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Microinsurance and Risk Management: Evidence from Ghana

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Microinsurance and Risk Management: Evidence from Ghana

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zur Erlangung des akademischen Grades

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Abstract

After the rapid success of microcredit and, to a lesser extent, microsavings in the past decades, microinsurance has been the third financial service to enter emerging financial markets in the developing world. Microinsurance could provide high welfare gains, given that low-income people often lack efficient strategies to manage and cope with risks, such as death, illness, old age, droughts or floods. In light of the low coverage of public security systems in many developing countries, it is seen as a promising innovation that could offer better protection for low-income people. However, little is known about the factors that constrain or facilitate demand to translate into uptake of microinsurance and on the product characteristics and business practices that create value for them. This thesis applies quantitative econometric and qualitative methods – based on own household and individual survey data as well as focus group discussions – to investigate participation patterns and perceived value in micro life insurance in Ghana.

The results reveal, first, that household uptake of micro life insurance does not entirely follow the predictions made by standard insurance theories. Informal trust-building mechanisms and subjective risk perceptions turn out to play an important role in the context of information asymmetries and limited experience with formal insurance. Furthermore, there is a mutually reinforcing relationship between micro life insurance and other formal financial services available in the rural and semi-urban study areas in Ghana. At the same time, microinsurance does not substitute informal financial services. Given that households are burdened with a number of other risks besides death and old age, more universal strategies, such as risk sharing within social networks, do not lose their significance.

Second, the perceived value of microinsurance consists not only of the expected or experienced benefits and costs, but also of quality, emotional and social dimensions. Perceptions of high or low value are driven by large discrepancies between expectations and experiences, clients' knowledge about insurance, their interaction with peers, and the availability and effectiveness of alternative risk management options.

Third, there are gender-specific patterns of market participation between and within households that are intertwined with the household type and regionally varying sociocultural conditions. Households headed by single women are less likely than other

households to purchase micro life insurance, which could be a sign of gender discrimination in the market. However, results on the intra-household level show that women in couples are, in fact, more likely to purchase micro life insurance compared to their husbands. This is found especially in regions dominated by matrilineal societies, in which husbands typically have less control over household decision-making. Results at the intra-household level suggest that the wives' bargaining power has little influence on their husbands' decisions to purchase insurance, but increases uptake by the wives themselves. Overall, the results suggest that spousal preferences on insurance differ and that women are an important target group for the provision of micro life insurance.

Preface

More than 1300 people in Ghana took their time to spend several hours answering questions in the course of the research underlying this thesis. Their willingness to take part in interviews and group discussions, many informal talks, and invitations to their homes and work places gave me an insight into their lives and were an invaluable precondition for the writing of this thesis. Often enough, they were wondering what ‚research' will make out of all this information. This thesis represents the scientific exploration of their decision-making in a context of uncertainty and insecurity. It touches upon the problem of death of a family member and funerals, which I experienced myself to be highly important concerns to Ghanaian people. With this thesis I hope to contribute to a greater understanding of what makes low-income people consider to purchase insurance and what makes it a valuable instrument for them to deal with the very high costs of such funeral events and to protect their future livelihoods.

I am grateful to: my supervisors Professor Tilman Brück and Professor Susan Steiner for their advice, encouragement and for inspiring my interest in development economics research; various colleagues for their comments and willingness to discuss, including Tara Caetano, Christine Fenanga, Heike Hoeffler, Robert Kappel, Krisztina Kis-Katos, Jann Lay, Andreas Landmann, Tobias Lechtenfeld, Toman Omar Mahmoud, Michael McCord, Andreas Mehler, Will Monteith, Daniel Neff, Babette Never, Kerstin Nolte, Markus Olapade, Miquel Pellicer, Sebastian Prediger, Birte Pfeiffer, Kati Schindler, Eva Terberger, and Horst Zank; the DZ Bank Foundation, the Poverty Reduction, Equity and Growth Network (PEGNet), the GIGA Institute of African Affairs, and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) in Ghana for financial support of the research; the Gemini Life Insurance Company (GLICO) and the Institute of Statistical, Social and Economic Research (ISSER) in Accra and particularly Clement Ahiadeke and the research team, who spared no effort to make the fieldwork a success; the team at GIZ Ghana for much appreciated support in organizing and conducting the fieldwork; and Janina Voss for excellent research assistance and friendship.

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List of Abbreviations

AME	Average marginal effect
GHC	Ghana Cedi
GLICO	Gemini Life Insurance Company
ISSER	Institute of Statistical, Social and Economic Research
NGO	Non-governmental organisation
NHIS	National Health Insurance Scheme
PIA	Personal insurance advisor
RCB	Rural and community bank
SSNIT	Social Security and National Insurance Trust
SSA	Subsahara Africa

Chapter 1

Introduction

1.1 Motivation

> *"I don't do any government work, I don't have any social security, my social security is the Anidaso group [micro life insurance scheme]. In future, I will lay hands on it, even if I don't lay hands on it, my children or my wife will lay their hands on it and they will stand on it to build their lives." (Self-employed mason from the Central Region in Ghana)*

> *"He will not join the insurance because his brother [peer] has gone to join and it has not helped him. If it wasn't by God's grace that he sold his own property, the illness would have killed his child. If someone sees something like that, then his mind begins to waver for fear of joining." (Farmer from the Central Region in Ghana)*

These statements made by participants of focus group discussions during field work in Ghana's Central Region illustrate aspects of the potential and the challenges of microinsurance. Taking a demand-side perspective, this thesis analyzes the determinants of uptake and the value perceived in microinsurance in the context of the broader financial risk management framework of households and individuals. Besides the analysis of decision-making on microinsurance on the aggregate household level, the thesis also investigates the insurance behavior of women and men at the intra-household level. The empirical analysis focuses on the example of micro life insurance in relation to other types of insurance and financial services provided by formal and informal financial institutions in the southern part of Ghana.

Low-income people often lack efficient strategies to manage and cope with risk. The welfare implications of uninsured risk go well beyond the short-term costs that low-income people face in the event of a shock. There is a growing understanding that many of the strategies applied by these people in response to risk involve high costs in the longer term, which increase vulnerability to falling into poverty and impede the ability to grow out of

poverty (e.g. Carter et al. 2007; Dercon 2005; Dercon et al. 2008; Jalan and Ravaillon 2004; Townsend 1995). Recognizing the crucial link between risk, growth opportunities and welfare improvements, the World Development Report 2014 will be dedicated to the examination of "how improving risk management can lead to larger gains in development and poverty reduction" (World Bank 2012). In this context, microinsurance could provide high welfare gains by helping low-income people to smooth consumption in a more efficient way. This is why the provision of microfinancial services in general, and microinsurance in particular, is seen as a promising innovation to protect low-income people against risk and is now regarded as an integral part of social protection and poverty reduction strategies

Much of the global concern about risks has lately been centred on the so-called "triple F" crisis including the financial crisis, the food crisis and the fuel crisis (Addison et al. 2011; Chen and Ravaillon 2009). Yet, it has been questioned whether these global events have led to a substantial difference in the overall risk poor people have to deal with (Banerjee and Duflo 2011). Of course, global hazards may exacerbate the vulnerability of poor people towards risk and may place an additional burden on them. Nonetheless, the most frequent and stressful risks that are still affecting the daily lives of low-income people in the developing world are rather such hazards as death or illness of a major breadwinner in the household, funerals, property loss, old age poverty and risks in agriculture, such as droughts and floods (Bhattamishra and Barrett 2010; Chantarat et al. 2013; Cohen and Sebstad 2005; Cohen et al. 2005; Collins et al. 2009; Dercon et al. 2008).

In most developing countries, governments fail to assist low-income people in coping with these risks by providing functioning public social security systems and safety nets. In subsaharan Africa (SSA), less than 10 percent of the population are covered by some form of social security and these are mostly civil servants and formal wage workers (ILO 2010). In most parts of SSA, however, 70 percent and more of the workforce is rather employed in the informal sector (World Bank 2011a).

For a long time formal financial services were regarded as inappropriate for low-income people and not considered as a means to fill in the social security gap. Yet, the rapid and successful increase of microloans and, to a lesser extent, savings accounts in the last three decades has led to a rethink. Microinsurance has been the last of the so-called finance trinity (the other two being credit and savings) to enter the spotlight in recent years. The

most popular definition of microinsurance was provided by the first *Microinsurance Compendium* and describes it as:

> *"the protection of low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of the risk involved. This definition is essentially the same as one might use for regular insurance except for the clearly prescribed target market: low income people. (...) How poor do people have to be for their insurance protection to be considered micro? The answer varies by country, but generally microinsurance is for persons ignored by mainstream commercial and social insurance schemes, persons who have not had access to appropriate products."* (Churchill 2006: 12–13).

Hence, a key difference between microinsurance and other insurance is that it is made accessible to the low-income market and thus to people who have an irregular income flow and often no previous experience with insurance or other formal financial services. There is a focus on the provision of microinsurance to low-income people in developing countries. Yet, in principle this definition applies to the low-income population anywhere in the world. The definition of microinsurance in respect of its target group has been criticized to remain on a rather vague level. While there is some agreement that low-income people are not only those that are poor today, but also those that are at risk of becoming poor in the future, there is no universal and clearly distinct classification of this group. Thus, operational definitions also include product parameters, such as premium caps, or types of institutions apart from formal insurers that are allowed to provide it, such as community-based organizations (Churchill and Matul 2012).

Today, microinsurance is available for many of those most pressing risks for the low-income population mentioned above. In the order of frequency products include life insurance[1], health insurance, agricultural index insurance, disaster insurance and property insurance (Matul et al. 2010; Roth et al. 2007). Outreach of microinsurance has rapidly increased from 78 million lives insured in 2006 to nearly 500 million lives insured in 2011 (Churchill and Matul 2012). However, in many countries, this still amounts to less than 5 percent of the population (Roth et al. 2007).

[1] Life insurance products include basic products such as (involuntary) credit life and funeral insurance as well as more sophisticated types of permanent and term life insurance.

There is an increasing interest in microinsurance among policymakers and market players that is in line with the focus of market-based development policies to increase financial inclusion of low-income people in globally linked markets (Prahalad 2005). Yet, creating a "culture of insurance" may take generations (Churchill and Matul 2012: 18) and depends greatly on the client's capability of adapting to changes in the financial sector and on the context of their risk management framework. The aim of this thesis is to gain a better understanding of the decision-making behavior and perspectives of potential microinsurance clients in the context of an emerging formal insurance and financial market on the basis of empirical evidence. This will also be crucial for the expansion of microinsurance such that it makes a real difference to the quality and extent of the protection of low-income people's livelihoods.

1.2 Embedding in the literature and research questions

1.2.1 Basic facts from standard insurance theory

The standard economic approach to analyzing risk and the demand for insurance is based on expected utility theory and the concept of risk aversion (von Neumann and Morgenstern 1944). This theoretical framework assumes that people are risk averse and exhibit diminishing marginal utility with respect to wealth. They purchase insurance because they prefer the certainty of paying small premiums to secure future income streams to the risk of suffering a large financial loss when a shock occurs (Mossin 1968). Thus, risk averse individuals have a concave utility function and purchase full insurance coverage at an actuarially fair price. From a slightly different perspective, it has also been argued that by purchasing insurance individuals transfer resources from low marginal utility of current income states to future income states where marginal utility is high (Arrow 1971; Debreu 1959; Karni 2006; Nyman 2001). A central element of this theoretical work is that with decreasing absolute risk aversion and increasing wealth, the willingness to pay for insurance – that is, the maximum amount paid to exchange the prospect of risk against a certain level of wealth – also decreases (Arrow 1971; Mossin 1968; Pratt 1964).

In reality, actuarially fair insurance does not exist as administration costs and the risk premium of shareholders have to be added on the premiums (policy loading factor). All other things constant, the optimal demand for insurance is then lower and, relative to their

personal risk preferences, people will only partially insure (Doherty and Schlesinger 1983; Mossin 1968). Nevertheless, based on the assumption of an inverse relationship between risk aversion and wealth, one would have to assume that low-income people, who are the target group of microinsurance, have a particularly high demand for insurance given higher levels of risk aversion and lower levels of wealth (de Bock and Gelade 2012; Guiso and Jappelli 1998).

In line with the above outlined expected utility framework, standard theoretical models of life insurance assume that consumers – and their households – maximize the weighted sum of their own lifetime utility from consumption and that of bequests by reducing uncertainty in their income streams due to the possibility of a premature death of a primary income earner. Whereas many insurance products are merely directed at the ex-ante management of a certain risk, the motivations of life insurance may be more complex. Life insurance can be regarded as a financial tool for controlling both intertemporal and interpersonal transfers (Villeneuve 2001). By minimizing the financial loss of the deceased on the family (term life insurance) it serves bequest or reallocation motives towards dependents or a spouse (Babiarz et al. 2012; Hussels et al. 2005; Sauter 2012; Zietz 2003). Yet, savings motives (permanent life insurance) related to the lifecycle, the purchase of large items like a house, or the intention to use it as collateral for securing credit are also common reasons for purchasing life insurance. Thus life insurance is also referred to as a financial asset (Babbel and Ohtsuka 1989; Browning and Lusardi 1996; Euwals et al. 2004; Lyons et al. 2008; Outreville 1996; Pissaridis 1980).

The fact that these motivations of life insurance are quite universal is one reason that explains its prevalence in the microinsurance business. Furthermore, life insurance is easier to provide than many other types of insurance. Due to the clear-cut nature of the loss event, life insurance is uncomplicated to price, mostly resistant to fraud and moral hazard and not dependent on the existence and efficient functioning of additional complex infrastructure, such as hospitals or rain gauge systems. Moreover, it is easy to link to other microfinance products and to distribute via the delivery channels of microfinance institutions that have already built up good client relations with the target group (Roth et al. 2007).

1.2.2 The case of microinsurance: Is there a difference?

Standard theories and empirical examinations of insurance consumption have focused almost entirely on the situation in developed countries. However, conditions of insurance and financial markets in developing countries are different. These are typically incomplete and characterized by asymmetric information. Suppliers of microinsurance face high transaction costs, actuarial difficulties due to imperfect information on the riskiness of their target group, and often a lack of efficient systems of insurance distribution and management. Thus, they usually face difficulties in achieving scale and fail to become accessible and affordable especially for poorer people in the target market that have a demand for insurance (Claessens 2006; Dionne et al. 2000). Connected to this, the low-income population has limited experience with formal insurance. In many countries, microinsurance products have been offered for less than a decade. The acceptance of the concept of insurance may be low. If people expect failure of the insurance to pay out in case of a loss then people might not act according to standard predictions on risk preferences and wealth. Expectations of payout failure may arise, for example, when people have witnessed defaults, distrust the insurer or simply when a contract does not cover enough of the potential loss (de Bock and Gelade 2012; Dercon et al. 2011; Doherty and Schlesinger 1983). It might also be that people are incapable of objectively assessing the probabilities of risks and that the experiences of past shocks influence their perceptions of risks, which could result in a biased judgement on the necessity of insurance (de Bock and Gelade 2012; Böhm and Brun 2008; Rogers 1997; Slovic et al. 1982).

Today, there is only a small but growing body of evidence on the participation in microinsurance. Conditional on the availability of microinsurance for the target population, by and large these studies find a surprisingly low uptake of microinsurance (see the studies surveyed in de Bock and Gelade 2012: 2). Even more surprising is the result of several of these studies that risk aversion tends to reduce, instead of increase, the uptake of microinsurance (Clarke and Kalani 2012; Cole et al. 2013; Giné et al. 2008; Ito and Kono 2010). Interestingly, much of the evidence on microinsurance uptake so far contradicts the standard prediction that poorer and more risk averse people are more inclined to purchase insurance to avoid the risk of a loss. Aside of supply side failures noted above, this lends support to the hypothesis that demand side failures in the market result in patterns of participation in microinsurance markets that are different from those observed in conventional insurance markets. Rather, much of the recent evidence on microinsurance

uptake points out that factors related to uncertainty, trust and familiarity with the insurer and the product are crucial for the purchase decision (Cai et al. 2009; Dercon et al. 2011; Giné et al. 2008; Morsink and Geurts 2011). While also likely to be important factors, much less is known about the role of shock experience and people's subjective perceptions of risk for the participation in microinsurance. Furthermore, the majority of the evidence on the demand-side of microinsurance markets has been concerned with the demand for health insurance (e.g. Chankova et al. 2008; Dror et al. 2006; Ito and Kono 2010; Schneider and Diop 2004), and agriculture related index insurance (e.g. Clarke and Kalani 2012; Cole et al. 2013; Giné et al. 2008; Sakurai and Reardon 1997). Despite the fact that life insurance is most commonly provided, empirical studies on this type of microinsurance are almost lacking.

Additionally, the fact that uptake remains behind the expectations suggests that existing microinsurance products are not always perceived as valuable by the target group of low-income people (Magnoni and Zimmerman 2011; Matul et al. 2011; McCord et al. 2012b). There is vast research on the perceived value of goods and services in the context of industrialized countries provided by the marketing literature. Though, this has been largely overlooked by the microinsurance literature on client value, which is mainly based on contributions from practitioners. This marketing literature shows that value is always based on subjective and evaluative judgments and involves more than just the weighting of the benefits of products against their costs. It is now widely agreed that client value is best described as a multidimensional concept that involves many cognitive, personal and affective perceptions that go beyond just the functional value of a product (Holbrook 1996; Sánchez-Fernandez and Iniesta-Bonillo 2007; Zeithaml 1988). However, empirical studies on client value of microinsurance are basically lacking.

In sum, compared to the vast literature on insurance consumption in developed countries we still know little about the factors that constrain or facilitate demand to translate into uptake of insurance products in developing countries and on the product characteristics and business practices that create value for low-income people. To add knowledge on those factors that are relevant for the participation in microinsurance markets based on standard insurance theory and beyond, the principal research question of this thesis is:

(1) *What determines participation in microinsurance markets of households and the individuals therein?*

In particular, the following sub-questions are derived from this question:

(1a) Which subjective factors play a role?

(1b) What constitutes value from the perspective of clients?

In addressing these questions, the analysis pays attention to the fact that patterns in microinsurance market participation could be different to those in conventional insurance markets. Focusing on the case of micro life insurance, the analysis thus includes factors that are usually not considered in standard models of life insurance consumption, but are likely to play a role in the setting of microinsurance. Thereby, it places specific emphasis on trust-building factors and the subjective perception of risk. In the analysis of client value the thesis takes a multidimensional approach and explores the various dimensions that are perceived as valuable in microinsurance by (potential) clients.

1.2.3 Microinsurance and alternative ways to smooth income and consumption

Of course, microinsurance is not the only option for low-income people to deal with risk. Rather, people have invented and used a diversity of alternative strategies to prepare against risk (ex ante) and cope with shocks (ex post) (Dercon 2002; Holzmann and Jorgensen 1999; Zimmerman and Carter 2003). Many of these strategies are applied on an informal level, such as arrangements of mutual assistance within families or communities (Fafchamps and Lund 2003). Yet, there are also risk management options provided on the commercial level, such as investment in and selling of financial assets or borrowing; and on the public level, such as mandated/state provided insurance for old age or employment related risks (Holzmann and Jorgensen 1999). To the extent that these strategies are accessible and efficient in dealing with a risk covered by microinsurance, people may have less incentive to buy formal insurance coverage (Arnott and Stiglitz 1991). Even if these strategies are not fully efficient, people may have become habituated to their traditional ways of managing with an insurable risk and there might be complex social obligations involved that are not easily abandoned (McCord et al. 2012b).

Yet, as mentioned above, research has shown that existing – mostly informal – risk management strategies applied by low income people to insure consumption against income fluctuations are neither always efficient, nor equally accessible by all households (Alderman and Paxon 1992; Fafchamps and Lund 2003; Kazianga and Udry 2006;

Townsend 1995). Retaining savings and assets to self-insure or moving into more diversified and less risky portfolios reduce the exposure to risk typically result in foregone mean returns to employment activities (Carter and Barrett 2006; Dercon 2002; Dercon et al. 2008; Morduch 1995; Rosenzweig and Binswanger 1993; Townsend 1995). This rather speaks in favor of a complementary, if not substituting role of microinsurance to existing risk management strategies, as it could help people to overcome their inability to deal with the uncertainty of future expenses and smooth consumption sufficiently over time.

Furthermore, several financial strategies may be used simultanously serving the same or similar motives. The purchase of life insurance, which also functions as a financial asset, is thus not necessarily separable from other portfolio decisions (Chen et al. 2006; Lin and Grace 2007; Mayers and Smith 1983).[2] As Browning and Lusardi (1996: 1798) put it: "households that save for retirement (the life-cycle motive) will also build up financial reserves that can be used to buffer pre-retirement income or consumption shocks (the precautionary motive)". Adding to this line of argumentation, the literature on the adaption of innovation has pointed out that early adopters of a new technology are likely to be those accustomed to similar technologies (Rogers 2003). Applied to the case of microinsurance, such technologies could be other financial services or even informal strategies geared towards risk pooling. People who use such mechanisms prior to the invention of microinsurance might then have an informational advantage, which rather promotes its uptake.

In short, it is largely unknown – and is also likely to depend on the empirical context – whether microinsurance is rather a substitute or complement to existing income and consumption smoothing activities. This leads to the second research question this thesis addresses:

(2) How does the participation in microinsurance relate to the availability and the use of alternative risk management strategies?

The thesis provides answers to this question particularly with regard to the relation of microinsurance with other formal and informal financial services. The analysis further takes into account such factors as remittances and transfers provided by informal networks and the availability of public social security. It also compares evidence on micro life

[2] An overview over the theoretical and empirical literature on household financing and portfolio allocation decisions is provided by Campbell (2006).

insurance with that on other types of insurance, such as health insurance. Thereby the thesis takes a more holistic approach compared to other empirical contributions on conventional insurance as well as microinsurance, which typically analyze insurance behavior in an isolated way.

1.2.4 Microinsurance and gender

It has been commonly observed throughout the world that women's wealth is lower than men's and widows are often at risk of being poor during retirement (Bajtelsmit et al. 1999; Razavi 1999; Schmidt and Sevak 2006). In this context, the investment and wealth management practices of women significantly differ from those of men (Auerbach and Kotlikoff 1991; Guérin 2011; Hinz et al. 1997; Johnson 2004; Lyons et al. 2008). Women are found to be more risk averse, to face different risks, and to command over less efficient strategies to respond to risks than men (Banthia et al. 2009; Ezemenari et al. 2002; Leeuwen 2005). Especially in low-income countries, they are often the primary caregiver and resource manager in the family, which makes them disproportionally bear the consequences of a household's inability to smooth consumption (Banthia et al. 2009; Ezemenari et al. 2002; Kabeer 2008). These factors suggest that women have a potentially higher demand for microinsurance than men.

However, research on gender and microfinance has pointed out that there may be gender-specific imperfections in financial markets of developing countries (Fletschner 2009; Guérin 2011; Johnson 2004; Mayoux 2011). Working against the presumably higher demand for insurance among women, these might be more excluded from accessing microinsurance due to formal and informal gender-biased rules in society and in financial institutions. In this regard, the opportunities to obtain insurance as well as the design of insurance may be heavily influenced by gender differences in family and social roles, or economic status, which could be one explanation for the observed differences in the financial protection of women and men (Banthia et al. 2009; Miles and Parker 1997). Related to these gender differences in social and economic roles, the one study on both spouses' purchase of conventional life insurance in the United States finds that the response of life insurance holdings to the key motives of income and household production differs for husbands and wives (Gandolfi and Miners 1996).

In addition to the issue of gender differences in the demand for and the access to insurance, it might be that risk coping within the household is not always a joint endeavour. There is now a large literature on intra-household dynamics that opposes the assumption of standard unitary models that households are places of common preferences. This literature shows that household members may have conflicting interests and bargain over respective decision outcomes.[3] In this regard, in couple households women's ability to obtain insurance is also likely to be related to intra-household power relations and financial management. Hence, there may be ambiguous gender effects related to the supply as well as the demand side of microinsurance that are likely to result in gender-specific patterns of market participation at the inter-household as well as the intra-household level. However, gender-specific insurance purchasing behavior has neither received much attention in the microinsurance literature nor in the conventional insurance literature. Even less attention has been paid to the intra-household dimension of decision-making on the purchase of insurance. Thus, the third research question addressed by this thesis is:

(3) Are there differences between men and women (husbands and wives) in their decisions to participate in microinsurance markets?

The typical approach to microinsurance equates the interest of the individual – as reflected by the purchase of individual insurance policies – to that of the household as a whole (Leeuwen 2005). Going beyond the inter-household comparison, the analysis is the first to investigate microinsurance uptake on the individual level of husbands and wives within couple households. Apart from adding knowledge on the question of whether men and women are more or less inclined to purchase insurance and whether their decisions respond to different factors, it also asks how these decisions relate back to intra-household dynamics.

1.3 Insurance and financial markets in Ghana

The insurance and financial market in Ghana is dominated by three main types of institutions: (1) formal institutions, such as government insurance schemes, parastatal insurance companies, private insurance companies, licensed brokers and agents, commercial banks, rural and community banks (RCBs) and savings and loans companies, (2) semiformal institutions, such as non-governmental organisations (NGOs), cooperatives,

[3] Comprehensive reviews of this literature are provided by Chiappori and Donni (2011) and Doss (1996).

and mutual health organizations and (3) informal institutions, such as *Susu* collectors (see below), funeral societies and other informal groups.

In the rural and semi-urban areas outside the capital area of Accra, RCBs stand out as the largest financial player in terms of geographical coverage, depth of outreach and number of financial products. They are profit-oriented unit banks owned by community members and play a much greater role than semiformal and mostly non-profit oriented NGOs and cooperatives, which is unusual when compared with many other African countries. A number of 127 RCBs were operating at the end of 2010. From 2000 until 2008, the total number of recorded depositors increased by 14 percent to 2.8 million and the number of borrowers increased by an impressive 27 percent to 680,000.[4] RCBs offer standard commercial as well as microfinancial savings products and loans to individuals or groups (Basu et al. 2004; Nair and Fissha 2010; Steel and Andah 2008). Other commercial banks are active mainly in the district capitals. In total, commercial banking services of any kind (including those of RCBs) are used by about 35 percent of the adult population (World Bank 2011b). The informal financial sector has also remained very important in Ghana, especially in rural areas. It covers a range of activities known as *Susu*, which are performed by individual savings collectors, rotating savings and credit associations, and savings and credit "clubs" run by an operator. *Susu* allows individuals to save outside the banking system and enables them to invest in their business activities, or to finance child education, funerals or other ventures where lump sums are needed. In 2003, there were over 4,000 collectors and enterprises nationwide (Steel and Andah 2008). Some RCBs and commercial banks have made attempts to adopt the savings mobilization methods established in the informal sector and developed linkages with *Susu* collectors to expand their services (Ibid.).

The insurance sector has started to develop quite rapidly over the past decade. The public insurance schemes include the Social Security and National Insurance Trust (SSNIT), which provides old age coverage, as well as the broader public National Health Insurance Scheme (NHIS). Whereas SSNIT covers only about 11 percent of the working population mainly employed in the formal sector (Boon 2007), approximately 34 percent of the total Ghanaian population are active enrollees in the NHIS (NHIA 2010). Being one of the very first attempts by a subsaharan African country to implement a universal health insurance

[4] The adult population in Ghana, comprising of people above the age of 18, stands at 13.6 million in 2010 (Ghana Statistical Service 2011).

program for its population, the NHIS was launched in 2004 and replaced the cash-and-carry healthcare system. NHIS targets the population as a whole, including the poorest income segments, and annual premiums are very low. Hence, the national health insurance reaches out to the target market of microinsurance as well.

Aside of the public insurance schemes, the national market penetration of commercial insurance products is not more than two percent and does not extend much beyond the capital area of Accra (Finmark Trust 2011). However, a range of actors have now started to enter the so-called "bottom line" of the insurance market, including some commercial insurers and insurance intermediates. This renders Ghana a particularly suitable case for the study of microinsurance market participation relative to other countries in SSA. Today, approximately 20 microinsurance products, which are mostly life or funeral insurance, are provided by 15 regulated insurance providers and cover about 1.2 million people (Munich Re Foundation 2012). On the regulatory side, and exceptional for the region, the National Insurance Commission in Ghana is highly committed to facilitating the development and expansion of the microinsurance market (Matul et al. 2010). Apart from South Africa, Ghana is the second country in SSA that is underway to pass a new Insurance Act that includes a legal regulation of microinsurance (Gruijters 2012). However, the outreach undertaken by microinsurance providers has only recently begun to scale up and is still mostly limited to Greater Accra and other large cities, such as Kumasi and Takoradi.

The Gemini Life Insurance Company (GLICO) was the first in the private sector to offer a voluntary microinsurance product and was long the largest player in the market, especially beyond the capital area. Together with RCBs and other microfinance institutions, GLICO offers a micro life insurance called the Anidaso Policy, which is explained in more detail in the following chapters.[5] During the fieldwork period of this thesis from 2008-2009, GLICO cooperated with 26 RCBs all over the southern regions of the country for the sale and distribution of the policy. The number of Anidaso clients was about 15,000 in total and ranged from around 200 to over 1,000 per RCB. The policy is directed at covering funeral and other immediate costs after death of the policyholder and offers an optional investment plan. Both types of coverage are highly relevant for the low-income population, given the low coverage of the SSNIT and usually substantial funeral costs going along with the ritual norms to be followed (Arhin 1994; Geest 2006; Mazzucato et al. 2006).

[5] "Anidaso" translates into "hope" in the Twi language, which is widely spoken in the capital area.

1.4 Data and approach

The core approach used in this thesis is the empirical analysis of micro-level household survey data. This is complemented by the analysis of qualitative data obtained from focus group discussions. I collected these data in cooperation with the Institute of Statistical, Social and Economic Research (ISSER) of the University of Legon within a project on risk management and the demand for microinsurance of low-income households. This project was conducted by the GIGA Institute of African Affairs under the supervision of Susan Steiner from 2006 – 2010. At the start of this thesis, virtually no empirical data were available on the demand-side of microinsurance in SSA. Two different surveys were conducted during the project with households that had purchased micro life insurance and a control group of non-microinsured households. In an ex ante selection process, GLICO had been identified to be the only known insurance provider offering voluntary microinsurance beyond health insurance to a meaningful number of low-income households in SSA at that time.[6] I conducted all fieldwork in the survey areas together with local teams from ISSER that spoke the relevant local languages.

The first quantitative household survey was undertaken as a pilot study from January until February 2008. The survey took place in two neighbouring small towns (Brakwa and Benin) of the Asikuma/Odoben/Brakwa district of the Central Region. The overall sample consisted of microinsured households (87), which were oversampled to facilitate statistical analysis, other insured (110) and non-insured households (154) making up a total of 351 interviewed households. All households were listed in a sampling frame and randomly selected from their respective stratum. This survey will be further discussed in Chapter 2.

The second and larger survey took place from January until March 2009. The survey contains 1,030 households randomly selected across 17 small towns and medium-sized towns in the service areas of three RCBs operating and distributing the microinsurance. To ensure regional variation, the three service areas were located in a) the Agona West Municipal District in the Central Region, b) the Akuapim North District in the Eastern Region and c) the South Tongu District in the Volta Region (see Figure 1). Again, microinsured households were oversampled and represented a third of all households in the sample (321). This survey and the sampling strategy will be further discussed in Chapter 3.

[6] It is important to note that information on microinsurance providers and products was highly fragmentary at the beginning of the project, and still is. It may well be that there existed more voluntary microinsurance products besides GLICO's Anidaso policy that we were not aware of.

Both surveys used a similar survey questionnaire that I developed together with Susan Steiner.[7] This questionnaire covered household demography, land and other assets, migration and remittances, as well as income and economic activities of household members. Respondents were asked about their household's experiences of shocks and applied risk managements strategies and their use of insurance and informal and formal financial services. A special feature of the second survey questionnaire was to separate some of the modules for spouses in couple households, who then answered the same questions individually. These included the questions on the use of insurance and other financial services as well as risk perceptions, attitudes and integration into social networks.

It is important to note that using survey data, though a common approach in studying participation in financial and insurance markets, entails some disadvantages over other methods in terms of the causal conclusions that can be reached. As an alternative way of data collection, randomized experiments are clearly advantageous regarding the researcher's control for selection into participation and are now increasingly conducted. However, due to time and resource constraints, such data could not be collected for this thesis. Aside of the internal validity, external validity could be a concern due to the data being collected only in three regions of one country. Yet there are reasons to believe that scope for generalization goes beyond the local areas of the two surveys. Firstly, the selection of the service areas of rural banks and the small and medium-sized towns therein was done randomly across all service areas of the provider that were not entirely urban. Thus results should be at least representative for those (semi-urban) service areas of RCBs operating in southern Ghana offering the micro life insurance. Secondly, the selected towns are typical examples of the towns in the southern Ghanaian districts in terms of their economic characteristics, infrastructure and size. Around 50-60 percent of their population is, on average, engaged in agricultural activities, and most other activities are focused in (informal) small-scale industrial businesses and petty trading. It is thus conceivable that many of the results of this thesis based on the survey data could be replicated in similar semi-urban contexts in Ghana as well as in other parts of subsaharan Africa.

In between the two surveys, together with two moderators from ISSER I conducted four focus group discussions in the Asikuma/Odoben/Brakwa district of the Central Region in October 2008 to explore the evaluation and perceived value of insurance in the context of people's risk management framework. Focus group discussions are seen as one particularly

[7] Furthermore, Mirko Bendig contributed to the design of the questionnaire used in the first survey.

suitable tool for the analysis of perceptions, attitudes, opinions and interactions (Kleiber 2004; Morgan 1997; Wilkinson 1998). While the discussion is structured by a guideline, there is no predetermined set of answers (as is the case in standardized household surveys and experiments) and any topic that appears relevant to the participants is allowed to come up during the discussions. This is advantageous especially when researching into an area that has not been studied extensively before. The disadvantage of this approach lies in its potentially low external validity. Further qualitative as well as quantitative evidence will be needed to reveal a complete picture of all factors that influence perceived value of microinsurance as well as their relative importance in different empirical contexts. The conduction and the analysis of the focus group discussions will be explained in detail in Chapter 5.

1.5 Structure and overview

Following this introduction, there are four independent chapters in this thesis.

Chapter 2 analyzes households' decisions to take up micro life insurance in a joint framework with their decision to use other formal and informal financial services. Using household survey data from two neighbouring small towns in the Central Region of Ghana, a multivariate probit model is applied to investigate the uptake of insurance, savings and loans simultaneously. Thereby, the analysis takes into account that households tend to use more than one financial service and there may be interconnections between these. The results suggest that the use of microinsurance and other formal financial services is mutually reinforcing. At the same time, the results do not suggest a substitution effect of microinsurance on informal financial services (crowding out). Given many more risks that households have to deal with besides death and old age, more universal strategies, such as risk sharing within social networks, do not lose their significance. In line with previous results on other types of insurance, risk averse households are less likely, instead of more likely to purchase insurance, suggesting that households consider it a risky choice. The chapter contributes to the discussion on the demand-side determinants of households' participation in microinsurance in three ways. First, different to previous contributions, the analysis explicitly takes into account that microinsurance does not enter a vacuum but joins a range of alternative informal and formal financial mechanisms used by households to diversify risk and cope with shocks. Second, whereas earlier studies have concentrated on agriculture, weather index, or health insurance, the study in this chapter was the first to

provide evidence on the participation in micro life insurance. Third, while others are now following, it was the first quantitative evidence on voluntary microinsurance uptake from a subsaharan African country. This chapter is based on joint work with Susan Steiner and Mirko Bendig and was published in The Journal of Risk and Insurance.[8]

Using household survey data from the larger survey conducted in three different regions, Chapter 3 investigates how the uptake and the extent of coverage of micro life insurance respond to trust-building factors and the subjective perception of risk. Furthermore, the analysis compares the predictors of micro life insurance to those of other available insurance types, especially the NHIS. The results of probit and tobit models show that beyond standard factors such as wealth and a bequest motive towards children, insurance participation and coverage increase with households' familiarity with the specific provider and their social network integration. Unlike the case with national health insurance and other types of insurance, participation in micro life insurance is negatively related to the subjective risk perception of the household head. This confirms the evidence on the different sample from the Central Region used in Chapter 2. The effect of risk pessimism is stronger the poorer the households are. This suggests that households operating in a context of incomplete information and limited experience with the microinsurance product and the providing institutions may (rationally) decide that purchasing an insurance policy that is new on the market is too risky an endeavour if they have only very limited funds to spend. The chapter contributes to the literature on microinsurance participation by showing that subjective factors that are usually not considered in standard models of insurance consumption can play a significant role in the setting of microinsurance markets, which are characterized by information asymmetries and market failures.

Chapter 4 provides insights into the gender dimension of microinsurance participation from an inter- as well as an intrahousehold perspective. Financial vulnerabilities associated with risks, such as death, old age, or illness, have been found to differ between women and men. Preferences on life insurance, but also access to it may thus be gendered. Furthermore, household members might not always pool risk and insure one another to the extent that individual demand for insurance is fully satisfied. Rather, insurance uptake is likely to be related to intra-household power relations and financial management. Yet, research on gender and the role of intra-household dimensions in microinsurance is

[8] 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.

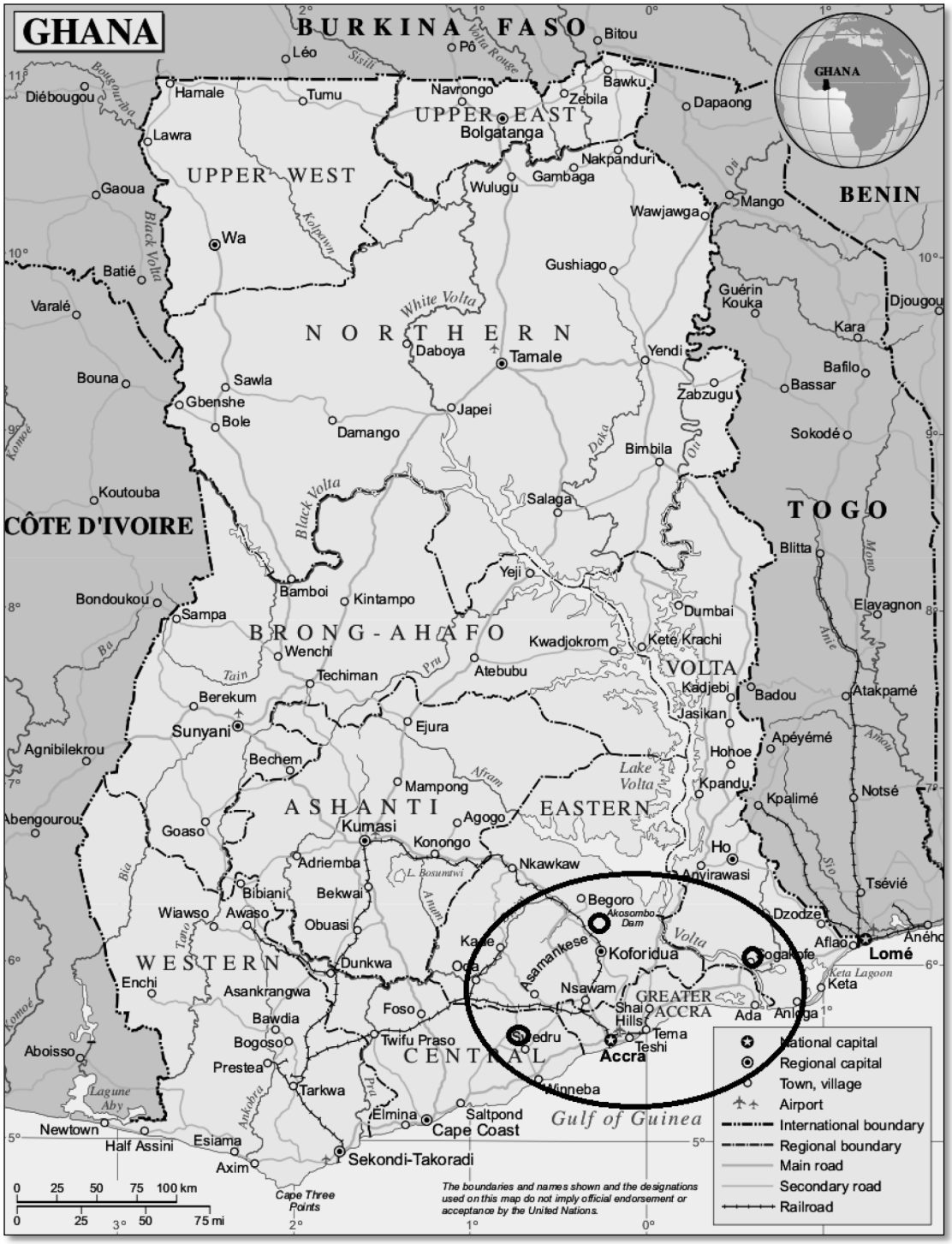
virtually lacking. Results indicate that, first, women's participation in micro life insurance is not uniform across different household types. Households headed by a (single) woman are less likely to purchase micro life insurance compared to couple households and single men households. However within couple households, wives are more likely to purchase micro life insurance than husbands. Second, the evidence at the intra-household level shows differences in husbands' and wives' uptake of micro life insurance related to differences in employment, risk perceptions and gendered responsibilities within the household. A reallocation motive in favour of the spouse seems to be of little relevance for both spouses. Third, while the data does not provide strictly exogenous parameters to identify spouses' bargaining power, initial evidence suggests it may play a role especially for the wife's ability to purchase insurance for herself. The chapter complements earlier research on microinsurance by providing a disaggregated view on the behaviour of women and men in the market both on the inter-household as well as the intra-household level. The intra-household analysis is facilitated by a unique feature of the survey data from southern Ghana, which includes individual information on the use of financial services (including insurance) as well as risk attitudes and perceptions of spouses obtained from separate interviews. The analysis shows what we can learn from extending the unitary approach to households to an approach that addresses intra-household issues. However, further research based on exogenous variation of bargaining power will be necessary to obtain conclusive evidence on the role of intrahousehold decision-making for the insurance behaviour of couples. This chapter is based on joint work with Tilman Brück.

