)	(0.014)	(0.016)	(0.195)	(0.209)	(0.141)	(0.164)
Harvest Small	0.315	0.321	0.031***	0.033***	3.673*	3.721*	0.310***	0.325***
	(0.192)	(0.196)	(0.005)	(0.005)	(1.916)	(1.944)	(0.048)	(0.050)
Harvest Large	0.346**	0.349**	0.042***	0.043***	4.255***	4.265***	1.271	2.219***
	(0.139)	(0.139)	(0.009)	(0.008)	(1.375)	(1.364)	(0.818)	(0.846)
Constant					3.400***	3.377***	1.271	2.219***
					(1.298)	(1.287)	(0.818)	(0.846)
Observations	4,057	4,057	7,974	7,974	4,059	4,059	7,989	7,989
R-Squared	-	-	-	-	0.185	0.185	0.187	0.173
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 22: Impact of MdS on the Existing of Savings and Amount of Savings (Formal) (Robustness 1)

Variables	Existing of Savings (Formal)				Amount of Savings (Formal)			
	2005-06		2010-11		2005-06		2010-11	
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.070***	0.095**	0.127***	0.060*	0.664***	0.848**	1.237***	0.633**
	(0.011)	(0.038)	(0.013)	(0.033)	(0.109)	(0.340)	(0.103)	(0.276)
HH Size	0.014***	0.014***	0.029***	0.029***	0.054	0.057	0.158***	0.156***
	(0.004)	(0.004)	(0.005)	(0.005)	(0.042)	(0.042)	(0.046)	(0.046)
HH Mean Schooling	0.131***	0.128***	0.205***	0.213***	0.764***	0.736***	1.650***	1.710***
	(0.025)	(0.025)	(0.026)	(0.026)	(0.155)	(0.165)	(0.189)	(0.189)
Age of HH Head	0.002	0.002	0.004	0.004	-0.001	-0.002	0.016	0.018
	(0.002)	(0.002)	(0.002)	(0.002)	(0.018)	(0.018)	(0.019)	(0.019)
Age Sq.	-0.000	-0.000	-0.000*	-0.000*	-0.000	-0.000	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.002	0.002	-0.011*	-0.013*	0.122**	0.117**	0.029	0.017
	(0.006)	(0.006)	(0.006)	(0.006)	(0.057)	(0.057)	(0.059)	(0.059)
Disease in HH	0.009	0.012	0.009	0.000	0.085	0.104	-0.004	-0.083
	(0.011)	(0.012)	(0.012)	(0.013)	(0.102)	(0.105)	(0.103)	(0.106)
Other Insurance	0.125***	0.138***	0.551***	0.492***	1.638***	1.731***	4.689***	4.142***
	(0.027)	(0.033)	(0.077)	(0.082)	(0.440)	(0.461)	(0.425)	(0.485)
Medical Consultation	0.015	0.011	0.018	0.034**	0.134	0.109	0.220*	0.365***
	(0.013)	(0.014)	(0.016)	(0.018)	(0.130)	(0.140)	(0.131)	(0.139)
Harvest Small	0.227**	0.221**	0.018***	0.019***	3.975***	3.964***	0.195***	0.202***
	(0.089)	(0.091)	(0.005)	(0.005)	(1.235)	(1.224)	(0.041)	(0.041)
Harvest Large	0.210***	0.209***	0.037***	0.038***	3.351***	3.377***	0.345***	0.352***
	(0.073)	(0.074)	(0.006)	(0.006)	(1.135)	(1.125)	(0.057)	(0.058)
Constant					3.351***	3.377***	1.089	1.503**
					(1.135)	(1.125)	(0.695)	(0.714)
Observations	4,057	4,057	7,974	7,974	4,059	4,059	7,711	7,711
R-Squared	-	-	-	-	0.231	0.231	0.269	0.265
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 23: Impact of MdS on the Existing of Savings and Amount of Savings (Informal) (Robustness 1)

Variables	Existing of Savings (Informal) 2005 Probit	2005 IVProbit	2010 Probit	2010 IVProbit	Amount of Savings (Formal and Informal) 2005 OLS	2005 IV2SLS	2010 OLS	2010 IV2SLS
CBHI	0.090***	0.069	0.033**	-0.073*	0.950***	0.883	0.389**	-0.811*
	(0.017)	(0.069)	(0.015)	(0.044)	(0.172)	(0.660)	(0.152)	(0.448)
HH Size	0.030***	0.030***	0.015***	0.015***	0.313***	0.312***	0.225***	0.253***
	(0.007)	(0.007)	(0.006)	(0.006)	(0.067)	(0.067)	(0.058)	(0.058)
HH Mean Schooling	0.163***	0.166***	0.132***	0.142***	1.385***	1.395***	1.461***	1.728***
	(0.033)	(0.034)	(0.027)	(0.027)	(0.289)	(0.302)	(0.263)	(0.269)
Age of HH Head	0.006**	0.007**	0.006**	0.006**	0.045*	0.045*	0.040	0.040
	(0.003)	(0.003)	(0.003)	(0.003)	(0.026)	(0.026)	(0.025)	(0.025)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001**	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.009	-0.009	-0.006	-0.008	-0.099	-0.097	-0.102	-0.156**
	(0.009)	(0.009)	(0.008)	(0.007)	(0.087)	(0.088)	(0.078)	(0.078)
Disease in HH	0.012	0.009	0.004	-0.010	0.108	0.101	0.015	-0.177
	(0.017)	(0.019)	(0.014)	(0.015)	(0.158)	(0.172)	(0.145)	(0.157)
Other Insurance	-0.042	-0.053	0.014	-0.082	-0.169	-0.203	0.593	-0.208
	(0.047)	(0.057)	(0.055)	(0.064)	(0.472)	(0.557)	(0.646)	(0.722)
Medical Consultation	0.021	0.024	0.012	0.037**	0.190	0.199	0.144	0.460**
	(0.020)	(0.022)	(0.016)	(0.018)	(0.193)	(0.209)	(0.159)	(0.185)
Harvest Small	0.202	0.209	0.033***	0.034***	2.545*	2.549*	0.287***	0.310***
	(0.176)	(0.180)	(0.005)	(0.005)	(1.350)	(1.338)	(0.039)	(0.042)
Harvest Large	0.258**	0.260**	0.013**	0.015***	0.369	0.360	0.193***	0.203***
	(0.126)	(0.126)	(0.005)	(0.006)	(1.380)	(1.367)	(0.059)	(0.063)
Constant					0.369	0.360	0.398	2.339
					(1.380)	(1.367)	(0.883)	(2.523)
Observations	4,057	4,057	7,979	7,979	4,059	4,059	7,989	7,989
R-Squared	-	-	-	-	0.135	0.135	0.132	0.120
First Stage F-Stat	-	485	-	1,584	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 24: Impact of MdS on Borrowing Status and Amount of Loans (Formal and Informal) (Robustness 1)

Variables	Borrowing Status (Formal and Informal) 2005-06 Probit	2005-06 IVProbit	2010-11 Probit	2010-11 IVProbit	Amount of Loans (Formal and Informal) 2005-06 OLS	2005-06 IV2SLS	2010-11 OLS	2010-11 IV2SLS
CBHI	0.007	0.059	-0.056***	-0.128***	0.238	0.610	-0.314**	-1.361***
	(0.018)	(0.057)	(0.013)	(0.029)	(0.171)	(0.547)	(0.129)	(0.325)
HH Size	0.007	0.007	0.007*	0.006*	0.177***	0.184***	0.225***	0.222***
	(0.007)	(0.007)	(0.004)	(0.004)	(0.066)	(0.066)	(0.049)	(0.048)
HH Mean Schooling	0.156***	0.148***	0.035*	0.041*	1.713***	1.657***	0.805***	0.911***
	(0.034)	(0.035)	(0.021)	(0.021)	(0.309)	(0.311)	(0.233)	(0.234)
Age of HH Head	-0.001	-0.001	0.003*	0.004**	-0.012	-0.013	0.061***	0.065***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.029)	(0.028)	(0.023)	(0.023)
Age Sq.	-0.000	-0.000	-0.000***	-0.000***	-0.000	-0.000	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.002	0.001	0.001	-0.000	-0.033	-0.042	-0.104	-0.125*
	(0.009)	(0.009)	(0.005)	(0.005)	(0.084)	(0.084)	(0.066)	(0.066)
Disease in HH	0.083***	0.089***	0.058***	0.050***	0.687***	0.726***	0.535***	0.399***
	(0.017)	(0.018)	(0.011)	(0.011)	(0.161)	(0.170)	(0.126)	(0.130)
Other Insurance	0.059	0.085	0.113***	0.053	1.112**	1.300**	2.192***	1.239**
	(0.047)	(0.054)	(0.042)	(0.047)	(0.475)	(0.541)	(0.492)	(0.547)
Medical Consultation	-0.003	-0.010	0.025**	0.039***	0.130	0.079	0.297***	0.546***
	(0.020)	(0.022)	(0.012)	(0.013)	(0.187)	(0.204)	(0.129)	(0.144)
Harvest Small	0.104	0.088	0.002	0.004	1.618	1.502	0.076***	0.090***
	(0.195)	(0.196)	(0.003)	(0.003)	(1.915)	(1.908)	(0.031)	(0.031)
Harvest Large	-0.263**	-0.265**	0.001	0.002	-1.994	-2.017	0.092*	0.104**
	(0.132)	(0.133)	(0.003)	(0.003)	(1.377)	(1.374)	(0.048)	(0.049)
Constant					7.052***	7.106***	6.123***	6.833***
					(1.381)	(1.373)	(0.825)	(0.859)
Observations	4,057	4,057	7,977	7,977	4,059	4,059	7,989	7,989
R-Squared	-	-	-	-	0.074	0.073	0.114	0.105
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 25: Impact of MdS on Borrowing Status and Amount of Loans (Formal) (Robustness 1)

| | Borrowing Status (Formal) | | | | Amount of Loans (Formal) | | | |
| | 2005 | | 2010 | | 2005 | | 2010 | |
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.016	-0.029	0.025***	-0.003	0.177	-0.126	0.252***	-0.041
	(0.013)	(0.042)	(0.007)	(0.017)	(0.138)	(0.428)	(0.072)	(0.197)
HH Size	-0.003	-0.004	0.011***	0.011***	0.007	0.002	0.191***	0.190***
	(0.005)	(0.005)	(0.002)	(0.002)	(0.052)	(0.052)	(0.044)	(0.043)
HH Mean Schooling	0.113***	0.119***	0.035**	0.038**	0.917***	0.963***	0.204	0.234*
	(0.024)	(0.024)	(0.015)	(0.015)	(0.192)	(0.197)	(0.126)	(0.127)
Age of HH Head	0.012***	0.012***	0.005***	0.005***	0.091***	0.092***	0.039***	0.040***
	(0.002)	(0.002)	(0.001)	(0.001)	(0.019)	(0.018)	(0.013)	(0.013)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.005	0.006	-0.007**	-0.008**	0.029	0.036	-0.150***	-0.156***
	(0.006)	(0.006)	(0.003)	(0.003)	(0.069)	(0.069)	(0.057)	(0.056)
Disease in HH	0.002	-0.003	-0.002	-0.006	0.048	0.016	-0.040	-0.078
	(0.014)	(0.015)	(0.007)	(0.007)	(0.131)	(0.141)	(0.086)	(0.087)
Other Insurance	0.082***	0.060*	0.194***	0.168***	1.438***	1.284***	6.132***	5.865***
	(0.028)	(0.034)	(0.020)	(0.024)	(0.444)	(0.481)	(0.669)	(0.677)
Medical Consultation	0.030**	0.037**	0.002	0.009	0.374**	0.415**	0.032	0.101
	(0.015)	(0.017)	(0.008)	(0.009)	(0.164)	(0.179)	(0.101)	(0.112)
Harvest Small	-0.199	-0.185	0.001	0.001	-1.740*	-1.646	0.015	0.019
	(0.127)	(0.128)	(0.001)	(0.001)	(0.998)	(1.007)	(0.025)	(0.026)
Harvest Large	0.037	0.040	0.003*	0.004**	0.524	0.543	0.088**	0.091**
	(0.094)	(0.093)	(0.002)	(0.002)	(1.116)	(1.101)	(0.040)	(0.040)
Constant					1.758	1.714	-0.365	-0.167
					(1.359)	(1.348)	(0.642)	(0.654)
Observations	4,050	4,050	7,974	7,974	4,059	4,059	7,989	7,989
R-Squared	-	-	-	-	0.075	0.074	0.169	0.167
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 26: Impact of MdS on Borrowing Status and Amount of Loans (Informal) (Robustness 1)

| | Borrowings Status (Informal) | | | | Amount of Loans (Informal) | | | |
| | 2005-06 | | 2010-11 | | 2005-06 | | 2010-11 | |
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	-0.007	0.081	-0.078***	-0.151***	0.061	0.745	-0.563***	-1.283***
	(0.018)	(0.058)	(0.014)	(0.034)	(0.163)	(0.535)	(0.133)	(0.342)
HH Size	0.011	0.012*	-0.006	-0.006	0.176***	0.187***	0.029	0.027
	(0.007)	(0.007)	(0.005)	(0.005)	(0.063)	(0.063)	(0.053)	(0.052)
HH Mean Schooling	0.058*	0.044	0.025	0.032	0.732**	0.629**	0.586**	0.659***
	(0.035)	(0.035)	(0.025)	(0.025)	(0.302)	(0.306)	(0.236)	(0.238)
Age of HH Head	-0.011***	-0.011***	0.001	0.001	-0.106***	-0.108***	0.021	0.024
	(0.003)	(0.003)	(0.002)	(0.002)	(0.027)	(0.027)	(0.022)	(0.022)
Age Sq.	0.000**	0.000**	-0.000	-0.000	0.001***	0.001***	-0.001**	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.004	-0.007	0.009	0.008	-0.070	-0.086	0.054	0.039
	(0.009)	(0.009)	(0.007)	(0.007)	(0.080)	(0.081)	(0.068)	(0.068)
Disease in HH	0.081***	0.089***	0.058***	0.048***	0.644***	0.716***	0.576***	0.483***
	(0.018)	(0.019)	(0.013)	(0.014)	(0.159)	(0.167)	(0.129)	(0.135)
Other Insurance	-0.046	-0.001	-0.397***	-0.460***	-0.333	0.014	-4.018***	-4.673***
	(0.050)	(0.057)	(0.051)	(0.057)	(0.449)	(0.518)	(0.514)	(0.580)
Medical Consultation	-0.039*	-0.050**	0.025*	0.042***	-0.271	-0.364*	0.254*	0.426***
	(0.020)	(0.021)	(0.015)	(0.016)	(0.178)	(0.190)	(0.136)	(0.154)
Harvest Small	0.260	0.232	0.001	0.002	3.085*	2.872	0.060*	0.070**
	(0.195)	(0.198)	(0.003)	(0.003)	(1.824)	(1.835)	(0.032)	(0.031)
Harvest Large	-0.319**	-0.320**	-0.005	-0.004	-2.392**	-2.436**	0.000	0.009
	(0.142)	(0.141)	(0.003)	(0.003)	(1.210)	(1.204)	(0.033)	(0.034)
Constant					5.337***	5.436***	6.505***	6.993***
					(1.517)	(1.505)	(0.945)	(0.967)
Observations	4,057	4,057	7,977	7,977	4,059	4,059	7,989	7,989
R-Squared	-	-	-	-	0.051	0.046	0.100	0.095
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

C Robustness Results 2

The following results exclude any other forms of Insurance (Table 27 to Table 35).

Table 27: Health Seeking Behaviour and Insurance Intensity (Robustness 1)

| Variables | Formal Health Seeking (2005-06) | | | Formal Health Seeking (2010-11) | | |
	Probit	Probit	Probit	Probit	Probit	Probit
CBHI	0.097***	0.089***	0.091***	0.206***	0.207***	0.211***
	(0.015)	(0.016)	(0.015)	(0.016)	(0.014)	(0.015)
Radio		0.026**	0.025*		0.010	0.008
		(0.013)	(0.013)		(0.009)	(0.010)
TV		-0.018	-0.079		0.056*	-0.000
		(0.035)	(0.063)		(0.031)	(0.042)
Adults		0.015**	0.016**		0.017***	0.021***
		(0.007)	(0.007)		(0.006)	(0.006)
Children in HH		0.017***	0.017***		0.016***	0.018***
		(0.004)	(0.004)		(0.004)	(0.004)
Women in HH		0.016*	0.012		0.017**	0.010
		(0.009)	(0.011)		(0.008)	(0.009)
Age of HH head		-0.006**	-0.005*		-0.010***	-0.011***
		(0.003)	(0.003)		(0.002)	(0.002)
Age Sq.		0.000	0.000		0.000***	0.000***
		(0.000)	(0.000)		(0.000)	(0.000)
HH Mean Schooling			0.045			0.041
			(0.028)			(0.029)
Urban			-0.013			0.021
			(0.025)			(0.021)
Time to Health Centre			-0.000			-0.000
			(0.000)			(0.000)
Harvest Small			-0.079			-0.003
			(0.133)			(0.002)
Harvest Large			0.024			-0.000
			(0.079)			(0.002)
Observations	6,714	4,955	4,368	14,147	10,538	9,661
Controls	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 28: Impact of MdS on Out of Pocket Expenses (OOP) (Robustness 2)

Variables	Out of Pocket Exp. (2005-06)						Out of Pocket Exp. (2010-11)					
	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS
CBHI	-0.150*	-0.316***	-0.524***	-1.148***	-1.247***	-1.225***	-0.215***	-0.286***	-0.328***	-0.346**	-0.299*	-0.317*
	(0.090)	(0.103)	(0.068)	(0.315)	(0.360)	(0.245)	(0.060)	(0.066)	(0.061)	(0.167)	(0.176)	(0.173)
HH Size		0.214***	0.089***		0.214***	0.088***		0.106***	0.053**		0.106***	0.053**
		(0.042)	(0.027)		(0.042)	(0.027)		(0.024)	(0.023)		(0.024)	(0.023)
HH Mean Schooling		0.223	-0.015		0.353	0.080		-0.039	-0.061		-0.038	-0.062
		(0.222)	(0.146)		(0.230)	(0.149)		(0.112)	(0.106)		(0.112)	(0.106)
Age of HH Head		0.002	0.007		0.006	0.011		-0.021**	-0.010		-0.021**	-0.010
		(0.018)	(0.011)		(0.018)	(0.011)		(0.009)	(0.008)		(0.009)	(0.008)
Age Sq.		-0.000	-0.000		-0.000	-0.000		0.000**	0.000		0.000**	0.000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Children in HH		-0.027	-0.037		-0.016	-0.029		-0.015	0.002		-0.015	0.002
		(0.055)	(0.038)		(0.055)	(0.038)		(0.029)	(0.028)		(0.029)	(0.028)
Disease in HH			2.156***			2.093***			1.342***			1.343***
			(0.087)			(0.089)			(0.064)			(0.065)
Medical Consultation			3.869***			3.961***			0.458***			0.456***
			(0.104)			(0.108)			(0.098)			(0.100)
Harvest Small		0.660	0.633		0.950	0.854		-0.020	-0.015		-0.020	-0.015
		(1.322)	(0.709)		(1.264)	(0.667)		(0.014)	(0.014)		(0.014)	(0.015)
Harvest Large		-0.574	-0.151		-0.512	-0.112		0.024	0.021		0.024	0.020
		(0.806)	(0.458)		(0.786)	(0.459)		(0.018)	(0.017)		(0.018)	(0.017)
Constant	2.325***	1.058	-0.476	2.703***	0.858	-0.615	1.158***	2.327***	1.750***	1.246***	2.337***	1.742***
	(0.063)	(0.838)	(0.496)	(0.134)	(0.846)	(0.503)	(0.052)	(0.480)	(0.386)	(0.118)	(0.490)	(0.398)
Observations	6,714	4,761	4,758	6,712	4,761	4,758	14,147	10,298	10,295	14,147	10,298	10,295
R-squared	0.000	0.057	0.574	-0.020	0.040	0.565	0.001	0.071	0.179	0.001	0.071	0.179
First Stage F-stat	-	-	-	1,184	515	481	-	-	-	5,879	2,063	1,771
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
OOP Expenses: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 29: Impact of MdS on Decision to Sale Assets (Robustness 2)

Variables	Sale of Land or Livestock (2005-06)						Sale of Land or Livestock (2010-11)					
	Probit	Probit	Probit	IVProbit	IVProbit	IVProbit	Probit	Probit	Probit	IVProbit	IVProbit	IVProbit
CBHI	0.052***	0.026	0.022	-0.002	-0.059	-0.061	0.024*	0.009	0.003	-0.002	0.042	0.035
	(0.018)	(0.019)	(0.019)	(0.057)	(0.067)	(0.068)	(0.014)	(0.015)	(0.015)	(0.029)	(0.034)	(0.035)
HH Size		0.031***	0.030***		0.031***	0.029***		0.008*	0.008*		0.009*	0.008*
		(0.007)	(0.007)		(0.007)	(0.007)		(0.005)	(0.005)		(0.005)	(0.005)
HH Mean Schooling		0.089**	0.083**		0.101**	0.094**		0.060**	0.059**		0.057**	0.057**
		(0.040)	(0.028)		(0.041)	(0.041)		(0.028)	(0.028)		(0.028)	(0.028)
Age of HH Head		-0.004	-0.004		-0.004	-0.004		0.001	0.001		0.001	0.001
		(0.003)	(0.003)		(0.003)	(0.003)		(0.002)	(0.002)		(0.002)	(0.002)
Age Sq.		0.000	0.000		0.000	0.000		-0.000	-0.000		-0.000	-0.000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Children in HH		-0.016*	-0.017*		-0.015	-0.015		0.000	0.000		0.000	0.000
		(0.009)	(0.009)		(0.009)	(0.009)		(0.006)	(0.006)		(0.006)	(0.006)
Disease in HH			0.026			0.018			-0.012			-0.009
			(0.018)			(0.020)			(0.012)			(0.013)
Medical Consultation			0.061***			0.073***			0.030*			0.024
			(0.022)			(0.023)			(0.016)			(0.017)
Harvest Small		1.488***	1.497***		1.509***	1.517***		0.022***	0.022***		0.022***	0.022***
		(0.250)	(0.250)		(0.252)	(0.252)		(0.005)	(0.005)		(0.005)	(0.005)
Harvest Large		0.190	0.195		0.190	0.194		0.041***	0.041***		0.041***	0.041***
		(0.124)	(0.125)		(0.124)	(0.125)		(0.006)	(0.006)		(0.006)	(0.006)
Observations	4,608	3,828	3,827	4,608	3,828	3,827	10,014	8,140	8,137	10,014	8,140	8,137
First Stage F-Stat	-	-	-	1,184	515	481	-	-	-	5,879	2,063	1,771
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 30: Impact of MdS on the Existing of Savings and Amount of Savings (Formal and Informal) (Robustness 2)

| Variables | Existing of Savings (Formal and Informal) | | | | Amount of Savings (Formal and Informal) | | | |
| | 2005-06 | | 2010-11 | | 2005-06 | | 2010-11 | |
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.126***	0.086	0.065***	-0.101**	1.252***	0.905	0.815***	-1.045**
	(0.016)	(0.064)	(0.014)	(0.039)	(0.163)	(0.630)	(0.142)	(0.419)
HH Size	0.035***	0.035***	0.030***	0.029***	0.350***	0.350***	0.231***	0.214***
	(0.006)	(0.006)	(0.005)	(0.005)	(0.056)	(0.056)	(0.046)	(0.047)
HH Mean Schooling	0.164***	0.170***	0.164***	0.175***	1.525***	1.572***	1.898***	2.055***
	(0.031)	(0.033)	(0.022)	(0.022)	(0.280)	(0.293)	(0.228)	(0.234)
Age of HH Head	0.012***	0.012***	0.010***	0.011***	0.095***	0.096***	0.114***	0.121***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.022)	(0.022)	(0.021)	(0.021)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.012	-0.011	-0.018***	-0.020***	-0.087	-0.083	-0.089	-0.110*
	(0.008)	(0.008)	(0.006)	(0.006)	(0.078)	(0.079)	(0.058)	(0.058)
Disease in HH	0.009	0.006	0.015	-0.004	0.075	0.044	0.053	-0.152
	(0.016)	(0.017)	(0.012)	(0.012)	(0.147)	(0.156)	(0.124)	(0.128)
Medical Consultation	0.033*	0.038**	0.024*	0.056***	0.286*	0.332*	0.293**	0.661***
	(0.017)	(0.019)	(0.012)	(0.012)	(0.172)	(0.187)	(0.124)	(0.139)
Harvest Small	0.345*	0.359*	0.024***	0.026***	4.051**	4.161**	0.241***	0.262***
	(0.181)	(0.188)	(0.005)	(0.005)	(1.765)	(1.808)	(0.036)	(0.039)
Harvest Large	0.316**	0.320**	0.039***	0.040***	3.817***	3.836***	0.300***	0.319***
	(0.126)	(0.127)	(0.007)	(0.007)	(1.230)	(1.225)	(0.042)	(0.045)
Constant					1.206	1.137	-1.036	0.244
					(1.230)	(1.221)	(0.758)	(0.796)
Observations	4,756	4,756	10,289	10,289	4,758	4,758	10,295	10,295
R-Squared	-	-	-	-	0.180	0.178	0.166	0.145
First Stage F-Stat	-	481	-	1,771	-	481	-	1,771
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 31: Impact of MdS on the Existing of Savings and Amount of Savings (Formal) (Robustness 2)

| Variables | Existing of Savings (Formal) | | | | Amount of Savings (Formal) | | | |
| | 2005-06 | | 2010-11 | | 2005-06 | | 2010-11 | |
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.076***	0.073*	0.122***	0.080**	0.711***	0.564*	1.224***	0.784***
	(0.011)	(0.038)	(0.013)	(0.036)	(0.104)	(0.335)	(0.100)	(0.290)
HH Size	0.010***	0.010***	0.029***	0.028***	0.041	0.044	0.125***	0.121***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.037)	(0.037)	(0.040)	(0.040)
HH Mean Schooling	0.140***	0.140***	0.199***	0.203***	0.847***	0.853***	1.524***	1.561***
	(0.023)	(0.024)	(0.024)	(0.024)	(0.143)	(0.153)	(0.171)	(0.171)
Age of HH Head	0.007***	0.007***	0.007***	0.007***	0.047***	0.050***	0.068***	0.069***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.015)	(0.015)	(0.015)	(0.015)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.005	0.005	-0.012**	-0.013**	0.119**	0.116**	0.055	0.049
	(0.005)	(0.005)	(0.005)	(0.005)	(0.051)	(0.050)	(0.049)	(0.049)
Disease in HH	0.003	0.002	0.012	0.007	0.026	0.009	0.006	-0.043
	(0.010)	(0.011)	(0.011)	(0.011)	(0.093)	(0.094)	(0.090)	(0.095)
Medical Consultation	0.025**	0.025**	0.034**	0.042***	0.193*	0.198	0.326***	0.415***
	(0.011)	(0.013)	(0.013)	(0.015)	(0.114)	(0.125)	(0.110)	(0.119)
Harvest Small	0.126	0.127	0.018***	0.019***	1.799	1.832	0.173***	0.178***
	(0.085)	(0.085)	(0.004)	(0.004)	(1.169)	(1.157)	(0.034)	(0.034)
Harvest Large	0.212***	0.212***	0.037***	0.038***	3.789***	4.024***	0.337***	0.341***
	(0.065)	(0.065)	(0.005)	(0.006)	(1.067)	(1.056)	(0.051)	(0.051)
Constant					1.705*	1.184	-0.145	0.160
					(0.932)	(0.984)	(0.656)	(0.689)
Observations	4,756	4,756	10,288	10,288	4,758	4,757	9,872	9,872
R-Squared	-	-	-	-	0.201	0.203	0.229	0.228
First Stage F-Stat	-	481	-	1,771	-	481	-	1,771
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 32: Impact of MdS on the Existing of Savings and Amount of Savings (Informal) (Robustness 2)