Finally, Chapter 5 employs a qualitative approach to achieve a systematic and detailed understanding of the value that clients perceive in microinsurance. Building on focus group discussions, the chapter explores which dimensions constitute value for the target group of micro life insurance and which context factors help to explain why people form the value judgments they do. Using a multidimensional approach, the chapter shows that client value is based on the perceived quality, costs, and consumption outcome, as well as the emotional and social value of micro life insurance. In their value judgements, focus group participants particularly emphasize the quality of the customer service provision, the (expected) payout benefits, and positive emotions inspired by insurance coverage. The evaluation of the value of the microinsurance under study is mixed. Large discrepancies between expectations and real experiences reduce the value perceived in the insurance product. Perceptions of high or low value are mainly driven by factors such as clients' knowledge about insurance, their interaction with peers, and the availability and

effectiveness of alternative risk management options. The chapter contributes to the literature in two ways. First, it shows what academics as well as practitioners interested in microinsurance can learn from the marketing literature with regard to how to think about client value. Second, as a starting point for further investigations, it develops a conceptual sketch of the dimensions of client value and provides insights into the contextual factors that explain how perceptions of value come about. This chapter is based on joint work with Susan Steiner.

1.6 Appendix

Figure 1: Map of Ghana



Source: United Nation, Department of Peacekeeping Operation, Cartographic Section, 2005.

Chapter 2

Participation in micro life insurance and the use of other financial services

2.1 Introduction

In recent years, there has been a profound transition in the understanding of microfinance.[9] Academics as well as practitioners have come to realize that "low-income households can profit through access to a broader set of financial services than just credit" (Armendáriz and Morduch 2005: 147). Microcredit long dominated the microfinance market, but many financial institutions have now established deposit accounts – to the extent that the number of deposit accounts is more than double the number of outstanding loans in subsaharan Africa today (Lafourcade et al. 2005) – and microinsurance has entered the market in many developing countries. However, since it is a relatively young phenomenon, the spread of microinsurance is still limited. A recent study shows that only about 2.6 percent of the African population living under US$2 per day are currently covered (Matul et al. 2010). Nevertheless, microinsurance is generally seen and promoted as an important financial service for low-income people in developing countries, offering (at least partial) protection in the event of serious shocks, such as death, illness, or natural catastrophes, given the absence of accessible and functioning conventional insurance markets and public social security systems.[10]

While microcredit and, to a lesser extent, microsavings, have been studied quite extensively, microinsurance has so far received only limited attention in the academic literature. In particular, not much is known about why uptake of microinsurance is still low, even though this is one of the most crucial questions to answer if greater coverage is

[9] This chapter is a slightly updated version of Giesbert, Lena, Susan Steiner, and Mirko Bendig (Ibid.).

[10] See, for instance, the detailed contributions in Churchill (2006) on the challenges and potentials of microinsurance.

to be achieved. A few recent studies that have studied the determinants of households' participation in the microinsurance market point to the importance of basis risk, household wealth, credit constraints, risk aversion, trust, social networks, hyperbolic preferences, and particular marketing methods (Cai et al. 2009; Cole et al. 2013; Giné et al. 2008; Ito and Kono 2010; Thornton et al. 2010; Wang and Rosenman 2007).

This chapter hypothesizes that households' participation in microinsurance may additionally be related to the use of other financial services, i.e. loans and savings products, and that this may also help to explain low insurance uptake. One can think of different ways in which insurance, loans and savings may be interrelated. On the one hand, it could be that the three services are substitutes for each other. Microinsurance does not enter a vacuum but joins a range of alternative mechanisms, including financial services, which households use in order to share risks and to deal with shocks. To the extent that these mechanisms are, or at least appear to be, efficient strategies, households may tend to continue applying them, which may in turn explain low uptake of microinsurance.

As the literature has shown, household savings often serve an insurance purpose. Such a precautionary motive for savings is in contrast to an accumulation motive, and it is higher when income is uncertain and credit constraints are taken into account (Besley 1995; Browning and Lusardi 1996; Deaton 1990; Eswaran and Kotwal 1989; Giles and Yoo 2007; Lee and Sawada 2007; Skinner 1988; Zeldes 1989). Credit also often takes on insurance functions if it is used for consumption instead of investment (Eswaran and Kotwal 1989; Zeller 2001). There is a vast literature on risk sharing, including the exchange of loans between members of an extended family or a community in emergency cases, which many authors refer to as informal insurance (Alderman and Paxon 1992; Dercon 2002; Morduch 1995; Platteau 1997; Townsend 1995). However, credit as insurance is not a feature of the informal financial market alone; it is well applicable to loans on the formal financial market. It is plausible that savings and loans are particularly strongly used as substitutes for insurance when no insurance market exists, as in many developing countries, but there is no reason to expect the motivation for precautionary savings and emergency loans to vanish with the expansion of formal insurance.[11]

On the other hand, it could be that the uses of insurance, loans and savings reinforce each other, at least if we think of insurance as being distributed via financial institutions that

[11] For example, Lee and Sawada (2007) show that US households, which can be assumed to have access to insurance markets in principle, save for precautionary motives to a non-negligible extent.

also provide the respective other services. First, users of one service may simply have an informational advantage over non-users in the sense that they either learn about additional services "by accident" when visiting their respective financial institutions or are deliberately approached and informed by bank staff. Second, users may have a higher level of financial literacy than non-users, that is, a better understanding of how financial services function, and may therefore better recognize the advantages of using another service as well. And third, savings as well as insurance may serve as a kind of collateral for loans, especially among poorer households for which other (asset-based) forms of collateral are unavailable. In all cases, households using at least one service can be assumed to be more likely to start using an additional service than households using no service at all. The fact that a non-negligible share of households in developing countries does not have access to the formal financial market may in fact explain low uptake of microinsurance.

It is the objective of this chapter to contribute to the discussion on the demand-side determinants of households' participation in microinsurance. The approach taken here differs from previous studies in two ways. First, the analysis takes explicitly into account that households tend to use more than one financial service and that there may be interconnections between these. It is not a trivial task to consider the uptake of microinsurance and the use of other financial services in an empirical estimation. There is scope for endogeneity, as unobserved heterogeneity may actually influence households' decisions of uptake of all of the services. Additionally, there may be problems of reverse causality as households without insurance may tend to save more, or take up more loans, in order to deal with future, or past, shocks. Therefore, and in order to capture potential joint underlying decision-making processes, the analysis addresses the choices of microinsurance, formal savings, informal savings, formal loans, and informal loans simultaneously in a reduced-form multivariate probit model. Such a framework takes into account that the relative probability of uptake of a financial service is influenced by the existence of other alternatives. Second, this chapter investigates the uptake of microinsurance in the context of a subsaharan African country and studies the example of life insurance. Earlier studies have concentrated on agriculture, weather index, or health insurance in other parts of the developing world.

The empirical analysis in this chapter is based on cross-sectional data from a survey of 350 Ghanaian households, some of which have purchased a micro life insurance (packaged with a hospitalization benefit, accident coverage and an optional savings scheme). The

survey was conducted by the authors in two neighboring small towns (Brakwa and Benin) in the Asikuma/Odoben/Brakwa district of the Ghanaian Central Region in February 2008 in the context of a research project on the uptake of insurance in subsaharan Africa.

The chapter is structured as follows. Following this introduction, Section 2.2 presents the particular microinsurance relevant to this chapter. Section 2.3 provides a theoretical framework for households' decisions to take up microinsurance. Section 2.4 describes the source of data, including sample selection and external validity. Section 2.5 introduces the outcome and explanatory variables. The estimation strategy is presented in Section 2.6, and the estimation results are shown and interpreted in Section 2.7. Section 2.8 serves as a conclusion.

2.2 Design and distribution of the Anidaso microinsurance policy

The microinsurance under study here is called Anidaso policy ("anidaso" translates into "hope" in Twi) and is provided by the commercial Gemini Life Insurance Company (GLICO). The Anidaso policy was developed with initial support of CARE International but GLICO does not receive subsidies of any kind for this insurance today. The policy offers term life insurance up to age 65, accident benefits, and hospitalization benefits (a contribution to the costs of the number of overnight stays in hospital) for the policyholder, the spouse, and up to four children. Contributions towards a so-called investment plan, which serves as a savings scheme and pays the accumulated amount at the maturity of the term, can be added on a voluntary basis. During fieldwork it became obvious that most policyholders are actually unaware of the accident and hospitalization benefits and consider the Anidaso policy to be a pure life insurance or, a savings device (for retirement).[12] The policy is specifically targeted at low-income people in both urban and rural areas.

For the sale and distribution of the policy, GLICO started to cooperate in early 2004 with six rural and community banks (RCBs).[13] It currently collaborates with 20 RCBs, five microfinance institutions (MFIs) and one savings and loan company in six regions of

[12] The fact that GLICO has hitherto only received claims upon death of policyholders but no claims in relation with any of the additional policy components underlines our impression that policyholders consider the Anidaso policy to be a pure life insurance.

[13] In general, RCBs are unit banks owned by members of the community. While they do not exclusively target low-income people, their business is by and large microfinance orientated because the majority of the population in their service areas can be classified as low-income (Basu et al. 2004; Steel and Andah 2008).

southern Ghana. The number of Anidaso policyholders per financial institution ranges from around 200 to over 1,000, and the total number of policyholders had reached 15,000 by December 2008. In each of the partnering financial institutions, GLICO assigns one Personal Insurance Advisor (PIA), who is in charge of marketing the Anidaso policy and mediating all running operations between the bank and the insurance company. In addition, there is usually a team of a minimum of two sales agents that joins forces with the PIA in the marketing process. The PIA and the sales agents are typically recruited locally, but they are trained at GLICO's headquarters.

GLICO's marketing strategy includes approaching group and opinion leaders in the communities, who are then mobilized to spread the word about the product and to help organize marketing meetings. Furthermore, PIAs and sales agents attend group meetings of microfinance groups or other (financial) self-help groups, accompany rural banks' mobile bankers[14], make individual door-to-door marketing rounds and approach visitors at the bank. Less frequently, GLICO holds large and widely announced product launches at community centres and bank offices. Interested individuals can usually apply on the spot.

There are no clearly defined eligibility criteria for policyholders except that they have to be adults below the age of 65 and that they have, or are willing to open up, an account with the local financial institution. This latter condition is necessary because the insurance premiums are directly deducted from policyholders' accounts; or from group accounts (if policyholders are organized in groups).[15] No detailed health check or information on the health condition of applicants or other household members is required.[16] The monthly premiums start at 2 Ghana Cedi and may be as high as 10–15 Ghana Cedi if the savings component is chosen.[17]

[14] These operate in the same (but formalized) way as so-called *Susu* collectors in the informal financial sector, on which more information is provided below.

[15] Financial groups are very common in Ghana. In the formal financial market, they usually have a joint savings account and accumulate savings from their members in order to qualify for a loan. In the case a loan was granted, the group handles the collection of repayments, acts as a mediator between the loan officers and the individual group members, and bears responsibility for recovery. Yet, direct lending to individuals with a credible history as a member of a group or, in cases where a group approach is not suitable, is also common (Steel and Andah 2008).

[16] In fact, this feature of the policy is used for promotion purposes in the Anidaso policy information flyer.

[17] In the sample of 87 Anidaso policyholders, the mean monthly premium is 3.95 Ghana Cedi and the median is 3.10 Ghana Cedi. The exchange rate at the time of our survey (February 2008) was 1.00 Ghana Cedi = 1.05 US Dollar.

2.3 Theoretical framework for insurance participation

In their pioneering study on participation in an index-based, agricultural microinsurance, Giné et al. (2008) present a simple neoclassical benchmark model of households' decisions to take up insurance, which they complement with important insights from behavioral economics. This model has guided the analysis in Cole et al. (2013) and also forms the basis of thetheoretical framework in this chapter. To match the insurance example studied here some of their predictions are modified and expectations are added to include insights from asymmetric information models on insurance consumption. As noted above, the Anidaso policy is not purely a life insurance but includes accident and hospitalization benefits. Yet, since these additional benefits turned out to be not as important as the life coverage to policyholders (or are altogether unknown by the policyholders), the Anidaso policy is treated as if it did not include them at all.

The benchmark model of Giné et al. (2008) refers to a full information setting and predicts that households' uptake of insurance is increasing in risk aversion, in the expected insurance payout relative to the cost of insurance (in other words, the subjective probability of risk), and in the size of risk exposure (or, the objective probability of risk); and it is decreasing in basis risk, i.e. the correlation between insurance payout and the risk to be insured. Applying the benchmark model to our case, all of these predictions persist with the exception of basis risk, which is not an issue here, as the Anidaso policy is not an index-based insurance. Yet, it is a life insurance, and hence, a bequest motive which is commonly included in standard models of participation in life insurance markets (Fischer 1973; Hakansson 1969; Lewis 1989; Yaari 1965) may be considered. A bequest motive can be expected to increase noticeably when individuals marry or have offspring. Over the lifetime of the consumer, the subjective weighting function for bequests is assumed to take on a hump shape, as the importance of bequests is greatest when the consumer dies at prime age.

It is important to note that the bequest motive is directly applicable only to death-based life insurance, i.e. term and whole life insurance. The determinants of uptake of life insurance that pays if the insured survives, however, may be somewhat different. Hence, some authors take the motive for saving for retirement into account (Pissaridis 1980). In practice, many insurance contracts actually serve both bequest and savings motives simultaneously. Empirical evidence has shown that death-based and survival-based life insurance are not

necessarily substitute goods, or in other words, both motives may co-exist (Babbel and Ohtsuka 1989; Outreville 1996).

In principle, the Anidaso policy is a term life insurance as it pays a determined amount to the insured's family if the insured dies within the policy term. However, due to the (voluntary) savings component, it is not a pure form of term life insurance but may be rather considered a universal life insurance (Black and Skipper 2000). Therefore, insurance participation can be generally expected to be higher when there is a strong motive for a bequest to be left to remaining household members. For those people who choose the savings component, savings motives are likely to play a role as well. It would be plausible to assume a change in preferences over time regarding the utility from expected consumption versus the utility from bequest, i.e. the bequest motive diminishes with increasing age, while the saving-for-retirement motive becomes more important.

Following their benchmark specification, Giné et al. (2008) augment their simple model with credit constraints so as to account for the fact that the degree of liquidity may play a key role in the decision to participate in insurance. Yet, the relationship between financial constraints and households' willingness to pay for insurance is ambiguous. On the one hand, it could be that liquidity-constrained households are more likely to purchase insurance because they have less ability to deal with the consequences of shocks than households that are not liquidity-constrained. This option was theoretically laid out by Gollier (2003) who explains that self-insurance in the form of reducing savings or borrowing is a substitute to costly formal insurance. He summarizes that "only liquidity constrained households would purchase a generous insurance coverage" (Ibid.: 21). On the other hand, in the specific setting of Giné et al. (2008) insurance is purchased at the same time as agricultural inputs are bought. Hence, credit-constrained households may prefer to use all available funds for inputs, and the authors consider this option more likely than the first. While the Anidaso policy is not directly linked to production decisions, one may still consider the possibility that limited cash would rather be invested in income-generating activities than in insurance to secure (a minimum) future income. In sum, the expected relationship remains ambiguous and the direction of the association has to be established empirically.

In the light of standard predictions about consumers' insurance-purchasing behavior such as the ones cited here, experiences in the real world have often revealed remaining puzzles. As a potential explanation for insurance participation in developing countries that deviates

from the conventional model, Giné et al. (Ibid.) consider households' trust in the supplier and households' understanding of an insurance policy. Even though the authors do not formally model such behavioral factors, they introduce hypotheses on their relevance for insurance uptake decisions.[18] Specifically, they predict that trust in the vendor, information gleaned from social networks, and greater cognitive ability make insurance purchase more likely. They show that allowing for these factors helps explain deviations from the benchmark model. Other authors have confirmed the enormous relevance of trust and familiarity with the product and the supplier (Cai et al. 2009; Cole et al. 2013; Giné et al. 2008; Thornton et al. 2010), and similar results in are expected in the case studied here.

As another potential explanation for observed deviations from the standard model, a number of studies have included adverse selection and moral hazard in models of insurance-purchasing behaviour (Abbring et al. 2003; Chiappori 2000; Dionne et al. 2000; Rothschild and Stiglitz 1976; Winter 2000). Different to the case of the rainfall insurance studied by Giné et al. (2008) and Cole et al. (2013), the life insurance market can be considered a "prime example of a market saddled with the inefficiency associated with adverse selection" (Cawley and Philipson 1999: 827).[19] Thus, the assumption of full information will be relaxed. In line with asymmetric information models (e.g. Rothschild and Stiglitz 1976), it is expected that – given equal premiums and benefits of the policy – households with a higher riskiness (i.e. those with a higher exposure to the insurable risk) tend to purchase the Anidaso policy more than households with a lower riskiness. Since it is rather unlikely that insured households behave less carefully and provoke the risk covered under the insurance (i.e. death), moral hazard, however, is not supposed to present an essential problem.

As noted above, it is further hypothesized that there is an association, which may be either positive or negative, between the uptake of microinsurance and the use of other financial services. As already outlined, this association is not straightforward: Savings and credit may either be substitutes for microinsurance, or their use may reinforce the uptake of

[18] Within behavioral finance, trust has often been considered in models of stock market participation. For example, Guiso et al. (2008) show that the perception of risk in stock markets is not only a function of the objective characteristics of the stock but also of the consumer's subjective probability to be cheated. From a slightly different perspective, Hong et al. (2004) propose that social interaction enhances trust in stock markets in the sense that "social" consumers find it more attractive to invest in stocks when more of their peers participate.

[19] In the analysis of indexed-based insurance by Giné et al. (2008) and Cole et al. (2013), information asymmetry does not play a major role because rainfall patterns that are relevant for index-based payouts are public information and rainfall measurement instruments are protected from manipulation by farmers.

microinsurance. In order to better understand and analyze this matter, it may in fact be necessary to distinguish between savings and loans from formal sources and those from informal sources.[20] In the case studied here, the mutually reinforcing effect of savings and credit on the one hand and insurance on the other relates to services provided in the formal financial sector, as the Anidaso policy is solely provided by formal financial institutions. Substitution between savings and insurance as well as between credit and insurance is generally possible for services from both formal and informal institutions. Households may have a precautionary motive in mind, no matter whether they deposit their savings in banks or collect them with informal savings groups or at home. In general, loans may be used in order to deal with the consequences of shocks regardless of where they come from. Yet, in reality it may be more difficult to obtain a loan for such a purpose from the formal sector than from social networks, such as extended families. In sum, it is expected that the the uptake of microinsurance is negatively related to the use of informal savings and informal loans, and positively to the use of formal loans, while the relationship between formal savings and microinsurance remains inconclusive.

2.4 Source of data

The data for the empirical analysis comes from a survey of 350 households in the Central Region of Ghana. Previous studies on households' participation in microinsurance in developing countries have either followed the same approach and used household survey data (Giné et al. 2008; Ito and Kono 2010; Wang and Rosenman 2007), or have conducted randomized experiments (Cai et al. 2009; Cole et al. 2013; Giné and Yang 2009; Thornton et al. 2010). Though the second way of data collection is clearly advantageous in terms of the researchers' control for selection into participation, such experiments could not be run due to time and resource constraints. Nevertheless, one can assume that external validity is given at least to a certain extent, as explained in the following description of survey sampling.

In a first step, the Anidaso policy was chosen, as GLICO had been identified as the only known insurance provider in subsaharan Africa offering voluntary life insurance to low-

[20] In the remainder of the chapter, the terms formal/informal services and services provided on the formal/informal financial market are used interchangeably.

income households.[21] In a second step, the specific survey area, Brakwa and Benin, were selected from the service areas of all 26 financial institutions that distribute the policy.[22] In doing so, only small to medium-sized towns in semi-urban or rural areas[23] were considered in order to make sure that there would be a high share of low-income people in the overall population, assuming that people in rural areas are on average poorer than people in urban areas.[24] Attention was paid to a relatively high density of bank clients holding an insurance contract and to the easy accessibility of the area. Out of five possible survey sites, Brakwa and Benin were randomly chosen. Hence, the results should be at least representative for these five semi-urban locations in the South of Ghana where microinsurance is available.

While it is acknowledged that external validity is not fully given, the scope for generalization is believed to go beyond the local area of the survey itself. There is little reason to assume that GLICO executes non-random program placement and chooses the cooperating institutions on the basis of particular characteristics. From discussions with GLICO staff, it is possible to conclude that in principle the insurer would distribute its microinsurance policy through any formal financial institution that is both interested in doing so and has the ability to deduct the premiums from policyholders' accounts. In the South of Ghana, there are financial institutions (by and large in the form of RCBs or MFIs) in every district capital and also in many other towns that could generally distribute the policy. Nevertheless, there remains some lack of clarity as to why the particular financial institutions were selected to offer Anidaso and not others. Yet, this selection could simply be a matter of the recent emergence of the Anidaso policy and the need to "start somewhere".

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[21] This selection was done in the year 2007. At that time, all other providers on which information could be found had an insufficient number of clients, offered only compulsory (mostly credit life) insurance, or provided health or heavily subsidized agricultural insurance. However, since information on microinsurance providers and products is fragmentary, it may well be that voluntary microinsurance products besides GLICO's Anidaso policy existed that on which no public information was available. Due to the dynamic nature of the market, there are many more voluntary life insurance products today.

[22] GLICO has collaborated with the Brakwa rural and community bank since 2005. The bank has its headquarters in the town of Brakwa and a branch office in the district capital Asikuma, which also offers the policy. Both offices are frequented by the population in the survey area.

[23] Out of the 26 financial institutions, 11 were located in an urban setting.

[24] In 2000, the poverty headcount in the Asikuma/Odoben/Brakwa district amounted to 57.6 percent on average with 42.1 percent in urban areas and 64.8 percent in rural areas. Rural poverty is high in this particular district: The poverty headcount in rural areas in the Central Region as a whole is 46.5 percent. These numbers are based on data from the 2000 census (Coulombe 2008). The IMF (2006) also presents poverty estimates for the district. The poverty headcount is 62 percent in total here, 35 percent in urban areas and 74 percent in rural areas.

Furthermore, Brakwa and Benin are typical towns of the South of Ghana, and the Asikuma/Odoben/Brakwa district in which they are located is an average mostly rural district with a rural population of 68 percent. The district is a highly agrarian, local economy with over 60 percent of the population being engaged in farm activities, mostly at the subsistence level and to a small extent in cash-crop cultivation (for example, cocoa) (Republic of Ghana 2007). Activities outside farming are focused in small-scale industrial businesses and petty trading. Therefore, it is assumed that the findings of this chapter could be replicated in any location in the South of Ghana and similar contexts in subsaharan Africa, except for cities and truly remote areas. However, in order to determine to what extent this assumption is true, further empirical research, including data collection in other locations, is needed.

In Brakwa and Benin, all households were listed to apply stratified random sampling. Households were stratified according to their insurance membership status. It is important to note that the Anidaso policy is not the only insurance available in the area. Donewell, a commercial insurance company, provides life, accident and car insurance, and there is the public National Health Insurance Scheme (NHIS). The NHIS was launched in 2004 and replaced the cash-and-carry healthcare system. It provides medical care at public hospitals, recognized private hospitals, and health centers for contributors and their dependents. Premiums are graded by income, and particular groups, such as the elderly, indigent people and pregnant women are covered free of charge. The NHIS is well received, particularly in rural areas, where a majority of people had hitherto gone without health services as a result of lacking resources and insurance alternatives.

In the sampling process, the first stratum was formed by households that were not insured at all, the second by households that were insured by the Anidaso policy (and potentially by other insurance as well), and the third by households that were not insured by Anidaso but by other insurance policies. Households within each stratum were chosen through random sampling, except for the microinsured stratum, in which all households were interviewed. The varying sampling probabilities are controlled for by including appropriate weights in the estimations below. A total of 351 households were interviewed, of which 154 were not insured, 87 were Anidaso insured, and 87 were otherwise insured. The survey questionnaire contained detailed sections on demographic and socioeconomic characteristics of the household, household assets, the occurrence of shocks, risk management strategies, household attitudes towards risk, and household financial

knowledge. Further, information was gathered on the embedding of households in different financial institutions and the usage of loans, savings products, and insurance. One household did not complete the entire questionnaire, which reduces the number of observations in our analysis to 350 households.

With regard to households' use of credit and savings, households were found to rely on a range of services, both formal and informal. The most frequented formal financial institution is the Brakwa RCB, which offers opportunities for savings and loans (and of course the Anidaso policy), on either an individual or a group basis. Another formal institution in the survey area, but much less used, is the Ghana Commercial Bank, which has a branch in Asikuma that offers various types of savings products and loans. The survey data show that at least one MFI and one cooperative are active in the survey area as well. The financial services provided by them are included as formal services in the following estimations.

In terms of informal financial institutions, there were moneylenders, credit groups, and the *Susu* system. *Susu* institutions include individual savings collectors, rotating savings and credit associations, and savings and credit "clubs" run by an operator.[25] Furthermore, mutual lending between relatives and other social networks is very common. Eligibility criteria are naturally not defined in these informal activities; however, research has demonstrated that a number of social factors, such as social visibility, reputation and social integration, are of considerable relevance, particularly in order to access informal loans (Ayalew 2003; Fafchamps and Gubert 2007; Schindler 2010; Vanderpuye-Orgle and Barrett 2009).

2.5 Definition of variables

In the below estimations, there are five categories of financial services that households use. These categories indicate whether or not households used insurance, formal savings options, informal savings options, formal credit, or informal credit in the five pre-survey years. The insurance category is confined to the Anidaso policy.[26] The formal savings

[25] In 2003, there were over 4,000 collectors nationwide, collecting the equivalent of an average of US$15 per month from approximately 200,000 clients (Steel and Andah 2008).

[26] As a robustness check, the insurance category has been extended to also include NHIS insurance and the few other insurance policies available in the area. In the sample, 21 households have some private insurance other than Anidaso and 132 have NHIS. In the total population, the respective shares are 4.68 percent and 26.19 percent.

category includes savings accounts, current accounts (which are often used for the purpose of savings), and other savings products offered by the formal financial institutions active in the two towns, mainly the Brakwa RCB.[27] Informal savings are savings made within informal schemes, including within the *Susu* system, in self-help groups, and at home. The formal credit category includes all loans taken up from formal institutions. The informal credit category entails loans from informal credit schemes, self-help groups, friends, family members and moneylenders. Of the 350 households analyzed, 87 use the Anidaso insurance policy, 168 use formal savings, 175 use informal savings, 84 use formal credit, and 124 use informal credit (Table 1). The use of these services need not be exclusive; on the contrary, many of the households use several of these services simultaneously.

Table 1: Use of financial services

Services used	Number of households in the sample (total = 350)	Estimated number of households in the survey area (total = 2,042)	Estimated proportion in the survey area (%)
Anidaso policy	87	92	4.51
Formal savings	168	707	34.61
Informal savings	175	1,000	48.97
Formal credit	84	327	16.02
Informal credit	124	732	35.87

Note: Households in the sample are weighted according to their sampling probabilities. This explains the discrepancy between the proportion of households in the sample and the estimated proportion in the survey area. *Source:* Authors' calculation.

Since the analysis primarily aims at examining patterns of insurance uptake, the theoretical framework on insurance participation provides the main guidance for the definition of the explanatory variables to be included. It is assumed that the determinants of the use of loans and savings options are similar to those of the use of insurance.[28] While this may seem to be an arbitrary assumption at first sight, it actually turns out to be a valid one when looking at the empirical literature on borrowing and savings behavior in developing countries (Barslund and Tarp 2008; Deaton 1990; Jabbar et al. 2002; Kiiza and Pederson 2002; Muradoglu and Taskin 1996; Pal 2002; Pitt and Khandker 2002; Swain 2002). Where this

[27] Users of savings options are only those households which can be identified as having intentionally decided to use such a product for the genuine purpose of saving or for safe storage of money. This is important because some households were found to be "pseudo-savers" in the sense that they had opened a savings or current account as a precondition for receiving a loan or purchasing insurance and had since not made use of their account for savings purposes. These households are excluded from the category of savings users.

[28] This is not to say that the effect of certain determinants is necessarily of the same magnitude and not even of the same sign for credit, savings, and insurance uptake.

literature offers additional guidance for the empirical specification, relevant variables are incorporated. It is assumed here that potential determinants of participation in savings and borrowing may influence the uptake of insurance as well. Table 2 provides descriptive statistics for the explanatory variables and Table 4 in the Appendix summarizes the definition of these.[29]

Table 2: Descriptive statistics

Variable	Mean	Stand. error	Minimum	Maximum
Willingness to take risk[a]	0.38	0.030	0	1
Illness[a]	0.47	0.029	0	1
Vaccination[a]	0.53	0.030	0	1
Risk perception[a]	0.07	0.060	-1.158	1.929
Death experience	0.43	0.030	0	1
Illness experience	0.36	0.029	0	1
Other shock experience	0.15	0.021	0	1
Age[a]	47.01	0.941	17	92
Age squared[a]	2,479.54	95.736	289	8464
Share of dependents	0.53	0.017	0	1
Married[a]	0.61	0.030	0	1
Benin	0.20	0.023	0	1
Female head[a]	0.43	0.030	0	1
Schooling[a]	6.51	0.317	0	23
Employee/employer[a]	0.14	0.020	0	1
Assets	-0.17	0.052	-1.196	2.794
Land (ln)	0.55	0.035	0	2.83
Remittances	0.28	0.027	0	1

Notes: a = measured for the household head. Source: Authors' calculation.

Risk aversion is measured by a rough proxy based on the following question in our questionnaire *"How do you see yourself? Are you rather willing or unwilling to take risks?"*. Respondents were asked to rank themselves from "0" (unwilling to take risks) to "5" (willing to take risks). Being aware that this question is rather a measure of risk attitude than of risk aversion, it is still used it as a risk aversion proxy as it has been shown to be a good predictor of actual risk-taking behavior (Dohmen et al. 2006). The respective dummy variable takes on the value of 1 if the respondent reported a ranking of "4" or "5" in response to the question, i.e. being rather risk loving, and 0 otherwise.

The size of the insured risk, or the objective probability of risk, is measured with the help of information on the household head's health status. It is thereby assumed that the head is the main decision-maker in the household who makes decisions on the basis of knowledge

[29] The pairwise correlations between the independent variables as well as the variance inflation factors did not give reason for concerns about multicollinearity.

about herself. Even though the insurance of interest is not a health but a life insurance, it is argue here that current health status is related with the probability of death. A dummy variable indicates whether the household head was ill or injured in the past year. A second dummy variable indicates whether the household head received any kind of vaccination.

The subjective probability of risk is measured by an index created through factor analysis. This index is a measure of households' assessments of their own risk situation. It includes information on subjective exposure to illness, accidents and economic shocks, relative to other households in their community.[30] In addition, the analysis includes the households' actual exposure to shocks in the past. Dummy variables indicate the experience of death, illness and other shocks in the five years prior to the survey.

In order to consider the relevance of bequest motives, the analysis includes the age of the household head, the share of dependents in the household and the marriage status of the household head. The analysis additionally includes age squared because a considerable part of the literature on savings behavior focuses on the savings pattern over a lifetime and hence regards age *and* age squared as important explanatory factors. The general finding is that the determinants of savings demand in developing countries usually differ from those in developed countries and often contradict the theoretical assumptions of the life-cycle theory or the permanent income hypothesis (Deaton 1992; Muradoglu and Taskin 1996; Spio and Groenewald 1996).[31]

Furthermore, the analysis controls for the residence of households in Brakwa or Benin. Earlier studies have pointed out that physical proximity to the providing institution is positively related to the uptake of insurance (Wang and Rosenman 2007). Further controls are gender, education and employment status of the household head, assets owned by the household, land usage, and remittance receipt. Most existing studies investigate the association between wealth-related factors (including education) and the use of insurance.

[30] The respective questions in the questionnaire were: „In your opinion, is your household more or less exposed to health shocks/ road or work accidents/ economic shocks compared to other households in your village?"

[31] In short, in terms of the determinants of savings, the permanent income hypothesis differentiates between permanent and transitory components of income. While the first is defined as individual longtime income expectations and consumption over lifetime given the present level of wealth, the latter is the difference between actual and permanent income, which is not normally used for consumption and hence its marginal propensity to be used for savings is unity (Friedman 1957; Kelley and Williamson 1968). The life-cycle hypothesis predicts that individuals smooth their consumption evenly over their lives by accumulating savings during earning years and dissaving after retirement to maintain consumption levels (Ando and Modigliani 1963).

Surprisingly, there are several studies that do not find a significant relationship between education and insurance uptake (Cole et al. 2013; Giné et al. 2008; Ito and Kono 2010; Wang and Rosenman 2007). This might be due to the fact that it is not education as such that matters but rather the level of specific knowledge on insurance, or financial literacy in general, which has been found to be significantly related to insurance uptake (Giné et al. 2008). In their study on health insurance uptake, Wang and Rosenman (2007) show that education does matter for a household's perception of the need for insurance but not for the final purchase decision. They explain that education relates to the ability of people to assess risk and the way insurance would mitigate it. Yet, whether or not a household finally decides to purchase insurance depends on different factors.

Employment status is measured as a dummy variable indicating whether the household head is employed (as opposed to self-employed or not occupied) or an employer. Even though formal and informal employment is not distinguished, being employed or being an employer is typically related to more steady income streams. In order to control for potential endogeneity of assets owned by the household, the analysis uses the lagged version of an asset index, which captures asset ownership five years ago.[32]

The inclusion of employment status as well as land size also follows from the review of the literature on borrowing behavior, while the inclusion of remittance receipt is motivated by the savings literature. With regard to the first, it has been found that investment plans are a much more important driver for the use of formal loans than they are for the use of informal loans. This is reflected in the finding that greater land holdings or area of operational holdings, less wage-labor income, higher price of output and different primary economic activities – factors associated with a higher need for capital in the household – are positively associated with the use of formal loans that are hence geared towards production purposes and asset management (Barslund and Tarp 2008; Pal 2002; Swain 2002). With regard to the latter, it has been found that the receipt of remittances appears to influence the timing of savings within the life-cycle of a household (Spio and Groenewald 1996).

[32] Deviating from the approach in Giné et al. (2008), the analysis does not control for credit constraints in our estimations. On the one hand, this is because our data do not allow for a good measure of credit constraints. On the other hand, the applied empirical model, i.e. estimating the uptake of insurance and the use of credit simultaneously, makes it difficult to include credit-related information on the right-hand side of the estimation equation. Since the model includes variables for employment status, assets, and land usage, which are different measures of the wealth of a household, they may serve as an indication for credit constraints.

2.6 Estimation strategy

As in other studies on insurance uptake (Browne and Kim 1993; Giné et al. 2008; Outreville 1996), the empirical analysis relies on a reduced-form approach. While this reduced form models insurance uptake as a function of demand and supply side determinants, a structural estimation would, in contrast, explicitly model those two sides of the insurance market. In this study that draws on a geographically limited area, there is the obvious problem of limited variance on the supply side, which, cannot be adequately controlled for. Accordingly, the results can only be interpreted as conditional on the prevailing supply side conditions that were described in detail above.

In order to investigate the correlates of households' uptake of microinsurance and other financial services, a reduced-form multivariate probit model is estimated. Due to the connection to the Gaussian distribution, this allows for flexible modeling of the underlying association structure, i.e. the cross-dependencies in latent utilities across the different services, and straightforward interpretation of the parameters. The alternative choices in the estimation are represented by the five latent variables: use of insurance *I**, use of formal savings options *S1**, use of informal savings options S2*, use of formal loans *L1**, and use of informal loans *L2**. Each latent response depends on a vector of explanatory variables *X*, unknown parameters *βS1, βS2, βL1, βL2, βI*, and the stochastic components of the error terms *εS1, εS2, εL1, εL2, εI*. The latter consist of those unobservable factors which explain the marginal probability of making the decision for one of the choices. The set of explanatory variables included in vector X is identical in the five equations, assuming that the same decision-making process underlies each choice.

$$
\begin{aligned}
I^* &= X' \beta_I + \varepsilon_I \\
S_1^* &= X' \beta_{S1} + \varepsilon_{S1} \\
S_2^* &= X' \beta_{S2} + \varepsilon_{S2} \\
L_1^* &= X' \beta_{L1} + \varepsilon_{L1} \\
L_2^* &= X' \beta_{L2} + \varepsilon_{L2}
\end{aligned}
\qquad (1)
$$

The five equations from (1) may be expressed as five binary variables *Yj (j = I, S1, S2, L1, L2)* that take the value of 1 if the household uses a financial service, and 0 otherwise.

$$
Y_j = 1(X' \beta_j + \varepsilon_j > 0) \qquad j = I, S_1, S_2, L_1, L_2 \qquad (2)
$$

Each of these functions can, of course, be estimated as single probit models. However, this would result in less efficient coefficients, if households' choices for financial services are interrelated. Single probit estimations do not allow for a non-zero correlation between the error terms. Therefore, a multivariate probit model is prefferred, in which non-zero correlation is possible and hence provides more efficient estimates (Jones 2007).

In this model, each εj is drawn from a J-variate normal distribution with a mean of 0, and a variance-covariance matrix Σ, where Σ has values of 1 on the leading diagonal and correlations $\rho_{jk} = \rho_{kj}$ as off-diagonal elements. These correlation terms represent the unobserved correlation between the stochastic component of each type of financial service (Capellari and Jenkins 2003).