	Existing of Savings (Informal)				Amount of Savings (Formal and Informal)			
	2005		2010		2005		2010	
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.089***	0.055	0.037**	-0.159***	0.925***	0.802	0.424***	-1.578***
	(0.016)	(0.071)	(0.014)	(0.042)	(0.164)	(0.673)	(0.143)	(0.460)
HH Size	0.032***	0.032***	0.016***	0.014***	0.349***	0.349***	0.222***	0.204***
	(0.006)	(0.006)	(0.005)	(0.005)	(0.057)	(0.056)	(0.051)	(0.052)
HH Mean Schooling	0.134***	0.139***	0.112***	0.125***	1.168***	1.184***	1.254***	1.423***
	(0.031)	(0.032)	(0.024)	(0.024)	(0.269)	(0.281)	(0.236)	(0.244)
Age of HH Head	0.010***	0.010***	0.011***	0.011***	0.072***	0.072***	0.095***	0.102***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.020)	(0.020)	(0.021)	(0.021)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.014*	-0.014*	-0.006	-0.008	-0.155**	-0.154*	-0.102	-0.125**
	(0.008)	(0.008)	(0.006)	(0.006)	(0.078)	(0.079)	(0.065)	(0.065)
Disease in HH	0.009	0.006	0.010	-0.012	0.106	0.095	0.092	-0.128
	(0.016)	(0.017)	(0.012)	(0.013)	(0.145)	(0.158)	(0.127)	(0.133)
Medical Consultation	0.017	0.021	0.009	0.048***	0.144	0.160	0.117	0.513***
	(0.018)	(0.020)	(0.014)	(0.015)	(0.173)	(0.190)	(0.141)	(0.158)
Harvest Small	0.283	0.294*	0.028***	0.030***	3.432*	3.471*	0.259***	0.281***
	(0.173)	(0.178)	(0.005)	(0.004)	(1.761)	(1.792)	(0.034)	(0.037)
Harvest Large	0.188	0.190	0.014***	0.016***	1.840	1.847	0.185***	0.206***
	(0.121)	(0.121)	(0.005)	(0.005)	(1.259)	(1.249)	(0.052)	(0.055)
Constant					-0.283	-0.307	-1.099	0.280
					(1.296)	(1.289)	(0.739)	(0.797)
Observations	4,756	4,756	10,284	10,284	4,758	4,758	10,295	10,295
R-Squared	-	-	-	-	0.138	0.137	0.126	0.102
First Stage F-Stat	-	481	-	1,771	-	481	-	1,771
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 33: Impact of MdS on Borrowing Status and Amount of Loans (Formal and Informal) (Robustness 2)

	Borrowing Status (Formal and Informal)				Amount of Loans (Formal and Informal)			
	2005-06		2010-11		2005-06		2010-11	
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.010	0.042	-0.055***	-0.160***	0.257	0.369	-0.316**	-1.229***
	(0.017)	(0.056)	(0.013)	(0.034)	(0.162)	(0.519)	(0.125)	(0.339)
HH Size	0.013**	0.013**	0.006	0.005	0.219***	0.219***	0.207***	0.199***
	(0.006)	(0.006)	(0.004)	(0.004)	(0.056)	(0.055)	(0.041)	(0.040)
HH Mean Schooling	0.145***	0.140***	0.039**	0.047**	1.633***	1.618***	0.813***	0.890***
	(0.032)	(0.032)	(0.021)	(0.021)	(0.290)	(0.290)	(0.210)	(0.212)
Age of HH Head	-0.002	-0.002	0.003*	0.003**	-0.033	-0.034	0.032	0.035*
	(0.003)	(0.003)	(0.002)	(0.002)	(0.026)	(0.025)	(0.020)	(0.020)
Age Sq.	-0.000	-0.000	-0.000***	-0.000***	-0.000	-0.000	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.007	-0.007	0.001	0.000	-0.096	-0.097	-0.088	-0.098*
	(0.008)	(0.008)	(0.005)	(0.005)	(0.074)	(0.073)	(0.056)	(0.056)
Disease in HH	0.059***	0.062***	0.058***	0.046***	0.449***	0.460***	0.558***	0.458***
	(0.017)	(0.017)	(0.011)	(0.011)	(0.152)	(0.159)	(0.111)	(0.115)
Medical Consultation	-0.002	-0.006	0.027**	0.048***	0.116	0.101	0.334***	0.515***
	(0.019)	(0.020)	(0.012)	(0.013)	(0.173)	(0.187)	(0.115)	(0.129)
Harvest Small	0.216	0.207	0.004	0.005*	2.928	2.893	0.095***	0.105***
	(0.191)	(0.192)	(0.003)	(0.003)	(1.845)	(1.839)	(0.030)	(0.030)
Harvest Large	-0.276**	-0.277**	0.001	0.002	-2.344*	-2.350*	0.084*	0.093**
	(0.118)	(0.118)	(0.003)	(0.003)	(1.229)	(1.223)	(0.045)	(0.046)
Constant					7.301***	7.323***	6.120***	6.749***
					(1.323)	(1.315)	(0.879)	(0.911)
Observations	4,756	4,756	10,283	10,283	4,758	4,758	10,295	10,295
R-Squared	-	-	-	-	0.067	0.067	0.097	0.091
First Stage F-Stat	-	481	-	1,771	-	481	-	1,771
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 34: Impact of MdS on Borrowing Status and Amount of Loans (Formal) (Robustness 2)

| Variables | Borrowing Status (Formal) | | | | Amount of Loans (Formal) | | | |
| | 2005 | | 2010 | | 2005 | | 2010 | |
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.014	-0.048	0.024***	0.012	0.170	-0.396	0.257***	0.147
	(0.013)	(0.041)	(0.007)	(0.018)	(0.131)	(0.398)	(0.070)	(0.218)
HH Size	0.002	0.002	0.011***	0.011***	0.050	0.050	0.185***	0.184***
	(0.004)	(0.004)	(0.002)	(0.002)	(0.047)	(0.047)	(0.037)	(0.037)
HH Mean Schooling	0.096***	0.105***	0.042***	0.043***	0.799***	0.876***	0.282**	0.291**
	(0.024)	(0.024)	(0.014)	(0.014)	(0.193)	(0.196)	(0.119)	(0.119)
Age of HH Head	0.006***	0.007***	0.000	0.000	0.041**	0.044**	-0.008	-0.008
	(0.002)	(0.002)	(0.001)	(0.001)	(0.018)	(0.018)	(0.016)	(0.016)
Age Sq.	-0.000***	-0.000***	-0.000	-0.000	-0.000***	-0.001***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.002	-0.001	-0.008**	-0.008**	-0.027	-0.021	-0.151***	-0.152***
	(0.006)	(0.006)	(0.003)	(0.003)	(0.064)	(0.064)	(0.052)	(0.052)
Disease in HH	-0.015	-0.021	-0.006	-0.008	-0.150	-0.201	-0.074	-0.086
	(0.012)	(0.013)	(0.006)	(0.006)	(0.117)	(0.125)	(0.072)	(0.074)
Medical Consultation	0.037***	0.045***	0.014*	0.016**	0.416***	0.490***	0.163*	0.184*
	(0.014)	(0.015)	(0.008)	(0.008)	(0.145)	(0.158)	(0.098)	(0.109)
Harvest Small	-0.109	-0.089	0.001	0.002	-0.869	-0.690	0.021	0.022
	(0.108)	(0.109)	(0.001)	(0.001)	(1.010)	(1.026)	(0.024)	(0.024)
Harvest Large	-0.005	-0.001	0.003**	0.003**	0.071	0.102	0.078**	0.079**
	(0.081)	(0.081)	(0.002)	(0.002)	(0.987)	(0.973)	(0.038)	(0.037)
Constant					2.307**	2.194*	1.030*	1.106*
					(1.164)	(1.152)	(0.588)	(0.602)
Observations	4,756	4,756	10,279	10,279	4,758	4,758	10,295	10,295
R-Squared	-	-	-	-	0.054	0.049	0.102	0.102
First Stage F-Stat	-	481	-	1,771	-	481	-	1,771
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 35: Impact of MdS on Borrowing Status and Amount of Loans (Informal) (Robustness 2)

| Variables | Borrowings Status (Informal) | | | | Amount of Loans (Informal) | | | |
| | 2005-06 | | 2010-11 | | 2005-06 | | 2010-11 | |
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	-0.004	0.091	-0.077***	-0.167***	0.084	0.772	-0.572***	-1.370***
	(0.018)	(0.056)	(0.013)	(0.035)	(0.156)	(0.516)	(0.125)	(0.355)
HH Size	0.012*	0.012*	-0.007	-0.008*	0.174***	0.175***	0.018	0.011
	(0.006)	(0.006)	(0.004)	(0.004)	(0.057)	(0.056)	(0.044)	(0.044)
HH Mean Schooling	0.060*	0.046	0.013	0.020	0.777***	0.683**	0.509**	0.577***
	(0.033)	(0.033)	(0.023)	(0.023)	(0.285)	(0.288)	(0.212)	(0.214)
Age of HH Head	-0.007***	-0.008***	0.004*	0.004**	-0.076***	-0.080***	0.040**	0.043**
	(0.003)	(0.003)	(0.002)	(0.002)	(0.024)	(0.024)	(0.019)	(0.019)
Age Sq.	0.000	0.000	-0.000***	-0.000***	0.000	0.000*	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.006	-0.007	0.012**	0.011*	-0.074	-0.082	0.070	0.061
	(0.008)	(0.008)	(0.006)	(0.006)	(0.072)	(0.072)	(0.060)	(0.060)
Disease in HH	0.074***	0.082***	0.066***	0.055***	0.605***	0.667***	0.639***	0.551***
	(0.017)	(0.017)	(0.012)	(0.012)	(0.147)	(0.153)	(0.114)	(0.120)
Medical Consultation	-0.041**	-0.053***	0.011	0.029**	-0.322*	-0.413**	0.151	0.309**
	(0.019)	(0.020)	(0.013)	(0.014)	(0.166)	(0.176)	(0.121)	(0.137)
Harvest Small	0.307*	0.275	0.002	0.003	3.529**	3.311**	0.072**	0.081**
	(0.179)	(0.180)	(0.003)	(0.003)	(1.672)	(1.677)	(0.034)	(0.033)
Harvest Large	-0.291**	-0.292**	-0.005*	-0.004	-2.363**	-2.401**	0.002	0.011
	(0.134)	(0.133)	(0.003)	(0.003)	(1.138)	(1.133)	(0.030)	(0.031)
Constant					5.018***	5.155***	5.113***	5.663***
					(1.386)	(1.381)	(0.952)	(0.980)
Observations	4,756	4,756	10,283	10,283	4,758	4,758	10,295	10,295
R-Squared	-	-	-	-	0.045	0.041	0.087	0.082
First Stage F-Stat	-	481	-	1,771	-	481	-	1,771
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

D   Robustness Results 3

The following results exclude outliers in the data (Table 36 to Table 43).

Table 36: Impact of MdS Out of Pocket Expenses (OOP) (Robustness 3)

Variables	Out of Pocket Exp. (2005-06)						Out of Pocket Exp. (2010-11)					
	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS	OLS	OLS	OLS	IV2SLS	IV2SLS	IV2SLS
CBHI	0.039	-0.061	-0.386***	-0.777***	-1.064***	-1.155***	-0.090*	-0.063	-0.108**	-0.205*	-0.008	-0.008
	(0.086)	(0.098)	(0.069)	(0.292)	(0.339)	(0.256)	(0.046)	(0.051)	(0.048)	(0.123)	(0.137)	(0.135)
HH Size		0.179***	0.078***		0.177***	0.076***		0.049***	0.014		0.049***	0.014
		(0.039)	(0.027)		(0.039)	(0.027)		(0.018)	(0.017)		(0.018)	(0.018)
HH Mean Schooling		0.221	-0.002		0.363*	0.113		-0.037	-0.043		-0.041	-0.052
		(0.207)	(0.145)		(0.213)	(0.148)		(0.100)	(0.095)		(0.099)	(0.095)
Age of HH Head		-0.022	0.000		-0.021	0.002		-0.011	-0.001		-0.011	-0.001
		(0.019)	(0.013)		(0.019)	(0.013)		(0.007)	(0.007)		(0.007)	(0.007)
Age Sq.		0.000	-0.000		0.000	-0.000		0.000	-0.000		0.000	-0.000
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.000)
Children in HH		-0.006	-0.023		0.012	-0.011		-0.007	0.006		-0.007	0.007
		(0.052)	(0.037)		(0.053)	(0.037)		(0.024)	(0.023)		(0.024)	(0.023)
Disease in HH			2.113***			2.046***			0.995***			1.005***
			(0.085)			(0.086)			(0.053)			(0.053)
Other Insurance			-0.716***			-1.130***			-0.258			-0.173
			(0.194)			(0.237)			(0.161)			(0.187)
Medical Consultation			3.463***			3.591***			0.265***			0.245***
			(0.104)			(0.111)			(0.079)			(0.080)
Harvest Small		-0.431	0.041		-0.026	0.374		-0.001	0.002		-0.001	0.000
		(1.124)	(0.797)		(1.090)	(0.768)		(0.012)	(0.012)		(0.012)	(0.012)
Harvest Large		-0.202	-0.111		-0.139	-0.087		-0.002	-0.003		-0.002	-0.004
		(0.787)	(0.470)		(0.766)	(0.468)		(0.013)	(0.012)		(0.013)	(0.012)
Constant	2.010***	1.493**	-0.232	2.312***	1.338*	-0.332	0.729***	1.130***	0.726**	0.804***	1.096***	0.656**
	(0.057)	(0.754)	(0.473)	(0.121)	(0.761)	(0.480)	(0.038)	(0.376)	(0.310)	(0.084)	(0.383)	(0.323)
Observations	6,549	4,696	4,693	6,549	4,696	4,693	13,580	10,055	10,052	13,580	10,055	10,052
R-squared	0.000	0.047	0.535	-0.016	0.025	0.522	0.000	0.051	0.138	-0.000	0.051	0.138
First Stage F-stat	-	-	-	1,280	551	466	-	-	-	4,692	1,739	1,481
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
District FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
OOP Expenses: Log values where all values reported as zero replaced by 1 to avoid missing observations
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 37: Impact of MdS on Hardship Financing: Decision to Sale Livestock, Farm Land, and Farm Equipment (Robustness 3)