The joint estimation of the five alternative equations (2) is based on a joint multivariate probability involving the evaluation of the loglikelihood over I = 1, …, N observations

$$\ln L = \sum_{i=1}^{N} \ln \Phi_5(\mu_i; \Omega) \tag{3}$$

where $\Phi_5(.)$ is the multivariate normal cumulative density function with arguments μ_i and Ω, where

$$\mu_i = \left(k_{iS1}\beta_{S1} X'_{iS1}, k_{iS2}\beta_{S2} X'_{iS2}, k_{iL1}\beta_{L1} X'_{iL1}, k_{iL2}\beta_{L2} X'_{iL2}, k_{iI}\beta_I X'_{iI}\right) \tag{3a}$$

where k_{ij} are the corresponding sign variables that equal 1 if a household uses a given financial service, and -1 otherwise. In matrix Ω, the constituent elements are Ω_{jk}, where

$$\Omega_{jj} = 1 \text{ for } j = 1,\ldots,5 \tag{3b}$$

This function is estimated using the method of simulated maximum likelihood by application of the Geweke-Hajivassiliou-Keane smooth recursive conditioning estimator in order to evaluate the multivariate normal distribution functions (Ibid.; Greene 2003). Under the assumption $\varepsilon \sim N(0,\Sigma)$ clarified above, the correlation coefficients summarize the association between unobservable household-specific factors that determine the likelihood of choosing one of the different financial services. The average marginal effects (AMEs) on the marginal probabilities of the explanatory variables in each equation are estimated by averaging sample marginal effects, calculated for each household.

2.7 Estimation results and interpretation

The outcome of the multivariate probit regression, showing the AMEs of the explanatory variables on the marginal probability to take up any of the five alternatives, is presented in Table 3. It is important to note that the outcome categories are not mutually exclusive; in other words, households with an Anidaso policy include those who use Anidaso alone as well as those who use it in addition to any (combination) of the four alternative financial services. The hypothesis that the correlations between the error terms of each equation are jointly zero can be rejected at a high significance level (X2 = 6,755; p = 0.000); and hence applying the multivariate probit model is appropriate.[33]

The estimated correlation coefficients indicate that the residuals of the estimation functions are highly correlated for the formal financial services, indicating that they have very similar unobservable, household-specific determinants. While there is a very strong positive correlation between the use of formal savings and the use of formal credit, the correlation between the uptake of Anidaso and either of the other two formal services is also positive but not as high. The correlation coefficient between the unexplained part of the (simultaneous) use of formal savings and formal loans amounts to 0.98, between Anidaso and formal savings to 0.69, and between Anidaso and formal credit to 0.56. This provides some evidence for a mutually reinforcing relationship between the uptake of formal savings, formal loans, and microinsurance. In terms of the informal financial services, there is a negative correlation between the error terms of the informal credit equation and the insurance equation, and a positive one for the informal savings equation and the insurance equation. This conforms only partially to the expectation of a substitutive relationship between these services and microinsurance. However, the correlation coefficients are not statistically significant, thus inhibiting a final conclusion here.

The following part discusses the estimation results for the uptake of insurance. The findings for the other financial services are only presented where these appear to be innovative. It is important to note at this point that any inference on causal relationships should be treated with the necessary caution because the analysis is based on cross-

[33] Note that it would only be appropriate in the case of independent error terms to deal with the above model as independent equations, as explained in the estimation strategy. Nevertheless, as a robustness check, the five choice functions were also estimated as binary probit models (see Table 5 in the Appendix). With few exceptions, the signs of the estimation coefficients remain the same. Generally, the significance levels are lower in the binary probit compared with the multivariate probit results.

sectional data. Thus, interpretations are limited to associations and do not intend to draw conclusions on causality.

In contrast to the expectations derived from the benchmark model, but in line with Giné et al. (2008), risk averse households are significantly less likely to take up microinsurance. This is shown by a comparably large, positive marginal effect of the level of willingness to take risk in the insurance function. In terms of the other financial services, the coefficients do not exhibit any statistical significance. This suggests that microinsurance is not regarded as a mechanism to mitigate risk but rather as a risky undertaking itself. A similar finding was shown in Giné and Yang (2009).

In line with this interpretation and running counter to the prior expectation is the result that households which consider themselves to be more exposed to risk than others are less likely to be Anidaso policyholders. However, it appears that the Anidaso policy is not perceived to be helpful in dealing with risk, at least as far as the risks included in the variable (illness, accident, economic shocks) are concerned.[34] Since causality cannot be fully established, it is important to mention that households which do not have access to insurance might be—and feel—more exposed to risk. Regarding the other alternatives, risk perception is negatively associated with informal savings and positively associated with informal credit, showing larger marginal effects compared with the case of insurance. Since informal loans often serve as ex post coping strategies, this indicates that the risk perception variable is a good indicator for true risk exposure.

The benchmark model predicted a positive relationship between the objective size of the risk and the uptake of microinsurance. Indeed, there is a negative association between the vaccination status of the head of the household and the uptake of microinsurance. This implies that households with a head who has not received any vaccination tend to purchase the Anidaso policy more than households with a vaccinated head. Given that vaccination status is not public information and that it is not part of Anidaso's eligibility criteria, this could be an indication for asymmetric information in the market, i.e. potential adverse selection. Yet, it is important to note that vaccination status is only an imperfect measure of policyholders' riskiness, and that illness of the household head in the previous year,

[34] The estimation was repeated and risk perception was replaced by only the subjective exposure to health shocks, as this might be the type of risk most relevant for households' decisions to take up the Anidaso policy. This did not change the signs and significance levels of the estimates, except for the fact that the respective coefficient in the formal loan function becomes insignificant.

which is also thought to measure riskiness, is not statistically significant.[35] At the same time, illness of the household head is negatively related to the use of formal credit and positively to the use of informal credit. The marginal effect is particularly large for informal credit. Thus, it seems that households' primary response in the case of the main breadwinner's illness is to borrow from within their social networks.

There is mixed evidence for a bequest motive in the uptake of the Anidaso policy. On the one hand, there is no significant relationship between the uptake of insurance and the share of dependents in the household[36] or marriage status of the head. On the other hand, the coefficients for the age variables in the insurance function are of the expected sign and they are statistically significant. They suggest that there is a life-cycle effect in the uptake of the Anidaso policy; whether this life-cycle effect implies a bequest motive, however, is questionable due to the insignificant results of marriage status and share of dependents.

Interestingly, there also seems to be a life-cycle effect for the use of both formal and informal credit. With increasing age of the household head, households request more insurance and more credit, most likely because their experience with financial matters increases, their economic activities are more developed, and their family responsibility increases. Yet, this effect holds only up to a certain age and then reverses. The turning point for uptake of the Anidaso policy is precisely 47 years of age, for formal credit it is 60 years of age, and for informal credit it is 42 years of age. The fact that the turning point for uptake of the Anidaso policy is relatively low suggests that there is no saving-for-retirement motive at play. However, for those households who choose the savings component, the policy might still be seen as a savings instrument, irrespective of a pension. In addition, the evidence suggests the existence of a life-cycle effect in the case of formal savings, which is in contrast to much of the literature on savings behavior in developing countries (Deaton 1992; Muradoglu and Taskin 1996; Spio and Groenewald 1996), but the effect is statistically significant only at the ten percent level.

[35] When substituting the Anidaso insurance uptake by NHIS uptake in the multivariate probit model, illness of the household head in the previous year is positively and significantly related with enrolment in the NHIS, showing high marginal effects. The difference between the estimates in the Anidaso function and those in the NHIS function clearly stems from the fact that the former is a life insurance and the latter is a health insurance. This, in turn, underlines the need to consider different types of insurance separately.

[36] The results do not change qualitatively when substituting the share of dependents by household size or the share of children in the household.

Table 3: Multivariate probit model results on the use of financial services

Independent variables	(1) Microinsurance			(2) Formal savings			(3) Informal savings			(4) Formal credit			(5) Informal credit		
	Coeff.	t-statistic	AME	Coeff.	t-statistic	AME	Coeff.	t-statistic	AME	Coeff.	t-statistic	AME	Coeff.	t-statistic	AME
Willingness to take risks	0.201	9.164***	0.023	0.048	0.672	0.015	0.010	0.059	0.004	0.088	0.660	0.031	0.182	0.696	0.062
Illness	0.255	1.534	0.029	0.063	1.069	0.016	0.119	1.321	0.047	-0.193	-3.939***	-0.076	0.325	13.13***	0.109
Vaccination	-0.233	-9.151***	-0.032	0.461	1.381	0.143	-0.178	-1.160	-0.071	0.606	8.440***	0.216	-0.158	-1.199	-0.051
Risk perception	-0.094	-6.193***	-0.014	-0.021	-0.568	-0.008	-0.234	-3.082***	-0.066	-0.032	-0.914	-0.007	0.181	3.385***	0.072
Death experience	0.043	0.780	0.006	0.224	3.095***	0.055	0.358	4.847***	0.142	0.213	1.911*	0.082	0.665	3.864***	0.194
Illness experience	0.019	0.172	0.003	0.220	2.380**	0.047	0.571	118.23***	0.214	0.492	5.111***	0.194	0.513	16.26***	0.101
Other shock experience	-0.034	-0.549	-0.005	0.267	6.441***	0.044	0.040	0.138	0.013	0.861	6.836***	0.296	0.411	1.413	0.047
Age	0.169	6.090***	0.013	0.033	2.989***	0.012	-0.071	-1.800*	-0.028	0.097	8.694***	0.020	0.075	4.368***	0.027
Age squared	-0.002	-5.468***	-0.000	-0.000	-1.716*	-0.000	0.001	1.363	0.000	-0.001	-7.251***	-0.000	-0.001	-3.962***	-0.000
Share of dependents	0.053	0.495	0.008	-0.195	-2.796***	-0.077	0.816	2.276**	0.275	-0.450	-1.292	-0.124	0.217	0.534	0.085
Married	-0.096	-0.574	-0.011	0.216	2.652***	0.073	-0.373	-1.753*	-0.144	0.544	4.125***	0.162	0.239	2.557**	0.087
Benin	0.688	3.351***	0.122	0.170	1.540	0.022	0.299	2.112**	0.092	-0.239	-1.653*	-0.065	-0.079	-0.910	-0.006
Female head	-0.030	-0.190	-0.004	-0.570	-6.137***	-0.218	-0.480	-2.301**	-0.152	-0.132	-0.734	-0.028	-0.050	-0.817	-0.020
Schooling	0.039	2.54**	0.004	0.053	8.091***	0.020	-0.036	-2.690***	-0.014	0.045	1.349	0.010	-0.035	-12.57***	-0.013
Employee/ employer	0.033	0.278	0.005	0.915	2.794***	0.345	-0.291	-1.822*	-0.109	0.556	3.879***	0.134	0.281	4.190***	0.110
Assets	0.374	2.930***	0.049	0.300	12.595***	0.118	0.394	2.712***	0.155	0.244	4.029***	0.064	0.022	0.441	0.008
Land (ln)	-0.083	-1.195	-0.013	0.023	0.506	0.009	-0.166	-2.169**	-0.065	0.160	2.071**	0.050	0.073	1.852*	0.028
Remittances	-0.189	-2.021**	-0.026	0.512	6.007***	0.190	-0.012	-0.030	-0.004	0.065	0.841	0.020	0.212	1.064	0.079
Estimated correlation coefficients		ρ21=0.699 2.473**			ρ31=0.023 0.818			ρ41=0.460 2.485**			ρ51=-0.103 -0.806			ρ32=0.123 1.407	
		ρ42=0.983 8.361***			ρ52=-0.201 -25.807***			ρ43=-0.055 -0.312			ρ53=-0.083 -1.242			ρ54=-0.002 -0.020	

Notes: Results of the multivariate probit model are estimated by simulated maximum likelihood with 50 pseudorandom draws. t-statistics refer to the estimated coefficients and are based on robust standard errors. Average marginal effects (AMEs) are calculated with respect to the marginal probability of each type of financial service. The model also includes a constant. Sample size is N = 350 observations. Households in the sample are weighted according to their sampling probabilities. Wald test of the model: $X^2 = 17.21$; p = 0.0002). The asterisks indicate level of significance: The asterisks indicate level of significance: *** <0.01, ** p<0.05, * p<0.1.*Source:* Authors' calculation.

Households with more well-educated heads are significantly more likely to purchase the Anidaso policy. This is in contrast to much of the earlier literature, which finds no significant relationship between education and the uptake of insurance (Cole et al. 2013; Giné et al. 2008; Ito and Kono 2010). This deviating result might be due to the fact that it is impossible to also control for financial literacy as many of the mentioned studies do. A higher asset index is positively and significantly related to the use of all formal financial services as well as informal savings, with particularly high marginal effects in the savings equations. This positive relationship is presumably due to the role of assets as collateral for formal loans on the one hand and to assets being an indication of the socioeconomic status, and hence of financial literacy and availability of liquid resources for insurance and both formal and informal savings on the other hand.[37] This is in line with the microfinance literature, which shows that microfinance typically does not reach the poorest households (Datta 2004; Hulme and Mosley 1997; Navajas et al. 2000).

The results suggest that remittances work as a substitute for the Anidaso policy, shown by a negative significant coefficient in the insurance equation, but they are also a source for savings, demonstrated by a positive significant coefficient for the formal savings alternative. Households obviously regard insurance to be less necessary, if they are potentially able to access remittances in cases of future shocks and emergencies.

Residence in Benin is positively and significantly correlated with the uptake of the Anidaso policy (as well as informal savings). Since the bank providing the policy is located in Brakwa, it would have been more plausible to assume that there was a negative relationship due to the relative distance and hence higher transaction costs. However, it seems that the Benin dummy captures information different from pure distance.

[37] When running the same regression with the asset index based on current asset levels (i.e. at the time of the survey), the results do not change remarkably. Thus, the potential noise in the regression due to the endogenous nature of assets might actually not be extraordinarily large.

One possible explanation could be that the PIA, GLICO's main local agent in the area, lives in and is part of the social community of Benin. Hence, trust in the insurance product and the local distributing institution may be enhanced through this personal contact, resulting in a higher likelihood of Benin households purchasing the policy, even though they are farther away from the bank office.[38]

2.8 Conclusion and scope for further research

It was the objective of this chapter to contribute to the discussion on the correlates of households' participation in microinsurance in developing countries. Different from previous studies the chapter analyzed the example of a micro life insurance. Furthermore, the analysis deviated from earlier work by focusing on the relationships between households' decisions to take up insurance and to use other financial services. The chapter demonstrated that microinsurance does not enter a vacuum but joins a range of alternative informal and formal financial mechanisms used by households to diversify risk and cope with shocks. It hypothesized that savings and loans could be either substitutes of insurance if they serve a risk management function or their use could reinforce the uptake of insurance if all services are provided by the same financial institution. In order to take into the interconnection between different financial services with insurance, a multivariate probit model was estimated using data from a household survey of 350 households in two neighboring towns in the Central Region of Ghana.

The results suggest a mutually reinforcing relationship between the uptake of micro life insurance, i.e. the Anidaso policy, and the use of other formal financial services. This is plausible as the Anidaso policy is distributed via local banks, which also offer formal savings options and formal loans. Since it is unclear whether this relationship would hold if insurance was supplied and distributed by the insurer itself or via institutions outside the

[38] Similar to the case of the Anidaso policy, there is a strong positive association between residing in Benin and taking up NHIS, and possibly other insurance as well. This points out that the Benin dummy is not merely a measure of trust in the Anidaso policy and the staff distributing it, as the NHIS is not distributed by the same agents. It might instead be a measure of more dynamic interaction within and also between social networks in Benin, as this town is much smaller than Brakwa. The importance of exchange of information within social networks is emphasized in Giné et al. (2008). In contrast to the Anidaso policy, the relationship between the receipt of remittances and the purchase of NHIS is positive, indicating that remittances do not always act as substitutes for insurance. The determinants of this relationship remain unclear and seem to be an interesting topic for further research.

formal financial sector, it would be interesting to repeat our analysis for different provider models and/or in a different context, possibly a different country.

The evidence does not suggest a substitution, or crowding out, effect between the use of informal savings and informal loans on the one side and uptake of microinsurance on the other side. More precisely, microinsurance does not appear to be simultaneously determined with informal savings or informal loans by the same unobservable, household-specific determinants. This finding is, in fact, not very surprising given that the Anidaso policy covers only the risk of death (and potentially, accident and hospitalization), while households usually face many more risks, such as illness, harvest failure, or unemployment. The policy cannot serve to mitigate all relevant risks; and households simply need to apply other risk management strategies, such as risk sharing within social networks, as well.

In line with earlier studies on households' microinsurance participation behavior, the estimation results reveal certain deviations from a neoclassical benchmark model. Risk averse households are less, not more, likely to participate in microinsurance. Furthermore, households which feel more exposed to risk compared to their neighbors are also less likely to participate. Households seem to consider the Anidaso policy to be risky because they do not fully understand the insurance and all its terms and conditions. This impression is supported by discussions with the sample households during field work. Lack of information on the demand side is generally discussed as one of the most important challenges of microinsurance in academic and policy-makers' circles. The analysis calls this fact into mind again and emphasizes that major efforts are necessary in providing financial literacy to low-income households.

The analysis provides indicative evidence for the significant role of trust in the insurance provider and for the role of social networks found in earlier microinsurance studies. Households that live in the smaller one of the two towns of the survey, Benin, which is farer away from the bank office, are surprisingly more likely to purchase the Anidaso policy (and to participate in the NHIS). This is attributed to the fact that there might be a more dynamic interaction within and also between social networks in this smaller town, and that, in the case of the Anidaso policy, the insurer's main local agent lives in and is part of the social community of Benin.

The findings are ambiguous as to the role of a bequest motive, which is usually part of basic life insurance demand models. The results suggest that there is a life cycle effect in the uptake of microinsurance. Whether this effect is a sign of a bequest motive, however, remains unclear. The evidence further suggests adverse selection in the uptake of the Anidaso policy, though the analysis included only suboptimal variables to measure riskiness. More research on the uptake of micro life insurance could focus on using better risk variables in order to investigate the issue of adverse selection further.

Furthermore, there seems to be a need for additional studies on the uptake of different types of microinsurance, especially those, which have not received much attention to date. Having said that, it appears to be desirable to conduct randomized experiments instead of cross-sectional household surveys in further analyses of microinsurance uptake. The researchers' control over households' selection into participation in randomized experiments allows generalization of findings to a much higher degree.

2.9 Appendix

Table 4: Definition of explanatory variables

Variable	Description
Willingness to take risks	Dummy variable, 1 if household ranks itself as risk loving, i.e. answers 4 or 5 on a scale from 0 (unwilling to take risks) to 5 (willing to take risks)
Illness	Dummy variable, 1 if household head was ill or injured in previous year, 0 otherwise
Vaccination	Dummy variable, 1 if household head has received any vaccination, 0 otherwise
Risk perception	Household's assessment of own risk situation (subjective exposure to health shocks, road or work accidents, and economic shocks compared with neighbors), index created by factor analysis; higher index implies higher risk exposure
Death experience	Dummy variable, 1 if household experienced the death of a household member in the previous five years and this shock had serious consequences; i.e., household needed more than one month to recover, 0 otherwise
Illness experience	Dummy variable, 1 if household experienced the illness of a household member in the previous five years and this shock had serious consequences; i.e., household needed more than one month to recover, 0 otherwise
Other shock experience	Dummy variable, 1 if household experienced a shock other than death or illness of a household member in the previous five years and this shock had serious consequences; i.e., household needed more than one month to recover, 0 otherwise
Age	Age of the household head
Age squared	Age of the household head squared
Share of dependents	Share of dependents in the total number of household members
Married	Dummy variable, 1 if household head is married, 0 otherwise
Benin	Dummy variable, 1 if household resides in Benin, 0 otherwise
Female head	Dummy variable, 1 if household is headed by a female, 0 otherwise
Schooling	Number of schooling years of the household head
Employee/ employer	Dummy variable, 1 if household head is wage-employed or an employer herself, 0 otherwise
Assets	Assets (bicycle, another house, refrigerator, electric iron, mobile phone, radio, TV, stove, use of electricity as main lighting source, building materials of higher quality, and toilet facilities of higher quality) owned by the household five years ago, index created by factor analysis
Land (ln)	Log of size (in acres) of land used by the household, per adult equivalent
Remittances	Dummy variable, 1 if household receives any remittances from former household members who have migrated, 0 otherwise

Source: Authors' illustration.

Table 5: Binary probit model results on the use of financial services

Independent variables	(1) Microinsurance			(2) Formal savings			(3) Informal savings			(4) Formal credit			(5) Informal credit		
	Coeff.	t-stat.	Marg. effect	Coeff.	t-stat.	Marg. effect	Coeff.	t-stat.	Marg. effect	Coeff.	t-stat.	Marg. effect	Coeff.	t-stat.	Marg. effect
Willingness to take risks	0.158	1.126	0.008	0.086	0.466	0.030	0.005	0.031	0.002	0.088	0.454	0.016	0.180	1.008	0.066
Illness	0.241	1.572	0.012	0.047	0.242	0.016	0.115	0.658	0.046	-0.229	-1.094	-0.041	0.335	1.847*	0.121
Vaccination	-0.296	-1.927*	-0.015	0.459	2.539**	0.157	-0.176	-1.005	-0.070	0.561	2.746***	0.099	-0.153	-0.852	-0.055
Risk perception	-0.090	-1.150	-0.004	-0.012	-0.135	-0.004	-0.234	-2.687***	-0.093	0.007	0.070	0.001	0.179	2.032**	0.065
Death experience	0.108	0.684	0.005	0.280	1.391	0.098	0.361	1.997**	0.143	0.215	0.980	0.039	0.679	3.591***	0.247
Illness experience	-0.024	-0.151	-0.001	0.209	1.053	0.074	0.573	3.037***	0.225	0.463	2.072**	0.090	0.507	2.669***	0.187
Other shock experience	0.080	0.341	0.004	0.293	1.018	0.107	0.037	0.139	0.015	0.932	3.010***	0.239	0.414	1.580	0.157
Age	0.153	3.740***	0.007	0.033	1.030	0.011	-0.070	-2.452**	-0.028	0.092	2.693***	0.016	0.075	2.314**	0.027
Age squared	-0.002	-3.707***	-0.000	-0.000	-0.671	-0.000	0.001	1.980**	0.000	-0.001	-2.415**	-0.000	-0.001	-2.823***	-0.000
Share of dependents	0.041	0.134	0.002	-0.218	-0.677	-0.076	0.819	2.677***	0.326	-0.504	-1.502	-0.090	0.222	0.707	0.080
Married	-0.048	-0.249	-0.002	0.263	1.184	0.090	-0.368	-1.791*	-0.146	0.586	2.694***	0.097	0.235	1.062	0.084
Benin	0.719	4.333***	0.056	0.127	0.598	0.045	0.300	1.543	0.119	-0.181	-0.775	-0.030	-0.098	-0.498	-0.035
Female head	0.067	0.352	0.003	-0.543	-2.340**	-0.183	-0.476	-2.237**	-0.188	-0.097	-0.452	-0.017	-0.040	-0.176	-0.014
Schooling	0.039	2.607***	0.002	0.055	2.971***	0.019	-0.036	-2.000**	-0.014	0.040	1.879*	0.007	-0.036	-1.818*	-0.013
Employee/ employer	0.035	0.167	0.002	0.986	3.678***	0.373	-0.282	-1.126	-0.111	0.500	2.077**	0.111	0.269	1.086	0.101
Assets	0.358	4.666***	0.017	0.298	3.000***	0.104	0.389	3.904***	0.155	0.204	2.065**	0.036	0.035	0.347	0.013
Land (ln)	-0.159	-1.069	-0.008	0.017	0.108	0.006	-0.166	-1.072	-0.066	0.185	1.086	0.033	0.075	0.499	0.027
Remittances	-0.159	-0.899	-0.007	0.488	2.467**	0.177	-0.007	-0.036	-0.003	0.113	0.520	0.021	0.216	1.075	0.080

Notes: The model also includes a constant. Sample size is N = 350 observations. Households in the sample are weighted according to their sampling probabilities. The asterisks indicate level of significance: The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

Chapter 3

Participation in micro life insurance and subjective risk

3.1 Introduction

Microinsurance markets have been growing rapidly in the developing world.[39] This demonstrates the fact that the poor desire and operate with a whole range of financial services to accumulate capital and manage risk (Collins et al. 2009). At the same time, public social security systems and safety nets in developing countries are typically weak. Often they cover less than 10 percent of the population in developing countries and are accessible mainly for employees in the formal sector (ILO 2001). Microinsurance is widely recognized as a formal tool that enables the poor to better cope with the consequences of shocks, which entail severe setbacks in these peoples' attempts to overcome their vulnerable livelihoods (Cohen et al. 2005; Dercon et al. 2008).

When financial and insurance markets are incomplete, low-income households typically rely on informal strategies to deal with such risks. These strategies, including self-insurance, risk-sharing arrangements among the family and social networks, or diversification into more and less risky activities, are found to balance consumption to some extent, but usually not entirely (Dercon 2002; Morduch 1995). Furthermore, while they reduce temporary income fluctuations, they often come at the cost of lower total returns to wealth (Ibid.; Platteau 1997; Rosenzweig and Binswanger 1993). In theory, microinsurance should thus be in high demand, as it not only offers a direct welfare benefit through a payout in the case that an insurable loss occurs, but can also prevent households from engaging in insufficient and costly alternative ways of coping with risk.

However, even where respective products are accessible by the low-income population, uptake rates have so far remained low. Although microinsurance products – covering

[39] For a detailed definition of microinsurance see Chapter 1.

illness, death of an income earner in the household, property loss as well as droughts and floods – have been identified in 77 out of the 100 poorest countries of the world, in most of the countries they still cover less than 5 percent of the total population (Roth et al. 2007).[40] Common explanations of the low observed uptake rates are the target group's unfamiliarity with insurance, it's limited financial literacy, and poorly designed programs that do not match the demands of low-income households (Cohen and Young 2007; McCord et al. 2012a). While these might be valid assumptions, there is still limited rigorous academic research on the various factors that determine households' participation in the microinsurance market with respect to different types of available insurance products.

This chapter extends the analysis of Chapter 2 and investigates the decisions of households to purchase micro life insurance and how much coverage to purchase based on a larger household survey in three regions across southern Ghana.[41] Thereby, it places specific emphasis on two sets of factors that are likely to play a role in the setting of microinsurance, but are usually not considered in standard models of insurance consumption. More precisely, it investigates how the uptake and the extent of coverage of micro life insurance respond to trust-building factors and the subjective perception of risk. Binary probit and limited dependent variable models are estimated to investigate the determinants of uptake and the amount of coverage purchased by households as indicated by the percentage of total household income devoted to insurance premiums. The insurance product offers a basic term life component for the policy holder, optional coverage for the spouse and children, as well as an additional and personally variable investment plan that pays out the accumulated amount at the expiry of the term.

Apart from the permanent loss in total household income if a working household member dies, in many developing countries there are substantial funeral costs to be covered. In the Ghanaian case that is studied here, a custom of stocking the corpses of deceased relatives for long periods, sometimes months, before they are buried has evolved. This is due not only to the economic interests of the facilities involved, but also to the fact that funerals are seen as an opportunity to demonstrate and enhance social status and prestige. The mortuary

[40] Of the approximately 500 million microinsured people in the world, the majority of about 400 million are located in India and China. In these two countries, they nonetheless represent less than 5 percent of the total low-income population. The coverage of the poor in Africa and Latin America is approximately 5 percent and 10 percent, respectively (Churchill and Matul 2012: 11–12).

[41] This survey followed the pilot survey in the Central Region that generated the data used in Chapter 2.

system is a part of the ritual norms to be followed and the length of the process and social get-togethers before the actual funeral takes place has increased over time. For a typical Ghanaian funeral families are estimated to spend about six months' income (Microensure 2011). Often, the access to sources of cash – such as loans and donations from social networks or remittances from migrants – is limited, resulting in ruinous consequences of these events for the remaining household (Arhin 1994; Geest 2006; Mazzucato et al. 2006). Hence, even if some mechanisms are in place to create the large lump sums needed to cover funeral expenditures, these are often not sufficient and not accessible by everyone, suggesting that micro life insurance could be an important measure to help households dealing with the risk of death.

An increasing number of empirical studies on different forms of microinsurance show that patterns of uptake do not necessarily follow the standard benchmark based on expected utility theory. Among the core reasons that are suggested to explain empirical deviations from common predictions and, subsequently, lower uptake than expected, are behavioural factors. Most prominently, several studies suggest that trust, the familiarity with the product and the supplier, and social networks are of overarching importance in households' decisions for or against microinsurance, given their limited previous experience with formal insurance (Cai et al. 2009; Cole et al. 2013; Giné et al. 2008; Jowett 2003).

Much less is known, however, about how the subjective evaluation of risk affects participation in microinsurance. It is commonly argued that insurance markets suffer from information asymmetries at the expense of insurers that are faced with difficulties to assess the riskiness of their clients (de Bock and Gelade 2012; Dionne et al. 2000). However, also on the side of consumers there may be difficulties in objectively assessing probabilities of risk. Rather, individuals tend to evaluate the probability distribution of risk, which determines to some extent the value of insurance, based on their perceptions of that risk (Kahnemann and Tversky 1979, Böhm and Brun 2008, Slovic et al. 1982).

The results show that participation in micro life insurance and the amount of coverage purchased by households follow some predictions of a standard benchmark model. Notably, insurance participation increases with "the intensity for bequests". However, the two sets of nonstandard factors included in the analysis provide highly relevant results that add to our understanding of the relatively low uptake rates of microinsurance. Surprisingly, households that perceive their exposure to risk to be greater than that of other households

in their community are less likely to participate. This effect becomes higher the poorer the households are. In contrast, the effect of the subjective risk perception is reversed in the decisions to enrol in the NHIS and on the amount of micro life insurance coverage, when they have already decided to purchase a policy. Here, risk pessimists behave as expected and spend more on premiums. These results suggest that that households that operate in a context of limited experience with microinsurance and the providing institutions and that receive only little information and customer care, may rationally decide that purchasing a policy is too risky an endeavour if they have only very limited funds to spend. In line with this reasoning, households' scepticism regarding the functioning of the product and the reliability of the insurer seems to be mitigated by their familiarity with the specific provider and their social network integration. In line with previous studies in the field of microinsurance participation, these factors are argued to serve as trust-building mechanisms, which reduce the uncertainty about the insurance product, increase knowledge about it, and induce imitation of peers' behaviour.

This chapter aims to add to the limited evidence on the patterns of participation in micro life insurance. Although micro life insurance products are most widespread globally and come a close second to health insurance in subsaharan Africa (McCord et al. 2012a; Roth et al. 2007) empirical studies on them are confined to the study presented in Chapter 2 based on the small survey in two villages in the Central Region and one study by Arun et al. (2012) based on survey data from Sri Lanka. Different to the previous contributions, the chapter compares the determinants of micro life insurance participation also to those of other available types of insurance, especially the National Health Insurance Scheme (NHIS). In addition, by investigating the role of trust and subjective perceptions on risk, the results of this chapter add to our understanding of relevant demand-side factors in microinsurance markets that go beyond standard theoretical reasoning and help to explain low participation rates.

The chapter proceeds as follows: Section 3.2 and 3.3 review the major theoretical determinants of life insurance participation and empirical evidence from previous studies on participation in microinsurance markets, respectively. Section 3.4 then provides a description of the data and the econometric methods applied. Section 3.5 presents the descriptive statistics and the empirical results, and section 3.6 concludes.

3.2 Theoretical predictions of life insurance consumption

It is important to note that theoretical models of insurance consumption should be applicable to the case of microinsurance as well. It functions in the same way as regular insurance except that its clearly defined target group is low-income people (see the definition provided in Chapter 1, page 3). However, this is not to say that standard insurance theories capture all the relevant determinants of households' decisions to purchase microinsurance, as is further substantiated below. While the standard models of insurance consumption typically refer to the amount of insurance purchased, I assume that the identified determinants are equally relevant for the insurance participation decisions of households as such.

In line with the expected utility framework and in a full-information setting, standard models of life insurance demand assume that consumers – and their households – are risk averse and exhibit diminishing marginal utility with respect to wealth. They maximize utility by paying small premiums to reduce uncertainty in their income streams due to the possibility of a premature death of the primary income earner. The effect of wealth on the insurance purchase is strongly connected with the consumer's attitude towards risk and thus ambiguous. For example, with decreasing absolute risk aversion and increasing wealth, the willingness to pay for insurance is typically assumed to decrease (e.g. Mossin 1968). Guided by the seminal work of Yaari (1965) and Hakansson (1969), most of the early theoretical studies focused on the demand for term life insurance and developed a life-cycle model in which the primary income earner maximizes his lifetime utility from consumption and from bequests. Hence, the standard approach includes a subjective weighting function for bequests; this weight for bequests is expected to increase as consumers marry or have offspring and to take on a hump-shape curve because the importance of bequests is greatest when the consumer dies at prime age. Bequests may be either altruistically (Tomes 1982) or strategically (Bernheim et al. 1985) motivated.

Instead of a bequest motive, there may as well be a precautionary savings motive that determines savings and insurance holdings over the life cycle. Pissarides (1980) points out that many life insurance policies include savings and annuity components. As individuals normally survive until retirement age, life insurance is primarily considered a "pension," while the bequest motive is satisfied by the fact that, in exchange for a reduction of the pension, the insured amount is made available to the consumer's dependents by the

insurance company should the policyholder die before retirement. Preferences regarding the utility of bequests and that of consumption may differ over the lifetime, as the former may be discounted more heavily than the latter if the bequest motive of insurance purchases diminishes with age and, consequently, the retirement motive becomes more important. As the microinsurance under study incorporates features of term and whole life insurance, the bequest and/or savings motivation has to be established empirically. To summarize, within the above framework, the consumption of life insurance is an (ambiguous) function of risk aversion and wealth. It increases with the desire to bequest or to save over the lifetime and decreases with the costs and the consumer's expected life span.

However, the conditions of insurance markets in developing countries are different to those in conventional insurance markets. For example, information about the average losses and average probabilities of the risk of the targeted population is likely to be highly imperfect. In the extreme case, this results in strong adverse selection – that is, the selection into the insurance scheme only by individuals with higher risk of preretirement death and bad health – whereas individuals with low risk probabilities will tend to opt out. This is a typical situation when there are information asymmetries in the market and the insurer is unable to account for this through corresponding price adjustments (Dionne et al. 2000; Rothschild and Stiglitz 1976). Furthermore, transaction costs are high and efficient systems of insurance distribution and management are often not in place. This constrains suppliers in reaching scale, while at the same time remaining affordable for the low-income population (Claessens 2006). Besides wealth, which is among the central factors considered in the standard models of insurance consumption, in this context liquidity constraints may also become of quite some importance. These constraints are ambiguous and may either enhance the demand for insurance, as they increase the need for future financial security, or may decrease it as premiums become too costly (Browning and Lusardi 1996).

At the same time many low-income people have low levels of (financial) education and only limited experience with formal insurance. Hence, they might be highly uncertain about the procedures and benefits involved in purchasing insurance. While not explicitly considered in models of insurance consumption, models of financial market participation demonstrate that in the presence of strong information gaps and limited financial education, trust in the provider and peer influence become highly relevant for the decision

to purchase stocks (Guiso et al. 2008; Hong et al. 2004). If this assumption is adapted to the case of micro life insurance, it can be expected that a higher level of trust in the provider and a higher level of social interaction within groups that are typically approached by the provider's sales staff will increase a household's willingness to buy a policy.

Furthermore, prospect theory and other psychological research on risk perception has shown that in cases where people lack concrete information and data they rely on intuition in their assessment of risk and the related decision making. Individuals can thus make imperfect assessments of information (Böhm and Brun 2008; Slovic et al. 1982). For example, given a reference point of wealth, consumers tend to react in a risk-loving way when confronted with losses, but at the same time show risk averse behavior in the gain domain. In addition, individuals tend to overvalue high-probability events, whereas they undervalue medium-probability and low-probability events (Kahnemann and Tversky 1979; Slovic 1987). Thus, insurance is purchased only when the subjective risk perception (due to overestimating the probability of an event) compensates for the undervaluation of a loss relative to the reference point. In addition, the expectation of risk realization (which would translate into a potential insurance payout) may be shaped to a great extent by the household's real experience with shocks, which results in a greater degree of wariness towards them (Rogers 1997). Hence, the more shocks a household has experienced in the past and the higher its subjective exposure to risks in the future, the greater its willingness to purchase insurance will be.

It seems plausible to assume that in the context of emerging (micro)insurance markets the decision-making of low-income households could be at odds with the predictions of the standard benchmark model. To summarize from above, alternative models of choice under uncertainty suggest that, for example, asymmetric information, liquidity constraints, and behavioural factors such as cognitive, emotional or social aspects could provide additional insights in the demand side of a market in which not all agents have perfect information and people lack experience with formal insurance products.

It is important to note that the available data does not allow for the empirical assessment of the time horizon of the above models of life insurance demand and instead relies on the cross-sectional variation of proxies related to the derived determinants. In addition, while the theoretical demand models capture the supply side at least in terms of the cost of life insurance (for example, the policy loading factor), it is not possible to distinguish between

supply and demand with the data at hand. The reduced form analysis tries to address the problem of omitted variable bias to the greatest extent possible.

3.3 Empirical evidence on the participation in microinsurance

Empirical contributions studying the decision to take up microinsurance are now rapidly increasing. Much of this evidence shows that, indeed, participation patterns in various microinsurance markets are not necessarily consistent with the benchmark of standard insurance models. This section highlights some of the findings, which go beyond the main standard theoretical assumptions.

Giné et al. (2008), followed by Cole et al. (2013), show that Indian farmers' participation in rainfall insurance matches some of the standard predictions of a model augmented with borrowing constraints. Insurance uptake decreases with expected income fluctuations, the credit constraints faced by a household, and basis risk – that is, the mismatch between the index and the actual expected losses covered by the insurance. It increases with household wealth. Contrary to the standard insurance theories, however, the authors find that risk averse households are significantly less likely to take up insurance, suggesting that households that are unfamiliar with the product and provider view purchasing insurance as a risky endeavor rather than a decision for safety. Using measures of risk preferences and trusting behaviour from lab experiments among tea growers in Kenya, Dercon et al. (2011) confirm the negative effect of risk aversion on a composite health insurance product. They show that this effect is explained largely by the clients' general trusting behaviour, which determines the subjective beliefs about the credibility of the insurer and the enforceability of the insurance contract.

The level of trust between the insurance provider and a potential client has been shown to be a powerful explanatory factor in microinsurance uptake behaviour by a number of other studies as well (de Allegri et al. 2005; Cole et al. 2013; Giné et al. 2008; Morsink and Geurts 2011). For example, in the context of a government-subsidized sow insurance, Cai et al. (2009) show that Chinese farmers shy away from the insurance when they have little trust in the local government due to frequent experiences of policy delivery failures. Similar evidence on the role of trust in governmental institutions is found in the case of community based health insurance in Rwanda (Schneider and Diop 2004). Studies on crop

insurance have shown that experience with the institution is important for farmers to trust an insurance provider (Giné et al. 2008; Patt et al. 2009).

Related to the issue of trust, other factors that are now increasingly addressed in empirical studies are those of awareness and the influence of social peers (de Bock and Gelade 2012). Tower and McGuiness (2012) show that a radio campaign in Kenya significantly increased knowledge on insurance terms and products. Morsink and Geurts (2011) find that clients of a typhoon microinsurance in the Philippines rely on the experiences of claim payouts by trusted peers as an informal trust-building mechanisms that substitutes for formal trust-building institutions, thereby trying to reduce the risk of opportunistic behavior on the part of the insurer in the insurance transactions. By the use of randomized control trials, studies have shown that people were more likely to take up sow insurance, when they heard about it in a village meeting, rather than through door-to-door visits (Cai et al. 2009); that marketing through village opinion leaders had a positive effect on uptake of crop insurance (Giné et al. 2008); and that transmission of information on insurance was distorted via networks and resulted in negative effects on uptake of health insurance (Olapade and Froelich 2012).