	Decision to Sale Livestock				Decision to Sell Farm Land				Decision to Sell Farm Equipment			
	2005-06		2010-11		2005		2010-11		2005-06		2010-11	
Variables	Probit	IVProbit	Probit	IVProbit	Probit	IVProbit	Probit	IVProbit	Probit	IVProbit	Probit	IVProbit
CBHI	0.036*	-0.039	0.028*	0.058	-0.008	-0.028	-0.022***	-0.025	-0.002	-0.008	-0.007*	-0.009
	(0.019)	(0.069)	(0.016)	(0.038)	(0.008)	(0.026)	(0.008)	(0.020)	(0.003)	(0.015)	(0.004)	(0.011)
HH Size	0.029***	0.029***	0.012**	0.012**	-0.000	-0.000	0.002	0.002	0.001	0.001	-0.001	-0.001
	(0.007)	(0.007)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.002)	(0.002)
HH Mean Schooling	0.089**	0.100**	0.074**	0.072**	0.034*	0.037*	0.002	0.002	0.000	0.001	0.017*	0.017*
	(0.041)	(0.042)	(0.030)	(0.030)	(0.019)	(0.020)	(0.016)	(0.016)	(0.008)	(0.009)	(0.009)	(0.009)
Age of HH Head	0.001	0.001	0.000	0.000	0.002	0.002	0.005***	0.005***	-0.001*	-0.001	0.001	0.001
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Age Sq.	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000***	-0.000***	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.014	-0.013	-0.007	-0.006	-0.002	-0.002	0.002	0.001	0.002	0.002	0.001	0.001
	(0.009)	(0.009)	(0.006)	(0.006)	(0.004)	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Disease in HH	0.002	-0.005	-0.010	-0.007	0.014*	0.013*	0.007	0.007	-0.002	-0.003	0.001	0.000
	(0.018)	(0.019)	(0.013)	(0.013)	(0.007)	(0.008)	(0.007)	(0.008)	(0.004)	(0.004)	(0.004)	(0.004)
Other Insurance	0.003	-0.039	0.053	0.079	-0.002	-0.012	-0.057**	-0.060*	0.007	0.005	-0.072**	-0.074**
	(0.056)	(0.067)	(0.052)	(0.060)	(0.024)	(0.028)	(0.029)	(0.033)	(0.007)	(0.008)	(0.034)	(0.035)
Medical Consultation	0.067***	0.078***	0.024	0.018	0.008	0.011	0.009	0.009	0.005	0.006	0.003	0.003
	(0.021)	(0.023)	(0.016)	(0.018)	(0.009)	(0.009)	(0.008)	(0.008)	(0.004)	(0.004)	(0.004)	(0.005)
Harvest Small	1.403***	1.417***	0.029***	0.028***	-0.008	-0.028	0.006***	0.006***	0.013	0.016	-0.002	-0.002
	(0.254)	(0.257)	(0.005)	(0.005)	(0.008)	(0.026)	(0.002)	(0.002)	(0.030)	(0.035)	(0.002)	(0.002)
Harvest Large	0.218*	0.220*	0.047***	0.047***	-0.000	-0.000	0.001	0.001	0.026	0.029	0.003***	0.003***
	(0.116)	(0.116)	(0.006)	(0.006)	(0.003)	(0.003)	(0.002)	(0.002)	(0.021)	(0.024)	(0.001)	(0.001)
Observations	3,894	3,894	8,034	8,034	4,804	4,804	10,338	10,338	2,470	2,470	7,454	7,454
First Stage F-Stat	-	466	-	1,481	-	466	-	1,481	-	466	-	1,481
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 38: Impact of MdS on the Existing of Savings and Amount of Savings (Formal and Informal) (Robustness 3)

	Existing of Savings (Formal and Informal)				Amount of Savings (Formal and Informal)			
	2005-06		2010-11		2005-06		2010-11	
Variables	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.119***	0.115*	0.061***	-0.099**	1.132***	1.148*	0.732***	-1.088**
	(0.016)	(0.067)	(0.014)	(0.040)	(0.161)	(0.643)	(0.141)	(0.426)
HH Size	0.036***	0.036***	0.028***	0.026***	0.327***	0.367***	0.190***	0.205***
	(0.006)	(0.006)	(0.005)	(0.005)	(0.055)	(0.055)	(0.046)	(0.046)
HH Mean Schooling	0.162***	0.163***	0.164***	0.174***	1.526***	1.786***	1.877***	2.142***
	(0.031)	(0.033)	(0.022)	(0.022)	(0.272)	(0.295)	(0.228)	(0.233)
Age of HH Head	0.007**	0.007**	0.006***	0.006***	0.047*	0.034	0.066***	0.065***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.026)	(0.025)	(0.021)	(0.021)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.011	-0.011	-0.019***	-0.020***	-0.067	-0.090	-0.087	-0.139**
	(0.008)	(0.008)	(0.006)	(0.006)	(0.077)	(0.076)	(0.058)	(0.056)
Disease in HH	0.008	0.007	0.013	-0.005	0.066	0.031	0.047	-0.193
	(0.016)	(0.017)	(0.012)	(0.012)	(0.151)	(0.165)	(0.123)	(0.131)
Other Insurance	0.091*	0.089	0.307***	0.174**	0.547	0.840	2.283***	1.121**
	(0.050)	(0.059)	(0.066)	(0.072)	(0.505)	(0.566)	(0.432)	(0.522)
Medical Consultation	0.041**	0.041**	0.020	0.051***	0.383**	0.446**	0.279**	0.683***
	(0.017)	(0.019)	(0.013)	(0.013)	(0.167)	(0.186)	(0.124)	(0.142)
Harvest Small	0.391**	0.393**	0.027***	0.029***	4.505**	5.020***	0.248***	0.276***
	(0.187)	(0.192)	(0.006)	(0.005)	(1.788)	(1.859)	(0.038)	(0.045)
Harvest Large	0.296**	0.296**	0.045***	0.047***	3.136***	3.625***	0.342***	0.372***
	(0.132)	(0.132)	(0.008)	(0.008)	(1.278)	(1.267)	(0.043)	(0.048)
Constant					1.364	-0.232	0.127	1.066
					(1.347)	(1.027)	(0.747)	(1.149)
Observations	4,750	4,750	10,116	10,116	4,751	4,750	10,131	10,131
R-Squared	-	-	-	-	0.161	0.153	0.153	0.128
First Stage F-Stat	-	466	-	1,481	-	466	-	1,481
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 39: Impact of MdS on the Existing of Savings and Amount of Savings (Formal) (Robustness 3)

Variables	Existing of Savings (Formal)				Amount of Savings (Formal)			
	2005-06		2010-11		2005-06		2010-11	
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.067***	0.080**	0.127***	0.147***	0.551***	0.518*	1.433***	1.489***
	(0.011)	(0.039)	(0.018)	(0.051)	(0.090)	(0.311)	(0.158)	(0.437)
HH Size	0.012***	0.012***	0.031***	0.031***	0.020	0.021	0.138***	0.140***
	(0.004)	(0.004)	(0.006)	(0.006)	(0.035)	(0.035)	(0.052)	(0.052)
HH Mean Schooling	0.128***	0.126***	0.154***	0.151***	0.740***	0.739***	1.568***	1.520***
	(0.023)	(0.024)	(0.034)	(0.035)	(0.137)	(0.144)	(0.311)	(0.309)
Age of HH Head	0.004*	0.004*	-0.001	-0.002	0.021	0.022	-0.018	-0.018
	(0.002)	(0.002)	(0.003)	(0.003)	(0.015)	(0.015)	(0.030)	(0.029)
Age Sq.	-0.000*	-0.000*	0.000	0.000	-0.000*	-0.000**	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.002	0.001	-0.012	-0.011	0.116**	0.113**	0.067	0.067
	(0.005)	(0.005)	(0.008)	(0.008)	(0.050)	(0.050)	(0.066)	(0.067)
Disease in HH	-0.000	0.001	0.005	0.007	0.031	0.029	0.013	0.022
	(0.011)	(0.011)	(0.015)	(0.015)	(0.084)	(0.085)	(0.133)	(0.138)
Other Insurance	0.131***	0.138***	0.470***	0.486***	1.500***	1.483***	3.789***	3.806***
	(0.026)	(0.033)	(0.083)	(0.091)	(0.408)	(0.430)	(0.361)	(0.502)
Medical Consultation	0.026**	0.024*	0.041**	0.038**	0.214*	0.207*	0.316**	0.295*
	(0.011)	(0.013)	(0.017)	(0.019)	(0.110)	(0.120)	(0.152)	(0.157)
Harvest Small	0.207**	0.204**	0.013**	0.013**	2.362**	2.564***	0.265***	0.267***
	(0.083)	(0.084)	(0.006)	(0.006)	(0.956)	(0.959)	(0.039)	(0.039)
Harvest Large	0.172**	0.172**	0.028***	0.028***	1.568*	1.289	3.871***	3.318***
	(0.070)	(0.071)	(0.006)	(0.006)	(0.890)	(0.935)	(0.957)	(1.031)
Constant					1.568*	1.289	3.871***	3.318***
					(0.890)	(0.935)	(0.957)	(1.031)
Observations	4,767	4,767	5,522	5,522	4,768	4,767	5,550	5,550
R-Squared	-	-	-	-	0.179	0.181	0.220	0.222
First Stage F-Stat	-	466	-	1,481	-	466	-	1,481
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 40: Impact of MdS on the Existing of Savings and Amount of Savings (Informal) (Robustness 3)

Variables	Existing of Savings (Informal)				Amount of Savings (Formal and Informal)			
	2005		2010		2005		2010	
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.074***	0.041	0.033**	-0.152***	0.712***	0.449	0.335**	-1.596***
	(0.017)	(0.073)	(0.015)	(0.044)	(0.162)	(0.669)	(0.139)	(0.468)
HH Size	0.028***	0.028***	0.013**	0.011**	0.293***	0.292***	0.174***	0.152***
	(0.006)	(0.006)	(0.005)	(0.005)	(0.057)	(0.057)	(0.049)	(0.050)
HH Mean Schooling	0.142***	0.147***	0.110***	0.123***	1.243***	1.281***	1.151***	1.313***
	(0.031)	(0.033)	(0.025)	(0.025)	(0.266)	(0.280)	(0.236)	(0.243)
Age of HH Head	0.006**	0.006**	0.008***	0.008***	0.040	0.041*	0.064***	0.070***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.025)	(0.024)	(0.022)	(0.022)
Age Sq.	-0.000***	-0.000***	-0.000***	-0.000***	-0.001**	-0.001**	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.011	-0.011	-0.005	-0.007	-0.124	-0.121	-0.090	-0.108*
	(0.008)	(0.008)	(0.006)	(0.006)	(0.078)	(0.077)	(0.061)	(0.061)
Disease in HH	0.006	0.003	0.010	-0.010	0.045	0.021	0.099	-0.110
	(0.016)	(0.017)	(0.013)	(0.013)	(0.143)	(0.156)	(0.124)	(0.130)
Other Insurance	-0.092*	-0.109*	-0.050	-0.197***	-0.807*	-0.939*	-0.344	-1.915***
	(0.052)	(0.063)	(0.049)	(0.058)	(0.432)	(0.540)	(0.513)	(0.631)
Medical Consultation	0.031*	0.036*	0.007	0.043***	0.302*	0.335*	0.081	0.453***
	(0.018)	(0.020)	(0.014)	(0.015)	(0.165)	(0.183)	(0.137)	(0.154)
Harvest Small	0.202	0.211	0.028***	0.030***	2.510	2.583	0.277***	0.308***
	(0.175)	(0.179)	(0.005)	(0.005)	(1.764)	(1.782)	(0.041)	(0.044)
Harvest Large	0.210*	0.213*	0.012**	0.014***	1.945	1.969	0.146***	0.170***
	(0.124)	(0.124)	(0.005)	(0.005)	(1.269)	(1.259)	(0.050)	(0.053)
Constant					-0.680	-0.712	-1.649**	-0.339
					(1.162)	(1.151)	(0.735)	(0.779)
Observations	4,662	4,662	10,031	10,031	4,663	4,663	10,040	10,040
R-Squared	-	-	-	-	0.123	0.123	0.106	0.082
First Stage F-Stat	-	466	-	1,481	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Savings: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 41: Impact of MdS on Borrowing Status and Amount of Loans (Formal and Informal) (Robustness 3)

Variables	Borrowing Status (Formal and Informal)				Amount of Loans (Formal and Informal)			
	2005-06		2010-11		2005-06		2010-11	
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.004	0.030	-0.058***	-0.158***	0.145	0.229	-0.353***	-1.298***
	(0.017)	(0.056)	(0.013)	(0.035)	(0.159)	(0.514)	(0.126)	(0.348)
HH Size	0.008	0.008	0.003	0.002	0.145***	0.146***	0.141***	0.133***
	(0.006)	(0.006)	(0.004)	(0.004)	(0.055)	(0.055)	(0.042)	(0.042)
HH Mean Schooling	0.142***	0.138***	0.037*	0.045**	1.556***	1.544***	0.772***	0.852***
	(0.033)	(0.033)	(0.022)	(0.021)	(0.297)	(0.299)	(0.209)	(0.210)
Age of HH Head	-0.001	-0.001	0.004**	0.004**	0.002	0.001	0.049**	0.053***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.026)	(0.026)	(0.019)	(0.019)
Age Sq.	-0.000	-0.000	-0.000***	-0.000***	-0.000	-0.000	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.003	-0.003	0.005	0.004	-0.035	-0.037	-0.023	-0.033
	(0.008)	(0.008)	(0.005)	(0.005)	(0.074)	(0.074)	(0.056)	(0.056)
Disease in HH	0.064***	0.066***	0.061***	0.049***	0.536***	0.543***	0.598***	0.494***
	(0.017)	(0.018)	(0.011)	(0.012)	(0.152)	(0.159)	(0.109)	(0.114)
Other Insurance	-0.022	-0.009	0.005	-0.077	-0.022	0.020	1.281**	0.512
	(0.047)	(0.055)	(0.045)	(0.051)	(0.459)	(0.516)	(0.520)	(0.575)
Medical Consultation	0.000	-0.003	0.025**	0.044***	0.131	0.120	0.283**	0.468***
	(0.019)	(0.020)	(0.012)	(0.013)	(0.172)	(0.187)	(0.114)	(0.128)
Harvest Small	0.213	0.205	0.003	0.005*	-2.759**	-2.761**	0.090***	0.101***
	(0.187)	(0.188)	(0.003)	(0.003)	(1.172)	(1.165)	(0.031)	(0.031)
Harvest Large	-0.308**	-0.308**	-0.001	0.000	3.504**	3.515**	0.050	0.061
	(0.126)	(0.127)	(0.003)	(0.003)	(1.445)	(1.438)	(0.040)	(0.042)
Constant					3.504**	3.515**	4.687***	5.358***
					(1.445)	(1.438)	(0.930)	(0.956)
Observations	4,724	4,724	10,112	10,112	4,725	4,725	10,122	10,122
R-Squared	-	-	-	-	0.056	0.056	0.091	0.084
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 42: Impact of MdS on Borrowing Status and Amount of Loans (Formal) (Robustness 3)