While trust and information diffusion are receiving increasing attention in the microinsurance literature, only few studies have investigated the relationship of subjective risk evaluation and perception with microinsurance uptake. Different to the use of formal savings or formal credit, the results presented in Chapter 2 demonstrate that uptake of microinsurance in the two studied towns in the Central Region is negatively related to higher perceived exposure to risk. Based on data from focus group discussions conducted in the same region, Chapter 4 will show that many people's image of insurance is based on incomplete (and sometimes erroneous) information, or intuitive responses. Positive as well as negative perceptions are channelled to other members of the target group, mainly via peers. A study by Ito and Kono (2010) on micro health insurance in India uses experimental questions to test for the preferences underlying prospect theory and find, though weak, support for the hypothesis that subjective probability weighting plays an important role and individuals who are risk loving towards losses are less likely to purchase insurance. They also find that there is adverse selection in the market as households with a higher ratio of sick members are more likely to enrol. Chankova et al. (2008) include a measure of the self-perception of health status in their empirical model on enrolment in mutual health organizations in West Africa, and Morsink and Geurts (2011)

include measures on the perception of the risk of typhoons and accidents and previous experiences with both of these events in their analysis of the uptake of typhoon microinsurance. More in line with the theoretical reasoning on risk perception and a priori common sense, both studies reveal a positive relationship between risk perception and enrolment in the insurance schemes.

The review of empirical contributions shows that the increasing body of literature on microinsurance participation has a strong focus on the analysis of health insurance and crop insurance. The case of micro life insurance has been studied only to a very limited extent, as for example by the study presented in Chapter 2. However, as the motivations and conditions underlying different types of insurance vary, there is a need for further investigation into the specific determinants of the participation in micro life insurance vis-à-vis other types of insurance. It is further important to consolidate whether and how, beyond the standard theoretical predictions, micro life insurance responds to the above identified (behavioural) factors such as trust, social network interactions and perceptions of risk.

3.4 Data and methodology

3.4.1 Source of data

The analysis is based on a household survey of 1030 households, including households holding the Anidaso micro life insurance offered by the Gemini Life Insurance Company (GLICO) (see Chapter 2) and a control group of non-microinsured households, conducted in cooperation with the Institute of Statistical, Social and Economic Research (ISSER) of the University Legon in southern Ghana from January to March 2009. [42]

As described in Chapter 2, GLICO distributes the Anidaso policy through rural and community banks (RCBs) and other microfinance institutions in all of the southern regions of Ghana. The policy targets low-income people in rural and urban areas and includes term

[42] As explained in Chapter 1 and 2, prior to the survey, GLICO had been identified as one of the few insurance providers in subsaharan Africa offering voluntary life insurance to a meaningful number of low-income households at that time. While there are now many more actors, including commercial insurers and insurance intermediates, that have started to enter the so-called “bottom line” of the market, GLICO has long been the largest player among those private insurers offering voluntary and independent microinsurance products in the Ghanaian market, including rural areas.

life insurance up to the age of 65 as well as an optional and personally variable investment plan that pays the accumulated amount at the expiry of the term.[43] It is possible to add coverage of the spouse, and up to four children. The only clearly identified eligibility criteria of the policy are that clients should be below the age of 65 and must be willing to use or open an own or a group account at local financial institution from which the premiums could be withdrawn. However, in the course of the fieldwork it became obvious that the age limit was not always strictly implemented, given that many people especially from older generations do not exactly know their own age.[44]

In order to ensure regional variation, communities within three service areas of the 26 financial institutions that distribute the policy were selected from three different regions. In order to include a high share of low-income people from the overall population, only RCB service areas in semi-urban or rural areas were considered, based on the assumption that people in these areas are on average poorer than people in highly urbanized areas (Ghana Statistical Service 2007). Out of the possible survey sites that met the above criteria, three RCB service areas were chosen in (a) the Agona West Municipal District in the Central Region, (b) the Akuapim North District in the Eastern Region and (c) the South Tongu District in the Volta Region. Within these service areas, the localities were deliberately selected so as to include an equal share of (a) localities with a meaningful number of insured clients and (b) localities comparable in size, infrastructure and access to the rural bank's services without any insured clients.

In the total sample, microinsured households were oversampled, with a third of all households in the sample randomly drawn from Anidaso client lists in the localities with policyholders. In the same localities, a third of noninsured households in the sample were randomly selected according to a counting procedure in each of the localities, with the counting interval set according to the official total number of households obtained from the 1998/1999 National Census. In the following discussion, these two sets of households from these communities are referred to as the "in-region sample." Finally, another third of households in the sample were randomly selected in the comparable localities without Anidaso policyholders, hereafter called the "out-region sample," using the same counting

[43] As explained in Chapter 2, the basic coverage is topped up with accident benefits and hospitalization benefits for the policyholder, but it became obvious during the fieldwork that most policyholders were unaware of the additional benefits and instead considered Anidaso to be a pure life insurance policy or a savings device.

[44] For more explanations on the Anidaso policy and its marketing and distribution see Chapter 2.

procedure described above. Thus, the sample includes a total of 17 communities from three regions (see Table 12). The subsequent analysis takes into account the stratification of the sample through the use of appropriate survey probability weights.

Similar to the smaller survey region described in Chapter 2, aside of micro life insurance, households in the sample across all three regions have access to conventional life, accident and car insurance provided by commercial and government owned insurance companies, such as Donewell or SIC Insurance Company. Moreover, health insurance is provided by the public NHIS and old age provision, mostly on a mandatory basis, is offered by the Social Security and National Insurance Trust (SSNIT). The NHIS is well received especially in rural areas and covers about 34 percent of the population, including low-income groups (NHIA 2010). In contrast, only 11 percent of the working population are enrolled in the SSNIT and these are mainly formal employers and employees (Boon 2007).

3.4.2 Method

In order to analyze households' participation in the micro life insurance market, the estimation strategy follows a two-step approach. First, in line with the literature discussed above, the cross-sectional determinants of households' decisions to purchase or not purchase insurance can be specified in a discrete choice model as follows:

$$Y_i = X_i'\beta + \varepsilon_i, \tag{4}$$

where the dependent variable Y_i takes on the value of 1 if a household has purchased life microinsurance, and 0 otherwise; β is a (K x 1) vector of unknown parameters; X_i is a vector of exogenous values for observation i of variables reflecting the benchmark model described above, additional variables assumed to be relevant for the uptake of microinsurance and a constant term; and $\varepsilon_i \sim N(0,\sigma^2)$. This model is estimated by a reduced-form probit model.

The variables intended to reflect the benchmark model include the following: The *level of wealth* of a household is measured by a (lagged) asset index created by principal component analysis on a range of productive and nonproductive assets owned five years ago and its second polynomial given potentially nonmonotonic effects of wealth; a dummy variable indicating the household head is engaged in nonfarm activities; and the logarithms

of the amount of land owned, the amount of remittances received per month and the amount of transfers (monetary and in-kind) received per month. A dummy variable indicating the experience of a loan denial at a formal institution measures liquidity constraints. Indicators of the *objective risk* include the age of the household head and its second polynomial and the household's health status, measured as the share of (severely) ill household members in the last twelve months as a proxy for the probability of death. A dummy variable indicating whether or not the household head is risk averse as opposed to risk-loving or risk-neutral reflects their *risk attitude*. It is based on data from a small decision experiment that was part of the survey. This experiment involved the chances of an additional payment (analogue to an insurance payout) in a hypothetical future scenario depending on the possibility of the household head becoming ill or remaining healthy (see Appendix 1 for a more detailed explanation).[45] The motivation to *bequest* or to *save for retirement* via a micro life insurance is reflected by a dummy variable indicating whether or not the household head is married, the share of kids in the household as well as the share of old dependents.

As discussed above, the analysis focuses on two sets of nonstandard variables that do more than simply test the predictions of the standard life-insurance-consumption models. Firstly, the household's *subjective perception of risk* is considered via a risk-perception index created through principal component analysis using polychoric correlations, which are able to adequately address the ordinal structure of the underlying variables (Kolenikov and Angeles 2008). This index is based on three questions about the household's subjective exposure to illness, accidents and (any) economic shocks relative to other households in the community, which are rated by the household head on a scale from one (much less exposed) to five (much more exposed). The actual past experience of shocks is reflected by variables indicating the number of deaths and the number of economic shocks a household has indeed experienced in the last five years. These variables also serve as a control for the potential bias given higher (or lower) true levels of exposure to the main idiosyncratic shocks.

[45] A simple dummy variable is preferred, given that the actual values of the risk-aversion parameter turned out to be highly inflated, reaching unrealistically high values (extremely risk-loving) in approximately 30 percent of the cases. It is possible that actual risk preferences do not strictly follow the assumptions of a quadratic expected utility function with constant relative risk aversion underlying the decision experiment, or that respondents had difficulties correctly understanding the procedures involved in the two decision exercises. As only about 60 percent of the total sample understood and participated in the decision experiment this variable is not included in all subsequent estimated specifications.

Secondly, some variables reflect the household's level of *familiarity* with institutions offering formal financial services in general and the provider of the Anidaso Policy in particular to elicit the role of trust-building factors in the uptake decision. At the household level, this is a variable denoting the number of years a household has used an RCB's services before the RCB introduced the Anidaso Policy. At the community level these are variables indicating the ratio of RCB clients in a community before the Anidaso Policy was introduced there and the ratio of *Susu* clients in the community as proxies for the relative level of familiarity with and popularity of formal financial services offered by RCBs and the prevalence of informal financial services, respectively.[46] The influence of *social networks* is measured by the number of groups the head is a member of, including, for instance, social community groups, occupational groups, or self-help groups. In addition, the analysis controls for gender, education and the access to media information of the household head, as well as for potential local or regional fixed effects (using community or region dummies).

In a second step, the analysis takes into account the extent of micro life insurance coverage. The data does not allow us to measure micro life insurance ownership by the total insurance in force (the sum of all life insurance purchased), as is often done in the literature on the demand for conventional life insurance. However, in accordance with prior studies in the context of conventional insurance markets (Burnett and Palmer 1984; Truett and Truett 1990), the analysis uses households' premium expenditures as an alternative dependent variable. This variable combines the price with the level of coverage, but provides at least some indication of the actual coverage. As many of the households in the survey areas have not purchased micro life insurance, the dependent variable is here not strictly continuous but is rather limited to zero for a large number of the observations. This calls for the application of censored regression models, such as the tobit model (Tobin 1958). Although this is a widespread approach in the conventional insurance demand literature, in the microinsurance literature only Arun et al. (2012) have used it, in the context of micro life insurance in Sri Lanka. Following these authors, I define the dependent variable as the fraction of the total household income spent on premiums (in

[46] As explained in the previous chapters, *Susu* refers to a common informal mobile banking system in Ghana that includes savings and credit groups and typically involves mobile bankers who go round and collect savings from participants at a small fee. Participants can then obtain bigger lump sums of money at the end of an agreed term.

percent). The tobit model allows the dependent variable Y_i, denoting the percentage of household income paid for micro life insurance, to be censored as follows:

$$Y_i = \begin{cases} Y_i^* \; if \; Y_i > 0 \\ 0 \; if \; Y_i^* \leq 0 \end{cases} \quad (i = 1,2, \dots, N), \tag{5}$$

The observed variable Y_i is related to an unobserved latent variable, Y_i*, for which parameters are estimated for the whole sample population, which can be specified as

$$Y_i^* = X_i'\beta + \varepsilon_i, \; (i = 1,2, \dots, N), \tag{6}$$

with X_i representing the same vector of explanatory variables presented above and $\varepsilon_i \sim N(0, \sigma^2)$. The log-likelihood function of the Tobit model can then be formulated as

$$lnL = \sum_{i\epsilon\{Y_i=0\}} ln\Phi\left(\frac{0-X_i'\beta}{\sigma}\right) + \sum_{i\epsilon\{0<Y_i\}} ln\frac{1}{\sigma}\phi\left(\frac{Y_i-X_i'\beta}{\sigma}\right), \tag{7}$$

where $\phi(.)$ is the standard normal probability density function and $\Phi(.)$ is the standard normal cumulative distribution function. Based on this, the parameters of the tobit model are estimated via the maximum likelihood method. As these parameters are only meaningful when one is interested in the latent variable Y*, the effects of the explanatory variables on the realised variable (that is the effects on the truncated mean of the dependent variable) are also assessed using the decomposition procedure suggested by McDonald and Moffit (1980).

As tests on the conditions of normal and homogenous errors provide indications that even with a log-transformed dependent variable the tobit model restrictions are not fully met, the analysis further includes specifications based on a two-part model and on a simple Heckman selection model without exclusion restrictions. Finally, the analysis compares the determinants of micro life insurance participation and coverage with those of the NHIS and all other (private) insurance policies available in the survey areas.

3.5 Results: Determinants of participation and coverage

3.5.1 Descriptive statistics

Overall, the sample includes low- and middle-income households with an average total income of 78.70 cedi per month per adult equivalent (approximately 62.95 US Dollar), which is about twice the total national consumption poverty line of 370.80 cedi per adult equivalent per year based on the Ghana Living Standard Survey 2005/2006 (Ghana Statistical Service 2007). Closely in line with the national average, approximately 30 percent of the households in the sample fall below this poverty line. Even though all survey locations are considered locally as towns, approximately 50 percent of the households are engaged in farming. However, nonfarm activities are more widespread, with 69 percent of the households engaged in at least one such activity.

Table 6 demonstrates that microinsured households show significant differences in certain characteristics compared to nonmicroinsured households. On average, microinsured households have higher mean asset levels and their heads are much more engaged in nonfarm activities (88 percent to 68 percent). More of their heads are married, and they have a 23 percent higher share of their own children and a three times lower share of elderly dependents in the household.

Surprisingly, according to their subjective evaluation microinsured households feel less exposed to risk. Correspondingly, they have experienced fewer cases of death in the past five years (0.22 to 0.29). Microinsured households have used the services of a rural bank for more than three times as long as the population as a whole (in years); their head is, on average, a member in 0.22 more social groups; and they live in communities where there was a higher ratio of rural bank clients and a lower ratio of *Susu* clients before the Anidaso Policy was introduced. All of the differences in means mentioned are significant at the 1 percent level.

Table 6: Summary statistics

Variables	Microinsured households mean	Non-microinsured households mean	Significance level of mean difference (percent)	Full sample mean	Std. Err.	Min.	Max.	Number of observations
Benchmark								
Risk aversion[a]	0.134	0.150		0.1498	0.020	0	1	647
Lagged asset index	0.395	-0.091	1	-0.081	0.042	-1.657	3.451	1031
Landsize per AE (in acres)	4.945	5.233	1	5.119	0.534	0	158.080	1031
Engaged in nonfarm activities[a]	0.884	0.683	1	0.688	0.020	0	1	1031
Income from remittances, per month	8.898	10.483		10.449	1.520	0	400	1031
Income from transfers/gifts, pm	6.610	7.750		7.726	0.952	0	200	1031
Total income per adult equivalent per month (Cedi)	85.603	61.417	1	78.710	3.486	1.808	821.918	1031
Experience of loan denial[a]	0.203	0.094	1	0.097	0.012	0	1	1031
Share of severely ill HH members (last 12 mths)	0.208	0.208		0.208	0.013	0	1	1031
Share of ill HH members (last 12 mths)	0.665	0.692		0.691	0.015	0	1	1031
Age [a]	44.630	49.146	1	49.051	0.655	19	95	1031
Bequest motive								
Married[a]	0.643	0.532	1	0.535	0.021	0	1	1031
Share of own children in HH	0.427	0.347	1	0.349	0.012	0.000	0.857	1031
Share of elderly dependents in HH	0.019	0.060	1	0.059	0.008	0.000	1.000	1031
Subjective probability of risk								
Risk perception index[a]	-0.261	-0.020	1	-0.025	0.046	-1.781	3.334	1011
Past experience of shocks								
No. of deaths (last 5 yrs)	0.221	0.285	10	0.282	0.025	0	6	1031
No. of economic shocks (last 5 yrs)	0.555	0.369	5	0.373	0.047	0	20	1031
Familiarity, networks and information								
Relationship to RCB before Anidaso (in yrs)	3.216	0.993	1	1.040	0.146	0	25	1031
Ratio of RCB clients in community before Anidaso	0.544	0.424	1	0.427	0.007	0.024	0.867	1031
Ratio of Susu clients in community	0.161	0.188	1	0.189	0.004	0.012	0.474	1031
No. of groups memberships[a]	1.167	0.942	1	0.947	0.039	0	10	1011
Reads newspaper[a]	0.524	0.412	1	0.414	0.021	0	1	1011
Often listens to news on radio[a]	0.700	0.566	1	0.569	0.021	0	1	1011
Other variables								
Female-headed HH	0.359	0.454	1	0.453	0.021	0	1	1031
Years of schooling[a]	10.090	8.115	1	8.167	0.223	0	26	1031
Unweighted number of observations	321	710		1031				
Weighted number of observations	507.37	23803.2		24310.5				

Notes: a = As reported by the household head. *Source:* Author's calculation.

Table 7 reports the distribution of the different insurance categories considered and average monthly premium expenditures. The Anidaso Policy exhibits the lowest uptake rates with 2.09 percent of the households in the survey areas, while almost half of the households are enrolled in the NHIS. Conventional private insurance is more commonly used than the Anidaso Policy, though mostly by households with above-average income levels.

Table 7: Types of insurance used and premium expenditures

Type of insurance	No. of households in sample	Estimated no. of households in survey area	Estimated percentage of households in survey area	Average premium expenditures per month (Ghana cedi)*	Percentage of total income paid for premiums per month
Anidaso Policy	321	507.37	2.09	5.44	4.68
Other private insurance	161	2946.64	12.12	13.22	4.61
National Health Insurance (NHIS)	562	12602.00	51.84	1.23	0.97
Any insurance**	738	14536.80	59.80	5.60	4.01
Total	1031	24310.5	100		

Notes: * The exchange rate at the time of our survey (February 2009) was 1.00 Ghana cedi = 1.25 USD. **This includes the Anidaso micro life insurance, other private insurances, NHIS, and SSNIT. *Source:* Author's calculation.

Comparing the average premium amounts per month paid for the respective types of insurance reveals that the Anidaso micro life insurance is indeed much cheaper than other private insurance. While the monthly premiums start at two Ghanaian cedi and go up to 10–15 cedi if policyholders choose the savings component, the mean monthly premium payments amount to 5.44 cedi. Yet the national health insurance premiums are even lower with average premiums of 1.23 cedi. This reflects the fact that the NHIS targets the population as a whole, including the poorest income segments, and is heavily subsidized by the central government.

3.5.2 Multivariate analysis

Table 8 presents the probit estimation results on households' decisions to purchase micro life insurance, and Table 9 presents the estimation results of the tobit model, the two-part model and the selection model regarding the extent of coverage. Based on the same regression techniques, Tables 13 and 14 in the Appendix provide the estimation results on participation in and coverage through the NHIS and all types of insurance held by

households. I highlight these in comparison with the results on micro life insurance wherever it is informative.

The community level variables on the ratio of RCB clients in the community before Anidaso was introduced and the ratio of *Susu* clients indicate that out-region households may be systematically prevented from consuming formal financial services to the same extent as the inhabitants of the in-region communities and rather resort to informal ones (see Table 8, columns one and two). Hence, the discussion of results concentrates on estimations based on the in-region sample.

With regard to the standard theoretical predictions, the core results are robust across all the different specifications. The relationship of micro life insurance participation and wealth takes on a hump-shape form, as shown by the significant positive effect of the level term and the significant negative effect of the quadratic term of the asset index. While opposing Giné et al.'s (2008) finding of a monotonically decreasing relationship in the case of micro index insurance in India, this is in line with a recent study on micro index insurance in Ethiopia (Clarke and Kalani 2012) and indicates that uptake of micro life insurance is lowest for households with very low and very high wealth and highest for those with intermediate levels of wealth. The results of the two-part and the selection models underline the reversing effect of these wealth indicators, which is demonstrated by the significant and negative coefficients of the asset index and transfers in the second-step equations. Nonfarm activities of the household head double the probability that a household with an initial uptake probability at the population mean purchases micro life insurance (last column in Table 8), and also positively affects the amount of coverage purchased. These findings on the wealth indicators do not seem to be unique to the case of micro life insurance, but apply to the NHIS and the all-insurance category as well. The nonlinear relationship of the asset index with insurance uptake is robust throughout all specifications.

Transfers, remittances and nonfarm employment seem less important for participation in other insurances relative to micro life insurance (see Tables 12 and 13). This suggests that activities in the nonfarm sector facilitate a greater ability to afford the regular monthly premium payments for the Anidaso Policy through more steady and reliable incomes. This is less important, for example, in the case of the NHIS, to which premiums can be paid on a yearly basis.

Table 8: Probit model results on Anidaso microinsurance participation

Explanatory variables	Based on total sample						Based on in-region sample						
	(1)			(2)			(3)			(4)			
	Coeff.	S.E.	AME	Coeff.	S.E.	AME	Coeff.	S.E.	AME	Coeff.	S.E.	AME	AME scaled by population uptake rate
Benchmark													
Risk aversion (Alpha<1)				-0.125	0.162	-0.006	-0.059	0.151	-0.003				
Lagged asset index	0.164***	0.052	0.007	0.181**	0.071	0.008	0.165**	0.078	0.010	0.130**	0.064	0.008	0.383
Lagged asset index squared	-0.066***	0.021	-0.003	-0.106**	0.046	-0.005	-0.123**	0.051	-0.007	-0.083**	0.037	-0.005	-0.239
Landsize per AE (log)	-0.020	0.038	-0.001	-0.022	0.030	-0.001	0.001	0.029	0.000	-0.008	0.025	-0.000	0.000
Engaged in nonfarm activities	0.373***	0.114	0.017	0.579***	0.155	0.026	0.625***	0.166	0.036	0.422***	0.123	0.024	1.148
Income from remittances (log)	-0.008	0.028	-0.000	0.054*	0.032	0.002	0.064*	0.033	0.004	0.001	0.028	0.000	0.000
Income from transfers (log)	-0.001	0.028	-0.000	0.008	0.031	0.000	0.010	0.033	0.001	0.003	0.027	0.000	0.000
Experience of loan denial	0.338***	0.126	0.015	0.585***	0.153	0.026	0.229	0.194	0.013	0.472***	0.155	0.027	1.292
Share of ill HH members (last 12 mths)	0.381**	0.189	0.017	0.223	0.186	0.010	0.552***	0.176	0.032	0.300**	0.149	0.017	0.813
Age	0.067***	0.016	0.003	0.089***	0.034	0.004	0.111***	0.039	0.006	0.079***	0.026	0.005	0.239
Age squared	-0.001***	0.000	-0.000	-0.001***	0.000	-0.000	-0.001***	0.000	-0.000	-0.001***	0.000	-0.000	0.000
Bequest motive													
Married	-0.066	0.121	-0.003	-0.146	0.141	-0.007	-0.050	0.142	-0.003	-0.067	0.120	-0.004	-0.191
Share of children	0.517***	0.158	0.023	0.687***	0.226	0.031	0.673***	0.237	0.039	0.517***	0.191	0.030	1.435
Share of elderly dependents in HH										-0.517	0.398	-0.030	-1.435
Shocks and subjective risk													
No. of death shocks (past 5 yrs)	-0.032	0.080	-0.001	-0.186*	0.109	-0.008	-0.059	0.111	-0.003	-0.050	0.094	-0.003	-0.144
No. of economic shocks (past 5 yrs)	0.041**	0.019	0.002	0.092**	0.037	0.004	0.103**	0.045	0.006	0.105**	0.042	0.006	0.287
Risk-perception index, polychoricpca	-0.103***	0.039	-0.005							-0.102**	0.041	-0.006	-0.287
Familiarity, networks, information													
Relationship to RCB before Anidaso (in yrs)				0.087***	0.015	0.004	0.113***	0.018	0.007	0.065***	0.014	0.004	0.191
Ratio of RCB clients to nonclients in community before Anidaso	1.193***	0.320	0.054	1.373***	0.257	0.062	-0.006	0.389	-0.000	0.026	0.316	0.002	0.096
Ratio of *Susu* clients in community	-2.373**	1.199	-0.107	-3.058***	0.947	-0.137	-0.719	0.863	-0.042	-0.777	0.670	-0.045	-2.153
No. of group memberships				0.062	0.077	0.003	0.009	0.080	0.001	0.084*	0.046	0.005	0.239
Reads newspaper				-0.051	0.134	-0.002	-0.129	0.143	-0.007	-0.283**	0.118	-0.016	-0.766
Often listens to news on radio				-0.089	0.130	-0.004	0.022	0.132	0.001	0.030	0.108	0.002	0.096
Other controls													
Years of schooling				-0.001	0.014	-0.000	-0.020	0.015	-0.001	-0.004	0.013	-0.000	0.000
Female-headed HH				-0.205	0.158	-0.009	-0.244	0.158	-0.014	-0.284**	0.132	-0.016	-0.766
Central Region	0.106	0.126	0.005	0.478***	0.144	0.021							
Eastern Region	-0.085	0.220	-0.004	0.044	0.181	0.002							
Community controls	No			No			yes			yes			
Constant	-4.089***	0.484		-4.875***	0.804		-4.573***	0.865		-3.796***	0.606		
Observations	1011			646			448			671			
F-statistic				(25, 596) 4,13			(28, 400) 3,04			(28, 642) 3,35			
Pseudo R-squared	0,121												

Notes: Households in the sample are weighted according to their sampling probabilities. The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Author's calculation based on survey data.

Table 9: Tobit, two-part and selection model results on the amount of Anidaso premiums as percent of total income, per month

Explanatory variables	Tobit model								Two-part model		ML simple selection model	
	(1) nontransformed				(2) lognormal				(3) OLS lognormal: 2nd part		(4) Heckman: outcome eq.	
	Coeff.	SE	AME for E(Y|X,Y>0)	AME for E(Y|X)	Coeff.	SE	AME for E(Y|X,Y>0)	AME for E(Y|X)	Coeff.	SE	Coeff.	SE
Benchmark												
Lagged asset index	1.714	1.072	0.185	0.043	0.672*	0.380	0.032	0.356	-0.275***	0.074	-0.272***	0.074
Lagged asset index squared	-1.162**	0.589	-0.125	-0.029	-0.465**	0.216	-0.022	-0.246				
Landsize per AE (log)	-0.284	0.390	-0.031	-0.007	-0.123	0.152	-0.006	-0.065	-0.021	0.036	-0.022	0.036
Engaged in nonfarm activities	5.620***	2.007	0.606	0.141	2.331***	0.719	0.109	1,234	-0.332	0.213	-0.290	0.263
Income from remittances (log)	0.029	0.405	0.003	0.001	0.004	0.160	0.000	0.002	-0.029	0.035	-0.029	0.035
Income from transfers (log)	0.183	0.415	0.020	0.005	0.087	0.159	0.004	0.046	-0.084**	0.033	-0.082**	0.033
Experience of loan denial	5.288**	2.277	0.570	0.133	1.932**	0.833	0.091	1.023	0.028	0.153	0.062	0.201
Share of ill HH members (last 12 mths)	6.666***	2.377	0.719	0.167	2.744***	0.890	0.129	1,453	-0.160	0.212	-0.119	0.252
Age	1.188***	0.408	0.128	0.030	0.496***	0.150	0.023	0.263	-0.007	0.006	-0.008	0.008
Age squared	-0.014***	0.004	-0.002	-0.000	-0.006***	0.002	-0.000	-0.003				
Bequest motive												
Married[b]	-0.612	1.870	-0.066	-0.015	-0.194	0.717	-0.009	-0.103	0.061	0.176	0.060	0.176
Share of children	7.197**	3.057	0.776	0.181	2.916***	1.111	0.137	1,544	-0.270	0.217	-0.202	0.305
Shocks and subjective risk												
No. of death shocks (past 5 yrs)	-1.308	1.394	-0.141	-0.033	-0.390	0.537	-0.018	-0.206	-0.186*	0.111	-0.189*	0.113
No. of economic shocks (past 5 yrs)	1.484**	0.597	0.160	0.037	0.589***	0.216	0.028	0.312	0.051	0.033	0.060	0.046
Risk perception index, polychoricpca	-1.480**	0.655	-0.160	-0.037	-0.609**	0.241	-0.029	-0.323	0.130**	0.061	0.120*	0.069
Familiarity, networks, information												
Relationship to RCB before Anidaso (in yrs)	0.907***	0.210	0.098	0.023	0.366***	0.067	0.017	0.194	-0.008	0.009	-0.002	0.021
Ratio of RCB clients in community	1.042	13.61	0.112	0.026	0.041	5.383	0.002	0.022	omitted		1.326	1.034
Ratio of *Susu* clients in community	-18.408	37.15	-1,986	-0.462	-5.526	14.65	-0.259	-2,926	omitted		-6.505**	3.051
No. of groups head is member of	1.177	0.730	0.127	0.030	0.443	0.280	0.021	0.235	-0.003	0.079	0.007	0.082
Reads newspaper	-3.628**	1.839	-0.391	-0.091	-1.482**	0.688	-0.070	-0.785	-0.269*	0.141	-0.293*	0.149
Often listens to news on radio	0.358	1.745	0.039	0.009	0.028	0.651	0.001	0.015	0.266*	0.155	0.268*	0.156
Other controls												
Years of schooling	-0.021	0.185	-0.002	-0.001	0.002	0.073	0.000	0.001	0.006	0.014	0.007	0.014
Female-headed HH	-3.062	2.038	-0.330	-0.077	-1.304*	0.771	-0.061	-0.691	0.499**	0.195	0.486**	0.197
Community controls	Yes				Yes				Yes		Yes	
Constant	-59.240***	11.73			-25.615***	3.694			0.816	0.643	1.550	0.984
Observations	652				652				296		652	
Left-censored observations	356				356							
Diagnostics and goodness of fit									R-squared	0.298		
F-test (28, 623)	1,490				5,240				Athro		0.114	0.364
Normality test (tobcm) Null: normal errors (p-values)	0,000				0,000				Lnsigma		-0.081	0.059

Notes: Estimations are based on in-region sample only. Households in the sample are weighted according to their sampling probabilities. The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Author's calculation based on survey data.

While the simple risk-aversion dummy cannot be confidently included in all specifications it turns out to be negative (though not significant).[47] In terms of the objective size of the risk, the results show, as expected, a strongly significant positive relationship with the household head's age in the participation equation. Yet the coefficient of the squared term is significant and negative. The turning point in the relationship is at a relatively young age of 41.54 years. This finding speaks strongly in favor of a bequest motive, which is further substantiated below. It might also indicate that for the older generation the cost of evaluating and accepting new products and technical procedures increases. There is also a significant positive association between the share of severely ill household members and the probability of uptake as well as coverage. Given that the health status of the household is not public information and that customers are not obliged to report this in the Anidaso Policy admission application, this is an indication, albeit a small one, of adverse selection in the market.

As for the bequest motive hypothesized above, the participation decision seems to be largely driven by the desire to bequeath children rather than the spouse. Marital status has a negative (though insignificant) effect. However, an increase of the mean share of children in the household significantly increases the probability that the household will purchase micro life insurance (0.3 percentage points at the margin). The coefficient of the share of elderly dependents, on the other hand, is negative but insignificant. These findings are in line with recent evidence of an intentional bequest motive in micro life insurance participation in Sri Lanka (Arun et al. 2012). However, the marginal effects of the bequest motive indicators are all insignificant and smaller with regard to the premium expenditure specifications. Hence, the bequest motive is less important in the decision about how much coverage to purchase. This finding seems convincing as higher premium payments also indicate that a household has chosen an optional savings component in addition to the basic term life component.[48] Instead of saving for retirement, however, these households might also want to use the option of a partial withdrawal of the insured amount mentioned earlier. Furthermore, the previous experience of a loan denial has a significant positive effect on

[47] As mentioned before, about 30 percent of the sample did not entirely understand the small decision experiment underlying the variable, which leads to a severe reduction in the sample size in these estimations. Results on the risk aversion proxy may thus not be fully reliable.

[48] It is not possible to identify exactly whether households have chosen such an additional component. This is due to the fact that (a) households are typically not sure about the amounts of premiums they pay for the basic term insurance and for the savings component and (b) the premiums paid for the basic coverage varied over the survey sites and over the years since the introduction of the policy and it was impossible to obtain any clear information on this.

the participation decision as such. While credit-constrained households may be driven towards other options to protect against risk, there are also some indications that clients view the Anidaso Policy as one option for improving their reputation at the bank – that is, as an alternative to collateral that will later allow them to access a loan. This was brought up in discussions with GLICO's sales agents and rural banks' staff, and in focus group discussions conducted by the author in the Central Region. Some sales agents have also apparently used this as an argument to convince people to buy a policy.

As hypothesized above, there may be two major sets of factors that are of particular importance for participation in microinsurance markets and go beyond the standard theoretical predictions. First, these include the perceived and actual risk exposure. Second, these are the level of information households possess regarding insurance and financial services in general and their level of trust in the providing institutions. Both sets of factors are expected to work in favor of the uptake decision and the extent of coverage as their levels increase.

Yet in contrast to a priori theoretical considerations – but in line with the negative effect of risk aversion – households with a higher perceived risk exposure compared to others in their neighborhood are less likely to purchase the Anidaso Policy. Confirming the earlier evidence provided in Chapter 2 with regard to the household data from two towns in the Central Region, the risk perception index exhibits a strongly significant negative effect on the participation decision. This effect is robust throughout all probit and tobit specifications. Increasing the risk perception index from the minimum to the maximum value decreases the probability that a household will purchase Anidaso by 2.3 percentage points. Interestingly, however, this effect is reversed in the second-step equations of the two-part and the selection models. Hence, households that have purchased the policy behave as expected: pessimists with a higher exposure to risk purchase more extensive coverage (including more family members and/or the pension component). A one-unit increase in the risk perception index leads to a 12–13 percent higher fraction of income paid for premiums. Recall that, evidently, these are the households with intermediate levels of wealth, a higher share of children and a higher objective degree of risk. Underlining this finding, the negative effect of the risk perception index on participation decreases with rising asset levels, as shown by the distribution of the average marginal effects across the range of the asset index (Figures 2 and 3, Appendix). In contrast to the microinsurance participation equation, in the regression models of the other insurance categories the

subjective risk perception index shows the expected positive significant coefficient for the uncensored observations in the tobit specification and the first parts of the two-part and the selection models (Tables 13 and 14).

These findings can be interpreted in somewhat conflicting ways. On the one hand, households may not use their perceptions to cope properly with the risk due to irrationality or limited (financial) understanding (Giné et al. 2008). They may have a limited ability to calculate the probability of the risk involved (prime age death and/or old age) and judge its potential implications. On the other hand, given that the life insurance under study does not provide full coverage, as may be the case with health insurance or indemnity insurance, the lower uptake among households with higher perceived levels of risk and lower levels of wealth may be the result of rational choice, as Clarke and Kalani (2012) argue in a model of rational hedging applied to index insurance in Ethiopia. This may be the case if there are strong expectations that, given the cost of the policy, the potential net payout of the insurance will not match either the financial loss incurred through the death of the insured household member(s) or the financial needs of old age.

A third explanation is that of incomplete information and limited experience with the microinsurance product and the providing institution on the part of the household. This results in limited trust in the functioning and reliability of both. Households with a higher awareness of risk also tend to be more cautious in their financial management practices and may draw back from the uncertainty associated with the policy. In fact, the policy itself might then be considered a risky option and thus not perceived as helpful in dealing with the consequences of death or old age. Both of the latter two interpretations are supported by the findings for the NHIS and the all-insurance equations, where households seem to behave in line with the theoretical reasoning, as shown by the significantly positive effects of the subjective risk perception in Tables 13 and 14. These types of insurance seem to be regarded as adequate mechanisms to deal with the associated risks, a finding that is convincing given that knowledge about and experience with the NHIS and types of insurance other than the microinsurance are likely to be greater in the survey regions.

The variables that control for actual shock experiences exhibit mixed results. The number of economic shocks (that is, dramatic increase/decrease of input/output prices, inability to sell products, or loss of job) a household has experienced in the last five years has a positive effect on the microinsurance participation equation. Counterintuitively, however,

the number of death shocks a household has experienced during the past five years is negatively related to the choice of buying a policy and the extent of coverage, but the significance levels of this finding are not robust throughout all specifications. This could be supportive of the negative effect of the subjective risk perception, or it may be an indication that households have mainly lost productive household members and have been more vulnerable to death, but less able to afford premiums.

The scepticism regarding the functioning of the product and the reliability of the insurer is confirmed by the results from the variables on the level of familiarity with the provider and integration into networks. Specifically, with each additional year that a household used services from the rural bank before the Anidaso Policy was introduced, the probability that the household purchases micro life insurance increases by 19 percentage points for a household at the initial population uptake probability. For the same household, each additional social group the head is a member of increases the probability of uptake by 24 percentage points. In the context of incomplete markets and weak formal trust-building institutions – both of which impact the quality of bureaucracy, contractual security, etc. – households may rely on informal trust-building mechanisms to reduce the risk of opportunistic behavior on the part of the insurer to a much greater extent than their counterparts in conventional insurance markets. In other words, households then have to rely on their own and others' experience with the providing institution and its staff and on insurance advice from peers. This confirms the evidence found in previous empirical contributions on other types of microinsurance (e.g. Giné et al. 2008; Morsink and Geurts 2011) and will be further consolidated in Chapter 4.

3.6 Conclusion

Despite the high expectations of policymakers and practitioners in microinsurance regarding the improvement of household risk management, participation in the market has remained low. At the same time, although life insurance is most common in the microinsurance business, it has remained the least studied example of microinsurance to date. This chapter's contribution has been to analyze the determinants of participation in micro life insurance and size of coverage relative to other available types of insurance, such as health insurance, using household survey data collected in southern Ghana. It was argued that beyond standard theoretical reasoning, there are at least two sets of

nonstandard factors that are of particular relevance for micro life insurance participation. On the one hand, these include households' perceived risk exposure vis-à-vis their actual experience of shocks. On the other hand, based on a growing body of evidence in the microinsurance literature, these include the level of information about insurance that households possess and their level of trust in the providing institutions.

The empirical results correspond with many of the benchmark predictions of standard life-insurance-consumption theories. Specifically, there is a strong indication of a bequest motive towards children in the decision to purchase micro life insurance. This underlines households' recognition of the long- and short-term consequences of the death of a major breadwinner in terms of permanent losses in total household income and the immediate need for funds to cover funeral costs.

Corresponding to the results of Chapter 2 and one recent study that focused on micro life insurance in Sri Lanka (Arun et al. 2012), the evidence suggests that insurance providers undertake rather limited outreach to the poorest and most vulnerable households, which have the least access to other options to manage risk. This finding is underlined by the fact that there tend to be restrictions for households in the access to the rural banks' services that are associated with geographical distance and the related transaction costs. Apparently, although highly mobile banking practices via the *Susu* system are widespread in Ghana, this tool has not been exploited by the insurance sales agents.

More remarkable results are generated when we look at the above-mentioned nonstandard determinants of participation in micro life insurance, which deserve greater attention in relation to efforts to try to expand outreach to the low-income populations.

Households that perceive their exposure to risk to be greater than their peers are surprisingly less likely to participate. Interestingly, this finding does not hold in the case of the NHIS and total insurance holdings and is also reversed in the case of expenditures on premiums. Here, households behave as expected: pessimists spend a higher share of their income on micro life insurance premiums. The chapter set out conflicting ways to interpret these findings. On the one hand, households may not be able to properly cope with the risk due to irrationality or limited understanding of the financial dimensions of the policy or the implications of the risk involved, as some of the previous literature on micro index insurance argues (Cole et al. 2013; Giné et al. 2008). On the other hand, the lower level of

participation by poorer households with higher levels of perceived risk may be the result of rational choice, with the household weighing the potential gains of the insurance and the reliability of a payout against its costs, as a more recent work on micro index insurance in Ethiopia has found (Clarke and Kalani 2012). A third argument may provide a way out of the dilemma: households operating in a context of incomplete information and limited experience with the microinsurance product and the providing institutions may rationally decide that purchasing a policy is too risky an endeavor if they have only very limited funds to spend. Rather than the households being limited in their ability to understand insurance products, it may be the limited information actively provided to the target group that creates reservation among them. In line with this reasoning, uptake rates are higher among those households that have been using the financial services offered by a rural bank for a longer period of time and among those that are integrated into a greater number of groups. The latter variable hints at the potentially important influence of peers as an informal trust-building mechanism in these circumstances, something which has also been highlighted by and Morsink and Geurts (2011) and will be further substantiated in Chapter 4. In future research it would thus be useful to more comprehensively disentangle the effects of heterogeneous subjective beliefs and risk preferences and to examine the impact of peer influence on the decision to purchase micro life insurance.