Variables	Borrowing Status (Formal)				Amount of Loans (Formal)			
	2005		2010		2005		2010	
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	0.004	-0.048	0.014**	0.014	0.027	-0.412	0.140**	0.155
	(0.017)	(0.040)	(0.006)	(0.015)	(0.119)	(0.363)	(0.057)	(0.154)
HH Size	0.008	-0.004	0.005***	0.005***	-0.027	-0.028	0.068***	0.068***
	(0.006)	(0.004)	(0.002)	(0.002)	(0.039)	(0.039)	(0.025)	(0.025)
HH Mean Schooling	0.142***	0.087***	0.027**	0.027**	0.664***	0.729***	0.226**	0.225**
	(0.033)	(0.023)	(0.011)	(0.011)	(0.188)	(0.192)	(0.092)	(0.093)
Age of HH Head	-0.001	0.010***	0.003***	0.003***	0.080***	0.081***	0.021***	0.021***
	(0.003)	(0.002)	(0.001)	(0.001)	(0.016)	(0.016)	(0.008)	(0.008)
Age Sq.	-0.000	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.003	0.004	-0.004	-0.004	0.034	0.040	-0.049	-0.049
	(0.008)	(0.006)	(0.003)	(0.003)	(0.056)	(0.056)	(0.032)	(0.032)
Disease in HH	0.064***	-0.010	-0.006	-0.006	-0.042	-0.083	-0.066	-0.065
	(0.017)	(0.013)	(0.005)	(0.005)	(0.110)	(0.118)	(0.053)	(0.054)
Other Insurance	-0.022	-0.027	0.041**	0.042*	0.036	-0.187	0.627	0.639
	(0.047)	(0.037)	(0.021)	(0.024)	(0.319)	(0.356)	(0.428)	(0.443)
Medical Consultation	0.000	0.025*	0.005	0.005	0.185	0.241*	0.060	0.057
	(0.019)	(0.014)	(0.006)	(0.006)	(0.124)	(0.135)	(0.064)	(0.068)
Harvest Small	-0.077	-0.061	0.000	0.000	-0.425	-0.294	0.006	0.006
	(0.099)	(0.099)	(0.001)	(0.001)	(0.825)	(0.832)	(0.014)	(0.014)
Harvest Large	-0.012	-0.008	0.002**	0.002**	0.067	0.089	0.029*	0.029*
	(0.076)	(0.076)	(0.001)	(0.001)	(0.760)	(0.755)	(0.016)	(0.016)
Constant					-2.049**	-2.089**	-0.937***	-0.947***
					(0.835)	(0.826)	(0.341)	(0.363)
Observations	4,723	4,723	10,057	10,057	4,724	4,724	10,074	10,074
R-Squared	-	-	-	-	0.075	0.074	0.030	0.030
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Table 43: Impact of MdS on Borrowing Status and Amount of Loans (Informal) (Robustness 3)

Variables	Borrowings Status (Informal)				Amount of Loans (Informal)			
	2005-06		2010-11		2005-06		2010-11	
	Probit	IVProbit	Probit	IVProbit	OLS	IV2SLS	OLS	IV2SLS
CBHI	-0.016	0.088	-0.082***	-0.149***	-0.052	0.780	-0.654***	-1.092***
	(0.018)	(0.056)	(0.014)	(0.037)	(0.155)	(0.503)	(0.127)	(0.350)
HH Size	0.004	0.002	-0.010**	-0.012***	0.084	0.086	-0.019	-0.023
	(0.006)	(0.006)	(0.004)	(0.004)	(0.053)	(0.053)	(0.040)	(0.040)
HH Mean Schooling	0.041	0.016	0.005	-0.004	0.490*	0.366	0.349	0.385*
	(0.033)	(0.034)	(0.023)	(0.023)	(0.281)	(0.288)	(0.214)	(0.215)
Age of HH Head	-0.009***	-0.008***	0.001	0.001	-0.084***	-0.085***	0.011	0.013
	(0.003)	(0.003)	(0.002)	(0.002)	(0.025)	(0.025)	(0.020)	(0.020)
Age Sq.	0.000*	0.000	-0.000	-0.000*	0.001**	0.001**	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.002	-0.002	0.013**	0.014**	-0.026	-0.039	0.068	0.064
	(0.008)	(0.008)	(0.006)	(0.006)	(0.068)	(0.068)	(0.057)	(0.057)
Disease in HH	0.065***	0.077***	0.066***	0.060***	0.523***	0.600***	0.634***	0.585***
	(0.017)	(0.017)	(0.012)	(0.013)	(0.145)	(0.151)	(0.115)	(0.119)
Other Insurance	-0.057	-0.019	-0.470***	-0.562***	-0.456	-0.027	-4.173***	-4.537***
	(0.053)	(0.058)	(0.045)	(0.051)	(0.419)	(0.472)	(0.366)	(0.450)
Medical Consultation	-0.032*	-0.044**	0.008	0.019	-0.220	-0.329*	0.092	0.177
	(0.019)	(0.020)	(0.013)	(0.014)	(0.162)	(0.173)	(0.122)	(0.132)
Harvest Small	0.180	0.126	-0.003	-0.004	1.754	1.446	0.003	0.010
	(0.189)	(0.187)	(0.003)	(0.003)	(1.637)	(1.644)	(0.029)	(0.029)
Harvest Large	-0.278**	-0.302**	-0.009***	-0.010***	-2.023**	-2.036**	-0.042*	-0.037
	(0.134)	(0.132)	(0.003)	(0.003)	(0.960)	(0.966)	(0.025)	(0.025)
Constant					3.581***	3.664***	5.245***	5.551***
					(0.986)	(0.986)	(0.928)	(0.954)
Observations	4,652	4,654	9,920	9,934	4,654	4,654	9,940	9,940
R-Squared	-	-	-	-	0.057	0.049	0.116	0.114
First Stage F-Stat	-	407	-	1,461	-	407	-	1,461
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14.
Amount of Loans: Log values where all values reported as zero replaced by 1 to avoid missing observations
Harvest Small/Large: RwF Values/1,000,000.
Notes: Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1

E   Heterogeneous Results

The following results are across income groups: Extremely Poor, Poor, Non-Poor (Table 44 to Table 43).

Table 44: Impact of CBHI on Health Seeking Behaviour

Variables	Health Seeking Behaviour (2005-06)			Health Seeking Behaviour (2010-11)		
	Probit Ext. Poor	Probit Poor	Probit Non-Poor	Probit Ext. Poor	Probit Poor	Probit Non-Poor
CBHI	0.070***	0.111***	0.079***	0.238***	0.143***	0.207***
	(0.014)	(0.027)	(0.026)	(0.021)	(0.028)	(0.016)
Radio	0.033*	-0.005	0.011	-0.040**	-0.000	0.027
	(0.020)	(0.031)	(0.023)	(0.017)	(0.025)	(0.019)
TV	Omitted	Omitted	0.006	Omitted	-0.268	-0.019
			(0.071)		(0.171)	(0.035)
Adults	0.013	0.018	0.024**	0.028**	0.033***	0.025**
	(0.011)	(0.020)	(0.011)	(0.013)	(0.010)	(0.010)
Children in HH	0.018***	0.031***	0.014**	0.027***	0.025***	0.022***
	(0.007)	(0.008)	(0.006)	(0.006)	(0.007)	(0.007)
Women in HH	0.002	0.004	0.018	0.002	0.003	0.011
	(0.014)	(0.025)	(0.015)	(0.019)	(0.015)	(0.017)
Age of HH head	-0.011***	-0.010**	0.002	-0.011**	-0.006	-0.012***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)
Age. Sq.	0.000**	0.000**	-0.000	0.000***	0.000	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HH Mean Schooling	0.014	0.086	0.026	0.062*	-0.031	0.029
	(0.045)	(0.055)	(0.046)	(0.033)	(0.043)	(0.049)
Urban	0.030	0.048	-0.022	-0.002	0.027	0.018
	(0.048)	(0.063)	(0.035)	(0.038)	(0.039)	(0.022)
Other Insurance	0.018	0.095	0.183***	0.201	0.114	0.311***
	(0.057)	(0.101)	(0.042)	(0.176)	(0.187)	(0.043)
Time to Health Centre	0.000	-0.000	-0.000	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Small	-0.000**	0.000	-0.000	-0.000**	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	0.000	0.000	-0.000	0.000*	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,564	1,016	1,933	2,439	2,304	5,149
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14.
Standard Errors clustered at cluster level, shown in brackets.
*** p<0.01, ** p<0.05, * p<0.1.

Table 45: Impact of MdS on Out of Pocket Medical Expenses (OOP)

Variables	OOP Expenses (2005-06)						OOP Expenses (2010-11)					
	Ext. Poor OLS	Ext. Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS	Poor OLS	Poor IV2SLS	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS
CBHH	-0.508***	-1.181***	-0.661***	-1.392***	-0.424***	0.713	-0.265***	-0.652*	-0.474***	-0.184	-0.411***	-0.457
	(0.114)	(0.426)	(0.103)	(0.503)	(0.143)	(3.047)	(0.091)	(0.341)	(0.115)	(0.404)	(0.095)	(0.346)
HH Size	0.109**	0.124***	0.084**	0.077*	0.148**	0.158**	0.013	0.008	0.039	0.037	0.085**	0.084**
	(0.047)	(0.047)	(0.041)	(0.041)	(0.054)	(0.062)	(0.035)	(0.037)	(0.043)	(0.043)	(0.036)	(0.035)
HH Mean Schooling	-0.106	-0.096	-0.018	0.142	-0.277	-0.422	-0.407***	-0.462**	-0.056	0.040	0.152	0.165
	(0.216)	(0.218)	(0.254)	(0.269)	(0.308)	(0.622)	(0.194)	(0.200)	(0.210)	(0.219)	(0.171)	(0.173)
Age	0.011	0.015	0.003	0.005	0.005	-0.003	-0.012	-0.012	0.011	0.011	-0.011	-0.010
	(0.023)	(0.023)	(0.021)	(0.021)	(0.026)	(0.035)	(0.017)	(0.018)	(0.016)	(0.016)	(0.014)	(0.014)
Age. Sq.	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000	-0.000	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.023	-0.020	-0.023	0.004	-0.036	-0.069	0.020	0.017	0.052	0.065	0.013	0.012
	(0.060)	(0.061)	(0.060)	(0.060)	(0.076)	(0.087)	(0.045)	(0.047)	(0.054)	(0.055)	(0.043)	(0.043)
Disease in HH	1.713***	1.665***	2.412***	2.329***	2.361***	2.460***	1.022***	0.979***	1.168***	1.224***	1.629***	1.624***
	(0.117)	(0.121)	(0.149)	(0.149)	(0.125)	(0.281)	(0.096)	(0.105)	(0.099)	(0.112)	(0.100)	(0.102)
Other Insurance	-0.369	-0.644	-1.157***	-1.630***	-0.368	0.125	0.029	-0.321	-1.180	-0.186	-0.816***	-0.857**
	(0.401)	(0.418)	(0.247)	(0.370)	(0.495)	(1.661)	(0.708)	(0.663)	(1.270)	(1.226)	(0.221)	(0.367)
Medical Cons.	4.024***	4.076***	3.762***	3.849***	3.474***	3.314***	0.506***	0.630***	0.496***	0.450***	0.307**	0.314**
	(0.149)	(0.155)	(0.159)	(0.167)	(0.212)	(0.423)	(0.142)	(0.166)	(0.162)	(0.172)	(0.137)	(0.142)
Harvest Small	0.000	-0.000	-0.000	0.000	-0.000	-0.000	0.000	0.000	-0.000**	-0.000**	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	-0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	3.479***	2.961***	0.145	0.066	-1.571	-0.216	0.601	0.198	0.639	1.185	1.757***	1.768***
	(1.154)	(0.814)	(0.693)	(0.687)	(1.040)	(3.150)	(1.060)	(0.941)	(0.900)	(1.264)	(0.523)	(0.561)
Observations	1,741	1,680	2,060	2,050	1,088	999	2,667	2,498	2,444	2,265	5,395	5,384
R-squared	0.534	0.526	0.618	0.610	0.582	0.556	0.166	0.167	0.188	0.192	0.197	0.197
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation using EICV 2005-06 and 2010-11 data on Stata14. Standard Errors clustered at cluster level, shown in brackets. p<0.01, ** p<0.05, * p<0.1
OOP Expenses: Log values where all values reported as zero replaced by 1 to avoid missing observations

Table 46: Impact of MdS on Sale of Assets (Livestock or Farm-Land or Equipment)

Variables	Sale of Assets (2005-06)						Sale of Assets (2010-11)					
	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit
CBHH	0.017	-0.179	-0.052	-0.016	0.042	-0.000	-0.029	0.008	-0.008	-0.180**	0.002	0.066
	(0.035)	(0.123)	(0.038)	(0.632)	(0.026)	(0.121)	(0.032)	(0.094)	(0.025)	(0.087)	(0.021)	(0.068)
HH Size	0.043***	0.044***	0.024	0.033**	0.026***	0.026***	-0.007	-0.004	0.022**	0.018*	0.014**	0.015**
	(0.011)	(0.012)	(0.015)	(0.015)	(0.009)	(0.009)	(0.010)	(0.011)	(0.010)	(0.010)	(0.006)	(0.006)
HH Mean Schooling	0.122*	0.120*	-0.028	-0.084	0.041	0.050	-0.020	-0.024	0.093*	0.088*	0.065*	0.061
	(0.068)	(0.066)	(0.052)	(0.150)	(0.057)	(0.061)	(0.057)	(0.059)	(0.053)	(0.053)	(0.037)	(0.038)
Age	-0.001	-0.001	-0.002	-0.004	0.005	0.005	0.004	0.003	0.003	0.006	0.002	0.002
	(0.007)	(0.007)	(0.007)	(0.010)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)
Age. Sq.	-0.000	-0.000	0.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.036**	-0.039**	0.005	-0.005	0.004	0.004	0.020	0.022	-0.009	-0.013	-0.001	-0.002
	(0.014)	(0.015)	(0.019)	(0.021)	(0.014)	(0.014)	(0.013)	(0.014)	(0.013)	(0.013)	(0.008)	(0.008)
Disease in HH	0.016	0.001	0.023	0.019	0.047*	0.039	-0.004	-0.001	-0.011	-0.043*	-0.008	-0.002
	(0.031)	(0.034)	(0.037)	(0.051)	(0.026)	(0.030)	(0.029)	(0.032)	(0.024)	(0.025)	(0.017)	(0.018)
Other Insurance	-0.097	-0.144	0.061	0.034	0.008	-0.020	-0.140	-0.111	0.035	-0.195	0.019	0.073
	(0.114)	(0.121)	(0.121)	(0.467)	(0.025)	(0.020)	(0.268)	(0.276)	(0.225)	(0.284)	(0.073)	(0.073)
Medical Cons.	0.097***	0.115***	0.046	0.052	0.004	0.011	-0.009	-0.019	0.054*	0.102***	0.023	0.013
	(0.038)	(0.038)	(0.046)	(0.100)	(0.030)	(0.033)	(0.034)	(0.046)	(0.029)	(0.031)	(0.020)	(0.022)
Harvest Small	0.000	0.000	0.000***	0.000*	0.000***	0.000***	0.000	0.000	0.000*	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	0.000	0.000	0.000	0.000	0.000	0.000	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,294	1,246	912	844	1,723	1,715	1,924	1,810	1,970	1,833	4,408	4,398
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 47: Impact of MdS on Existence of Savings (Formal or Informal)

Variables	Household Saving (Formal and Informal) (2005)						Household Saving (Formal and Informal) (2010)					
	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit
CBHI	0.083***	0.107	0.118***	0.361	0.133***	0.267***	0.044*	-0.062	0.033	-0.012	0.051***	-0.118**
	(0.024)	(0.092)	(0.030)	(0.439)	(0.024)	(0.095)	(0.024)	(0.087)	(0.025)	(0.093)	(0.017)	(0.058)
HH Size	0.038***	0.037***	0.047***	0.046**	0.038***	0.037***	0.033***	0.034***	0.031***	0.031***	0.029***	0.027***
	(0.009)	(0.009)	(0.013)	(0.020)	(0.008)	(0.008)	(0.009)	(0.010)	(0.010)	(0.010)	(0.006)	(0.006)
HH Mean Schooling	0.124**	0.124*	0.178***	0.143	0.095**	0.066	0.153***	0.127***	0.134***	0.142***	0.139***	0.150***
	(0.048)	(0.049)	(0.067)	(0.191)	(0.045)	(0.049)	(0.045)	(0.047)	(0.047)	(0.049)	(0.029)	(0.029)
Age	0.006	0.006	0.004	0.004	0.011**	0.011**	0.013***	0.013***	0.004	0.005	0.005**	0.006***
	(0.004)	(0.004)	(0.008)	(0.008)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.002)	(0.002)
Age. Sq.	-0.000*	-0.000*	-0.000	-0.000	-0.000**	-0.000*	-0.000**	-0.000***	-0.000	-0.000	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.014	-0.012	0.005	-0.003	0.001	-0.004	-0.026**	-0.029**	0.002	0.002	-0.005	-0.004
	(0.012)	(0.012)	(0.016)	(0.017)	(0.012)	(0.012)	(0.011)	(0.012)	(0.012)	(0.013)	(0.008)	(0.008)
Disease in HH	-0.002	-0.002	0.035	0.036	0.010	0.023	0.001	-0.004	0.027	0.016	0.008	-0.007
	(0.026)	(0.028)	(0.034)	(0.041)	(0.025)	(0.026)	(0.025)	(0.028)	(0.024)	(0.025)	(0.015)	(0.015)
Other Insurance	0.044	0.056	0.009	0.135	0.140**	0.214***	-0.208	-0.230	0.283	0.169	0.277***	0.127
	(0.086)	(0.094)	(0.113)	(0.285)	(0.059)	(0.076)	(0.239)	(0.236)	(0.176)	(0.205)	(0.065)	(0.081)
Medical Cons.	0.045	0.048	0.004	-0.011	0.018	-0.002	0.035	0.048	-0.012	0.021	0.008	0.031*
	(0.029)	(0.031)	(0.074)	(0.074)	(0.026)	(0.029)	(0.029)	(0.040)	(0.028)	(0.031)	(0.016)	(0.018)
Harvest Small	0.001**	0.000**	-0.000	-0.000	0.000	0.000	0.000*	0.000	0.000**	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	-0.000	-0.000*	0.000*	0.000	0.000*	0.000*	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,726	1,667	1,083	994	2,058	2,048	2,659	2,492	2,440	2,261	5,377	5,366
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 48: Impact of MdS on Savings Deposits (Formal or Informal)

Variables	Household Savings Deposit (Formal and Informal) (2005)						Household Savings Deposit (Formal and Informal) (2010)					
	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS
CBHI	0.724***	0.840	1.080***	6.867	1.397***	2.912***	0.435*	-0.662	0.176	-0.458	0.816***	-1.087*
	(0.240)	(0.863)	(0.300)	(7.757)	(0.255)	(1.128)	(0.227)	(0.818)	(0.249)	(0.334)	(0.195)	(0.656)
HH Size	0.382***	0.379***	0.494***	0.574***	0.302***	0.311***	0.248***	0.225**	0.251***	0.257***	0.227***	0.217***
	(0.088)	(0.088)	(0.121)	(0.157)	(0.074)	(0.075)	(0.089)	(0.093)	(0.093)	(0.094)	(0.056)	(0.056)
HH Mean Schooling	1.076***	1.107***	1.442**	0.740	1.191**	0.937*	1.162***	0.944*	1.275***	1.385***	2.028***	2.164***
	(0.401)	(0.407)	(0.607)	(1.536)	(0.464)	(0.494)	(0.415)	(0.432)	(0.455)	(0.476)	(0.343)	(0.354)
Age	0.038	0.040	0.037	0.022	0.100***	0.107***	0.038	0.062	0.062	0.066*	0.089***	0.100***
	(0.035)	(0.035)	(0.054)	(0.084)	(0.045)	(0.046)	(0.041)	(0.044)	(0.038)	(0.037)	(0.028)	(0.028)
Age. Sq.	-0.000	-0.000	-0.001	-0.001	-0.001***	-0.001***	-0.001**	-0.001***	-0.001*	-0.001**	-0.001***	-0.001***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.117	-0.107	-0.002	-0.093	0.149	0.102	-0.107	-0.100	0.069	0.072	0.054	0.060
	(0.113)	(0.115)	(0.159)	(0.216)	(0.117)	(0.123)	(0.102)	(0.105)	(0.117)	(0.117)	(0.078)	(0.078)
Disease in HH	-0.051	-0.063	0.396	0.595	0.009	0.159	-0.083	-0.140	0.283	0.132	-0.045	-0.212
	(0.236)	(0.245)	(0.331)	(0.648)	(0.254)	(0.277)	(0.228)	(0.252)	(0.225)	(0.237)	(0.168)	(0.176)
Other Insurance	-0.379	-0.371	-0.184	3.272	1.603***	2.466***	-2.956	-2.656	2.040	1.418	2.635***	0.980
	(0.815)	(0.887)	(1.181)	(4.359)	(0.594)	(0.853)	(1.973)	(1.912)	(1.438)	(1.858)	(0.386)	(0.659)
Medical Cons.	0.439	0.491*	-0.022	-0.550	0.095	-0.106	0.294	0.420	0.146	0.499*	0.023	0.285
	(0.267)	(0.281)	(0.607)	(0.986)	(0.275)	(0.308)	(0.271)	(0.373)	(0.274)	(0.295)	(0.175)	(0.195)
Harvest Small	0.000	0.000*	-0.000	-0.000	0.000***	0.000***	0.000	0.000	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	-0.000	-0.000	0.000*	0.000	0.000***	0.000***	-0.000	-0.000**	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	5.156***	3.112	-6.922***	-1.492	1.360	1.215	-3.195**	-1.851	-2.813	-2.586	0.516	1.756
	(2.271)	(2.013)	(2.642)	(8.155)	(1.620)	(1.624)	(1.783)	(2.017)	(1.740)	(2.364)	(1.005)	(1.078)
Observations	1,741	1,680	1,088	999	2,060	2,050	2,667	2,498	2,444	2,265	5,395	5,384
R.Square	0.154	0.160	0.184	-0.055	0.209	0.190	0.170	0.126	0.170	0.178	0.185	0.166
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 49: Impact of MdS on Existence of Savings (Formal)

Variables	Household Saving (Formal) (2005-06)						Household Saving (Formal) (2010-11)					
	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit
CBHI	0.038***	-0.010	0.066***	-0.015	0.110***	0.207***	0.091***	0.128*	0.057**	-0.053	0.121***	0.088
	(0.011)	(0.043)	(0.023)	(0.340)	(0.020)	(0.093)	(0.020)	(0.072)	(0.023)	(0.079)	(0.019)	(0.065)
HH Size	0.080**	0.012***	0.019*	0.021**	0.019***	0.020***	0.011	0.014*	0.030***	0.030***	0.041***	0.041***
	(0.037)	(0.004)	(0.008)	(0.009)	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)	(0.008)	(0.006)	(0.006)
HH Mean Schooling	0.373**	0.073***	0.155***	0.142	0.156***	0.134***	0.150***	0.141***	0.113**	0.112**	0.204***	0.206***
	(0.155)	(0.028)	(0.050)	(0.089)	(0.044)	(0.049)	(0.039)	(0.040)	(0.048)	(0.047)	(0.035)	(0.035)
Age	-0.030	-0.002	0.008	0.007	0.009**	0.009**	0.011***	0.019**	0.001	-0.000	0.004	0.004
	(0.019)	(0.002)	(0.005)	(0.006)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Age. Sq.	0.000	0.000	-0.000	-0.000	-0.000***	-0.000*	-0.000***	-0.000*	-0.000	0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.050	0.003	0.003	-0.002	0.010	0.007	-0.001	-0.003	0.002	0.002	-0.012	-0.012
	(0.051)	(0.005)	(0.011)	(0.012)	(0.009)	(0.010)	(0.009)	(0.009)	(0.010)	(0.011)	(0.008)	(0.008)
Disease in HH	-0.050	-0.009	0.020	-0.001	0.008	0.008	0.018	0.020	0.007	0.006	0.001	-0.001
	(0.092)	(0.013)	(0.025)	(0.039)	(0.020)	(0.022)	(0.018)	(0.022)	(0.010)	(0.011)	(0.015)	(0.016)
Other Insurance	0.063**	0.047	0.183***	0.137	0.155***	0.212***	0.199	0.222	0.643***	0.517***	0.573***	0.545***
	(0.031)	(0.030)	(0.057)	(0.175)	(0.043)	(0.068)	(0.165)	(0.171)	(0.169)	(0.190)	(0.073)	(0.090)
Medical Cons.	0.014	0.022	-0.009	0.022	0.031	0.019	0.008	-0.009	0.002	0.020	0.035*	0.038*
	(0.014)	(0.017)	(0.027)	(0.050)	(0.021)	(0.024)	(0.023)	(0.032)	(0.022)	(0.026)	(0.019)	(0.020)
Harvest Small	0.000	0.000	-0.000	-0.000	0.000***	0.000*	0.000	0.000	0.000*	0.000*	0.000**	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	0.000	0.000	0.000	0.000	0.000***	0.000**	0.000***	0.000***	0.000***	0.000***	0.000**	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,612	1,557	983	899	2,056	2,046	2,658	2,492	2,441	2,262	5,375	5,364
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 50: Impact of MdS on Savings Deposits (Formal)

Variables	Household Savings Deposit (Formal) (2005-06)						Household Savings Deposit (Formal) (2010-11)					
	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS
CBHI	0.299***	-0.173	0.509***	0.842	0.959***	1.855**	0.782***	1.138**	0.445***	-0.350	1.503***	0.773
	(0.112)	(0.346)	(0.180)	(3.224)	(0.193)	(0.852)	(0.146)	(0.557)	(0.168)	(0.593)	(0.168)	(0.617)
HH Size	0.080**	0.083**	0.105	0.102	0.031	0.039	-0.014	0.010	0.039	0.043	0.260***	0.257***
	(0.037)	(0.038)	(0.076)	(0.078)	(0.066)	(0.065)	(0.058)	(0.062)	(0.072)	(0.075)	(0.055)	(0.055)
HH Mean Schooling	0.373**	0.421***	0.595**	0.497	1.161***	1.000***	0.949***	0.955***	0.881***	0.859***	1.806***	1.878***
	(0.155)	(0.038)	(0.264)	(0.588)	(0.314)	(0.344)	(0.237)	(0.243)	(0.316)	(0.328)	(0.293)	(0.294)
Age	-0.030	-0.027	0.037	0.031	0.055*	0.055*	-0.000	0.038	0.035	0.026	0.030	0.034
	(0.019)	(0.019)	(0.026)	(0.036)	(0.033)	(0.033)	(0.024)	(0.025)	(0.035)	(0.026)	(0.030)	(0.022)
Age. Sq.	0.000	0.000	-0.000	-0.000	-0.001**	-0.001**	-0.000	-0.000	-0.000*	-0.000	-0.000**	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	0.050	0.056	0.016	0.013	0.347***	0.317***	0.087	0.072	0.243***	0.230**	0.081	0.080
	(0.051)	(0.052)	(0.097)	(0.100)	(0.101)	(0.103)	(0.073)	(0.076)	(0.091)	(0.092)	(0.075)	(0.074)
Disease in HH	-0.050	-0.075	0.235	0.132	-0.054	0.036	0.126	0.157	0.043	0.007	-0.136	-0.190
	(0.092)	(0.094)	(0.196)	(0.296)	(0.199)	(0.213)	(0.131)	(0.157)	(0.185)	(0.131)	(0.147)	(0.157)
Other Insurance	0.189	-0.004	2.032*	2.691	1.879***	2.424***	1.293	1.541	6.543***	6.359***	4.967***	4.324***
	(0.351)	(0.395)	(1.077)	(2.068)	(0.541)	(0.728)	(1.475)	(1.523)	(1.420)	(1.631)	(0.367)	(0.631)
Medical Cons.	0.135	0.200	-0.188	-0.092	0.216	0.108	-0.003	-0.172	0.140	0.326	0.254	0.352*
	(0.127)	(0.144)	(0.220)	(0.445)	(0.215)	(0.236)	(0.182)	(0.253)	(0.180)	(0.205)	(0.166)	(0.181)
Harvest Small	0.000	0.000	-0.000	-0.000	0.000*	0.000*	0.000	0.000	0.000***	0.000*	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	0.000	0.000	0.000	0.000	0.000***	0.000**	0.000***	0.000**	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	6.500***	6.825***	-2.546***	-1.625	0.607	0.603	-0.083	0.668	-2.159*	-1.705	0.259	0.693
Observations	1,741	1,680	1,088	999	2,060	2,050	2,570	2,406	2,340	2,173	5,149	5,140
R-squared	0.072	0.059	0.100	0.104	0.288	0.279	0.088	0.082	0.145	0.137	0.318	0.316
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 51: Impact of MdS on Existence of Savings (Informal)