3.7 Appendix

Appendix 1: Small choice experiment to elicit risk aversion and subjective beliefs via a proper scoring rule

This appendix presents the decision exercise conducted on the risk attitude of individuals using their subjective beliefs on the probability of risk. It was designed by Prof. Horst Zank, University of Manchester, School of Social Sciences, Prof. Susan Steiner, University of Hannover. The experiment was conducted under my supervision in the survey underlying this chapter. All descriptions below are based on the (unpublished) illustrations provided to me by Prof. Horst Zank.

Set-up

The choice experiment was part of the survey questionnaire and applied to each respondent in the sample. It involved two questions laying out the chances of an additional payment (analogue to an insurance payout) in a hypothetical future scenario indicating the possibility of becoming ill or remaining healthy. The two choices to be made were purely hypothetical and did not involve a real payout of the chosen amounts of money based on a person's health status in the next month. The following question was posed twice to the respondent, each time referring to one of the Tables of payment options (below) ranging from 1 to 21 (Tables 10 and 11):

"Suppose that you are offered amounts of money (again) depending on whether or not you become ill during the next month. If you become ill during the next month and cannot work for one week or more, you receive payment A; but if you do not become ill, you receive payment B. These amounts are paid to you in addition to what you already own and earn. The Table below indicates possible combinations of payments A and B. (This time, the payments are different from the ones in the previous Table).

[Example given and respondent asked to explain one of the options him/herself]

Please choose the option that you find is best for you. Please note that there are no right or wrong answers because your choice depends on your own preferences and circumstances."

Application of the proper scoring rule

The measurement tool jointly estimates a person's risk attitude and his/her use of subjective beliefs on risk (the probability of becoming ill). It exploits a quadratic proper

scoring rule as a truth-telling mechanism underlying the two choices made regarding both Tables (Tables 10 and 11).

Individuals are assumed to have subjective expected utility preferences. Simple acts of events related to monetary outcomes are denoted by $P = (E_1: x_1, \ldots, E_n: x_n)$. Subjective expected utility (SEU) assigns probabilities $p(E_i)$ to the events E_i and utility $u(x_i)$ to outcomes, such that acts can be expressed as:

$$SEU(P) = \sum_{i=1}^{n} p(E_i)u(x_i).$$

The application below refers to binary acts that pay x in the event of E and y otherwise. The SEU value of such an act would thus be SEU(p) = p(E)u(x) + [1-p(E)]u(y). Utility is assumed to be a power function, i.e. $u(x) = x^{\alpha}$, with $\alpha > 0$. This describes the Arrow-Pratt measure of constant relative risk aversion with a coefficient of $1- \alpha$.

As outlined above, the individual is asked to choose the most preferred act of the two sets of actions presented in Tables 10 and 11, which set out payments according to the following scoring rule:

A. Payment if E (illness occurs): $a*[-(1-r)^2] + b$

B. Payment if not E (no illness occurs): $a*(-r^2) + c$

Hence, the payoffs in the two scenarios are related to the probability of becoming ill (r) in the next month, with $r \in [0,1]$. The value for a, b, and c are fixed at the beginning of the experiment. The numbers in Tables 10 and 11 hence represent amounts of money for r = 0, 0.05, 0.1, …, 0.9, 0.95, 1. The chosen option in only one of the decision rounds returns information about the individual relative risk-aversion parameter α and the individual's assessment of the probability of becoming ill in the case that $\alpha = 1$ (risk neutral). The individual's preferences are then described by the subjective expected value SEV(P) = p(E)x + [1-p(E)]y, where $P = (E: x, E^c: y)$.

However, in the case that utility is not linear, i.e. $\alpha \neq 1$, only via the second decision round on payoffs for the same events as in the first round (becoming ill/not becoming ill) it is possible to derive both the value of α and the true expected probability (r* in the first choice and r** in the second choice), thus r*/r** = p(E).

The relationship between p(E) and the given choice (outcome A and B) in Table 11 is:

$$p(E) = \frac{r*}{r* + (1-r*)\left[\frac{b-a\,(1-r*)^2}{c-a\,(r*)^2}\right]\alpha - 1}.$$

The risk-aversion parameter α can then be expressed as follows:[49]

$$\propto = 1 + \frac{\ln\left(\frac{r*}{1-r*}\cdot\frac{1-r**}{r**}\right)}{\ln\left(\frac{\frac{b-a\,(1-r*)^2}{c-a\,(r*)^2}}{\frac{b-a\,(q-r**)^2}{c-a\,(r**)^2}}\right)}.$$

The more general expression for α given the corresponding r* from the first choice and r** from the second choice is given by

$$\propto = 1 + \frac{\ln\left(\frac{r*}{1-r*}\cdot\frac{1-r**}{r**}\right)}{\ln\left(\frac{\frac{x}{y}}{\frac{x'}{y'}}\right)}.$$

[49] Note that α cannot be calculated in cases where one of the r-values is 0 or 1, as the natural logarithm cannot be defined. Hence, it is assumed that in the case of r = 0 and r = 1 respondents actually chose a value close to that, since in reality it is unlikely that the probability of becoming ill is truly 0 or 1. Hence, although the design of the experiment prevented this, these cases are replaced with values 0.01 and 0.99, respectively.

Table 10: Risk game's first decision round*

Option	**Payment A if ill** a*[-(1-r)2] + b	**Payment B if not ill** a*(-r2) + c
1 (r=0)	5.00	40.00
2 (r=0.05)	6.95	39.95
3 (r=0.10)	8.80	39.80
…	...	…
19 (r=0.90)	24.80	23.80
20 (r=0.95)	24.95	21.95
21 (r=1)	25.00	20.00

* a = 20, b = 25, c = 40

Table 11: Risk game's second decision round**

Option	**Payment A if ill** $a*[-(1-r)^2] + b$	**Payment B if not ill** $a*(-r^2) + c$
1 (r=0)	0.00	50.00
2 (r=0.05)	3.90	49.90
3 (r=0.10)	7.60	49.60
…	…	…
19 (r=0.90)	39.60	17.60
20 (r=0.95)	39.90	13.90
21 (r=1)	40.00	10.00

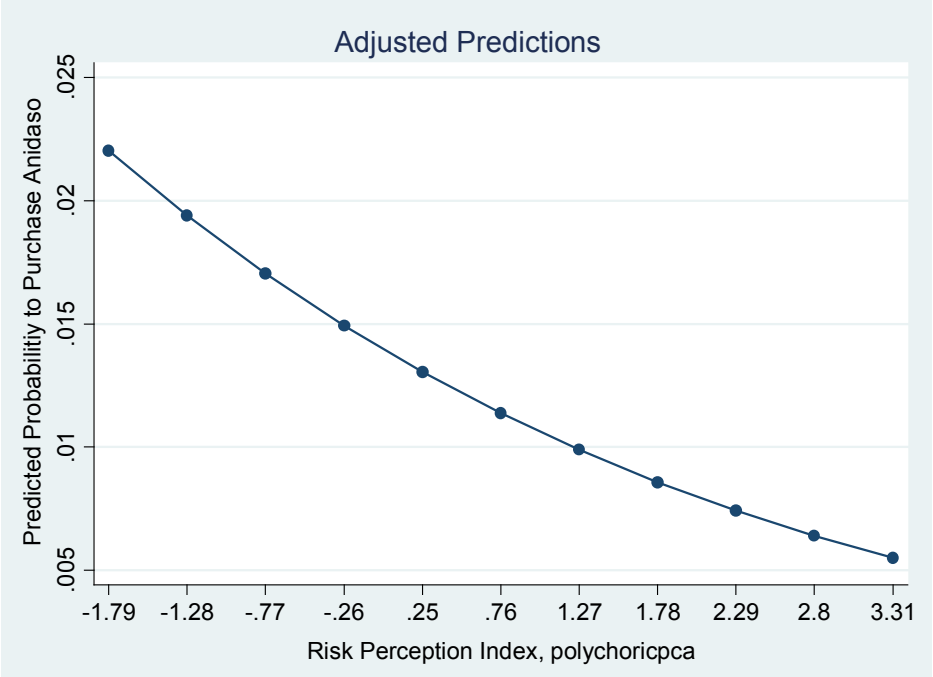
** a = 40, b = 40, c = 50

Table 12: Insured and non-insured households across survey sites

	Number of non-insured households in sample	Number of insured households in sample	Estimated share of insured households in population (weighted, in percent)
Central Region			
Policyholder locations			
Nsaba	41	24	0.17
Duakwa	32	25	0.18
Kwanyako	44	62	0.35
Non-policyholder locations			
Mensakrom	27	0	0
Mankrom Nkwanta	27	0	0
Asafo	61	0	0
Eastern Region			
Policyholder locations			
Mamfe	28	28	0.25
Mampong	43	44	0.36
Larteh	44	36	0.29
Non-policyholder locations			
Tingkong/Nyame Bekyere	44	0	0
New Mangoase	43	0	0
Asenema	28	0	0
Volta Region			
Policyholder locations			
Sogakope	99	72	0.34
Dabala	34	30	0.15
Non-policyholder locations			
Adutor	59	0	0
Hikpo	32	0	0
Kpotame	23	0	0
Total	709	321	2.09

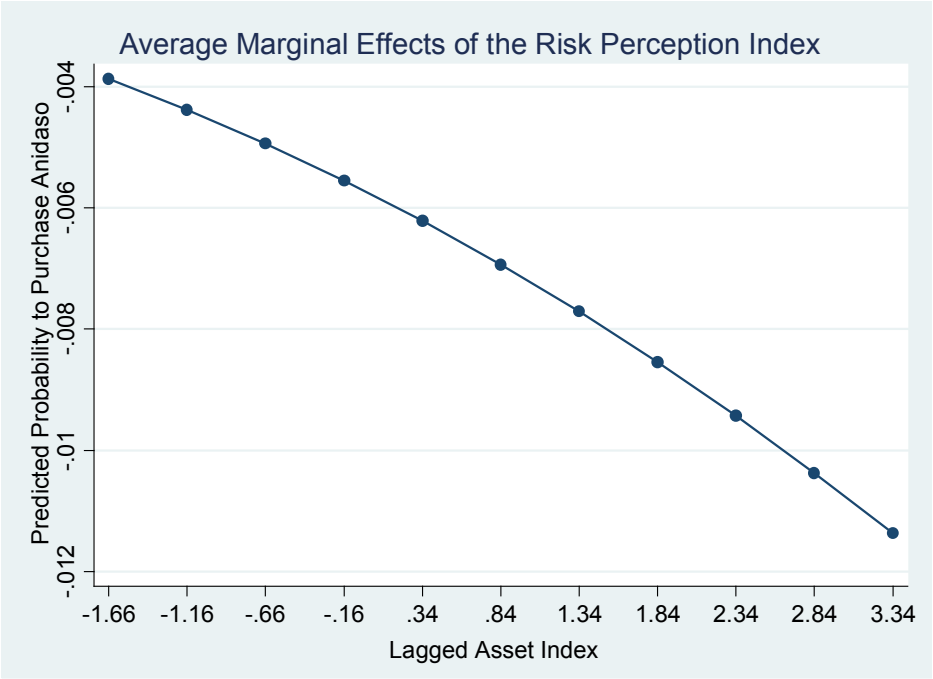
Notes: Due to oversampling of insured households, the share of insured households in the respective total community population is much smaller than the relative number of these households in the sample suggests. *Source:* Author's calculation.

Figure 2: Effect of the risk perception index on the probability to purchase Anidaso life insurance



Source: Author's calculation.

Figure 3: Distribution of AME's of the risk perception index across values of the asset index



Source: Author's calculation.

Table 13: Tobit, two-part and selection model results on the participation in NHIS and the amount of NHIS premiums in percent of total income (log-transformed), per month

Explanatory variables	(1) Tobit				(2) Probit: 1st part			(3) OLS: 2nd part		(4) Probit: selection eq.		(5) Heckman: outcome eq.	
	Coeff.	SE	AME for E(Y|X,Y>0)	AME for E(Y|X)	Coeff.	SE.	AME	Coeff.	SE.	Coeff.	SE	Coeff.	SE.
Benchmark													
Lagged asset index	1.532***	0.325	0.287	0.224	0.428***	0.114	0.130	0.278	0.172	0.424***	0.118	0.189	0.135
Lagged asset index squared	-0.556***	0.166	-0.104	-0.081	-0.158***	0.060	-0.048	-0.143	0.093	-0.154**	0.064		
Landsize per AE (log)	-0.120	0.117	-0.023	-0.018	-0.039	0.043	-0.012	-0.034	0.056	-0.039	0.043	-0.034	0.055
Egaged in non-farm activities	-0.472	0.591	-0.088	-0.069	-0.066	0.205	-0.020	-0.634**	0.253	-0.064	0.206	-0.594**	0.264
Income from remittances (log)	-0.238**	0.118	-0.045	-0.035	-0.068	0.042	-0.021	-0.100*	0.058	-0.068	0.042	-0.106*	0.061
Income from transfers (log)	0.236**	0.113	0.044	0.034	0.086*	0.045	0.026	-0.020	0.054	0.086*	0.045	-0.047	0.059
Experience of loan denial	-2.713***	0.760	-0.507	-0.397	-0.748***	0.257	-0.228	-0.461	0.460	-0.739***	0.264	-0.494	0.514
Share of ill HH members (last 12 mths.)	1.377**	0.643	0.258	0.201	0.461**	0.220	0.140	0.330	0.315	0.462**	0.220	0.355	0.345
Bequest motive													
Married[b]	0.834	0.623	0.156	0.122	0.423**	0.211	0.129	-0.531	0.351	0.423**	0.210	-0.396	0.362
Share of kids	-0.935	0.921	-0.175	-0.137	-0.556*	0.323	-0.169	0.541	0.491	-0.539	0.340	0.744	0.500
Age	-0.029	0.094	-0.005	-0.004	-0.043	0.030	-0.013	0.064	0.053	-0.046	0.037	-0.029***	0.008
Age squared	0.000	0.001	0.000	0.000	0.000	0.000	0.000	-0.001*	0.001	0.001	0.000		
Shocks and subjective risk													
No. of death shocks (past 5 yrs.)	-0.217	0.421	-0.041	-0.032	0.123	0.143	0.038	-0.540***	0.206	0.125	0.143	-0.502**	0.209
No. of economic shocks (past 5 yrs.)	-0.051	0.239	-0.010	-0.007	-0.015	0.082	-0.005	-0.049	0.109	-0.014	0.083	-0.013	0.117
Risk perception index, polychoricpca	0.321*	0.188	0.060	0.047	0.162**	0.073	0.049	-0.109	0.096	0.161**	0.073	-0.090	0.102
Familiarity, networks, information													
Relationship to RCB before Anidaso (in yrs.)	0.001	0.003	0.000	0.000	0.029	0.018	0.009	-0.001	0.002	0.030	0.019	-0.001	0.002
Ratio of RCB clients in community	-4.427	4.110	-0.828	-0.648	-2.976*	1.518	-0.906	omitted		-7.490**	2.984	1.813	2.328
Ratio of Susu clients in communtiy	5.387	11.09	1.008	0.788	5.924	3.987	1.804	omitted		25.573**	10.88	-6.871	5.469
No. of group memberships	-0.281	0.252	-0.053	-0.041	-0.121	0.088	-0.037	0.119	0.149	-0.121	0.088	0.114	0.156
Reads newspaper	-0.661	0.592	-0.124	-0.097	-0.068	0.205	-0.021	-0.675**	0.284	-0.070	0.205	-0.631**	0.288
Often listens to news in radio	0.296	0.594	0.055	0.043	-0.130	0.187	-0.040	0.560*	0.298	-0.132	0.187	0.611**	0.288
Other controls													
Years of schooling	-0.257	0.660	-0.048	-0.038	-0.088	0.217	-0.027	-0.255	0.383	-0.090	0.217	-0.165	0.373
Female headed HH	0.019	0.055	0.003	0.003	0.025	0.020	0.008	-0.046*	0.027	0.025	0.020	-0.040	0.028
Community controls / Constant	Yes				Yes			Yes		Yes		Yes	
Observations	671				671			398		671		671	
Left-censored observations	338												
Diagnostics and goodness-of-fit													
F-statistic	(28, 642) 4.05				(28, 642) 3.43					Atrho		0.082	0.298
R-squared								0.255		Lnsigma		0.402***	0.051

Notes: Households in the sample are weighted according to their sampling probabilities. The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Author's calculation.

Table 14: Tobit, two-part and selection model results on the participation in any insurance and the amount of total insurance premiums in percent of total income (log-transformed), per month

Explanatory variables	(1) Tobit				(2) Probit: 1st part			(3) OLS: 2nd part		(4) Probit: selection eq.		(5) Heckman: outcome eq.	
	Coeff.	SE	AME for E(Y|X,Y>0)	AME for E(Y|X)	Coeff.	SE.	AME	Coeff.	SE.	Coeff.	SE	Coeff.	SE.
Benchmark													
Lagged asset index	1.198***	0.282	0.269	0.261	0.253**	0.108	0.089	0.212	0.143	0.223*	0.123	0.115	0.140
Lagged asset index squared	-0.322**	0.129	-0.072	-0.070	-0.059	0.056	-0.021	-0.168**	0.076	-0.029	0.075		
Landsize per AE (log)	-0.179*	0.098	-0.040	-0.039	-0.035	0.041	-0.012	-0.046	0.052	-0.038	0.041	-0.062	0.054
Egaged in non-farm activities	-0.018	0.494	-0.004	-0.004	0.116	0.193	0.041	-0.579**	0.273	0.123	0.195	-0.504*	0.289
Income from remittances (log)	-0.256**	0.100	-0.058	-0.056	-0.050	0.039	-0.018	-0.148***	0.055	-0.049	0.040	-0.144**	0.059
Income from transfers (log)	0.063	0.089	0.014	0.014	0.105**	0.042	0.037	-0.127***	0.048	0.100**	0.043	-0.114*	0.060
Experience of loan denial	-1.391**	0.599	-0.312	-0.304	-0.216	0.227	-0.077	-0.408	0.483	-0.192	0.235	-0.344	0.503
Share of ill HH members (last 12 mths.)	0.837	0.552	0.188	0.183	0.267	0.212	0.095	-0.012	0.309	0.275	0.212	0.117	0.349
Bequest motive													
Married	0.670	0.513	0.150	0.146	0.253	0.193	0.090	-0.255	0.321	0.262	0.193	-0.065	0.355
Share of kids	-1.596**	0.765	-0.358	-0.348	-0.401	0.292	-0.142	-0.691	0.496	-0.363	0.296	-0.554	0.523
Age	-0.027	0.079	-0.006	-0.006	-0.060**	0.028	-0.021	0.072	0.046	-0.076**	0.035	-0.027***	0.008
Age squared	0.000	0.001	0.000	0.000	0.001**	0.000	0.000	-0.001**	0.000	0.001**	0.000		
Shocks and subjective risk													
No. of death shocks (past 5 yrs.)	-0.226	0.340	-0.051	-0.049	-0.020	0.130	-0.007	-0.370**	0.159	-0.025	0.128	-0.346**	0.165
No. of economic shocks (past 5 yrs.)	-0.017	0.194	-0.004	-0.004	0.057	0.080	0.020	-0.044	0.086	0.065	0.080	0.010	0.094
Risk perception index, polychoricpca	0.326*	0.167	0.073	0.071	0.092	0.070	0.033	0.032	0.095	0.089	0.071	0.069	0.108
Familiarity, networks, information													
Relationship to RCB before Anidaso (in yrs.)	0.001	0.002	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.000	0.001	0.001	0.001
Ratio of RCB clients in community	-2.989	3.268	-0.670	-0.652	0.233	1.406	0.082	omitted		-6.951**	2.850	0.634	2.255
Ratio of Susu clients in communtiy	1.879	8.398	0.421	0.410	-4.662	3.687	-1.650	omitted		26.575**	10.350	-1.163	5.141
No. of group memberships	-0.125	0.201	-0.028	-0.027	-0.141	0.091	-0.050	0.430***	0.151	-0.127	0.094	0.432***	0.159
Reads newspaper	-0.043	0.498	-0.010	-0.009	-0.012	0.201	-0.004	-0.036	0.271	-0.010	0.201	-0.021	0.277
Often listens to news in radio	0.471	0.481	0.106	0.103	0.018	0.175	0.006	0.714***	0.267	0.014	0.178	0.803***	0.263
Other controls													
Years of schooling	0.043	0.045	0.010	0.009	-0.032*	0.019	-0.011	-0.003	0.027	-0.031	0.019	-0.014	0.032
Female headed HH	-0.257	0.544	-0.058	-0.056	-0.162	0.204	-0.057	0.103	0.323	-0.161	0.204	0.082	0.352
Community controls / Constant			Yes			Yes		Yes		Yes		Yes	
Observations			671			671		421		671		671	
Left-censored observations			165										
Diagnostics and goodness-of-fit													
F-statistic			(28, 642) 4.09			(28, 642) 1.51				Atrho		0.421	0.400
R-squared								0,328		Lnsigma		0.374***	0.109

Notes: Dependent variable excludes employer-based pension. Estimations are based on in-region sample only. Households in the sample are weighted according to their sampling probabilities. The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Author's calculation.

Chapter 4

Gender differentials in micro life insurance participation

4.1 Introduction

Microinsurance intends to help low-income people to manage risk and improve their living conditions.[50] As outlined in the previous chapters, it is seen as a promising alternative to informal tools applied by them in response to risks that are often found to be inadequate.[51] The financial vulnerabilities associated with many of those risks, such as death, old age, or illness, are commonly found to be different for women and men. As women typically are the care givers and risk managers within the household, they are found to disproportionally absorb the impact of adverse shocks. Furthermore, the strategies applied to cope with risks tend to vary with gender-related individual and household characteristics. In this regard, it is possible that women are "particularly good candidates for microinsurance" (Banthia et al. 2009: V), if they can gain more from insurance than men.

However, women in developing countries often face restrictions in terms of access to financial markets (e.g. Addai 2011; Guérin 2011; Johnson 2004). Furthermore, risk coping within the household may not always be a joint endeavor. Where households are strongly divided into male and female spheres, intermediation of resources between spouses to pool risk and insure one another might be limited. Thus, whether or not women can satisfy their demand for insurance and other financial services to secure their own livelihood and that of dependents is likely to be related to (gendered) imperfections in the market as well as to intrahousehold power relations and financial management (Banthia et al. 2009). However, not much is known about gender differences in insurance behavior. Rather, the typical approach in studies on the participation in conventional as well as in microinsurance has

[50] This chapter is based on joint work with Tilman Brück.

[51] For a definition of microinsurance see Chapter 1.

been to equate the interest of an individual – presumably a male household head – who does or does not purchase insurance coverage to that of the household as a whole.

It is the objective of this chapter to address this gap and explore gender differentials in the insurance behavior between and within households in an emerging insurance market, focusing particularly on the case of micro life insurance. In addition, going beyond the examination of mere gender differences, the chapter provides a first insight into the question of how the decision to purchase micro life insurance responds to intrahousehold dynamics in couple households.

Life insurance is a financial instrument that facilitates intertemporal and interpersonal transfers to protect household resources in the event of the death of the policyholder (term life insurance) or during his or her old age (permanent life insurance) (Villeneuve 2001). Hence, purchasing life insurance serves savings motives, bequest motives, and reallocation motives and is closely related to household and/or individual financial portfolio decisions. As demonstrated in Chapter 1, the decision to purchase life insurance may be jointly determined with the decision to save and/or to borrow. Thus, aside of micro life insurance, the analysis takes into account the available formal and informal financial services including savings options and loans.

There are reasons to believe that preferences of women and men on life insurance covering the risk of death and saving for old age differ. Women have a higher life expectancy and, if married, are generally younger than their husband. In addition, irrespective of their marital state and role as a household head or a spouse, they are typically more responsible to cater for the needs of children and other dependents. Thus, they are likely to have both higher incentives to save for future livelihood during their old age and to insure the family against the loss of income after the husband's or their own death, Yet, women are often found to be at risk of being poor during retirement and not well covered by life insurance plans of their husbands or of themselves, suggesting unequal access conditions and/or conflicting interests on life insurance expenditures within the household (e.g. Bajtelsmit et al. 1999; Bernheim et al. 2003; Razavi 1999).

The analysis uses household survey data collected in three regions of southern Ghana in 2009 (see also Chapter 2). Multivariate probit models are estimated to investigate gender differentials in the uptake of micro life insurance and other formal and informal financial

services on the inter-household as well as the intra-household level. On the inter-household level, the analysis tests for the effect of different household types in order to find out whether households headed by a (single) woman are more or less likely to take up micro life insurance vis-à-vis other types of financial services as compared to couple households and single man households.[52] On the intra-household level, the analysis tests for the effect of gender on the individual uptake of micro life insurance and other financial services of spouses in the subsample of couple households. Furthermore, using simultaneous bivariate probit models that allow for the correlation of spouses' decision-making, the analysis examines whether the husband's and wife's uptake of micro life insurance responds to different factors and how it relates back to intrahousehold power relations among the two.

The results show that the effect of gender on the inter-household level differs from that on the intra-household level. Households headed by single women are less likely than couple households and single men households to purchase micro life insurance, which could be a sign of gender discrimination in the market. However, this is disproved by the finding that women in couples are, in fact, more likely to purchase micro life insurance compared to their husbands. Yet, this is only the case in the regions dominated by matrilineal societies. In line with the one study that exists on both spouses' participation in conventional life insurance markets (Gandolfi and Miners 1996), the uptake of micro life insurance of spouses in couple households responds to some different individual and household characteristics. Compared to the husband, the wife's uptake is more strongly associated with informal non-farm activities, bad health, household wealth and a bequest motive towards children. Compared to the wife, the husband's uptake responds more strongly to his perceived risk exposure of the household, indicating stronger pessimism on the value of the insurance for the man in couples. Furthermore, there is little evidence that the characteristics of the wife and her bargaining power within the household affect the husband's decision to purchase insurance. Yet, the wife's bargaining power significantly increases the probability that she purchases micro life insurance for herself.

The chapter contributes to the literature in two ways. First, as reviewed in the previous chapters, there is now an increasing body of research on the determinants of participation in different types of microinsurance. Yet, there is a dearth of empirical research exploring gender dimensions both in conventional and microinsurance markets. This is surprising,

[52] The chapter uses the term single women households for those households, which are headed by women who have never been married, who are widowed, and who are divorced.

given that women and men typically face different vulnerabilities towards risk. The results presented in this chapter support the view that there are gender differentials in micro life insurance participation, though these may be heterogeneous and rooted in the particular local cultural and social background. Furthermore, it is now well documented that intra-household relations may be characterized by diverging or even conflicting interests and different degrees of cooperative behavior. There is an array of so-called collective models and respective empirical applications, which address intra-household cooperation and bargaining and object the assumption of shared preferences made by standard unitary models. The second contribution of this chapter is thus to demonstrate the relevance of analyzing insurance participation on a more disaggregated level within households. This provides insights into differing interests of spouses on insurance coverage and the role of intra-household power relations for respective decision outcomes. Not least, this is facilitated by a unique feature of the household survey used for the analysis, which collected insurance and other financial information from spouses in separate interviews. Given that studies have found that financial information is often not publicly shared within households and that for reported use of financial services it matters who in the household is asked (Cull and Scott 2010; Malapit 2012), this makes it possible to draw a more complete picture of the patterns of participation in the insurance and financial market under study.

The chapter is structured as follows. Section 4.2 starts with an overview of the standard literature on the consumption of life insurance. It then continues to outline gender-related issues in insurance participation and intrahousehold financial management. Section 4.3 presents the data and section 4.4 explains the empirical approach and describes major summary statistics of the main variables included in the analysis. Section 4.5 presents the empirical results followed by the conclusion in section 4.6.

4.2 Review of the literature

4.2.1 Demand for life insurance: The standard approach

As described in the previous two chapters, according to the standard model of life insurance consumption a primary income earner purchases life insurance to maximize his lifetime utility and that of dependents. Thereby, the lifetime uncertainty of the primary income earner is removed from a household's allocation decisions. Following from this,

life insurance serves the motive of saving for retirement, and a second motive of saving for a bequest (Pissaridis 1980; Yaari 1965). Extensions of this basic model have introduced subjective discount rates, bequest functions, risk attitudes, human capital and labor income (e.g. Fischer, 1973; Campbell, 1980; Hurd, 1989; Lewis, 1989). Furthermore, life insurance has been considered as a part of household asset accumulation, portfolio choice behavior and financing decisions.[53] Especially in the context of high risk and incomplete insurance markets in developing countries, aside of insurance, which is not always available, savings and borrowing are also commonly used for the purpose of smoothing consumption in the wake of high income fluctuations (e.g. Deaton, 1989; Eswaran and Kotwal, 1989; Besley, 1995; Browning and Lusardi, 1996; Dercon, 2005; Morduch, 1995).

It is beyond the scope of this study to provide a comprehensive survey of the large empirical research on the purchase of conventional life insurance.[54] Yet, as shown by the previous chapters, household participation in micro life insurance in developing countries may be determined to quite an extent by factors that go beyond the standard determinants considered in the literature on conventional life insurance. In line with the results of studies on other types of microinsurance (Cai et al. 2009; Giné et al. 2008; Morsink and Geurts 2011), informal trust-building mechanisms, such as the familiarity with the insurance provider and the product turn out to be relevant determinants. In addition, Chapter 1 has shown that there is a mutually reinforcing relationship between the use of micro life insurance and the use of other formal financial services.

While there is now detailed knowledge on many reasons why households or individuals hold life insurance and other financial assets, much less is known about whether there are gendered differences in the decisions to purchase life insurance and/or use other financial services and how these decisions relate to the household structure and the interaction of spouses. The first and only study that provides evidence on the intra-household level of both husbands' and wives' purchase of life insurance based on data from the United States shows that couples decide strategically on who should carry insurance depending on the returns to human capital and household production. Yet, their findings also indicate that the wife's demand for life insurance function shows considerable differences to that of the

[53] An overview over the theoretical and empirical literature on household financing and portfolio allocation decisions is provided by Campbell (2006).

[54] A review over the empirical literature on the demand for life insurance over the past 50 years is provided by Zietz (2003).

husband. Most importantly, the bequest motive seems to be relevant only for the wife's purchase of life insurance. While such results provide an indication that preferences over life insurance of men and women differ, they do not make this point explicit.

However, many studies have found that women, and elderly widows in particular, are at high risk of being poor and not well-covered by life insurance and other financial assets both in industrial countries as well as in developing countries (Auerbach and Kotlikoff, 1991; Bernheim et al., 2003; Razavi, 1999; Banthia et al., 2009). In the latter countries, their vulnerability is often increased by unfavorable legal rights on and control over assets after the death of their husbands. Furthermore, women in developing countries are found to be keen savers. Yet, they frequently deplete accumulated savings to deal with shocks affecting household members. Hence, women are neither always adequately protected by insurance bought by their husbands (if there is one), nor those bought by themselves.

In short, we know very little on how different characteristics of women (wives) and men (husbands) affect the decisions to purchase life insurance or to use other financial services. Furthermore, none of the above studies addresses the reasons for the observed variations of vulnerability and financial protection of women and men. Apart from data limitation, this may be due to the simplified approach of treating the household as if it was a single decision-maker and thus a place of common preferences.

4.2.2 Gender and household decision making

The development of so-called collective models that consider the dimensions of an intrahousehold economy has already started in the 1980s. These models deviate from the traditional unitary approach of treating households as if they were single individuals. Instead, they allow for the interaction of spouses with different preferences, who bargain over allocation or production decisions.[55] There is now an increasing body of research on the influence of spouses' relative bargaining power on various outcomes, including expenditures on clothing, food, alcohol or tobacco, health, and children's needs (e.g. Lundberg et al. 1996; Quisumbing and Maluccio 2003; Thomas 1990). Bargaining models

[55] See Doss (2001) and Chiappori and Donni (2011) for a review on intrahousehold decision-making models. These include cooperative models with Pareto efficient allocation outcomes and non-cooperative (or strategic) models, which are based on the concept of the Cournot-Nash equilibrium and allow for non-Pareto efficient outcomes.

include a "sharing rule", which depends on factors that affect spouses' relative bargaining power, such as spouses' utility outside the joint arrangement (threat point) and each spouse's control over household resources.[56]

Only recently have studies started to explicitly take into account the mechanisms of intrahousehold decision-making in the analysis of insurance, saving and borrowing behavior. In his unique theoretical model, Browning (2000) develops a simplified non-cooperative model on intertemporal savings decisions in a two-person household. He shows that husbands discount the future more than wives since the latter are typically younger and expect to live longer. Under the assumption of less than perfect sympathy between the spouses, household portfolio allocations depend strongly on the relative distribution of income between the two. Husbands are shown to have a higher preference for annuities and lower preferences for private savings and life insurance than wives.

On the empirical side, several studies have found that retirement and overall wealth, investment and portfolio composition decisions differ significantly across gender and marital states.[57] The wife's bargaining power is found to be positively associated with household net worth (Friedberg and Webb 2006; Lundberg and Ward-Batts 2000), positively associated with the living standard during widowhood indicated by the amount of savings and life insurance holdings (Aura 2005; Babiarz et al. 2012), and negatively associated with investment in risky assets such as stocks (Bernasek and Shwiff 2001; Friedberg and Webb 2006; Lyons et al. 2008). In contrast, when husbands are more powerful, couples are found to be more likely to invest in stocks and annuities that pay off during their lifetime, rather than term life insurance (Euwals et al. 2004; Lyons et al. 2008). Apart from women's higher life expectancy and motivation to leave a bequest, such evidence has also been explained by the observation that women tend to bear lower risk. Yet, lower risk bearing among women seems to be caused to a great extent by gender-related differences in earnings, financial knowledge and psychological factors, such as self-confidence (Dwyer et al. 2002; Hinz et al. 1997; Jianakoplos and Bernasek 1998). Furthermore, Lundberg and Ward-Batts (2000) show that even in the absence of

[56] In some of the literature this outside option is considered to be the utility levels in the case of divorce, whereas others view the non-cooperative marriage as the outside option.

[57] A profound review over the recent literature on gender and marital differences in wealth and investment decisions in industrial countries is provided by Lyons et al. (2008).

bargaining, the characteristics of both spouses are determinants of households' total savings and wealth accumulation.

To measure relative bargaining power, studies have either used indicators of relative resource control such as income, age and education inequalities (Folbre 1988; Lundberg and Ward-Batts 2000), indicators of who in the household has the "final say" (Friedberg and Webb 2006; Lyons et al. 2008), or extra-household environmental parameters such as characteristics of the marriage market and the divorce legislation (Chiappori et al. 2002), and social security laws (Aura 2005; Duflo 2003). The indicators of relative resource control are plagued by certain disadvantages over the other two. For example, relative earnings reflect relative wage rates of women and men in the labor market, which jointly affect time allocation, savings, insurance and investment decisions (Lundberg and Ward-Batts 2000; Lyons et al. 2008). The age differential might also be an inappropriate measure of bargaining power. Lundberg and Ward-Batts (2000) caution that older wives may not necessarily be more powerful, especially given the fact that their chances for re-marriage declines. Compared to the effects of relative income and education, the effect of the age differential of couples on wealth and portfolio decisions has been rather inconclusive (Browning et al. 1994; Lundberg et al. 2003; Lundberg and Ward-Batts 2000; Lyons and Yilmazer 2010).

With regard to spouses' financial management in the context of developing countries, a number of studies show that women and men in couples command over different asset and income streams (e.g. Zwarteveen 1996, Johnson 2004), operate in separate economies (Hill 1975), hide income and undertake financial transactions that are unknown to their spouses (Malapit 2012, Goldstein 1999, Ashraf 2009), and use separate and different types of financial services, such as loans and savings accounts (Johnson 2004, Karanja-Diejomaoh 1978, Oppong 1971). Not least, this is caused by the fact that in developing countries women often face restrictions in terms of access to financial markets (Addai 2011; Guérin 2011; Johnson 2004; Kabeer 2008). There is some evidence that the ability to overcome such gendered financial market imperfections by intra-household resource transfers strongly depends on the distribution of resources and opportunities among spouses (Fletschner 2009). Specifically in the case of Ghana, studies have shown that households do not always pool their financial resources (Doss 2001) and that the gender-related control over resources matters for intrahousehold allocation decisions (Ibid.; Goldstein 1999) and production decisions (Carr 2008).

In sum, the evidence provided by the literature suggests that household resource protection and financing decisions depend on gender-specific preferences and intra-household power relations among spouses. Yet, there is only scarce empirical evidence on the relationship of spousal characteristics and intra-household power relations with conventional life insurance in the context of retirement saving as well as individual and household portfolio decisions. Respective evidence on microinsurance in general and micro life insurance in particular essentially does not exist.

4.3 The survey data

This study employs data from the survey on household risk management and insurance conducted in the Central region, Eastern region and Volta region of southern Ghana described in Chapter 2. As explained there, the survey contains 1,030 households randomly selected across 17 semi-urban communities within the service areas of three rural and community banks (RCBs), which provide the Anidaso policy from the Ghanaian Gemini Life Insurance Company (GLICO). The policy is similar to a universal life insurance and includes a term component up to the age of 65, topped up by accident benefits and hospitalization benefits for the policyholder. Contributions towards a so called investment plan and supplemental term coverage on the spouse, and up to four children can be added on a voluntary basis.[58] The survey included communities where policyholders were located (in-region) and communities from the same service areas comparable in size and infrastructure where no policyholders were located (out-region). Microinsured households were oversampled and represent 50 percent of the households in the in-region.

The survey data is particularly suitable for this study, as the questionnaire included sections on the individual use of financial services provided by formal and informal financial institutions that had to be answered separately by the household head and his wife in couple households. These included questions on savings and insurance held with formal and informal financial institutions, as well as loans taken from these during the past five years, which is the time period the micro life insurance had been on the market. Both spouses were also asked individually about their perception of various risks and risk

[58] GLICO recruits and trains sales agents who typically come from the communities where the Anidaso policy is offered and who are in charge of marketing the policy and communication between GLICO and the distributing bank. For more information about the Anidaso policy, see Giesbert, et al. (2011) and Steiner and Giesbert (2010).

attitude, as well as their integration into networks. Furthermore, in the two survey areas in the Central Region and the Eastern Region the population is dominated by the ethnic group of the Akan. Different to other ethnic groups, their families and household structures are based on the maternal line. Although husbands perform the role of a household head, in these matrilineal societies they typically have less control over their wives and children and household decisions than husbands in patrilineal societies, such as those in the Volta Region (Okali 1983). Aside of the rather imperfect measures of bargaining power of spouses that can be obtained from the survey data (see below), this exogenous variation of the sociocultural context across the regions allows for an additional insight into the gender and bargaining power nexus with the use of micro life insurance and other financial services.

The analysis in this chapter considers data from the 685 households of the in-region to ensure equal access of households to the micro life insurance and other formal financial services, which was shown to be systematically lacking for the out-region in Chapter 2. From this sample, it considers only the single headed households and couple households with complete item responses in the financial services modules and in which the head (or at least one spouse in couple households) is below the age of 75. This ensures that, in principle, at least one of them would have been able to access the insurance scheme.[59] For the sake of simplicity, the five couple households that are headed by a woman and 97 households with a single head who is married are dropped from the analysis. While the married single headed households are not unusual, they are of quite a distinct type. In these households it is likely that husbands have migrated and the available "woman head" is presumably not the primary decision-maker in most cases. In the few married single men households the spouses may also have migrated. However, it may also be the case that these spouses still live with their family, which is not an uncommon practice especially among the matrilineal Akan in the Central and Eastern Region. It is impossible to trace the exact whereabouts of the spouses in the married single households in the data. More importantly, for these households the complete and necessary information for the financial services module of both spouses is not available. As shown in the Appendix in Table 22 on the distribution of the sample, this reduces the total number of observations used in the

[59] According to the few eligibility criteria for policyholders clients should be adults below the age of 65 and in a healthy condition, but these criteria are not always strictly met. Especially people from the older generation often do not know their own age. The age margin of accepted clients since market entry (five years prior to the survey) goes beyond 65 and includes people in their seventies today.

analysis to 568 households. Among these, 313 are couple households, 204 are single women households and 51 are single men households. The analysis on intra-household insurance patterns uses the subsample of 626 husbands and wives of the couple households.[60]

According to the sampling frame, the distribution of the microinsured and non-microinsured households in the sample is nearly balanced across the three survey regions. However, on the individual level, which was not considered in the sampling frame, there is a higher proportion of female policyholders in the Central Region as compared to the other two regions. On the aggregate household level, correctly weighted uptake rates are slightly higher in the Central and Eastern Regions than in the Volta Region (Table 22). All further analysis accounts for the survey probability weights.

4.4 Empirical approach

The primary interest in the subsequent analysis is on the effect of gender in relation to the different household types and power relations within the couple household subsample. In the first step, the analysis investigates gender-related differences in the uptake of micro life insurance and the use of other financial services across households by estimating a standard unitary model on the aggregate household level. Single women households, in which a woman is the most important decision-maker, are expected to be more likely to purchase micro life insurance, given the assumed higher motivation of women to leave a bequest to children and to save for retirement, which single women are responsible for on their own. However, the true preferences of women may not be revealed if there are gender disparities in the access to financial services, as outlined above. Hence, one may alternatively hypothesize that single women households are less likely to use micro life insurance and other financial services. The model includes dummy variables indicating single women and couple households, with single men households being the omitted category. In the second step, to follow up the effect of gender within the couple households, the data for husbands and wives are combined to form a 'household equation' of couples and include gender as an explanatory variable. Both models are estimated by using a multivariate probit model that is specified as follows:

[60] Cohabiting couples are also included in the sample. Though they are not spouses in legal terms, for simplicity reasons they are referred to as spouses, husbands and wives as well. Furthermore, it is assumed that the insurance behavior of husbands and wives is not affected by other adult members of the household.

$$Y_i^j = X_i'\beta_i^j + F_i'\beta_i^j + \varepsilon_i^j \quad (8)$$

$$\text{With} \quad Y_i^j = \begin{cases} 1 & if\ Y_i^j > 0 \quad (uses\ financial\ service\ j) \\ 0 & if\ Y_i^j \leq 0 \quad (does\ not\ use\ financial\ service\ j) \end{cases},$$

where Y_i^j is the latent propensity to use financial service j for household/individual i. Financial services j can be micro life insurance, formal savings, informal savings, formal loans or informal loans. F refers to a dummy variable indicating that the household head or the individual (in the household equation of the couples) is female. The vector X refers to control variables on the individual, household, and community level. These are derived mainly from the literature on the demand for life insurance and microinsurance. On the individual level, these include two dummy variables indicating informal and formal non-farm employment vis-à-vis farming as the omitted category, credit constraints measured by the experience of a loan denial, an index on the subjective perception of risk[61], a dummy variable indicating illness for more than one week continuously, years of schooling, age and the squared term of age, the number of group memberships as a way to capture the impact of social networks, and a dummy variable indicating enrolment in the public pension scheme (SSNIT). The latter variable is included as the expectation of future public pension benefits is likely to reduce the need for private life insurance coverage. In the aggregate household level estimation, individual characteristics refer to those of the household head. Hence, in couple households, these are not necessarily coinciding with the characteristics of the potential insurance holder, the owner of a savings product, or the borrower. On the household level, control variables include an asset index (based on principal component analysis on the assets held five years ago), land size, the share of children to measure bequest motives[62], the experience of death in the past five years, the experience of other shocks in the past five years and the relationship to formal banks in years prior to the introduction of the micro life insurance, to measure the familiarity with and exposure to formal financial services. On the community level, the analysis controls for locally varying access conditions to financial services. The respective variables include the ratio of formal bank clients and the ratio of *Susu* clients prior to the introduction of the micro life insurance to indicate the prevalence of formal and informal financial services

[61] See Chapter 2, p. 62 for a more detailed description of the construction of the index.

[62] Using the share of children in a household instead of their total number ensures a higher variation of the variable and the children's influence is then also set in relation to the number of other household members who potentially influence household decision-making.

options, respectively.[63] Region dummies are also included. The intra-household level estimation further includes interaction terms of gender with the three regions as a source of exogenous variation of women's power in the household, given that the Central and the Eastern region are dominated by the matrilineal ethnic group of the Akan.

In line with the approach taken in Chapter 1, the assumption is that the determinants of the decisions to use loans and savings options investigated simultaneously with the insurance are similar, though not necessarily of the same magnitude and direction. As mentioned above, under this reduced-form specification the parameters capture the combined supply and demand effects. The error terms of the financial services functions are allowed to be correlated:

$$COV\left(\varepsilon_i^j, \varepsilon_i^k\right) = \rho_{jk}. \tag{9}$$

Attributing a gender effect in the couple households only on a gender dummy variable is not fully convincing. This approach assumes that spouses make financial choices independently. As outlined above, however, recent evidence rather suggests that the choices of individuals in couple households at least partly also reflect the preferences of the spouse.

In the third step, a more complete unitary model of the use of micro life insurance is estimated, which includes individual characteristics of both spouses. In line with Gandolfi and Miners (1996) and Lundberg and Ward-Batts (2000), it is expected that even in the absence of bargaining, characteristics of both spouses should affect their individual and joint insurance behavior. This part of the analysis focuses only on the decision to purchase micro life insurance, primarily because the number of observations in each of the financial service categories becomes too limited to obtain meaningful results from multivariate probit estimations.[64] Different specifications are used to estimate this model. Firstly, the following simple probit model is specified on the aggregate household level:

$$Y_i = X_i'^f \beta_i^f + X_i'^c \beta_i^c + X_i'^h \beta_i^h + X_i'^w \beta_i^w + \varepsilon_i \tag{10}$$

[63] As explained in the previous chapters, *Susu* describes well-known and widespread informal mechanisms of savings and loan taking in Ghana, including individual savings collectors, rotating savings and credit associations, and savings and credit "clubs" run by an operator.

[64] Furthermore, it would become too complex to additionally take into account the potentially simultaneous nature of spousal decision-making in the joint estimation of all financial services.

$$\text{With} \quad Y_i = \begin{cases} 1 \;\; if\; Y_i > 0 & (uses\; micro\; life\; insurance) \\ 0 \;\; if\; Y_i \leq 0 & (does\; not\; use\; micro\; life\; insurance) \end{cases},$$

where the vectors $(X_i^f, X_i^c, X_i^h, X_i^w)$ describe the characteristics of the household, the community, the husband and the wife, including the same variables introduced above.

Secondly, individual- level equations of both husbands and wives are estimated in a simultaneous framework, similar to the above case of the simultaneous choices of different financial services. This has rarely been done in the literature (e.g. Lyons and Yilmazer 2010), but is the appropriate approach if spouses' insurance equations are endogenous to one another and unobserved factors affect both spouses' ability and willingness to purchase micro life insurance. At the same time, it allows the spouses' individual position in the financial market as well as the determinants of the decision to use micro life insurance to be different. Thus, function (2) is estimated as a bivariate probit model including two equations for husbands and wives that follows a bivariate normal distribution. As above in the multivariate probit model, the error terms of the equations are allowed to be correlated:

$$COV\left(\varepsilon_i^m, \varepsilon_i^f\right) = \rho_{mf}, \tag{11}$$

where $\varepsilon_i^m$and ε_i^f capture unobserved demand shocks of spouses in couple i. If spouses have the same unobserved access conditions, perfect information and share preferences then ρ would be close to 1. On the contrary, the closer ρ is to zero, the more disconnected is the access and insurance behavior of the spouses. In addition to the bivariate joint probabilities, conditional probabilities can be defined to assess the probability that wives or husbands purchase micro life insurance conditional on their spouses' insurance status.

The fourth step is to take an even closer look into the intrahousehold dimension. The models of insurance participation on the aggregate level of the couple, as well as on the individual level of husband and wife are augmented by including variables suggested by the household bargaining approach.[65] In line with some of the above literature it is expected that it is determined by the relative control of spouses over household resources. Following other authors (e.g. Babiarz et al. 2012; Fletschner 2009; Lundberg and Ward-Batts 2000; Lyons and Yilmazer 2010), bargaining power is measured by 1) the share of

[65] It is important to note that it is beyond this study's scope to test the possibility of non-Pareto efficiencies predicted by the non-cooperative household models, and thus address welfarist objectives.

husband's and wife's income in total household income, 2) the age differential between husbands and wives, and 3) the education differential as indicated by the years of schooling.[66] It is important to caution again that while relative income seems to be the most obvious indicator of relative resource control, it is likely to be strongly correlated with unobserved determinants of the decision to purchase insurance. As the age differential might also not be a reliable indicator of decision-making power in a couple, the relative education is the preferred proxy of bargaining power in this analysis, as it serves as a more long-term proxy of the husband's and the wife's potential earnings. Overall, the simple collective models enable only an initial insight into the question of how intrahousehold power relations influence insurance decisions.

4.5 Descriptive statistics

4.5.1 Dependent variables

Table 15 shows the use of financial services across couple households, single men and single women households and of spouses within couple households. These exclude the retirement plan of the SSNIT that is mandatory for formal sector employees. An estimated 3.0 percent of all households in the survey areas have purchased micro life insurance, which is very low. Still higher is the 6.8 percent uptake of conventional life insurance. The proportion of couples who have either micro life insurance or conventional life insurance is higher than that of single women and men, with 3.7 and 8.3 percent respectively. Interestingly, a higher proportion of wives have purchased micro life insurance as a principal compared to their husbands (2.1 to 1.9 percent), while there are more policy holders of conventional life insurance among husbands (7.0 to 1.2 percent).[67]

Compared to micro and conventional life insurance, the use of other formal and informal financial services is much higher across all household types. The unconditional evidence

[66] As variables 2) and 3) increase, they indicate rising values for the wife compared to the husband. In other words, the age differential, for example, shows how many years younger or older the wife is compared to the husband.

[67] Note that participation rates are quite different with regard to public health insurance (NHIS), for instance, that is also available for the low income population. With 42.67 percent the participation of households in the NHIS is much higher. On the individual level, in the total sample the share of female spouses being a member of the NHIS is higher than the share of household heads (on average 50.72 to 40.31 percent, respectively).

shows that couples use more of any of the financial services. Using informal financial services is more common among single women compared to single men. This gender pattern is supported to some extent within couples, in which a higher proportion of wives use informal savings than husbands. Informal and formal loans, in particular, are most common among husbands and single women.

It is important to note that the categories of informal savings and informal loans comprise of only institutional services, including those offered by *Susu* schemes, financial groups, moneylenders and other institutions. Informal options outside any institutional framework, such as savings at home or loans obtained from family or friends, are not considered since the latter information is not available in the data. The prevalence of informal financial risk management may thus be much higher than suggested here. The formal savings and loans categories include savings held at and loans obtained from MFI's, RCBs, commercial banks, cooperatives and funds established for formal sector employees, and a remainder category.

Table 15: Distribution of financial services across households and individuals

Financial service	Households				Spouses in couples		
	Weighted %				Weighted %		
	Couple	Single men	Single women	All	Husbands	Wives	All
Life insurance	11.6	5.4	5.7	9.5	8.8	3.3	6.1
Micro life insurance (Anidaso)	3.7	3.1	2.2	3.0	1.9	2.1	2.0
Conventional life insurance	8.3	2.3	3.7	6.8	7.1	1.2	4.2
Formal savings	68.1	38.7	34.3	49.3	55.8	32.4	44.1
MFI	1.6	5.7	0.1	1.8	0.5	1.2	0.8
RCB	48.9	26.8	24.6	35.1	35.4	23.6	29.5
Commercial bank	29.4	12.6	12.0	18.8	25.6	8.3	16.9
Cooperative/pension fund	3.4	0.1	1.8	2.6	3.0	1.3	2.1
Other	0.4	0.0	0.0	0.2	0.4	0.0	0.2
Informal savings	23.7	7.5	14.1	18.0	8.0	17.7	12.9
Susu	17.3	4.9	10.2	13.2	4.5	14.8	9.6
Financial group	6.4	2.6	3.9	4.9	3.5	2.9	3.2
Formal loans	31.5	14.0	16.9	24.2	24.1	11.7	17.9
MFI	5.1	0.2	1.4	3.0	4.3	1.2	2.7
RCB	17.3	9.1	10.7	14.6	11.1	7.7	9.4
Commercial bank	11.6	4.7	4.4	7.5	10.8	2.0	6.4
Cooperative	1.8	0.0	0.9	1.1	1.0	0.8	0.9
Informal loans	10.5	2.6	10.0	10.0	8.7	3.9	6.3
Money lender	4.3	0.0	1.9	2.8	2.5	2.2	2.4
Susu	1.5	0.0	2.0	1.7	1.0	0.4	0.7
Financial group	3.8	0.2	5.0	3.4	3.1	1.2	2.2
Other	2.1	2.4	1.2	2.5	2.1	0.0	1.1
Total sample (N)	313	51	204	568	313	313	626

Notes: Includes only couples with complete information and non-married single men/women *Source:* Authors' calculation

Table 16 provides descriptive evidence on the prevalent motivations of purchasing micro life insurance. The majority of men and women report that they have purchased the policy for the relatively unspecific reason "to secure against future shocks". "Protection for the family in case of accident or death" comes second and is mostly mentioned by husbands, followed by the option "to save for future livelihood". Hence, the majority of clients seem to view micro life insurance as a means of precautionary savings to deal with any type of

future risk. This interpretation is supported by evidence obtained from focus group discussions in the Central Region, where many participants view the micro life insurance rather as a savings instruments and are highly unsure about the exact benefits it provides. As a consequence, they regard it as a panacea for any difficulties they face in life.[68]

Table 16: Motivation of individuals to purchase micro life insurance across household types

	Couple households		Single headed households		All
	Percent		Percent		Percent
	Husbands	Wives	Single men	Single women	
To secure against future shocks (n=169)	45.5	70.3	65.4	61.2	59.8
To protect family in case of accident/death (n=68)	31.0	20.8	16.7	20.5	23.4
To obtain collateral for loans (n=15)	8.0	1.3	5.5	5.7	4.9
To save for future livelihood (n=25)	11.3	3.7	12.5	11.1	8.8
Other (non-genuine purpose) (n=8)	4.2	4.0	0.0	1.5	3.0
Total (n=285)	100.0	100.0	100.0	100.0	100.0

Notes: The figures represent unweighted percent of households in the sample. *Source:* Authors' calculation

4.5.2 Individual, household and community characteristics

Table 17 provides descriptive statistics for the explanatory variables used in the analysis. Not surprisingly, single women and wives earn less income from economic activities and attended school for fewer years than single men and husbands.

[68] The distribution of self-reported purchase reasons of conventional life insurance shows a very similar pattern. However, the number of observations across the considered household types is too limited to offer meaningful results.

Table 17: Summary statistics

Variables	Couple households				Single headed households				All			
	Husbands		Wives		Single men		Single women					
	Mean		Mean		Mean		Mean		Mean		Min	Max
Individual characteristics												
Income from economic activities per month (GHC)	156.61	(12.16)	78.66	(7.74)	93.22	(18.43)	91.76	(10.97)	110.71	(5.71	0	900
Informal non-farm employment[a]	0.4	(0.04)	0.7	(0.04)	0.62	(0.09)	0.67	(0.04))	0.59	(0.02)	0	1
Formal non-farm employment[a]	0.26	(0.04)	0.1	(0.02)	0.17	(0.07)	0.13	(0.03))	0.17	(0.02)	0	1.00
Experience of loan denial[a]	0.1	(0.02)	0.06	(0.02)	0.17	(0.07)	0.03	(0.01)	0.07	(0.01)	0	1
Risk perception index	-0.18	(0.09)	-1.09	(0.06)	0.05	(0.19)	0.04	(0.1)	-0.37	(0.05)	-1.78	3.33
Illness (last 12 mths)[a]	0.21	(0.03)	0.18	(0.03)	0.08	(0.05)	0.37	(0.04)	0.23	(0.02)	0	1
Years of schooling	10.49	(0.41)	7.14	(0.42)	8.58	(0.85)	6.83	(0.48	8.38	(0.24	0	26
Age	46.61	(1.14)	39.57	(1.01)	46.98	(3.79)	49.94	(1.27)	45.39	(0.64	19	83
No. of group memberships	0.91	(0.06)	0.97	(0.06)	1.22	(0.48)	0.88	(0.07	0.95	(0.04)	0	10
Enrolled in pension scheme (SSNIT)	0.16	(0.03)	0.05	(0.02)	0.25	(0.08)	0.08	(0.02)	0.12	(0.01)	0	1
Household characteristics												
Total household income per month (GHC. per adult equivalent)	80.55	(6.03)	80.55	(6.03)	150.53	(30.05)	67.44	(6.01)	83.68	(3.70)	2	630
Total value of household assets (GHC)	840.09	(192.63)	840.09	(192.63)	919.15	(263.39)	527.21	(166.91)	782.77	(95.13)	0	18637.67
Land size per AE	5.85	(0.82)	5.85	(0.82)	8.64	(3.85)	3.19	(0.93)	5.06	(0.47)	0	98
Share of children	0.43	(0.02)	0.43	(0.02)	0.06	(0.03)	0.3	(0.03)	0.37	(0.01)	0.00	0.86
Death experience (past 5 yrs.)[a]	0.12	(0.03)	0.12	(0.03)	0.27	(0.09)	0.32	(0.04)	0.2	(0.02)	0	1
Other shock experience(past 5 yrs.)[a]	0.5	(0.04)	0.5	(0.04)	0.33	(0.09)	0.4	(0.04)	0.46	(0.02)	0	1
Relationship to banks (yrs)	2.9	(0.47)	2.9	(0.47)	1.55	(0.71)	1.33	(0.41)	2.27	(0.23)	0	37
Community characteristics												
Ratio of bank clients (5 year lag)	0.67	(0.01)	0.67	(0.01)	0.7	(0.03)	0.65	(0.01)	0.67	(0.01)	0.48	0.88
Ratio of *Susu* clients (5 year lag)	0.17	(0.01)	0.17	(0.01)	0.19	(0.01)	0.16	(0.01)	0.17	(0.00)	0.01	0.26
Relative characteristics husband/wife[b]												
Wife's income differential	-0.28	(0.03)	-0.28	(0.03)					-0.28	(0.03)	-1	1
Wife's age differential	-7.04	(0.40)	-7.04	(0.40)					-7.04	(0.40)	-35	13
Wife's education differential	-1.64	-0.19	-1.64	-0.19					-1.64	-0.19	-10	8
Husband has 3+ years more education (one std dev)[a]	0.40	(0.04)	0.40	(0.04)					0.40	(0.04)	0	1
Total sample (N)	313		313		51		204		881			

Notes: Standard errors in parentheses. a: Dummy variable where 1 = yes; b: only measured in couple households. *Source:* Authors' calculation.

The proportion of single women and wives in informal non-farm employment is higher than that of husbands and single men, but the opposite is true with regard to employment in the formal non-farm sector. With a mean age of 50 years, single women are slightly older than the average person in the sample (48 years). In contrast, wives are 40 years old on average and 7 years younger than their husbands. Interestingly, single men seem to be most active in social and financial groups and they are most likely to be enrolled in the SSNIT. In terms of their subjective exposure to risk, single women and men feel most exposed and husbands feel least exposed to risk, as measured by a respective risk perception index. Finally, with 6 months on average, husbands and single men are those with the longest relationship to formal banks prior to the market entry of the Anidaso policy.

Regarding the household characteristics, the descriptive statistics indicate that single men households are richest and single women households are poorest in terms of assets and land. Unsurprisingly, the share of children is highest among couples and single women with 43 and 30 percent, respectively, and lowest among single men with only 2 percent. In terms of shocks experienced by households during the past five years it is not surprising that the experience of a death in the household is considerably higher among single women and single men households. Other shocks, however, are more often experienced among couples. The descriptive statistics on our bargaining power proxies measured in couple households show that the wife's share in total household income is, on average, 28 percentage points lower than the husband's, she is 7 years younger and went to school for 1.64 fewer years. The community level characteristics are similar across the considered household types.

4.6 Results

4.6.1 Inter-household comparison

This section addresses gender differentials in the use of micro life insurance and formal savings and informal savings options as well as formal and informal loans on the aggregate household level. The main interest of the analysis lies in the effect of the different household types considered, i.e. single women households and couple households in comparison to the omitted category of single men households. Table 18 presents the results with respect to these variables of a multivariate probit model that simultaneously estimates

the use of any of these five financial services. The full model including all individual, household and community control variables is shown in the Appendix, Table 24. The estimated correlation coefficients shown in the bottom line of the table confirm the earlier results on the Central Region of the multivariate probit model presented in Chapter 2. The residuals of the estimated functions are significantly correlated for the formal financial services, indicating that they are jointly influenced by the same or similar unobservables. Hence, applying a multivariate estimation framework is appropriate and improves estimates for any of the five equations as compared to the univariate alternative. There is no significant correlation of the informal services functions with micro life insurance. Thus, there seems to be no substitution effect between these options and micro life insurance. The mean of the predicted values from all financial services equations differ from the actual sample mean by 1.2 to 12.0 percent, indicating a good fit of the household-level regression.

The results show a negative effect of the dummy variables indicating single women households and, surprisingly, also couple households in the micro life insurance equation relative to the reference group of single men households. Hence, single men are the group that is most likely to purchase the micro life insurance, which is surprising given that they neither have a wife, nor many children living with them. On average, single women households are 11 percentage points and couple households are 10 percentage points less likely to purchase micro life insurance as compared to single men households. With regard to the couple households the primary motive to purchase micro life insurance might thus not be reallocation and household resource protection in favor of a surviving spouse. Yet the effect is statistically significant only for single women households.

However, as compared to the reference group of the single men households, single women and couple households are more likely to use any of the other financial services. This could point out that, in fact, single men households face higher barriers to access both formal and informal savings and loans options and use micro life insurance as an alternative coping strategy, or as a way to gain reputation at the bank to qualify for a loan. As compared to the other groups of households, couple households are significantly more likely to use formal and informal savings. Single women households are significantly more likely to use informal loans, though the effect does not appear to be economically relevant. As a robustness check, the same analysis was performed with the insurance category including also conventional life insurance. The effect of the single women household dummy is still

negative in the insurance equation, but loses significance (results not shown). Thus, if at all these results point to a higher access barrier of (single) women to formal financial services this, surprisingly, seems to be more pronounced in the case of micro life insurance as compared to life insurance in general.

Table 18: Multivariate probit model results on the effect of gender and household type on households' uptake of micro life insurance and other financial services

	Single woman household			Couple household			Observed uptake rates	Predicted uptake rates
	Coeff.		AME	Coeff.		AME	Percent	Percent
Micro life insurance	-0.441**	(0.198)	-0.111	-0.319	(0.198)	-0.096	3.0	4.7
Formal savings	0.031	(0.337)	0.007	0.871**	(0.369)	0.210	51.1	63.1
Informal savings	0.382	(0.481)	0.000	0.926**	(0.459)	0.000	13.2	19.4
Formal loans	0.290	(0.489)	0.062	0.314	(0.467)	0.058	23.8	31.1
Informal loans	1.618**	(0.809)	0.000	1.380*	(0.790)	0.000	9.6	10.8
Observations	568							
Estimated corr. coefficients	p21= 0.449*** (0.136)		p41=0.369*** (0.112)		p51=-0.109 (0.144)		p32= -0.301** (0.128)	
	p42=0.217 (0.140)		p43= -0.179 (0.130)		p53= 0.409** (0.172)		p54= -0.381*** (0.119)	

Note: The model also includes individual, household and community controls. Robust standard errors are given in parentheses. The model also includes a constant and corrects for the sampling probability weights. Wald test of the model: X^2 (115) = 480.78; p = 0.0000). The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

The effects of the head's individual, the household and the community characteristics are in line with those presented in the previous two chapters (Table 24). The largest signficant marginal effects are obtained for the employment and loan denial variables. The household head's employment in formal or informal non-farm work rather than farm work increases uptake of micro life insurance by 12 percentage points in both cases. Experience of a loan denial increases the probability to purchase micro life insurance, as well as to use formal savings and informal loans. As explained in the previous chapters, informal loans are a substitute for formal ones (as also indicated by the negative correlation coefficient of the formal and informal loan functions), whereas life insurance and formal savings are options that can serve as collateral. Large positive and significant average marginal effects are also obtained for the variables indicating the share of children in the household, thus signaling a bequest motive in the purchase decision, and previous shock experience other than death during the past five years. Shock experience may create a higher wariness and wish to secure household resources by purchasing insurance, especially when people have the

vague imagination that the policy could help with regard to various future shocks as suggested by self-reported reasons to purchase the insurance presented above.

4.6.2 Intra-household comparison

This section addresses the effect of gender within the couple households on the use of micro life insurance and formal savings and informal savings options. Furthermore, it deals with the differences of husbands' and wives' insurance participation functions and the role of intra-household power relations in these.

4.6.2.1 Gender effect

Table 19 shows the results of the same multivariate probit model that is now estimated on the individual level of the combined dataset of husbands and wives with respect to the key variable of interest. These include the gender of the individual as well as gender and region interaction terms. As explained above, the differences in matrilineal versus patrilineal societies across the three survey regions introduce a source of exogenous variation in women's power in decision-making in the household.[69] There are serious limitations to calculate correct marginal effects of interaction terms in a multivariate probit model. In order to gain an insight into the true magnitude and significance of the interaction effects the average marginal effects of the interaction terms displayed in the table are obtained from simple probit models on each of the financial services.[70] The estimated correlation coefficients of the error terms of the five equations in the multivariate probit model are of the same sign and significance as in the household-level regression. The model fit of the intra-household regression even improves, with predicted values from all financial services equations that differ from the actual sample mean by 1.2 to 5.9 percent.

Remarkably, the negative gender effect suggested by the inter-household comparison is not generally confirmed for couple households. Rather, there are significant differences across

[69] When including interaction terms of the different household types with regions in the household-level regression above, these show the same direction of effects with regard to single women households across the different regions, but these turn out not significant.

[70] These are calculated using Stata's inteff command. There are no available routines in Stata or other statistical programmes for calculating the correct marginal effects and standard errors for interaction terms in a multivariate probit model. Using standard bootstrapping methods to calculate them manually turns out too expensive in computational terms.

the three survey regions. Contrary to the lower likelihood of single woman heads to use micro life insurance, wives in the Central Region are 6.1 percentage points and wives in the Eastern Region are 3.3 percentage points more likely to purchase micro life insurance than husbands, relative to the reference group of wives in the Volta Region. These are fairly large magnitudes, given that the low predicted (and actual) uptake of 3.4 percent (2.1 percent). These results suggest that due to the higher power status of wives in the Central and Eastern Region the incentives for husbands to purchase insurance protection for the spouse and children could be lower; and wives ability (or necessity) to purchase insurance on their own to secure their livelihood during old age or leave a bequest could be higher.

Table 19: Multivariate probit model results on the effect of gender on spouses' uptake of micro life insurance and other financial services

	Female		**Female*Central Region**		**Female*Eastern Region**		**Observed uptake rates**	**Predicted uptake rates**
	mvprobit est.	probit est.	mvprobit est.	probit est.	mvprobit est.	probit est.	Percent	Percent
	Coeff.	AME	Coeff.	AME	Coeff.	AME		
Micro life insurance	-0.599***	-0.027***	0.727***	0.061**	0.433*	0.033*	2.1	3.4
	(0.199)	(0.009)	(0.249)	(0.315)	(0.254)	(0.026)		
Formal savings	-0.827***	-0.224***	0.215	0.080	0.232	0.051	44.1	50.0
	(0.296)	(0.081)	(0.404)	(0.123)	(0.390)	(0.123)		
Informal savings	0.304	0.050	-0.082	-0.019	-0.152	-0.006	12.9	14.1
	(0.387)	(0.059)	(0.480)	(0..074)	(0.535)	(0.108)		
Formal loans	-0.567	-0.107*	-0.284	0.025	0.478	0.116	17.9	22.0
	(0.380)	(0..065)	(0.535)	(0.117)	(0.440)	(0..110)		
Informal loans	0.704	0.044	-1.349**	-0.119*	-1.267*	-0.096	6.3	7.3
	(0.446)	(0.039)	(0.532)	(0..101)	(0.647)	(0..090)		
Observations	626							
Estimated corr. coefficients	p21= 0.403*** (0.117)		p31= 0.123 (0.132)		p41= 0.502*** (0.104)		p51= 0.090 (0.131)	
	p32= -0.189 (0.142)		p52= -0.556*** (0.177)		p43= -0.165 (0.138)		p53= 0.406* (0.208)	
	p54= -0.075 (0.135)							

Note: The model also includes individual, household and community controls. Robust standard errors are given in parentheses. The model also includes a constant and corrects for the sampling probability weights. Wald test of the model: $X^2(110) = 584.95$; $p = 0.0000$). The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

4.6.2.2 Husbands' and wives' insurance participation and bargaining power

While apparently being an important determinant of the insurance behavior in couple households, attributing a gender effect only on a gender dummy variable is not fully convincing as it assumes that spouses make financial choices independently. As outlined

above, however, the choices of individuals in couple households may also reflect the preferences of the spouse (Lyons et al. 2008). Table 20 shows the results of a bivariate probit model that is simultaneously estimated for husbands and wives and includes both spouses' characteristics in each equation.[71] As a robustness check the estimation is repeated for only those husbands and wives, which have not covered their spouse under their own policy (see Table 26 in the Appendix).[72] This eliminates the bias that might arise from the fact that spouses are less likely to purchase micro life insurance if they are already covered by the other one's policy, provided that they are aware of that coverage and only interested in the term life component of it and not in the investment plan. In fact, during fieldwork it became clear that spouses were not always informed about each other's insurance status and the respective policy details. Overall, the results are nearly the same as those of the bivariate probit model based on the total sample of couples.

The results of the bivariate probit model show that, as expected, the error terms of the spouses' equations are significantly correlated with a coefficient of $\rho = 0.73$. Thus, unobserved characteristics affect both spouses' insurance equation and their choices are jointly determined at least to some extent. Very similar results are obtained when performing the same analysis for any life insurance purchased (including conventional life insurance) though the correlation coefficient becomes somewhat smaller (Table 27 in the Appendix). In fact, the figures in the bottom row of Table 20 indicate that husbands are 30 percent more likely to be insured if the wife is also insured. Wives are 25 percent more likely to be insured if the husband is also insured. These results support that wives are individually more likely to purchase micro life insurance on their own, but the conditional probabilities indicate cooperation and joint willingness to protect future household resources and provide for their old age among some of the spouses.

In line with Lyons and Yilmazer's (Ibid.) findings on the investment for retirement behavior of US American couples, only few characteristics of the spouse are decisive for each spouse's marginal probability to purchase micro life insurance.

[71] As mentioned above the use of micro life insurance of husbands and wives cannot be estimated in a simultaneous framework with other financial services due to the limited number of observations in each of the respective categories.

[72] As shown in Table 23 in the appendix, 86 percent of the couples in the sample have not covered their spouse under their policy.

Table 20: Probit model results on spouses' uptake of micro life insurance

Explanatory variables	Husband		Wife	
	AME		AME	
Individual characteristics of husband				
Informal non-farm employment	0.014	(0.009)	0.014	(0.010)
Formal non-farm employment	0.019*	(0.010)	0.007	(0.012)
Experience of loan denial	0.017*	(0.010)	0.007	(0.013)
Risk perception index	-0.006*	(0.004)	-0.007	(0.005)
Illness (last 12 mths)	0.007	(0.008)	-0.003	(0.010)
Years of schooling	-0.001	(0.001)	-0.002**	(0.001)
Age	0.003	(0.003)	0.002	(0.003)
Age squared	-0.000	(0.000)	-0.000	(0.000)
No. of group memberships	0.006	(0.004)	0.003	(0.005)
Enrolled in pension scheme (SSNIT)	0.015*	(0.009)	0.013	(0.012)
Individual characteristics of wife				
Informal non-farm employment	-0.004	(0.008)	0.033**	(0.016)
Formal non-farm employment	0.005	(0.014)	0.038*	(0.020)
Experience of loan denial	-0.030**	(0.014)	0.032**	(0.016)
Risk perception index	0.004*	(0.006)	-0.001	(0.008)
Illness (last 12 mths)	-0.001	(0.009)	0.026***	(0.009)
Years of schooling	-0.001	(0.001)	0.002	(0.001)
Age	0.000	(0.002)	0.006*	(0.003)
Age squared	-0.000	(0.000)	-0.000	(0.000)
No. of group memberships	-0.002	(0.005)	0.003	(0.006)
Enrolled in pension scheme (SSNIT)	-0.045*	(0.023)	-0.025	(0.021)
Household characteristics				
Asset index (5 year lag)	-0.003	(0.005)	0.012*	(0.006)
Asset index squared	-0.003	(0.003)	-0.004	(0.003)
Land size per AE	-0.000	(0.000)	-0.000	(0.000)
Share of children	0.016	(0.017)	0.023*	(0.020)
Death experience (past 5 yrs.)	0.008	(0.009)	-0.002	(0.010)
Other shock experience (past 5 yrs.)	0.015**	(0.006)	-0.008	(0.008)
Relationship to banks (yrs)	0.002***	(0.001)	0.001	(0.001)
Community characteristics				
Ratio of bank clients (5 year lag)	0.015	(0.033)	0.055	(0.043)
Ratio of *Susu* clients (5 year lag)	0.147	(0.110)	-0.060	(0.130)
Central Region	-0.011	(0.011)	0.051***	(0.016)
Eastern Region	0.022	(0.016)	0.023	(0.018)
Observations	313		313	
Estimated correlation coefficient	0.730*** (0.134)			
Log Likelihood	-1102.6861			
Chi2	112.46			
Prob > chi2	0.0001			
Probability husband insured if wife insured	33.9			
Probability wife insured if husband insured	29.3			
Probability husband insured if wife non-insured	3.5			
Probability wife insured if husband non-insured	4.2			

Notes: The model includes a constant and corrects for the sampling probability weights. Robust standard errors are in parentheses. The asterisks indicate levels of significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculation.

The probability that the husband purchases micro life insurance increases with his own enrolment, but decreases with the wife's enrolment in the SSNIT. This could be an indication that the savings for retirement motive in the husband's decision to purchase life insurance is greater than the motive to reallocate resources in favor of the spouse,

especially when she is already covered by alternative protection. The wife's purchase probability significantly decreases with her husband's level of education. This finding could be explained by an opposition of higher educated husbands to their wives spending money on life insurance on their own, given that husbands are unlikely to benefit from the insurance due to their lower likelihood to outlive their wives.

In line with Gandolfi and Miner's (1996) study on the life insurance purchasing behavior of US American couples, the findings also indicate some outstanding differences of the wife's decision to purchase micro life insurance relative to the husband's. Most notably, the variable indicating bad health during the past 12 months is significant and positive only in the wife's equation. Similarly, compared to husbands, the household's level of wealth and the share of children (signaling a bequest motive) significantly increase only the probability that the wife purchases micro life insurance, but not the husband. The average marginal effects of the non-farm employment variables and credit constraints are significant and positive in both spouses' equations, but the effects are 1-2 percentage points larger for the wife. The subjective risk perception index turns out to have a significant negative effect only on the husband's uptake of micro life. In line with the argumentation in Chapter 3, risk pessimists may be highly reserved towards the insurance, when there is limited experience with the microinsurance product and the providing institutions. Rather than being more likely to purchase insurance because of their perceived higher risk exposure, they might think that taking up a policy is itself too risky an endeavor given their uncertainties and limited funds to spend. The results further support the regionally heterogeneous gender effect identified above. The dummy variables indicating the household's residence in the Central Region and the Eastern Region show a positive effect on the probability that the wife holds a policy. Though, the effect is only statistically significant for the Central Region, but not on the probability that the husband holds one.

Table 21 provides estimates from the simple collective models at the aggregate household level of the couples as well as on the individual level of husbands and wives. These include the relative characteristics of husbands and wives presented above as measures of relative bargaining power. The results of this part of the analysis has to be treated with caution, given that the applied proxies of bargaining power are not strictly exogenous factors indicating spouses' individual threat point of the utility outside marriage. More detailed results including the estimates of the most important control variables in the different specifications are provided in Tables 28 and 29 in the appendix.

The effect of the wife's share of current income from economic activities in total household income included in the first specification is significant and positive in the equation of the couple on the aggregate level and (much more) in the wife's equation, but not in that of the husband. In contrast, the husband's contribution to total household income included in the second specification has neither a positive effect in the equation on the aggregate level of the couple nor in his own, but it has a significant positive effect again in the wife's equation. This result points to a strong overall income effect on the wife's probability to purchase micro life insurance (which is underlined by the effects of household wealth in the model as well as the unitary bivariate model specifications above). Hence, wives from poorer households might be comparatively less powerful and also less able to afford purchasing a micro life insurance. However, current income is supposedly endogenous with respect to life insurance. Therefore, the variable is not included in the following specifications.

Instead, the third specification of the model includes the age differential of the wife. While this variable is, again, not the preferred proxy of bargaining power, it neither appears to have a significant effect on insurance status of the couple at the aggregate level, nor on the insurance status of the husband or the wife at the individual level. Yet, the set of age-category dummy variables included as controls (Tables 28 and 29) show that husbands in the upper age groups are significantly less likely (up to 10 percentage points) to purchase micro life insurance, whereas wives in the upper age groups become significantly more likely to purchase micro life insurance (up to 11 percentage points). This supports the notion that husbands are less inclined to purchase micro life insurance as compared to wives, given that wives are likely to outlive them.

Finally, the third and fourth specification tests for the effect of the preferred measures of bargaining power indicating spouses' education differential. Controlling for levels of education of both spouses, the wife's education differential in years shows a significant positive effect on the couple's equation on the aggregate level, as well as on the wife's equation, though the estimates are significant only at the 10 percent level. In line with this finding, an alternative variable indicating that the husband has been to school for at least 3 years longer than the wife (which is more than one standard deviation of the education difference between the two) has a significant negative effect on the probability that the couple purchases micro life insurance on either spouse. While the average marginal effects

are relatively low (0.005 and -0.026, respectively), the magnitude of effects has to be considered in relation to the low uptake in the survey areas.

Table 21: Probit model results on the effect of bargaining power on the uptake of micro life insurance (collective models)

	Wife's income contribution	Husband's income contribution	Wife's age differential	Wife's education differential	Husband has 3+ years more education (one std dev)
	AME	AME	AME	AME	AME
Univariate probit					
Couple (aggregate)	0.135**	0.084	-0.002	0.005*	-0.026*
	(0.056)	(0.055)	(0.002)	(0.003)	(0.014)
Bivariate probit					
Husband	0.028	0.051	-0.001	0.001	-0.008
	(0.041)	(0.040)	(0.001)	(0.002)	(0.008)
Wife	0.121***	0.072*	-0.001	0.005**	-0.019*
	(0.042)	(0.040)	(0.002)	(0.002)	(0.011)

Notes: The effects of variables are estimated in separate regressions including the same explanatory variables as in the unitary models above. Robust standard errors are in parentheses. The asterisks indicate levels of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

Weak as this result may be, it implies that rising levels of education of the wife relative to her husband – reflecting increasing control over resources, which, in turn, increases bargaining power – increase the probability of micro life insurance uptake on the aggregate household-level, but especially that of the wife. Supporting this finding, very low education of the wife relative to the husband (as implied by the alternative variable definition) has no impact on the husband's probability to purchase micro life insurance, but significantly reduces the probability of uptake on the aggregate level of the couple and particularly that of the wife.