Variables	Household Saving (Informal) (2005-06) Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit	Household Saving (Informal) (2010-11) Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit
CBHH	0.057** (0.025)	0.054 (0.098)	0.072** (0.030)	0.513*** (0.154)	0.101*** (0.026)	0.219** (0.110)	0.008 (0.024)	-0.120 (0.000)	0.008 (0.025)	0.023 (0.025)	0.022 (0.020)	-0.154** (0.075)
HH Size	0.028*** (0.009)	0.029*** (0.009)	0.048*** (0.013)	0.033 (0.023)	0.030*** (0.009)	0.030*** (0.008)	0.028*** (0.009)	0.026 (0.000)	0.032*** (0.010)	0.033*** (0.010)	0.005 (0.007)	0.004 (0.007)
HH Mean Schooling	0.093* (0.047)	0.095* (0.049)	0.142** (0.067)	0.024 (0.124)	0.111*** (0.048)	0.111*** (0.035)	0.094* (0.049)	0.075 (0.000)	0.046 (0.047)	0.064 (0.049)	0.126*** (0.035)	0.134*** (0.035)
Age	0.010** (0.004)	0.010** (0.004)	0.004 (0.006)	0.000 (0.006)	0.008* (0.004)	0.008* (0.004)	0.009* (0.005)	0.008 (0.000)	0.007* (0.004)	0.007* (0.004)	0.010*** (0.003)	0.011*** (0.003)
Age. Sq.	-0.001** (0.000)	-0.000*** (0.004)	-0.000 (0.006)	-0.000 (0.000)	-0.000* (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.004)	-0.000* (0.000)	-0.000** (0.003)	-0.000*** (0.003)
Children in HH	-0.011 (0.011)	-0.010 (0.012)	-0.005 (0.016)	-0.009 (0.013)	-0.005 (0.013)	-0.008 (0.000)	-0.015 (0.010)	-0.016 (0.000)	-0.008 (0.012)	-0.008 (0.000)	0.012 (0.009)	0.013 (0.009)
Disease in HH	0.004 (0.025)	0.003 (0.027)	0.033 (0.034)	0.044 (0.027)	0.011 (0.025)	0.022 (0.027)	-0.018 (0.024)	-0.027 (0.000)	0.015 (0.025)	0.015 (0.025)	0.018 (0.018)	0.002 (0.018)
Other Insurance	-0.029 (0.086)	-0.027 (0.093)	-0.154 (0.130)	0.180 (0.172)	0.021 (0.063)	0.090 (0.089)	-0.393 (0.323)	-0.284 (0.000)	-0.437 (0.302)	-1.676* (0.962)	-0.033 (0.051)	-0.185** (0.079)
Medical Cons.	0.046 (0.029)	0.051 (0.031)	0.003 (0.039)	-0.048 (0.039)	-0.002 (0.028)	-0.018 (0.031)	0.045 (0.029)	0.065 (0.000)	0.011 (0.028)	0.053* (0.030)	-0.028 (0.020)	-0.003 (0.022)
Harvest Small	0.000* (0.000)	0.000*** (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000** (0.000)	0.000*** (0.000)
Harvest Large	-0.000 (0.000)	-0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000** (0.000)	0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000** (0.000)	0.000** (0.000)
Observations	1,726	1,667	1,086	997	2,058	2,048	2,664	2,497	2,440	2,261	5,383	5,372
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 52: Impact of MdS on Savings Deposits (Informal)

Variables	Household Savings Deposit (Informal) (2005-06) Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS	Household Savings Deposit (Informal) (2010-11) Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS
CBHH	0.490** (0.238)	0.548 (0.900)	0.775*** (0.297)	9.346 (9.320)	1.097*** (0.267)	2.512** (1.204)	0.120 (0.226)	-0.926 (0.784)	0.100 (0.252)	-0.979 (0.965)	0.265 (0.210)	-1.642** (0.812)
HH Size	0.319*** (0.087)	0.318*** (0.086)	0.522*** (0.121)	0.632*** (0.179)	0.319*** (0.083)	0.328*** (0.085)	0.307*** (0.090)	0.253*** (0.091)	0.354*** (0.094)	0.363*** (0.097)	0.142* (0.073)	0.132* (0.074)
HH Mean Schooling	0.824** (0.395)	0.854** (0.309)	1.204** (0.607)	0.006 (1.787)	0.926** (0.458)	0.688 (0.503)	0.717* (0.411)	0.472 (0.430)	0.646 (0.467)	0.816* (0.467)	1.497*** (0.360)	1.614*** (0.372)
Age	0.064** (0.032)	0.066* (0.033)	0.035 (0.052)	0.001 (0.006)	0.074* (0.042)	0.080* (0.042)	0.064 (0.040)	0.070 (0.044)	0.061* (0.036)	0.066* (0.035)	0.097*** (0.029)	0.108*** (0.030)
Age. Sq.	-0.001** (0.000)	-0.001** (0.000)	-0.001 (0.001)	-0.001 (0.001)	-0.001*** (0.000)	-0.001*** (0.042)	-0.001* (0.000)	-0.001* (0.000)	-0.001* (0.000)	-0.001* (0.035)	-0.001*** (0.000)	-0.001*** (0.000)
Children in HH	-0.120 (0.111)	-0.115 (0.113)	-0.091 (0.158)	-0.220 (0.247)	-0.030 (0.124)	-0.075 (0.131)	-0.152 (0.101)	-0.116 (0.103)	-0.084 (0.119)	-0.084 (0.120)	0.083 (0.100)	0.089 (0.101)
Disease in HH	-0.003 (0.223)	-0.017 (0.239)	0.336 (0.325)	0.775 (0.756)	0.116 (0.246)	0.253 (0.274)	-0.169 (0.228)	-0.208 (0.245)	0.314 (0.228)	0.100 (0.237)	0.188 (0.185)	0.013 (0.196)
Other Insurance	-0.488 (0.794)	-0.493 (0.862)	-1.193 (1.042)	3.503 (5.016)	0.603 (0.648)	1.411 (0.943)	-3.942* (2.355)	-3.154 (2.097)	-3.504* (1.821)	-6.046*** (1.551)	-0.004 (0.612)	-1.660* (0.913)
Medical Cons.	0.432 (0.265)	0.479* (0.279)	0.004 (0.373)	-0.885 (1.169)	-0.095 (0.279)	-0.279 (0.317)	0.423 (0.274)	0.523 (0.370)	0.177 (0.277)	0.568* (0.301)	-0.308 (0.210)	-0.044 (0.233)
Harvest Small	0.000 (0.000)	0.000* (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Harvest Large	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000* (0.000)	0.000 (0.000)	0.000* (0.000)	0.000*** (0.000)	0.000 (0.000)	0.000* (0.000)	0.000*** (0.000)	0.000*** (0.000)
Constant	-1.690	-3.737*	-6.264**	1.725	0.267	0.149	-4.782***	-4.180***	-2.254	-1.808	-0.677	0.589
Observations	1,741	1,680	1,088	999	2,060	2,050	2,667	2,498	2,444	2,265	5,395	5,384
R-squared	0.147	0.153	0.182	-0.399	0.134	0.117	0.135	0.137	0.175	0.178	0.102	0.086
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

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Table 53: Impact of MdS on Borrowing Status (Formal or Informal)

Variables	Household Borrowing (Formal and Informal) (2005)						Household Borrowing (Formal and Informal) (2010)					
	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit
CBHI	-0.007	-0.165*	-0.007	-0.271	0.027	0.205*	-0.013	-0.149**	-0.084***	-0.099	-0.071**	-0.165***
	(0.029)	(0.100)	(0.035)	(0.511)	(0.026)	(0.107)	(0.023)	(0.074)	(0.021)	(0.077)	(0.018)	(0.059)
HH Size	0.015	0.016	-0.009	-0.010	0.021**	0.021***	0.007	0.000	0.009	0.008	0.008*	0.008
	(0.010)	(0.012)	(0.012)	(0.012)	(0.008)	(0.008)	(0.009)	(0.009)	(0.008)	(0.008)	(0.005)	(0.005)
HH Mean Schooling	0.156***	0.151***	0.241***	0.247***	-0.005	0.010	0.046	0.018	0.072*	0.084**	0.019	0.023
	(0.053)	(0.052)	(0.065)	(0.064)	(0.051)	(0.053)	(0.040)	(0.042)	(0.041)	(0.043)	(0.034)	(0.034)
Age	-0.001	0.000	0.008	0.008	-0.005	-0.005	0.001	0.005	0.002	0.001	0.006**	0.007***
	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)	(0.004)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)
Age. Sq.	-0.000	-0.000	-0.000*	-0.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.013	-0.012	0.027	0.026	-0.007	-0.012	0.020*	0.021**	-0.002	-0.001	-0.009	-0.009
	(0.014)	(0.014)	(0.017)	(0.017)	(0.012)	(0.011)	(0.010)	(0.010)	(0.011)	(0.011)	(0.007)	(0.007)
Disease in HH	0.046*	0.025	0.065*	0.029	0.070***	0.084***	0.060***	0.034	0.065***	0.061***	0.060***	0.050***
	(0.027)	(0.028)	(0.035)	(0.065)	(0.026)	(0.027)	(0.023)	(0.026)	(0.020)	(0.022)	(0.015)	(0.015)
Other Insurance	0.008	-0.059	0.024	-0.161	0.070	0.172**	-0.289*	-0.325**	0.414*	0.415	0.120**	0.037
	(0.097)	(0.101)	(0.113)	(0.276)	(0.060)	(0.082)	(0.162)	(0.156)	(0.241)	(0.254)	(0.046)	(0.067)
Medical Cons.	-0.014	0.005	0.035	0.061	-0.004	-0.026	0.045*	0.088**	0.026	0.029	0.012	0.025
	(0.033)	(0.035)	(0.040)	(0.064)	(0.028)	(0.031)	(0.027)	(0.037)	(0.024)	(0.026)	(0.016)	(0.017)
Harvest Small	0.000	0.000	-0.000	-0.000	0.000	0.000	-0.000*	-0.000	0.000	0.000	0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	-0.000	-0.000	-0.000	0.000	-0.000***	-0.000***	-0.000	0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,740	1,679	1,086	997	2,058	2,048	2,660	2,492	2,422	2,249	5,388	5,377
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 54: Impact of MdS on Loan Amount (Formal or Informal)

Variables	Household Loan Amount (Formal and Informal) (2005)						Household Loan Amount (Formal and Informal) (2010)					
	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS
CBHI	-0.006	-1.721*	0.063	-1.647	0.448*	2.163*	-0.052	-1.108	-0.586***	-0.823	-0.550***	-1.662***
	(0.253)	(0.979)	(0.325)	(5.956)	(0.254)	(1.216)	(0.216)	(0.724)	(0.192)	(0.706)	(0.187)	(0.619)
HH Size	0.226**	0.235**	0.030	0.024	0.327***	0.335***	0.239***	0.186**	0.234***	0.248***	0.267***	0.262***
	(0.091)	(0.093)	(0.117)	(0.127)	(0.081)	(0.081)	(0.086)	(0.088)	(0.080)	(0.083)	(0.060)	(0.060)
HH Mean Schooling	1.670***	1.691***	2.116***	2.301*	0.723	0.388	0.513	0.442	1.094***	1.202***	0.488	0.546
	(0.444)	(0.453)	(0.622)	(1.228)	(0.471)	(0.506)	(0.379)	(0.402)	(0.397)	(0.410)	(0.329)	(0.355)
Age	-0.026	-0.013	0.088*	0.101	-0.035	-0.036	0.004	0.039	0.006	0.027	0.093***	0.102**
	(0.045)	(0.046)	(0.053)	(0.067)	(0.046)	(0.046)	(0.041)	(0.045)	(0.033)	(0.033)	(0.028)	(0.028)
Age. Sq.	-0.000	-0.000	-0.001***	-0.001**	-0.000	-0.000	-0.000	-0.001	-0.001*	-0.001*	-0.001***	-0.001***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.110	-0.096	0.187	0.177	-0.096	-0.142	0.052	0.060	-0.024	-0.033	-0.178**	-0.178**
	(0.123)	(0.128)	(0.163)	(0.176)	(0.118)	(0.121)	(0.102)	(0.104)	(0.108)	(0.111)	(0.086)	(0.086)
Disease in HH	0.327	0.134	0.467	0.213	0.637**	0.812***	0.533***	0.302	0.688***	0.701***	0.566***	0.464***
	(0.233)	(0.249)	(0.326)	(0.544)	(0.266)	(0.302)	(0.229)	(0.252)	(0.193)	(0.200)	(0.156)	(0.162)
Other Insurance	0.204	-0.484	0.624	-0.504	1.378**	2.433**	-2.685	-2.376	2.780*	3.913***	2.990***	2.014***
	(0.883)	(0.940)	(1.033)	(3.325)	(0.667)	(0.974)	(2.237)	(2.187)	(1.560)	(1.426)	(0.440)	(0.665)
Medical Cons.	-0.020	0.176	0.522	0.714	0.027	-0.186	0.531**	0.863**	0.031	0.014	0.215	0.369**
	(0.293)	(0.315)	(0.377)	(0.824)	(0.288)	(0.335)	(0.233)	(0.343)	(0.212)	(0.225)	(0.163)	(0.179)
Harvest Small	0.000	0.000	-0.000	-0.000	0.000	0.000	0.000	-0.000	0.000*	0.000*	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	-0.000	-0.000	0.000	0.000	-0.000**	-0.000*	0.000*	0.000**	0.000*	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-3.368	-0.649	-7.370***	-8.505	8.776***	8.876***	4.962**	5.673***	7.101***	8.398***	5.058***	5.766***
Observations	1,741	1,680	1,088	999	2,060	2,050	2,667	2,498	2,444	2,265	5,395	5,384
R-squared	0.075	0.047	0.088	0.048	0.106	0.083	0.109	0.099	0.119	0.119	0.128	0.122
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 55: Impact of MdS on Borrow Status (Formal)