4.7 Conclusion

This chapter has examined gender differentials in the use of micro life insurance and other formal and informal financial services in the context of an emerging insurance and financial market in Ghana across and within households. Different to the previous chapters and other studies on the participation in microinsurance, the primary contribution of the chapter has been to take a closer look at the intra-household dimension of the decision-making on micro life insurance. Aside of investigating merely gender effects, the chapter accounted for both husbands and wives participation in micro life insurance in couple households and provided initial evidence on the question of how this relates back intra-

household power relations. Thereby, the analysis allowed for the possibility that spouses face a conflict between the decision to purchase life cycle protection that may eventually provide more benefits to a surviving spouse, or alternative resource allocations. Three main issues have been revealed.

First, the observed patterns of financial market participation on the inter- and intra-household level demonstrate that gender differentials based on demand and supply factors are intertwined both with the type of household and regionally varying sociocultural conditions. On the inter-household level, single woman are less likely than couple households and single men households to purchase micro life insurance, and slightly more likely to use informal loans, which could be a sign of gender discrimination in the market. Surprisingly, single men households are most likely to purchase micro life insurance compared to the other household groups. This seems to be due to gender discrimination against single men with respect to the provision of other financial services and easier accessibility of the insurance scheme for them. Furthermore, the intra-household results also disprove gender discrimination in the provision of micro life insurance towards women in general. In fact, women in couples are more likely to purchase micro life insurance compared to their husbands, though this applies only to women in the Central and Eastern Regions. Related to the prevalence of matrilineal inheritance rules, wives in these regions have a higher status and husbands have less control over household decision-making compared to husbands in patrilineal societies. However, the higher likelihood of these wives to purchase micro life insurance for themselves leaves room for ambiguous interpretation. On the one hand, they might be able to decide more independently on purchasing adequate financial protection for their children or their own livelihood during old age. On the other hand, in the matrilineal context husbands might be less willing to purchase insurance protection that could also benefit their spouse and children.

Second, spouses' uptake of micro life insurance responds to some different individual and household characteristics. Such differences affect insurance participation if husbands and wives have different preferences on insurance, for example related to different life expectancies and gendered responsibilities within the household. Compared to the husband, the wife's uptake is more strongly associated with household wealth and non-farm employment, bad health, and a bequest motive towards children. Compared to the wife, the husband's uptake responds more strongly to his perceived risk exposure of the

household, indicating stronger pessimism on his side that the insurance provides effective risk protection.

Third, there is some empirical support for the hypothesis that bargaining power of the wife proxied by income, age and education differentials of spouses increases the probability that spouses purchase micro life insurance on the aggregate level of the couple. However, results on the individual level show that the wife's bargaining power does not significantly increase the husband's probability to purchase micro life insurance, but only the probability that the wife purchases insurance coverage for herself. Surprisingly, descriptive evidence also shows that only a negligible minority of wives takes the opportunity to insure their husband's death under their policy. Yet, in some households the husband also purchases life insurance (irrespective of the wife's power status), and there is evidence that spouses' insurance status is positively correlated to some extent. This stands somewhat against the picture of entirely selfish spouses, among which the husband would prefer not to purchase life insurance that includes survivor benefits due to his lower probability to outlive the wife.

Further research will have to shed more rigorous and conclusive light on the role of intrahousehold bargaining on the insurance behavior of couples, which requires better (exogenous) measures of relative bargaining power, such as variations in social security laws. Furthermore it could be interesting to consider a non-cooperative framework, which allows for non-Pareto efficient outcomes, to find out in more detail to what extent spouses pool resources and decide independently on their financial protection.

From a policy perspective, the results suggest that women are indeed an important target group for the provision of micro life insurance. Yet, providers seeking to assist individuals in their decisions on appropriate financial protection need to take into account the decision-making dynamics within the household and the potentially different preferences on respective choices between women and men. The results stress the importance of tailored insurance services that fit the need of all individuals within a household and across different household types as well as the communication with and between both spouses of a couple about their financial risk management.

4.8 Appendix

Table 22: Distribution of households, household heads and their spouses

Region	Households			Heads			Female spouses		
	No.	Cell percent	Weighted percent	No.	Cell percent	Weighted percent	No.	Cell percent	Weighted %
Central Region	183	32.2	39.4	183	32.2	39.4	104	65.8	62.8
Microinsured	92	16.2	1.0	46	8.1	0.5	49	15.7	1.1
Eastern Region	192	33.8	28.1	192	33.8	28.1	94	60.6	75.9
Microinsured	95	16.7	1.3	72	12.7	1.0	29	9.3	0.8
Volta Region	193	34.0	16.4	193	34.0	16.4	115	72.8	74.8
Microinsured	86	15.1	0.7	79	13.9	0.6	14	4.5	0.2
Total	568	100.0	100.0	568	100.0	100.0	313	100.0	100.0
Microinsured	273	48.1	3.0	197	34.7	2.1	92	29.4	2.1

Notes: Includes only households and individuals of couples, non-married single women and non-married single men with complete survey information and with the head or female spouse below the age of 75.
Source: Authors' calculation based on survey data

Table 23: Person coverage of the Anidaso policy (percent)

	Couple households		Single headed households		All
	Husbands	Wives	Single men	Single women	
Prinicipal only (n=99)	42.3	4.7	72.3	46.8	33.8
Principal and spouse (n=11)	9.4	3.5	0.0	0.0	3.9
Principal and children (n=147)	16.8	89.2	27.7	53.2	52.1
Principal, spouse and children (n=32)	31.5	2.6	0.0	0.0	10.2
Total (n=289)	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculation based on survey data

Table 24: Multivariate probit model results on households' uptake of micro life insurance and other financial services

Explanatory variables	Micro life insurance			Formal savings			Informal savings			Formal loans			Informal loans		
	Coeff.		AME	Coeff.		AME	Coeff.		AME	Coeff.		AME	Coeff.		AME
Individual characteristics (head)															
Informal non-farm employment	0.375***	(0.135)	0.123	0.223	(0.241)	0.030	0.207	(0.268)	0.000	0.116	(0.244)	0.046	0.697**	(0.296)	0.000
Formal non-farm employment	0.321*	(0.170)	0.120	0.377	(0.322)	0.038	0.042	(0.321)	0.000	0.188	(0.296)	0.075	0.490	(0.306)	0.000
Experience of loan denial	0.401**	(0.162)	0.159	0.164	(0.277)	0.010	-0.217	(0.298)	0.000	0.287	(0.356)	0.113	0.316	(0.285)	0.000
Risk perception index	-0.111**	(0.046)	-0.016	-0.101	(0.095)	0.000	0.132	(0.085)	0.030	0.005	(0.081)	0.002	0.150	(0.115)	0.036
Illness (last 12 mths)	0.114	(0.119)	0.043	0.050	(0.233)	0.002	-0.177	(0.241)	0.000	0.062	(0.216)	0.015	-0.072	(0.222)	0.000
Years of schooling	-0.002	(0.013)	0.000	0.027	(0.024)	0.000	-0.049**	(0.023)	-0.012	0.075***	(0.025)	0.030	-0.002	(0.026)	-0.001
Age	0.093***	(0.033)	0.013	0.078**	(0.039)	0.000	0.101*	(0.052)	0.025	0.116***	(0.044)	0.046	-0.112**	(0.049)	-0.027
Age squared	-0.001***	(0.000)	0.000	-0.001**	(0.000)	0.000	-0.001**	(0.001)	0.000	-0.001**	(0.000)	0.000	0.001**	(0.001)	0.000
No. of group memberships	0.049	(0.056)	0.008	0.136	(0.084)	0.000	0.100	(0.108)	0.027	-0.035	(0.086)	-0.014	0.323***	(0.103)	0.087
Enrolled in pension scheme (SSNIT)	0.203	(0.148)	0.079	0.268	(0.309)	0.012	0.127	(0.276)	0.000	0.836***	(0.292)	0.281	0.335	(0.296)	0.000
Household characteristics															
Asset index (5 year lag)	0.101	(0.072)	0.001	0.292**	(0.123)	0.001	0.088	(0.122)	0.000	0.399***	(0.138)	0.003	0.260**	(0.123)	0.000
Asset index squared	-0.102**	(0.040)	-0.004	-0.208**	(0.091)	-0.003	-0.037	(0.069)	0.000	-0.187***	(0.071)	-0.008	-0.165	(0.108)	0.000
Land size per AE	0.001	(0.003)	0.000	-0.020***	(0.008)	0.000	-0.009	(0.007)	-0.002	0.012*	(0.007)	0.004	0.007	(0.009)	0.001
Share of children	0.518**	(0.225)	0.056	0.002	(0.405)	0.000	-0.069	(0.389)	-0.015	0.641	(0.431)	0.234	0.524	(0.501)	0.086
Death experience (past 5 yrs.)	0.127	(0.128)	0.046	0.040	(0.231)	0.001	-0.239	(0.254)	0.000	0.407	(0.257)	0.086	-0.512*	(0.285)	0.000
Other shock experience (past 5 yrs.)	0.198**	(0.099)	0.069	-0.543***	(0.205)	-0.017	0.104	(0.189)	0.000	0.362*	(0.192)	0.059	0.287	(0.214)	0.000
Relationship to banks (yrs)	0.035***	(0.011)	0.006	1.193***	(0.281)	0.000	-0.048**	(0.023)	-0.013	0.010	(0.018)	0.004	-0.036*	(0.021)	-0.011
Gender and type of household															
Single woman head	-0.441**	(0.198)	-0.111	0.031	(0.337)	0.007	0.382	(0.481)	0.000	0.290	(0.489)	0.062	1.618**	(0.809)	0.000
Couple	-0.319	(0.198)	-0.096	0.871**	(0.369)	0.210	0.926**	(0.459)	0.000	0.314	(0.467)	0.058	1.380*	(0.790)	0.000
Community characteristics	Yes			Yes			Yes			Yes			Yes		
Observations	568			568			568			568			568		
Fraction in survey areas	3.0			51.1			13.2			23.8			9.6		
Estimated probabilities	4.7			63.1			19.4			31.1			10.8		
Estimated correlation coefficients	p21= 0.449*** (0.136)			p31= 0.122 (0.097)			p41=0.369*** (0.112)			p51=-0.109 (0.144)			p32= -0.301** (0.128)		
	p42=0.217 (0.140)			p52= -0.878*** (0.255)			p43= -0.179 (0.130)			p53= 0.409** (0.172)			p54= -0.381*** (0.119)		

Notes: Results of the multivariate probit model are estimated by simulated maximum likelihood with 50 pseudorandom draws. Robust standard errors are given in parentheses. Average marginal effects (AMEs) are calculated with respect to the marginal probability of each type of financial service. The model also includes a constant and corrects for the sampling probability weights. Wald test of the model: X^2 (115) = 480.78; p = 0.0000). The asterisks indicate level of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

Table 25: Multivariate probit model results on spouses' uptake of micro life insurance and other financial services

Explanatory variables	Micro life insurance			Formal savings			Informal savings			Formal loans			Informal loans		
	Coeff.		AME	Coeff.		AME	Coeff.		AME	Coeff.		AME	Coeff.		AME
Individual characteristics															
Informal non-farm employment	0.516***	(0.169)	0.160	0.727***	(0.223)	0.097	0.466	(0.312)	0.000	0.507*	(0.303)	0.001	0.471	(0.326)	0.000
Formal non-farm employment	0.585***	(0.193)	0.222	0.793***	(0.308)	0.207	0.087	(0.431)	0.000	1.096***	(0.343)	0.000	0.160	(0.395)	0.000
Experience of loan denial	0.562***	(0.171)	0.216	0.683**	(0.317)	0.259	-1.128***	(0.436)	0.000	0.538	(0.331)	0.000	0.998***	(0.315)	0.000
Risk perception index	-0.162***	(0.060)	-0.014	-0.041	(0.097)	-0.016	0.039	(0.120)	0.004	0.125	(0.098)	0.019	0.226*	(0.125)	0.007
Illness (last 12 mths)	0.294**	(0.134)	0.094	0.477**	(0.222)	0.177	0.403	(0.262)	0.000	0.196	(0.243)	0.000	-0.143	(0.320)	0.000
Years of schooling	-0.008	(0.014)	-0.001	0.054**	(0.022)	0.021	-0.034	(0.027)	-0.006	-0.028	(0.026)	-0.004	0.003	(0.029)	0.000
Age	0.106***	(0.034)	0.008	-0.046	(0.039)	-0.018	-0.043	(0.066)	-0.006	0.104*	(0.059)	0.017	-0.058	(0.067)	-0.002
Age squared	-0.001***	(0.000)	0.000	0.001	(0.000)	0.000	0.000	(0.001)	0.000	-0.001*	(0.001)	0.000	0.001	(0.001)	0.000
No. of group memberships	0.077	(0.078)	0.007	0.159	(0.137)	0.062	0.830***	(0.175)	0.191	0.091	(0.130)	0.017	0.514***	(0.197)	0.041
Enrolled in pension scheme (SSNIT)	0.066	(0.161)	0.023	0.149	(0.338)	0.059	-0.841*	(0.499)	0.000	1.008***	(0.313)	0.000	0.144	(0.396)	0.000
Household characteristics															
Asset index (5 year lag)	0.120	(0.086)	0.002	0.299**	(0.131)	0.002	0.285*	(0.163)	0.000	0.602***	(0.181)	0.000	0.484**	(0.243)	0.000
Asset index squared	-0.073*	(0.044)	-0.003	-0.040	(0.062)	-0.001	-0.129*	(0.078)	0.000	-0.232***	(0.068)	0.000	-0.255**	(0.110)	0.000
Land size per AE	-0.004	(0.005)	0.000	0.002	(0.006)	0.001	-0.002	(0.010)	0.000	0.015**	(0.008)	0.003	-0.024	(0.020)	-0.001
Share of children	0.437	(0.270)	0.029	0.146	(0.457)	0.058	0.010	(0.521)	0.024	-0.413	(0.460)	-0.088	-0.117	(0.727)	-0.007
Death experience (past 5 yrs.)	0.093	(0.170)	0.025	0.283	(0.279)	0.089	-0.473	(0.372)	0.000	0.124	(0.336)	0.000	-0.615*	(0.352)	0.000
Other shock experience (past 5 yrs.)	0.070	(0.110)	0.026	-0.239	(0.181)	-0.067	0.333	(0.214)	0.000	-0.049	(0.189)	0.000	0.558**	(0.279)	0.000
Relationship to banks (yrs)	0.034***	(0.011)	0.019	0.040**	(0.020)	0.015	-0.043*	(0.023)	-0.012	-0.013	(0.020)	-0.003	-0.021	(0.020)	-0.003
Gender and region interactions															
Central Region	-0.107	(0.234)	-0.029	0.295	(0.360)	0.087	-0.137	(0.446)	0.000	-0.450	(0.408)	0.000	0.196	(0.603)	0.000
Eastern Region	0.014	(0.285)	0.004	-0.266	(0.440)	-0.072	0.925	(0.589)	0.000	0.354	(0.483)	0.000	-1.333*	(0.707)	0.000
Female	-0.599***	(0.199)	-0.166	-0.827***	(0.296)	-0.248	0.304	(0.387)	0.000	-0.567	(0.380)	0.000	0.704	(0.446)	0.000
Female*Central Region	0.727***	(0.249)	0.210	0.215	(0.404)	0.079	-0.082	(0.480)	0.000	-0.284	(0.535)	0.000	-1.349**	(0.532)	0.000
Female*Eastern Region	0.433*	(0.254)	0.074	0.232	(0.390)	0.078	-0.152	(0.535)	0.000	0.478	(0.440)	0.000	-1.267*	(0.647)	0.000
Community characteristics	Yes			Yes			Yes			Yes			Yes		
Observations	626			626			626			626			626		
Fraction in survey areas	2.1			44.1			12.9			17.9			6.3		
Estimated probabilities	3.4			50.0			14.1			22.0			7.3		
Estimated correlation coefficients	p21= 0.403*** (0.117)			p31= 0.123 (0.132)			p41= 0.502*** (0.104)			p51= 0.090 (0.131)			p32= -0.189 (0.142)		
	p42= 0.405*** (0.126)			p52= -0.556*** (0.177)			p43= -0.165 (0.138)			p53= 0.406* (0.208)			p54= -0.075 (0.135)		

Notes: Results of the multivariate probit model are estimated by simulated maximum likelihood with 50 pseudorandom draws. Robust standard errors are given in parentheses and are adjusted for clustering on the household level. Average marginal effects (AMEs) are calculated with respect to the marginal probability of each type of financial service. The model includes a constant and corrects for the sampling probability weights. Wald test of the model: $X^2(110) = 584.95$; $p = 0.0000$). The asterisks indicate levels of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

Table 26: Bivariate probit model results of participation in micro life insurance with only non-spousal coverage of husbands and wives

Explanatory variables	Husband		Wife	
	AME		AME	
Individual characteristics of husband				
Informal non-farm employment	0.007	(0.007)	0.016	(0.010)
Formal non-farm employment	0.013	(0.008)	0.003	(0.011)
Experience of loan denial	0.009	(0.007)	-0.008	(0.013)
Risk perception index	-0.004*	(0.003)	-0.009*	(0.005)
Illness (last 12 mths)	0.008	(0.006)	-0.007	(0.010)
Years of schooling	-0.000	(0.001)	-0.002**	(0.001)
Age	0.001	(0.002)	0.000	(0.003)
Age squared	-0.000	(0.000)	-0.000	(0.000)
No. of group memberships	0.004	(0.003)	0.001	(0.005)
Enrolled in pension scheme (SSNIT)	0.007	(0.006)	0.017	(0.012)
Individual characteristics of wife				
Informal non-farm employment	0.002	(0.006)	0.024*	(0.014)
Formal non-farm employment	0.005	(0.010)	0.028	(0.019)
Experience of loan denial	-0.113***	(0.017)	0.025*	(0.014)
Risk perception index	0.004*	(0.004)	0.005	(0.007)
Illness (last 12 mths)	-0.001	(0.006)	0.027***	(0.009)
Years of schooling	-0.001	(0.001)	0.002	(0.001)
Age	0.001	(0.002)	0.008**	(0.003)
Age squared	-0.000	(0.000)	-0.000*	(0.000)
No. of group memberships	-0.002	(0.004)	0.005	(0.005)
Enrolled in pension scheme (SSNIT)	-0.023*	(0.017)	-0.016	(0.021)
Household characteristics				
Asset index (5 year lag)	-0.004	(0.004)	0.011**	(0.006)
Asset index squared	0.001	(0.002)	-0.004	(0.003)
Land size per AE	-0.000	(0.000)	0.000	(0.000)
Share of children	0.007	(0.012)	0.021*	(0.020)
Death experience (past 5 yrs.)	0.004	(0.007)	0.004	(0.009)
Other shock experience(past 5 yrs.)	0.008*	(0.005)	-0.011	(0.007)
Relationship to banks (yrs)	0.001**	(0.000)	0.001	(0.001)
Community characteristics				
Ratio of bank clients (5 year lag)	0.010	(0.024)	0.061	(0.044)
Ratio of *Susu* clients (5 year lag)	0.117	(0.076)	-0.056	(0.131)
Central Region	-0.009	(0.008)	0.052***	(0.017)
Eastern Region	0.018	(0.011)	0.022	(0.019)
Observations	270		270	
Estimated correlation coefficient	0.677*** (0.171)			
Log Likelihood	-847.22777			
Chi2	982.74			
Prob > chi2	0.0000			

Notes: The model includes a constant and corrects for the sampling probability weights. Robust standard errors are in parentheses. The asterisks indicate levels of significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculation.

Table 27: Bivariate probit model results on the participation in any life insurance of husbands and wives

Explanatory variables	Husband		Wife	
	AME		AME	
Individual characteristics of husband				
Informal non-farm employment	-0.017	(0.030)	0.028**	(0.014)
Formal non-farm employment	0.088***	(0.033)	0.007	(0.016)
Experience of loan denial	0.000	(0.028)	0.007	(0.016)
Risk perception index	0.004	(0.011)	-0.003	(0.007)
Illness (last 12 mths)	0.036	(0.026)	-0.002	(0.014)
Years of schooling	0.005**	(0.003)	-0.004**	(0.001)
Age	0.016	(0.012)	0.007	(0.005)
Age squared	-0.000	(0.000)	-0.000	(0.000)
No. of group memberships	0.029**	(0.013)	0.008	(0.007)
Enrolled in pension scheme (SSNIT)	0.008	(0.034)	-0.005	(0.016)
Individual characteristics of wife				
Informal non-farm employment	0.005	(0.029)	0.041*	(0.021)
Formal non-farm employment	-0.082*	(0.047)	0.093***	(0.031)
Experience of loan denial	-0.018	(0.031)	0.033*	(0.019)
Risk perception index	0.005	(0.017)	-0.010	(0.011)
Illness (last 12 mths)	-0.039	(0.028)	0.008	(0.014)
Years of schooling	0.001	(0.003)	0.003*	(0.001)
Age	0.018	(0.016)	0.005	(0.004)
Age squared	-0.000	(0.000)	-0.000	(0.000)
No. of group memberships	-0.005	(0.017)	0.009	(0.008)
Enrolled in pension scheme (SSNIT)	-0.086	(0.060)	-0.046	(0.028)
Household characteristics				
Asset index (5 year lag)	-0.015	(0.016)	0.021**	(0.010)
Asset index squared	0.001	(0.008)	-0.013**	(0.006)
Land size per AE	0.000	(0.001)	0.001	(0.001)
Share of children	-0.127**	(0.054)	0.006	(0.027)
Death experience (past 5 yrs.)	-0.035	(0.035)	-0.005	(0.016)
Other shock experience (past 5 yrs.)	0.051**	(0.022)	0.001	(0.010)
Relationship to banks (yrs)	0.005***	(0.002)	0.002***	(0.001)
Community characteristics				
Ratio of bank clients (5 year lag)	-0.048	(0.103)	0.079	(0.058)
Ratio of *Susu* clients (5 year lag)	-0.375	(0.357)	-0.326*	(0.186)
Central Region	-0.090**	(0.041)	0.054**	(0.021)
Eastern Region	-0.101*	(0.057)	-0.018	(0.024)
Observations	313		313	
Estimated correlation coefficient	0.618*** (0.124)			
Log Likelihood	-1726.6275			
Chi2	174.92			
Prob > chi2	0.0000			

Notes: Both models include a constant and correct for the sampling probability weights. Robust standard errors are in parentheses. The asterisks indicate levels of significance: *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculation.

Table 28: Univariate probit model results on the participation in micro life insurance of couples (collective model)

Explanatory variables	(1)		(2)		(3)	
	AME		AME		AME	
Wife's income contribution	0.135**	(0.056)				
Husband's income contribution	0.084	(0.055)				
Wife's age differential			-0.002	(0.002)		
Wife's education differential					0.005*	(0.003)
Husband has 3+ years more education (one std dev)					-0.026*	(0.014)
Total household income per month (GHC, per adult equivalent)	0.000	(0.000)				
Asset index (5 year lag)	0.005	(0.008)	0.005	(0.008)	0.005	(0.008)
Asset index squared	-0.006	(0.004)	-0.006	(0.005)	-0.006	(0.005)
Informal non-farm employment	0.038**	(0.018)	0.030*	(0.016)	0.028*	(0.016)
Formal non-farm employment	0.042**	(0.021)	0.041**	(0.019)	0.028	(0.018)
Husband started secondary school			0.002	(0.106)	0.053	(0.105)
completed secondary school			0.011	(0.024)	0.018	(0.023)
tertiary education			0.003	(0.019)	0.018	(0.020)
Wife started secondary school			-0.012	(0.110)	-0.045	(0.109)
completed secondary school			-0.038	(0.040)	-0.018	(0.035)
tertiary education			-0.018	(0.034)	-0.033	(0.036)
Husband in age group 33-35			-0.006	(0.026)		
age group 36-38			-0.031	(0.035)		
age group 39-42			-0.021	(0.038)		
age group 43-45			-0.076	(0.048)		
age group 46-49			-0.049	(0.052)		
age group 50-53			-0.044	(0.059)		
age group 54-56			-0.104	(0.066)		
age group 57-61			-0.128*	(0.075)		
age group 62+			-0.137	(0.088)		
Wife in age group 28-30			0.017	(0.023)		
age group 31-33			0.034	(0.029)		
age group 34-35			0.057	(0.035)		
age group 36-38			0.059	(0.039)		
age group 39-42			0.065	(0.045)		
age group 43-46			0.099*	(0.054)		
age group 47-50			0.139**	(0.061)		
age group 51-54			0.134*	(0.069)		
age group 55+			0.113	(0.074)		
Observations	313		313		313	
Pseudo R2	0.2061		0.1730		0.1946	
Log Likelihood	-882.13278		-918.89137		-89884031	
Chi2	78.86		69.67		75.78	
Prob > chi2	0.0002		0.0013		0.0004	

Notes: The model corrects for the sampling probability weights and includes a constant. Additionally, it includes the same explanatory variables as in the univariate models above. Robust standard errors are in parentheses. The asterisks indicate levels of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

Table 29: Bivariate probit model results on the participation in micro life insurance of husbands and wives (collective model)

Explanatory variables	Husband		Wife		Husband		Wife		Husband		Wife	
	AME		AME		AME		AME		AME		AME	
Wife's income contribution	0.028	(0.041)	0.121***	(0.042)								
Husband's income contribution	0.051	(0.040)	0.072*	(0.040)								
Wife's age differential					-0.001	(0.001)	-0.001	(0.002)				
Wife's education differential									0.001	(0.002)	0.005**	(0.002)
Husband has 3+ years more education (one std dev)									-0.008	(0.008)	-0.019*	(0.011)
Total household income per month (GHC, per adult equivalent)	0.000	(0.000)	0.000	(0.000)								
Asset index (5 year lag)	-0.003	(0.005)	0.013**	(0.006)	-0.005	(0.006)	0.016**	(0.007)	-0.004	(0.005)	0.012*	(0.007)
Asset index squared	-0.004	(0.003)	-0.005*	(0.003)	-0.003	(0.003)	-0.005	(0.004)	-0.004	(0.003)	-0.004	(0.003)
Informal non-farm employment	0.007	(0.010)	0.026**	(0.013)	0.011	(0.009)	0.018	(0.011)	0.014	(0.009)	0.013	(0.011)
Formal non-farm employment	0.013	(0.012)	0.023	(0.014)	0.023**	(0.011)	0.013	(0.014)	0.019*	(0.010)	0.006	(0.012)
Husband started secondary school					-0.396***	(0.064)	0.235***	(0.045)	-0.377***	(0.055)	0.297***	(0.042)
completed secondary school					0.005	(0.014)	0.004	(0.017)	0.009	(0.014)	0.014	(0.019)
tertiary education					0.011	(0.011)	0.001	(0.013)	0.015	(0.014)	0.029	(0.020)
Wife started secondary school					0.273***	(0.039)	-0.406***	(0.066)	0.260***	(0.034)	-0.461***	(0.064)
completed secondary school					0.013	(0.022)	-0.045	(0.036)	0.016	(0.021)	-0.039	(0.033)
tertiary education					0.000	(0.019)	-0.029	(0.032)	-0.005	(0.020)	-0.054	(0.033)
Husband in age group 33-35					-0.002	(0.014)	0.001	(0.022)				
age group 36-38					-0.022	(0.021)	0.000	(0.027)				
age group 39-42					-0.014	(0.020)	0.006	(0.032)				
age group 43-45					-0.023	(0.026)	-0.058	(0.042)				
age group 46-49					-0.023	(0.028)	-0.015	(0.040)				
age group 50-53					-0.018	(0.032)	-0.010	(0.047)				
age group 54-56					-0.049	(0.036)	-0.043	(0.051)				
age group 57-61					-0.066	(0.040)	-0.052	(0.058)				
age group 62+					-0.095*	(0.050)	-0.048	(0.069)				
Wife in age group 28-30					0.012	(0.013)	0.006	(0.020)				
age group 31-33					0.007	(0.017)	0.031	(0.025)				
age group 34-35					0.024	(0.020)	0.026	(0.030)				
age group 36-38					0.018	(0.022)	0.051	(0.033)				
age group 39-42					0.004	(0.025)	0.059	(0.037)				
age group 43-46					0.035	(0.030)	0.076*	(0.043)				
age group 47-50					0.045	(0.033)	0.104**	(0.048)				
age group 51-54					0.042	(0.038)	0.091*	(0.053)				
age group 55+					0.049	(0.040)	0.076	(0.060)				
Observations	313				313				313			
Estimated correlation coefficient	0.610*** (0.160)				0.483** (0.156)				0.641*** (0.144)			
Log Likelihood	-978.32724				-929.03397				-1005.1182			
Chi2	155.42				.				.			
Prob > chi2	0.0000				.				.			

Notes: The model corrects for the sampling probability weights and includes a constant. Additionally, it includes the same explanatory variables as in the univariate models above. Robust standard errors are in parentheses. The asterisks indicate levels of significance: *** p<0.01, ** p<0.05, * p<0.1. *Source:* Authors' calculation.

Chapter 5

Client perceptions of the value of microinsurance

5.1 Introduction

As discussed in the previous chapters, uptake of microinsurance generally falls short of projections.[73] This has recently made practitioners focus on client value (Magnoni and Zimmerman 2011; Matul et al. 2011; McCord et al. 2012b). In a vastly underserved market with potentially high demand for microinsurance, it is understood that low uptake can either be a sign of poorly designed insurance products or of misperceptions about the value of these products (Matul et al. 2011). However, empirical research on what constitutes client value in microinsurance has been limited.[74] This chapter intends to fill this gap and achieve a systematic and detailed understanding of the value that clients perceive in microinsurance. The analysis is based on qualitative data from focus group discussions among both existing and potential clients[75] of micro life insurance in the Central Region of southern Ghana in between of the two surveys that generated the data used in the previous chapters.

The survey data show that illness and death constitute the most important risks for households, which is in line with much of the literature on risk exposure and risk management in other countries (Cohen and Sebstad 2005; Cohen et al. 2005; Dercon 2002; Dercon et al. 2008; Tesliuc and Lindert 2004). Hence, one would expect that health and

[73] This chapter is based on joint work with Susan Steiner.

[74] Efforts have mostly been confined to the development and application of practically oriented value assessment tools. One example is the ILO's PACE (Product, Access, Cost and Experience) (Matul et al. 2011). This is a tool that scores microinsurance products in relation to alternative risk management options. It relies on staff interviews, process reviews, and secondary performance and other data. However, it does not explicitly include the clients' perspective on the value of the respective microinsurance products.

[75] Henceforth, the chapter refers to potential and existing clients simply as clients. As explained below, value can be perceived by both.

life insurance was a priority purchase for many households. The previous chapters showed that the uptake of health insurance, in the form of the publicly provided National Health Insurance Scheme (NHIS), is indeed quite high (approx. 50 percent) in the Central Region as well as other regions covered by our surveys. However, the uptake of micro life insurance is below 5 percent. Possibly, this limited uptake is a sign that clients do not perceive much value in the micro life insurance under study. This chapter seeks to shed some light on this question by investigating when and why clients perceive value.

Microinsurance practitioners define client value as the "added value – in comparison to other available risk coping mechanisms – of having insurance either when claims are made or as a result of the changed behavior caused by owning a policy and trusting that it will be honored" (Magnoni and Zimmerman 2011: 5) or as "reducing vulnerability due to improved risk-management practices that then contributes to improved well-being" (Matul et al. 2011: 1). While useful as a starting point to think about client value in microinsurance, these definitions largely ignore the debate on the client value of goods and services in the marketing literature of the past 25 years.[76] This literature treats client value as the outcome of an evaluative judgment that is subjective, personal, and context-dependent (Holbrook 1996; Sánchez-Fernandez and Iniesta-Bonillo 2007; Zeithaml 1988). It distinguishes between unidimensional and multidimensional models of client value (Sánchez-Fernandez and Iniesta-Bonillo 2007). Unidimensional models assume that clients apply cognitive reasoning to weigh the benefits of goods and services against their costs. Multidimensional models, in contrast, regard the value perceived in goods and services as a complex phenomenon consisting of several dimensions that include cognitive as well as affective factors.

In line with this second approach, client value is here considered to be a multidimensional concept. The chapter studies value from the clients' perspective whereby it assumes that value is a subjective and relativistic judgment that involves cognitive as well as affective processing of information. Indeed, the previous chapters as well as other studies on the determinants of microinsurance uptake have pointed out that behavioral factors, such as trust, familiarity with the provider as well as imitation of peers' behaviour, play a large

[76] This literature mostly uses the terms 'customer value' or 'consumer value', not 'client value'. Throughout this chapter the term 'client value' is used as it elaborates on insurance, which is characterized by long-term contractual arrangements between policyholder and provider. In this context, 'client' is considered to be the more adequate term than 'customer' or 'consumer'. The chapter refers to 'Client value' also when discussing the literature even if the respective contributions employ another term.

role in explaining households' decisions to purchase microinsurance (Cai et al. 2009, 2013; Cole et al. 2013; Giné et al. 2008; Morsink and Geurts 2011; Thornton et al. 2010). This suggests that affections and social interactions should be taken into account when trying to understand why people value (or do not value) and purchase (or do not purchase) microinsurance.

Using an exploratory approach, this chapter identifies which dimensions constitute value for clients of micro life insurance and which context factors help to explain why clients form the value judgments they do. A qualitative research design is considered to be the most appropriate given that the analysis delves into an area that has not received much attention by the microinsurance literature. Any value dimension as well as context factor that appears relevant to the group participants is here allowed to come up during the discussions. To the extent that certain aspects emerge in several or even all groups, one may assume that they are reflective of general patterns of value perceived among the focus group participants, which represent the typical target group of microinsurance. As demonstrated by qualitative studies on client value within the marketing literature (Pura and Gummerus 2008; Williams and Soutar 2000; Zeithaml 1988), the advantage of this approach is that it facilitates an insight into the value dimensions that are relevant for clients of micro life insurance without making many prior assumptions.

It is important to clarify that this approach does not allow us to measure the contribution of the separate dimensions to overall client value quantitatively, as in Lemmink et al. (1998), de Ruyter et al. (1997), Sweeney and Soutar (2001) and Sánchez et al. (2006), among others. The chapter also does not intend to develop a measurement scale for client value, as in Sweeney and Soutar (2001) and Sánchez et al. (2006). Hence, the disadvantage of the approach is that no inference can be made on which dimensions of client value are quantitatively more important than others. This – as well as an examination of whether the proposed model of client value can be confirmed for different types of microinsurance as well as in different country settings – is left for future research.

The chapter contributes to the literature in four ways. First, it shows what academics as well as practitioners interested in microinsurance can learn from the marketing literature with regard to to how to think about client value. Second, it investigates to what extent existing models of client value - generally developed on the basis of research in industrialised countries - explain perceptions of client value in developing countries. Third,

using the example of micro life insurance, it proposes a first sketch for a conceptual model of what constitutes client value vis-à-vis this particular product. And fourth, it analyzes how value perceptions are shaped by the specific context of the focus group participants, which is an area that has not received much attention in the literature. It is shown that clients judge the value of microinsurance in five different dimensions, namely consumption outcome, quality, costs (all are forms of functional value), emotional value, and social value. The dimensions of consumption outcome, quality and emotional value play the largest role in our focus group discussions. The personal background of clients, their risk management framework and the interaction with the insurance provider and their peers largely explain why clients form the value judgements they do.

The practical implication of this chapter is to add to policy maker's and insurance provider's understanding of clients' perceptions of the value of microinsurance. As argued by Woodruff (1997), there are usually differences in what managers think their clients value and what clients say they value. Therefore, it is imperative to consider the clients' view when trying to comprehend why uptake of microinsurance has been lower than expected. Knowing more about which dimensions clients value will help insurance providers focus more on those aspects that have not received sufficient attention.

The remainder of this chapter is organized as follows. Following this introduction, section 5.2 provides a review of models of client value and elaborates on the role of the context for value perceptions. Section 5.3 describes the methodologies of data collection and data analysis applied. Section 5.4 turns to the results from our focus group discussions and presents five dimensions that constitute value from the perspective of microinsurance clients. Subsequently, section 5.5 discusses how context factors determine whether or not clients perceive value in microinsurance. Section 5.6 concludes and derives respective policy recommendations.

5.2 Connceptual framework

5.2.1. Models of client value[77]

The question of what constitutes client value has been originally addressed by unidimensional models. These models claim that clients weigh benefits against costs and thereby concentrate on economic utility (Sánchez et al. 2006). One of the most popular definitions is provided by Zeithaml (1988: 14) who defines client value as "the consumers' overall assessment of the utility of a product based on perceptions of what is received and what is given." Similarly, Monroe (1990) describes client value as the ratio of perceived benefits and perceived sacrifice. The receiving components or benefits have often been reduced to the quality of a good or service, and the giving components or sacrifice to the price. However, these two features may be too narrow. Benefits may also come in the form of such things as brand reputation or convenience and sacrifice as operating costs, time or effort (Best 2013; Bolton and Drew 1991; Zeithaml 1988).

Typically, unidimensional models regard benefits and sacrifices as antecedents of value. They are seen as abstractions within clients' cognitive organization of information, rather than specific product attributes. Value is understood as a mental concept at an even higher level than benefits and sacrifices and as more individualistic and personal. Due to its complexity, value has often been empirically measured by a simplistic indicator of the value-for-money perceived by clients (Bolton and Drew 1991; Sánchez-Fernandez and Iniesta-Bonillo 2007; Zeithaml 1988).

The multidimensional models of client value are much broader and allow for affective value dimensions. One of the first multidimensional models is the one by Sheth et al. (1991). The authors identify five value dimensions (functional, emotional, social, epistemic, and conditional), which are assumed to influence consumption choice. Functional value is the utility derived from the capacity of a good or service for functional, utilitarian, or physical performance. Emotional value is the utility derived from the feelings generated by a good or service. Social value is the utility acquired from a good or service's association with particular social groups. Epistemic value relates to the capacity of a good

[77] This review intends to cover the most important models of client value. For the sake of briefness, it will not, however, provide a complete review. The interested reader may consult Sánchez-Fernández and Iniesta-Bonillo (2007).

or service to offer novelty or surprise to the client. Conditional value is the utility derived in the context of a specific set of circumstances. Later contributions confirm these dimensions to be valid with some modifications. Sweeney and Soutar (2001) do not find epistemic and conditional value to play a role in the context of durables, and they distinguish between two types of functional value, i.e. quality/performance and price/value for money. Sánchez et al. (2006) identify four types of functional value (installations, professionalism, quality, and price) besides emotional and social value in their study of tourism packages. Pura and Gummerus (2008), analysing value in the context of mobile services, ascertain six value dimensions, i.e. conditional, epistemic, emotional, social, monetary, and convenience value.

A second line of multidimensional models has started with Mattson (1991) on the basis of Hartman's (1973) framework of an axiological approach towards value. Value is here assumed to precede client satisfaction, and the specific dimensions are emotional, practical, and logical (or systemic). Emotional value is equivalent to the understanding in the above models. Practical value refers to the physical and functional aspects of consumption, and logical value focuses on the rational and abstract characteristics of the good or service, such as value-for-money. Followers of this approach include de Ruyter et al. (1997) and Lemmink et al. (1998), who study value in the context of museum and restaurant visits respectively.

A different model is Holbrook's (1994, 1996) typology of client value. He defines client value as an "interactive relativistic consumption preference experience" (Holbrook 1994: 22). This means that a) there is an interaction between the consumer and the good or service, and value cannot occur without the consumer appreciating certain attributes of the good or service (*interactive*), b) the value of different objects may be compared, different individuals perceive different value for the same good or service, and value crucially depends on the context in which it is perceived (*relativistic*), c) value is an evaluative judgment (*preference*), and d) value resides in the consumption experience, not in the purchase itself (*experience*) (Holbrook 1996). The author proposes three dichotomies of client value: extrinsic (the good or service as a means to an end) versus intrinsic (the consumption experience valued on its own), self-oriented (the effect the good or service has on oneself) versus other-oriented (the effect achieved in others), and active (the good or service may be manipulated by the consumer) versus reactive (the consumer is affected

by the good or service). Combining these dichotomies with each other leads to eight types of value, i.e. efficiency, play, excellence, aesthetics, status, ethics, esteem, and spirituality.