Variables	Household Borrowing (Formal) (2005-06)						Household Borrowing (Formal) (2010-11)					
	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit
CBHH	0.002 (0.019)	-0.207** (0.090)		-0.057 (0.506)	0.027 (0.021)	0.004 (0.086)	0.012 (0.010)	0.023 (0.034)	0.001 (0.010)	-0.048 (0.042)	0.029** (0.013)	-0.005 (0.041)
HH Size	0.004 (0.006)	0.005 (0.007)	0.000 (0.010)	0.000 (0.010)	0.004 (0.007)	0.004 (0.007)	0.007* (0.004)	0.007* (0.004)	0.006 (0.004)	0.007* (0.004)	0.020*** (0.003)	0.020*** (0.003)
HH Mean Schooling	0.066** (0.034)	0.089** (0.039)	0.068 (0.048)	0.067 (0.103)	0.183*** (0.043)	0.137*** (0.045)	0.029 (0.021)	0.029 (0.021)	0.033 (0.022)	0.037 (0.025)	0.038 (0.024)	0.041* (0.024)
Age	0.006 (0.004)	0.007* (0.004)	0.013*** (0.005)	0.014** (0.006)	0.015*** (0.004)	0.014*** (0.004)	-0.000 (0.002)	-0.000 (0.002)	0.005** (0.002)	0.004** (0.002)	0.008*** (0.002)	0.008*** (0.002)
Age. Sq.	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000* (0.000)	-0.000*** (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Children in HH	-0.008 (0.009)	-0.005 (0.010)	0.000 (0.014)	0.000 (0.014)	0.001 (0.009)	0.003 (0.010)	-0.007 (0.005)	-0.008 (0.005)	0.000 (0.005)	-0.001 (0.005)	-0.013*** (0.005)	-0.013*** (0.005)
Disease in HH	-0.034* (0.020)	-0.056** (0.023)	-0.018 (0.025)	-0.027 (0.045)	0.027 (0.021)	0.023 (0.024)	-0.033*** (0.010)	-0.028*** (0.011)	-0.007 (0.011)	-0.007 (0.011)	0.012 (0.011)	0.010 (0.012)
Other Insurance	0.078 (0.052)	0.010 (0.062)	-0.023 (0.080)	-0.035 (0.274)	0.088** (0.040)	0.075 (0.064)	0.073 (0.057)	0.093* (0.054)	0.145** (0.070)	0.142* (0.078)	0.289*** (0.023)	0.259*** (0.041)
Medical Cons.	0.063*** (0.020)	0.091*** (0.024)	0.013 (0.029)	0.023 (0.069)	0.011 (0.022)	0.015 (0.024)	0.022** (0.011)	0.014 (0.013)	-0.001 (0.012)	-0.002 (0.014)	0.007 (0.013)	0.010 (0.014)
Harvest Small	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Harvest Large	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000* (0.000)	0.000*** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Observations	1,677	1,623	1,066	978	2,049	2,039	2,290	2,151	2,412	2,241	5,388	5,377
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 56: Impact of MdS on Loan Amount (Formal)

Variables	Household Loan Amount (Formal) (2005-06)						Household Loan Amount (Formal) (2010-11)					
	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS
CBHH	0.017 (0.173)	-1.713** (0.672)	0.077 (0.260)	-0.655 (4.976)	0.286 (0.219)	0.236 (0.924)	0.099 (0.093)	0.101 (0.302)	0.019 (0.110)	-0.487 (0.411)	0.319** (0.124)	-0.058 (0.505)
HH Size	0.046 (0.059)	0.058 (0.061)	0.049 (0.095)	0.036 (0.104)	0.089 (0.080)	0.085 (0.079)	0.080* (0.046)	0.085* (0.047)	0.072 (0.051)	0.089* (0.053)	0.349*** (0.061)	0.347*** (0.061)
HH Mean Schooling	0.482* (0.266)	0.628** (0.284)	0.490 (0.427)	0.505 (0.962)	1.035*** (0.342)	1.042*** (0.362)	0.188 (0.155)	0.140 (0.160)	0.268 (0.179)	0.300 (0.193)	0.101 (0.209)	0.132 (0.209)
Age	0.042 (0.029)	0.052* (0.031)	0.101*** (0.034)	0.106** (0.048)	0.114*** (0.033)	0.110** (0.033)	-0.010 (0.016)	-0.009 (0.016)	0.036*** (0.014)	0.027* (0.014)	0.061*** (0.020)	0.061** (0.020)
Age. Sq.	-0.000 (0.000)	-0.000 (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Children in HH	-0.051 (0.085)	-0.029 (0.089)	0.026 (0.123)	-0.009 (0.136)	0.015 (0.116)	0.028 (0.119)	-0.072 (0.055)	-0.086 (0.057)	0.000 (0.065)	-0.024 (0.066)	-0.258*** (0.087)	-0.259*** (0.087)
Disease in HH	-0.270 (0.168)	-0.437** (0.184)	-0.163 (0.246)	-0.292 (0.444)	0.244 (0.218)	0.235 (0.238)	-0.270*** (0.085)	-0.250*** (0.094)	-0.111 (0.109)	-0.116 (0.111)	0.074 (0.138)	0.052 (0.140)
Other Insurance	1.199 (0.799)	0.587 (0.818)	-0.049 (0.803)	-0.181 (2.694)	1.576** (0.615)	1.565* (0.812)	2.532 (2.323)	3.000 (2.288)	3.225 (2.651)	3.885 (2.954)	7.517*** (0.552)	7.186*** (0.711)
Medical Cons.	0.595*** (0.189)	0.811*** (0.213)	0.123 (0.292)	0.265 (0.668)	0.235 (0.248)	0.256 (0.272)	0.183* (0.101)	0.148 (0.137)	0.021 (0.120)	0.037 (0.136)	0.094 (0.172)	0.132 (0.188)
Harvest Small	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Harvest Large	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000* (0.000)	0.000*** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Constant	-1.820** (0.940)	-0.940	-5.395***	-5.385	-1.400	1.489	1.326	2.047	-0.750	1.184	-1.725**	-1.455*
Observations	1,741	1,680	1,088	999	2,060	2,050	2,667	2,498	2,444	2,265	5,395	5,384
R-squared	0.049	-0.024	0.067	0.050	0.110	0.110	0.047	0.057	0.045	0.043	0.248	0.248
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 57: Impact of MdS on Borrowing Status (Informal)

Variables	Household Borrowing (Informal) (2005-06)						Household Borrowing (Informal) (2010-11)					
	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit	Ext. Poor Probit	Ext. Poor IVProbit	Poor Probit	Poor IVProbit	Non-Poor Probit	Non-Poor IVProbit
CBHI	-0.009	0.023	-0.018	-0.197	0.004	0.201*	-0.023	-0.162**	-0.082***	-0.039	-0.097***	-0.153**
	(0.029)	(0.114)	(0.036)	(0.639)	(0.026)	(0.110)	(0.024)	(0.075)	(0.022)	(0.086)	(0.019)	(0.067)
HH Size	0.012	0.012	-0.008	-0.009	0.018**	0.018**	0.001	-0.006	0.003	0.00	-0.000	0.015***
	(0.010)	(0.011)	(0.013)	(0.013)	(0.008)	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.006)	(0.006)
HH Mean Schooling	0.095*	0.077	0.185***	0.198**	-0.064	-0.098*	0.010	0.006	0.048	0.056	0.006	0.007
	(0.054)	(0.056)	(0.070)	(0.090)	(0.051)	(0.050)	(0.041)	(0.043)	(0.044)	(0.046)	(0.036)	(0.037)
Age	-0.006	-0.006	-0.002	-0.002	-0.017***	-0.016***	0.001	0.005	-0.001	-0.001	0.001	0.002
	(0.005)	(0.005)	(0.006)	(0.008)	(0.005)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)	(0.003)	(0.003)
Age. Sq.	0.000	0.000	0.000	0.000	0.000***	0.000***	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.007	-0.009	0.021	0.025	-0.011	-0.017	0.026**	0.028***	-0.001	0.001	0.007	0.007
	(0.013)	(0.013)	(0.017)	(0.018)	(0.012)	(0.012)	(0.010)	(0.010)	(0.012)	(0.012)	(0.008)	(0.008)
Disease in HH	0.076***	0.074***	0.084**	0.062	0.043	0.061**	0.089***	0.089***	0.077***	0.075***	0.051***	0.044**
	(0.026)	(0.028)	(0.034)	(0.075)	(0.027)	(0.028)	(0.023)	(0.026)	(0.022)	(0.024)	(0.017)	(0.018)
Other Insurance	-0.078	-0.081	0.026	-0.134	-0.040	0.078	-0.476***	-0.541***	-0.073	-0.034	-0.460***	-0.506***
	(0.092)	(0.102)	(0.118)	(0.335)	(0.064)	(0.086)	(0.167)	(0.167)	(0.198)	(0.213)	(0.046)	(0.070)
Medical Cons.	-0.081**	-0.086**	0.020	0.033	-0.017	-0.041	0.024	0.071**	0.023	0.025	0.005	0.014
	(0.032)	(0.035)	(0.039)	(0.084)	(0.029)	(0.031)	(0.027)	(0.036)	(0.026)	(0.030)	(0.018)	(0.020)
Harvest Small	0.001	0.000	-0.000	-0.000	0.000*	0.000*	-0.000*	-0.000	0.000	0.000	0.000*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	-0.000	-0.000	-0.000	-0.000	-0.000*	-0.000**	-0.000*	-0.000	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	1,737	1,677	1,086	997	2,058	2,048	2,663	2,495	2,438	2,259	5,388	5,377
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 58: Impact of MdS on Loan Amount (Informal)

Variables	Household Loan Amount(Informal) (2005-06)						Household Loan Amount(Informal) (2010-11)					
	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS	Ext. Poor OLS	Ext. Poor IV2SLS	Poor OLS	Poor IV2SLS	Non-Poor OLS	Non-Poor IV2SLS
CBHI	-0.007	0.057	-0.008	-1.419	0.144	1.783	-0.158	-1.223*	-0.593***	-0.321	-0.860***	-1.495**
	(0.249)	(0.971)	(0.325)	(6.365)	(0.236)	(1.195)	(0.224)	(0.731)	(0.203)	(0.774)	(0.184)	(0.684)
HH Size	0.184**	0.181**	-0.010	-0.006	0.239***	0.250***	0.153*	0.094	0.155*	0.151*	-0.090	-0.093
	(0.089)	(0.090)	(0.113)	(1.126)	(0.082)	(0.082)	(0.084)	(0.087)	(0.086)	(0.090)	(0.063)	(0.062)
HH Mean Schooling	1.112**	0.985**	1.599**	1.844	-0.349	-0.664	0.300	0.283	0.825**	0.908**	0.362	0.381
	(0.445)	(0.450)	(0.621)	(1.252)	(0.457)	(0.477)	(0.380)	(0.402)	(0.360)	(0.420)	(0.347)	(0.351)
Age	-0.069	-0.067	-0.017	-0.008	-0.155***	-0.152***	0.012	0.046	0.001	0.002	0.032	0.038
	(0.045)	(0.045)	(0.053)	(0.067)	(0.042)	(0.043)	(0.042)	(0.046)	(0.035)	(0.035)	(0.029)	(0.029)
Age. Sq.	0.000	0.000	0.000	0.000	0.001**	0.001**	-0.000	-0.001	-0.000	-0.000	-0.001**	-0.001**
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Children in HH	-0.067	-0.076	0.160	0.189	-0.125	-0.178	0.134	0.156	-0.021	-0.005	0.091	0.092
	(0.117)	(0.115)	(0.158)	(0.180)	(0.115)	(0.121)	(0.100)	(0.103)	(0.104)	(0.117)	(0.086)	(0.086)
Disease in HH	0.597***	0.574**	0.672**	0.518	0.379	0.553**	0.819***	0.563**	0.801***	0.821***	0.496***	0.425**
	(0.225)	(0.240)	(0.301)	(0.530)	(0.252)	(0.281)	(0.222)	(0.245)	(0.206)	(0.217)	(0.175)	(0.186)
Other Insurance	-0.963	-1.024	0.588	-0.645	-0.281	0.707	-5.286***	-5.449***	-1.292	-1.035	-4.610***	-5.167***
	(0.728)	(0.808)	(1.082)	(3.435)	(0.607)	(0.895)	(1.309)	(1.372)	(1.754)	(2.147)	(0.458)	(0.717)
Medical Cons.	-0.642**	-0.665**	0.340	0.445	-0.226	-0.448	0.330	0.701**	0.008	0.000	0.098	0.201
	(0.277)	(0.299)	(0.354)	(0.849)	(0.273)	(0.312)	(0.231)	(0.339)	(0.232)	(0.255)	(0.185)	(0.204)
Harvest Small	0.000	0.000	-0.000	-0.000	0.000*	0.000*	-0.000*	-0.000	0.000*	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Harvest Large	-0.000	-0.000	-0.000	-0.000	-0.000*	-0.000**	-0.000	0.000	-0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-1.427	0.395	-1.766	-3.302	7.530***	7.524***	3.741*	3.737**	7.983***	7.309***	6.865***	7.240***
Observations	1,741	1,680	1,088	999	2,060	2,050	2,667	2,498	2,444	2,265	5,395	5,384
R-squared	0.076	0.075	0.069	0.049	0.076	0.058	0.107	0.095	0.096	0.092	0.120	0.119
Household Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Author calculation of average marginal effects using EICV 2005-06 and 2010-11 data on Stata14. Notes: Standard Errors clustered at cluster level, shown in brackets. *** p<0.01, ** p<0.05, * p<0.1