Comparing these marketing models of client value to the above definitions of client value in microinsurance reveals that the latter are short-sighted for several reasons. First, Magnoni and Zimmerman (2011) and Matul et al. (2011) do not explicitly acknowledge that value may have several dimensions. Second, even though they incidentally take on a marketing perspective (and refer to such issues as service quality, client satisfaction and potential misperception of the value offered), they focus on the economic benefits that can be expected, in the sense of an increase in people's welfare. They either vaguely generalize the benefits ("added value") or name a particular form of benefit ("reduced vulnerability"). This approach is much closer to specifying the impact of microinsurance than to addressing value aspects such as quality, convenience, or emotions. Third, and related to this, the definitions do not sufficiently account for the fact that client value is always perceived client value and therefore a subjective construct. Value may differ from person to person and even from time to time for the same person (Holbrook 1996; Zeithaml 1988). Additionally, perceptions are not necessarily based on objective information, but may be rather formed on the basis of intuition (Böhm and Brun 2008; Slovic et al. 1982). And fourth, both definitions suggest that client value could only be evaluated after having purchased insurance, which is, however, not the case. Client value may instead also be perceived at the prepurchase stage (Sánchez et al. 2006; Sweeney and Soutar 2001; Woodruff 1997), which is of crucial importance for the ultimate purchase decision. If an individual considers purchasing insurance but does not perceive its value to be sufficiently high, the insurance will not be purchased.

5.2.3. The context of client value

It is generally recognized that client value strongly depends on the context in which it is perceived (Holbrook 1996; Zeithaml 1988). Yet, little attention has been paid to the question of how the context is related to the formation of value perceptions and their change over time (Woodruff and Flint 2006). Some models of client value treat the context as one of several dimensions of client value (Pura and Gummerus 2008; Sheth et al. 1991). Even though Pura and Gummerus (2008) argue convincingly that the context affects the (content-related) dimensions of value, it can be argued that treating it as a separate

dimension would be misleading. Rather, the context can be viewed as a cross-cutting determinant of all value dimensions. For example, whether an individual experiences joy while consuming a good or service, or thinks that the value for money is too low, always depends on his or her specific situation.

Context conditions include such factors as client characteristics, personal values, needs, and financial resources (Bolton and Drew 1991; Ravald and Grönroos 1996). In addition, Woodruff and Flint (2006) point out that value perceptions may change after recent experiences with a particular good or service. With regard to life insurance, considered in this chapter, it is plausible that individuals see more or less value contingent on whether they have a spouse and children, whether they have access to other effective risk management options (for example, savings or loans), and whether they have heard from other people that life insurance has been useful for them, among other factors. One could even imagine that the value that individuals see in other types of insurance, such as health or agricultural insurance spills over to the value perceived in life insurance. Beyond identifying the value that the focus group participants place on micro life insurance, the following analysis also explores how these value perceptions are formed.

5.3 Methodology

5.3.1. Data collection

Focus group discussions were conducted in two small towns – namely, Brakwa and Nyakrom – in the Central Region of Ghana, in October 2008.[78] These towns lie within the respective service areas of two rural banks that distribute the (universal) Anidaso micro life insurance of the Gemini Life Insurance Company (GLICO) (for a detailed description of the policy see Chapter 2, pp. 24-26). The chapter refers to the supply side (composed of GLICO, the rural bank, and the sales agents) simply as the insurance provider when no further disaggregation is required.

Brakwa was chosen as a study site due to the fact that the town was already part of the smaller household survey presented in Chapter 1 in February 2008. To ensure that results

[78] In terms of living standards, households in the Central Region have slightly below average mean annual expenditures of 1,810 Ghana Cedi in 2005/06 compared with 1,918 Ghana Cedi for the whole country (Ghana Statistical Service 2008).

are not highly specific to the conditions in one RCB service area, Nyakrom was chosen as an additional study site because it was similar in terms of size and the number of Anidaso policyholders. In both Brakwa and Nyakrom, people also had access to commercial life and non-life insurance, mainly provided by the Donewell and Unique insurance companies, and to public insurance schemes such as the Social Security and National Insurance Trust (SSNIT) and the National Health Insurance Scheme (NHIS).

Two focus group discussions were conducted in each of the two towns, using a purposive sampling frame. With the help of the local sales agents, groups of different professional associations were approached, which had previously attended information sessions on the Anidaso policy. GLICO typically targets its marketing efforts towards groups in order to reduce marketing costs. At the end of the information sessions, attendants are allowed to purchase the policy on the spot. Therefore, a substantial number of the professional associations' members in Brakwa and Nyakrom were microinsured. In Brakwa, one focus group (comprised only of females) consisted of market women, whereas the other group (males) consisted of members of a farmers association. In Nyakrom, one group (females) was composed of members of a dressmakers group, while the other (males) was composed of participants involved in construction/masonry. These professions can be considered to be typical for the target group of microinsurance. Focus group participants were not paid for their attendance of the discussion; but they received free soft drinks and a meal.

Attendance of the focus group discussions was not obligatory, but the groups selected the desired number of eight participants per focus group among themselves.[79] The only intervention from the research team was to require that half of the participants of each focus group were insured and the other half were not insured. Hearing the views of both existing and potential microinsurance clients was considered an important aspect in the design of the focus group discussions. The potential clients are those that have not purchased the micro life insurance, although they belong to the group of people that was approached by the insurance provider. Non-insured members were deliberately invited from the same associations, and not anyone else from the towns, because they were the most likely to also have had direct exposure to the micro life insurance in an information session. Furthermore, inviting participants from real groups is often advised for the

[79] As a result, it might well be that there was a self-selection of the more extrovert and potentially more influential people from the respective real groups in the focus group discussions. However, this holds equally true for all members who chose to participate, both the insured and the non-insured.

conduct of focus group discussions as they share certain experiences, opinions, and incidents in their daily lives - a common ground - that increases their willingness to exchange thoughts and ideas compared with strangers (Kitzinger 1994; Loos and Schäffer 2012).

One can therefore expected a greater stimulus for the discussion, provoking the elaboration of arguments and counterarguments, from introducing heterogeneity in terms of the insurance status of participants (Wibeck et al. 2007). In addition, separate discussions with insured participants on the one hand and non-insured participants on the other hand could have been less focused on the primary interest of the value perceived in micro life insurance among the non-insured participants. This is because, naturally, they have had less interaction with the insurance provider as compared to those who have purchased the Anidaso policy. The challenge of having insured and non-insured participants in one group, however, consisted in the possibility of the non-insured people not feeling at ease – because the issue of interest was insurance – and, hence, not participating equally in the discussion. The result section will return to this issue.

Having separate male and female groups appeared important in order to make group participants feel comfortable in speaking about their behaviour and experiences in financial matters (Morgan 1997). Often, financial decision making in Ghana is separated between men and women. Even within households, spouses often do not have full information about each other's financial budget and respective sources (Doss 1996; Goldstein 1999).

The discussions were held by two moderators from the Institute of Statistical, Social and Economic Research (ISSER), who had considerable experience with focus group discussions.[80] One of the moderators led the female groups, while the other moderated the male groups. Even though the moderators introduced themselves as researchers, some focus group participants thought they represented GLICO. Hence, the moderators clarified their role again in those groups where misconceptions were prevalent. However, even in the group that needed most of this clarification, the point was understood by all participants approximately after the first fifteen minutes of the discussion.

[80] Before the conduct of the actual discussions, both moderators were trained, and they moderated two pilot focus group discussions in Accra.

The discussions were semi-structured and the moderators used discussion guidelines. To elicit the client value, beliefs and understandings of micro life insurance and other available types of insurance, the guidelines distinguished between three main discussion areas: a) application of different risk management strategies in cases of death and illness, and perception of the value of these, b) experiences with, knowledge about, and valuation of insurance in general and the micro life insurance in particular, and c) factors influencing the decision to buy insurance. All discussions were held in the local language, Twi, and were recorded using digital audio and video recorders. They were then completely transcribed and translated into English by the moderators. The transcripts were made anonymous.

5.3.2. Data analysis

The analysis was guided by the conceptual framework outlined above, keeping different models of client value as well as different context factors in mind. In a first cycle of open coding, value items and context factors were identified that were then grouped into categories. It turned out that these categories were broadly in line with several of the previous contributions in the marketing literature, especially Parasuraman et al. (1988) on the attributes of service quality, Sweeney and Soutar (2001) and Sánchez et al. (2006) on the specific dimensions of client value, and Pura and Gummerus (2008) on the context. Hence, in the refinement of the coding scheme, a flexible approach was used that allowed a mix of deductively and inductively developed codes (Friese 2012; Saldaña 2013). The coding approach to the transcript data included an eclectic combination of attribute, magnitude, descriptive, process, affective, and pattern (Ibid.). From the identified value items respective value attributes could be derived (that are more abstract and general), which, subsequently, defined the overall higher-level value dimensions. In some cases, the value items are directly summarised in value dimensions, if there were only few observed value items making aggregation into attributes difficult (in the case of social value) or if the value items appeared to be too specific to the case of life insurance (in the case of consumption outcome). In a similar manner, all aspects related to the context of the focus group participants were coded and structured by developing higher-level context factors. Furthermore, the codes captured the evaluative tendency of statements made by the focus group participants and whether or not these were based on own experiences with the micro

life insurance. The transcript data was coded and analyzed using the qualitative data analysis software Atlas.ti.

In what is termed group-to-group validation, the analysis explores the value that clients perceive in micro life insurance by identifying how many groups mention a specific topic, how many statements of the same type are made in each group, and whether reactions towards certain topics are similar or different across the groups (Morgan 1997). The interest here is not in absolute numbers of the codes, but rather on whether there are substantially more statements of one type as compared with another and whether and how they are interrelated.[81] Beyond these rather quantitative means of investigation, the main analysis consists in the in-depth interpretation of the coded data. Verbatim quotations of the transcripts are presented to illustrate the patterns and key issues of client value that emerge from the discussions.

One issue that became obvious during the coding excercise was that the focus group participants in all groups, but especially in the Brakwa female group and the Nyakrom male group, referred to an Anidaso group when, instead, they should have been talking about the Anidaso insurance. Indieed in both towns there existed various social, financial and occupational groups, which is typical across Ghana. In Brakwa, there was even one self-help group called Anidaso ('help') and there is a slight chance that the participants of the Brakwa female group indeed talked about this group. However, the context in which most of the respective statements were made suggests that the participants referred to the Anidaso insurance, rather than to a specific group. All statements about the Anidaso group are thus treated in the same way as those statements that unequivocally referred to the insurance.[82]

[81] Interrelation of codes refers to incidences where codes overlap, co-occur, or follow one another. The investigation of these interrelations allows us to detect common patterns underlying the data (Friese 2012). Thereby it was possible to discover, for example, that emotional value attributes are often connected to certain quality attributes.

[82] One can suspect that the confusion of insurance and groups comes from the fact that the focus group participants are more familiar with the idea of mutual help groups than with the concept of insurance. In addition, they are often approached by the insurance staff in the context of their groups and group meetings.

5.4 Results from the focus group discussions

5.4.1 General observations

The multidimensional approach to client value turns out to be relevant and appropriate in the focus group discussions. The participants do not only talk about benefits and sacrifices related to micro life insurance, but also discuss a wide range of value items that can be ultimately summarized in five dimensions of client value. As illustrated in Figure 4, the participants discussed microinsurance with respect to emotional value, social value, and different forms of functional value, in line with Sweeney and Soutar (2001) and Sánchez et al. (2006). Beside the functional value dimensions of quality and costs, the results of the coding suggest consumption outcome as a separate form of functional value. This relates to the perceived consequences of insurance consumption (Woodruff and Flint 2006) and, in particular, the perceived insurance benefits that the micro life insurance provides.[83]

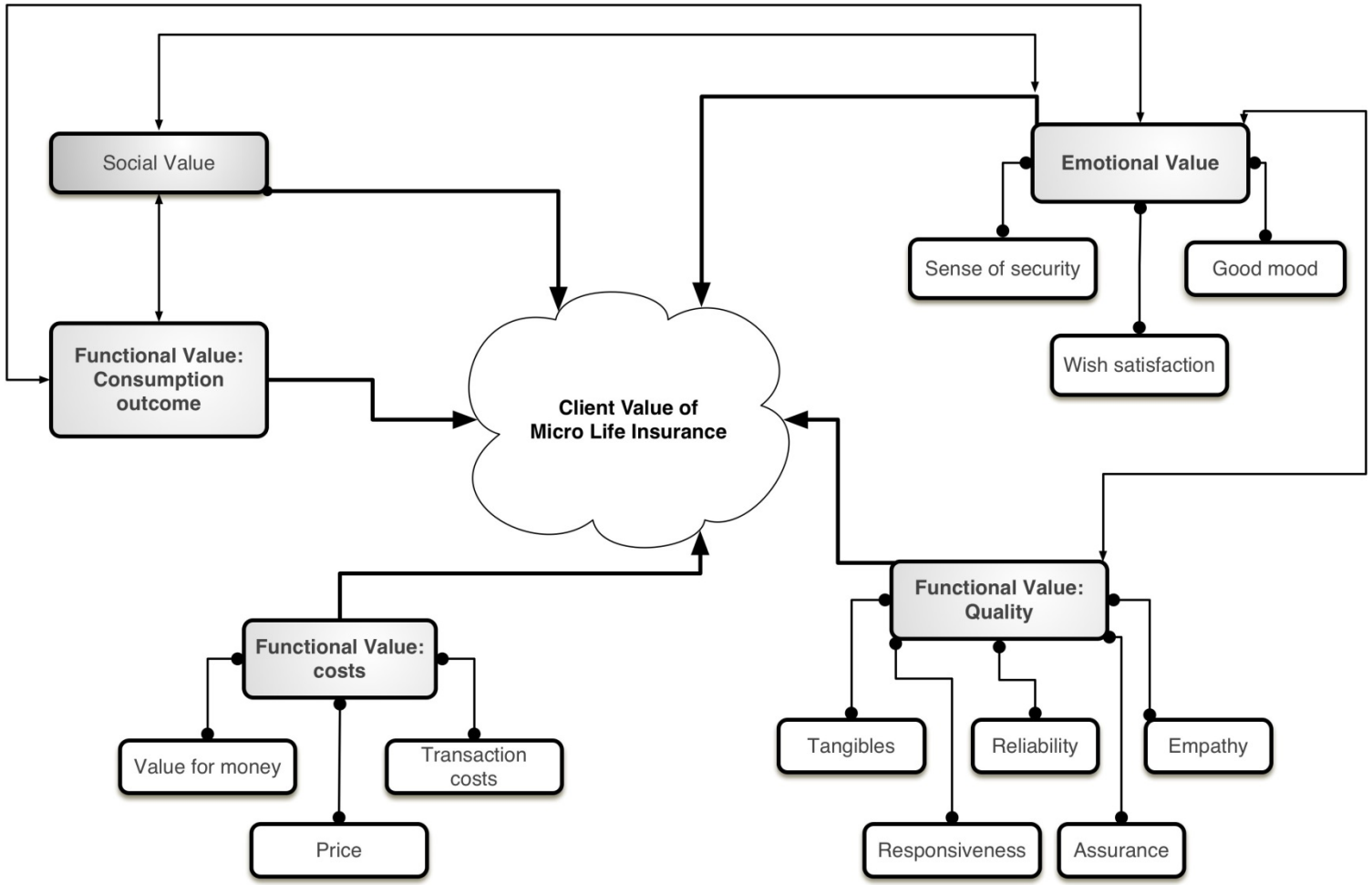
Emotional value, quality and consumption outcome are the value dimensions that receive the greatest attention in the focus group discussions in terms of the number of statements made, the respective length of discussion, and the variety of items revealed under each dimension (reflected in Figure 4 by the bold box lines).[84] Costs as well as social value are less extensively addressed (reflected in Figure 4 by the dashed box lines).[85] This does not imply that costs and social value are unimportant in contributing to overall value perceptions.

[83] Some authors recognise that service quality may have several components, one for the process of the service delivery and one for the outcome of the service delivery (Grönroos 1982; Rust and Oliver 1994). The classification made here follows these authors to some extent, but the outcome component is depicted as an own value dimension beside quality.

[84] See also Table 30 and Figure 6 in the Appendix.

[85] This pattern is not specific to the micro life insurance, but is mirrored with regard to other types of insurance. The focus group participants discuss the National Health Insurance Scheme and health insurance in general, the Social Security and National Insurance Trust, other life insurance schemes, property and fire insurance, funeral insurance, and insurance as such. Taking all value codes together, the majority of contributions (about three quarters of all codes) are related to the micro life insurance.

Figure 4: Perceived value dimensions and attributes



Source: Authors' own illustration

The value dimensions turn out to be interrelated, rather than independent from one another, as suggested by Sheth et al. (1991). This is in line with Sweeney and Soutar (2001) who claim that purchasing an attractive good is likely to simultaneously evoke favourable functional as well as emotional or social responses. Of course, the same is true in the opposite (negative) direction. In the empirical setting of this study, there are particularly strong links between emotional value and quality (reflected in Figure 4 by connecting arrows). There is also some indication for links between emotional value and consumption outcome, between social value and consumption outcome as well as between emotional and social value (dashed arrows in Figure 4).

The value perceptions revealed in the focus group discussions are not necessarily based on participants' own experiences with micro life insurance. Own experiences refer to incidences of purchasing the policy, making use of customer service, asserting a claim, or consuming payout benefits. This holds true for the non-insured participants (by definition), but also for the insured participants. Many of the insured participants did not have contact with the insurance provider after purchasing the Anidaso policy. They are therefore similar to the non-insured participants in the sense that they have not used the insurance for risk management. Insured and non-insured participants also rarely base their value assessments on the processing of (objective) information about insurance coverage and associated services. In the majority of cases, perceptions are instead based on visions (Woodruff and Flint 2006) and expectations of what insurance in general and the micro life insurance in particular entails. The insured participants make, on average, more statements on the value that they perceive in micro life insurance than the non-insured participants. Nevertheless, there turn out to be no noteworthy differences in what they say about the value perceived.

The value dimensions as well as their underlying attributes do not carry clear evaluative connotations (Lemmink et al. 1998). Their underlying items may have a negative or a positive inclination, depending on how they are described by the focus group participants. For example, when the participants discuss items of service quality, such as attention by the sales agents, they may note that the attention was either more than expected or insufficient and hence assess the quality as being either high or low. Similarly, costs may be judged as high or adequate. Many of the value items are discussed in the context of specific life events, shock scenarios or encounters with the insurance provider and are portrayed as either negative or positive in that particular situation.

Overall, the micro life insurance is perceived in a very positive way in the two female groups and the Nyakrom male group. The Brakwa male group shows some divergence from the other groups, with a high concentration of negative statements. In this group, one participant had a negative experience with the customer service of the insurance provider. This participant's contributions dominate the discussion and strongly influence the other participants in their assessment of the value of micro life insurance. Subsequently, participants in this group talk about certain value items, which appear much less or not at all in the other groups. Therefore, the picture that emerges from the Brakwa male group may be an extraordinary one. However, one can well imagine that more of such negative experiences and subsequent value judgments would have emerged, had one conducted a larger number of focus group discussions or done research over a longer period of time (such that the focus group participants were able to draw upon more experiences).

5.4.2 Perceived value dimensions and underlying attributes

The following section elaborates on each one of the five value dimensions and their underlying attributes. The meaning of these dimensions and attributes in the empirical setting of micro life insurance are illustrated by presenting the value items they are composed of. The section concentrates on value items that are mentioned across more than just one group, although others are mentioned when relevant. Table 30 in the Appendix lists all value items.

5.4.2.1 Functional value: consumption outcome

Woodruff and Flint (2006) note that clients perceive value in the consequences that the consumption of a specific good or service promises. Such value may also be perceived if the good or service is not actually used but intended to be used. This perfectly describes the identified consumption outcome dimension. The focus group participants discuss the consumption outcome in terms of the insurance benefits they have received or expect to receive as a result of being insured. Many of these benefits are specific to the case of life insurance and may not be reproducable with regard to other types of insurance. Hence, different to the other value dimensions, this functional value dimension is decribed merely in terms of the value items that are discussed, rather than by intermediate value attributes, which might anyways not be applicable to other types of insurance.

Among these are a whole range of perceived benefits that are thought to contribute to the value of the micro life insurance but that are not actually part of the policy. Beside the (true) benefits of a payout after death, a pension plan, and the financing of hospitalization costs[86], participants across all groups perceive many other benefits in micro life insurance. Most commonly mentioned is the rather unspecific notion that it will help in the future. Participants typically think the insurance would cover almost any type of problem that might befall them. This overly positive, but unspecific view on microinsurance is particularly transmitted in the Brakwa female group.

> *"We should pay this money monthly so if one day if something happens to you and you see them eh eh! it means that they will take care of you or help you, that is why we also joined. We all have hope." (Brakwa, female, insured)*

> *"That insurance, how I understand it is that you have put something down to help you at the time you are in some difficulty, so, that thing you have put down, that is what will take you out of that difficulty." (Nyakrom, male, non-insured)*

These examples demonstrate that there is either a widespread lack of knowledge on the specific type of help that the micro life insurance provides or, if the participants are aware of the actual insurance benefits, they nevertheless convey the picture of insurance as a panacea to their peers.

Very important in terms of the perceived benefits is the idea that the micro life insurance covers all kinds of medical treatments. Other perceived benefits include help to repay loans, help to progress (related to employment and business investments), and other payouts (sometimes referred to as loans) that are not actually related to any insured event. The women in Brakwa emphasize the perceived benefits of funds to finance children's education and payments for fire or construction damage. Focus group participants often consider micro life insurance in relation to their own personal experiences of shocks and difficulties, rather than the specific terms and conditions of the policy.

> *"Right now the difficulties I've encountered, not being in the group, now, if I were in the group, when my child completed school, I will have helped her continue. […] I have to join so that I can get money to further her education." (Brakwa, female, non-insured)*

[86] Note that the coverage of hospitalization costs does not entail any costs of medical treatment, but just a contribution to the expenses for the overnight stays.

> *"[…]based on this group, employment can come into this town. Based on what? This Anidaso group, jobs could come into this town so it can gain a big name, if it gets a big name, it can let the whole Agonaman, people will hear about it and they will come and join this Anidaso group." (Nyakrom, male, insured)* [87]

These and several other comments across the focus group discussions reveal that many participants have not fully understood the terms and conditions of the Anidaso policy and base their value assessments on false impressions about the insurance benefits. Such impressions are often passed on to other focus group participants. Some insured participants try to convince the non-insured participants to purchase the micro life insurance, holding out the prospect of various kinds of help that would then be provided to them.

Ideas about the benefits of micro life insurance are also guided by the perceived benefits of other types of insurance. For example, one woman in Brakwa talks about fire in the mission house of her church. She proclaims that seeing how its insurance enabled the church to rebuild the house helped her recognize the benefits of insurance and made her purchase the Anidaso policy. The facts that the policy does not cover the eventuality of fire and that it is provided by a different insurance company do not seem to be part of this participant's considerations in buying it.

Once confronted with the true benefits of micro life insurance, perceptions of the consumption outcome may turn strongly negative if the true benefits are not in line with the envisioned benefits. This is particularly underlined in the Brakwa male group.

> *"They [insurance provider] told us that […] if your child is ill you will go to the hospital. They made us put our hope in it, in the beginning, I didn't want to do it, but when they came, they convinced us to join, I was the fourth person. […] But since then, if your child falls ill, my child was ill and I came here, the man told me to go and see their manager. I did aaaa, and I wasn't seeing anything." (Brakwa, male, insured)*

> *"I didn't want to do it, but [sales agent] said that after three months or one year if we come for a loan, they will give us. So, it made me really happy, I was enthusiastic about it. So, after doing it for about two to three years, I was*

[87] The context of the quote makes clear that the speaker vaguely addresses the insurance provider and the research team to help his community by providing jobs. Thereby, the participant intends to hijack the agenda of the focus group discussion for his own interests. This is a common peculiarity of the Nyakrom male group, whose participants typically make a direct connection between employment and risk management as they regard the possibility to generate income from their own work as the most important precondition for being able to manage risk.

> *coming to look for a loan. I came the first time, they didn't mind me. I came the second time, they didn't mind me. The third time, I said, I won't come again, you should take it." (Brakwa, male, insured)*

The expectation to qualify for a loan by purchasing micro life insurance appears to be a shared (mis)understanding across all focus groups. On the one hand, it seems that sales agents have commonly tried to convince potential clients to purchase the insurance with the promise that access to loans would become easier, given that the clients' reputation at the rural bank would grow through regular premium payments. On the other hand, it is possible to arrange a partial withdrawal with GLICO after three years – at the earliest – if clients initially choose the pension plan. Apparently, this option is often sold, or misunderstood, as being a type of loan.

5.4.2.2 Functional value: costs

In line with previous contributions on client value (Sánchez et al. 2006; Sweeney and Soutar 2001), costs are identified as one functional value dimension, which captures both monetary as well as non-monetary costs. The focus group participants mainly emphasize the most obvious type of costs, which is the monthly premium contributions. The regularity of the monthly premium contributions represents a large burden for them, as it does not take the irregular money inflow of self-employed people and extraordinary and emergency expenses into account.

> *"They said we should buy books,[…]so when it happens like that, it puts pressure on me. This job too, if you go and cut the plantain, the person who will buy it is the one who gives you the price […], so everything you will get, it means, you will have to use to help the child. So, because of that, the money I have to give, I have to pay in at the rural bank, so that at the end of the month, this one [GLICO] will also deduct theirs, which is twenty one thousand and some pesewas, I stopped because I was in difficulty." (Brakwa, male, insured)*

Furthermore, the men in Brakwa point out that premium payments for micro life insurance come at the expense of short-term savings. As premium payments are deducted from policyholders' savings accounts at the rural bank, the respective amounts are no longer accessible for immediate use. Moreover, the pension plan of the Anidaso policy appears unattractive to them because they would have to wait a long period of time until they have accumulated a meaningful amount for consumption. They would like to have easy and fast access to the premiums paid as well as to their accumulated pension plan contributions when they are in need. This implies that several participants regard the Anidaso policy as a

savings product, rather than as insurance. In contrast to this, the women in Brakwa identify premium contributions as a necessity and express a belief that everybody should work hard to have the necessary monthly amount available in the savings account.

Several participants across all groups emphasize the cost advantage of the micro life insurance in comparison to loans, because insurance does not carry interest.

> *"I didn't know they had that Anidaso thing here, so when I was bringing my child from the hospital and paid my debt, those that had to bear interest, they bore it, and those that didn't bear, didn't, when I paid all, I got to know that, as a human being when you are there, something can happen to you unexpectedly and you will need help." (Nyakrom, female, insured)*

Such comparisons with alternative risk management options, especially loans and savings instruments, are a typical way of judging the value of micro life insurance.

Besides purely monetary costs, the focus group participants also discuss transaction costs, which, if high, are claimed to reduce the value of micro life insurance. The participants foresee transaction costs when they have to go to the rural bank to purchase the Anidaso policy or to clarify issues, such as the premium deductions or the application procedure, especially if they have to go several times. In this regard, micro life insurance is commonly compared to the alternative option of taking (informal) loans. Informal loans are viewed as even more costly in terms of the time and effort it takes to receive them, often referred to by the expression of "going round". This is illustrated in the following dialogue between two participants in the context of dealing with illness.

> *1st Person: "It would have helped me but I went round to look for a loan, but if I had joined you could have given me a loan. In case my child fell ill. I would have known that I there is hope that it could be treated."*
>
> *2nd Person: "You have really worried yourself, you have really worried yourself."*
>
> *[...]*
>
> *1st Person:" I wasn't getting money, I wasn't getting money".*
>
> *2nd Person: "Sell the things you are selling well. If you do that, the Anidaso group will help you so in the event of a disaster you won't have to go to a friend in search of a loan."*
>
> *(Brakwa, females, non-insured and insured)*

What the participants think about the costs of the micro life insurance is often influenced by the experiences of peers with the same or other insurances. One of the women in Nyakrom, for example, intially assumed high fees associated with claiming a death benefit from the micro life insurance, before changing her mind following the account of a friend:

> *"There is a woman I attend the same church with. She was saving with such a group. It was quite long, when the husband passed away, he himself told the children and the wife that he had insured himself so he had a little money, but Dad, the amount of money the children spent before getting that little money their father had left them." (Nyakrom, female, insured)*

Similar to Sweeney and Soutar's (Ibid.) empirical findings, the statements of the focus group participants rarely indicate a simple weighting of (monetary) costs against overall benefits in the sense of value-for-money as applied in some unidimensional approaches.

5.4.2.3 Functional value: quality

The service quality of the micro life insurance turns out to be a key dimension of client value. The codes that describe quality in the trancripts can be well categorised into the five quality attributes (tangibles, reliability, responsiveness, assurance and empathy) identified in the SERVQUAL model by Parasuraman et al. (1988). In this model, tangibles are the physical facilities, equipment, and appearance of personnel of the service provider. Reliability describes the ability to perform the promised service dependably and accurately. Responsiveness is understood as the willingness of employees to help clients and provide prompt service. Assurance implies that employees are knowledgeable, friendly and able to inspire trust and confidence among clients. And finally, empathy is approached as the caring and individualized attention that the service provider offers its clients. There is a clear concentration of statements on empathy, reliability and assurance related to micro life insurance (see Table 30). The other attributes - responsiveness and tangibles - are less prominently mentioned across the focus group discussions. This is not only substantiated by the number of statements and length of discussion, but also by the diversity of items grouped under these attributes.[88]

[88] Possibly, this is a sign that responsiveness and tangibles are less relevant aspects of service quality in the setting of microinsurance. Yet, due to the qualitative approach, fundamental conclusions about the relevance of the SERVQUAL quality attributes in the microinsurance industry cannot be drawn. In fact, the five separate service quality attributes as conceptualised in SERVQUAL have not remained without criticism (Brady and Cronin Jr 2001; Carman 1990; Cronin Jr and Taylor 1992). The adequacy and relevance of these quality attributes in the setting of microinsurance appears to be a highly relevant issue for future research.

With regard to empathy, the main items discussed across all groups are the provision of information by the insurance provider, and the individualized attention of sales agents towards the clients' needs. This involves keeping the clients informed in a language they can understand and explaining the insurance product in every detail, not only at the time when the contract is concluded, but also later when questions come up. While all participants seem to consider these items as very important in their value assessment, there are both positive and negative evaluations of the Anidaso policy.

> *"The young man who came to collect, […] he opened the way for us and gave us the information for us to join. When he explained it, it meant progress, we had to do it." (Brakwa, female, insured)*

> *"They should educate us paaa!, so we would know, because even what we are doing, we have not completely understood it." (Nyakrom, female, insured)*

The relevance that participants place on information provision is closely connected with perceptions of their own educational background.

> *"My brothers, what I know is that, we ourselves, because we are farmers and our education didn't really go forward, even when we come here, they can't explain it to us well, I mean Anidaso is the only thing that, when it came, they were able to explain to us that if we join, it will help us in the future." (Brakwa, male, insured)*

Participants across all groups comment on the access to the Anidaso policy. They positively evaluate the micro life insurance both in terms of availability and eligibility, especially compared with other types of insurance (for example, SSNIT) that are perceived as reserved for workers in the formal sector. However, participants raise concerns about how to reach the sales agents if there are questions or if clients would like to assert a claim. In the Brakwa male group, one of the insured participants repeatedly claims that clients are not able to reach a sales agent or responsible staff at GLICO in the case of a problem. This perception is based on several negative experiences he has made since he contracted the insurance. For example, his policy document has been withheld by a sales agent, even though he has been paying premiums for a long period of time and has repeatedly tried to obtain it in order to to be able to assert claims.

> *"I went there, they spoke at length and I took some of their manager's numbers, but they said I shouldn't call them but I should see [sales agent]. I collected [sales agent]'s number and he told me to take my certificate there. I took it there, when I was going I took everything else that was needed. Since then I haven't heard anything, I board a car to his place, that he should just*

> *give me the thing, when I go, he says it is at Cape [Cape Coast], when I go, he says it is in Accra. In fact it was worrying me, so I went back to the manager and told him that, the way they said it here, I think the mind has changed, so how would I lay hands on my certificate." (Brakwa, male, insured)*

One additional issue brought up by a man in Nyakrom with regard to empathy is the form of payment, which should be easy and adapted to the needs of the target group of low-income people working in the informal sector.

In terms of reliability, the men in Brakwa, but also other focus group participants, often discuss the issue of keeping service promises that are given to clients. In the majority of comments, the Anidaso policy is negatively evaluated in this regard.

> *"In the beginning when they started and said it, a lot of people put their trust in them, but what they said, it didn't happen like that. The bank, the company, if they are doing something and you join, then they leave you hanging. When it happens like that it is not good." (Brakwa, male, insured)*

Other reliability items that are mentioned are the delivery of prompt payout (in the case of a claim), the correct deduction of premiums, and the delivery of policy documents. The latter is a repeated issue especially in the Brakwa male group. Several participants of this group draw the conclusion that they should not purchase the Anidaso policy, as it does not seem to them to be a reliable mechanism.

> *"It is what they are saying, that is what some of them are saying, those who went in are not seeing anything. Me on my part, I won't put it [my money] there." (Brakwa, male, non-insured)*

The key item that the focus group participants emphasize in terms of assurance is trust in the future benefits of the micro life insurance in terms of death-related payouts, the payout of the accumulated savings, or other (wrongly) perceived payouts. Across the groups, the participants discuss this item a lot and reveal both high and low trust, which seems to depend on the length and depth of their relationship with the rural bank and the sales agent. Other items that the participants in some of the groups regard as valuable are that the sales agents and the rural bank always operate with the clients' conscious permission, for example when deducting premiums from client's savings accounts or when registering clients, and that sales agents are credible and give trustable information. These items are often negatively evaluated with regard to the Anidaso policy. There have obviously been incidents where the sales agents processed insurance application forms without clients

fully understanding the implications of this and without their conscious consent to deduct the respective premiums from their accounts.

> *"I didn't know the young man was deducting from the money I had saved, […] so until the time he brought my policy to me, when I asked him that, […] He told me that my money at the bank was what he was deducting. Then I asked him that: have I told you to deduct it?" (Nyakrom, female, insured)*

In terms of responsiveness and tangibles, there are only few items discussed, mostly revealed in only one of the groups. Related to negative personal experiences in the Brakwa male group, participants talk about the possibility to exit the Anidaso policy and withdraw their premium and pension plan contributions. One woman in Brakwa and one woman in Nyakrom consider the prompt and easy delivery of a payout after a claim and the immediate coverage of the policy valuable, respectively. Tangibles generally seem to be of least interest to the participants. Only the women in Brakwa make reference to the presence of an office and the existence of a policy document, and one woman in Nyakrom values the name of the policy.

5.4.2.4 Emotional value

As emphasized by the multidimensional models of client value, affections play a large role in perceiving value in goods and services (Sánchez-Fernandez and Iniesta-Bonillo 2007). This is confirmed in the focus group discussions where both positive and negative emotions turn out to be very important for judging the value of micro life insurance.

The most common emotional value attribute associated with the Anidaso policy (but also other types of insurance) is a sense of security that is conveyed by being insured. More specifically, participants associate being insured with the feeling of hope that they will be compensated for future losses. They believe that insurance will result in a positive outcome when they experience difficulties or shocks and hence in an ultimate improvement of their general livelihood. Another feeling commonly expressed in this regard is "peace of mind"[89].

This refers to reduced worries about the future prior to an insured event and relief afterwards.

[89] The code "peace of mind" evolved as an In Vivo code derived directly from the respective (translated) expressions of the participants.

> *"Now, you see that, this insurance I have, and you don't, now when I look at my life, I am more relaxed than those who don't have it." (Brakwa, female, insured)*

In addition, one woman in Brakwa feels supported by the micro life insurance in her ability to self-control and prevent spending all her money on immediate consumption. This feeling is also expressed by several participants when talking about formal and informal savings options. However, in three out of the four groups participants feel confused with regard to the functioning and outcomes of micro life insurance, which negatively contributes to the sense of security. In two groups, participants feel worried.

A second attribute of emotional value is a status of good mood. In two out of the four groups, participants mention feelings of happiness or joy that go along with having micro life insurance, or that they feel strong, in the sense of being prepared for shocks, and proud or even superior to others who are not insured. The third identified emotional value attribute is wish satisfaction. This is only found in the Brakwa male group and purely consists of negative emotions. These mainly include the feelings of disappointment and dissatisfaction with the insurance provider.

There is a tendency of (especially negative) emotional value assessments to coincide with contributions on the quality dimension. For example, when evaluating the level and type of information provided by the insurance provider (empathy), participants express feelings of confusion, and jealousy - men feel that women receive more information - at the same time. Similarly, when the participants talk about the delivery of service after a claim (reliability) or the approachability of the insurance provider (empathy), they simultaneously express anger or disappointment as the micro life insurance supposedly does not meet their expectations on these aspects. In fact, many of the quality items that describe reliability and assurance are connected with the issue of trust. Trust may not actually be clearly distinguished from an emotion and is closely related to the sense of security identified above. In line with the SERVQUAL approach, however, the issue of trust is only captured under the respective quality items. The following statement illustrates that, when participants do not rate the approachability of the insurance provider as well as the credibility of the service (assurance) very high, it can lead to unfavourable emotions, such as worry.

> *"We are a bit scared that in the future if you are in difficulty, they will throw you up and down and you don't know whom to go to." (Nyakrom, female, insured)*

In some cases, participants also reveal positive feelings in relation to key quality attributes, as demonstrated by the following statement.

> *"If you are insured, you can go to the young man that brother. This is what has happened to me. Even if it doesn't go well for him to give you your money, he can sympathize with you for you to have hope and be assured so even the problem, or the plenty worries will be reduced a bit." (Brakwa female, insured)*

The participant indicates that the sales agent provides individualized attention to the need of clients, even if not necessarily in the form of a financial payout. Of particular value to the participant in this scenario is the emotional support that may be given to her during the (potential) encounter with the sales agent.

Furthermore, participants react strongly to other participants' value assessments when they refer to emotional value. Typically, they imitate the shared positive or negative attitude of others. They even recognize this spill-over effect themselves and point out that potential clients in their communities are likely to react to the experiences of already insured clients by devaluating or appreciating the micro life insurance accordingly.

> *"He will not join the thing, then he has seen that, this thing, some brother of his has gone to join and it has not helped him. Just like our brother here is saying that [pointing to other participant] even his child, this illness he had, if it wasn't by God's grace that he sold his things, like the child, the illness will have killed him, you see, so something like that, if someone sees something like that, then his mind begins to waver for fear of joining." (Brakwa, male, insured)*

5.4.2.5 Social value

As orginally indicated by Sheth et al. (1991), many goods and sevices are consumed because of the social image they evoke or because they allow for identification with a particular social group. There is very little of such behaviour in the setting of the micro life insurance that is studied here, which does not necessarily mean that it is not present. The main social value item highlighted across all groups is the perceived possibility to help the remaining family, especially the children, by leaving a bequest. One woman in Brakwa mentions the desire that all of the professional group members should become insured in

order to equalize the group and share a common ground. Similarly, especially in the Nyakrom male group, participants perceive the Anidaso policy as a way to demonstrate to others in the community the supportive and progressive nature of solidarity principles within the community.[90]

5.5 Discussion: Formation of value perceptions

This section discusses the relevance of expectations and experiences for the formation of value perceptions. Subsequently, it investigates the context factors that help to explain why the focus group participants formed the value perceptions they did. The findings are represented by the conceptual model in Figure 5.

5.5.1 Expectations and experiences

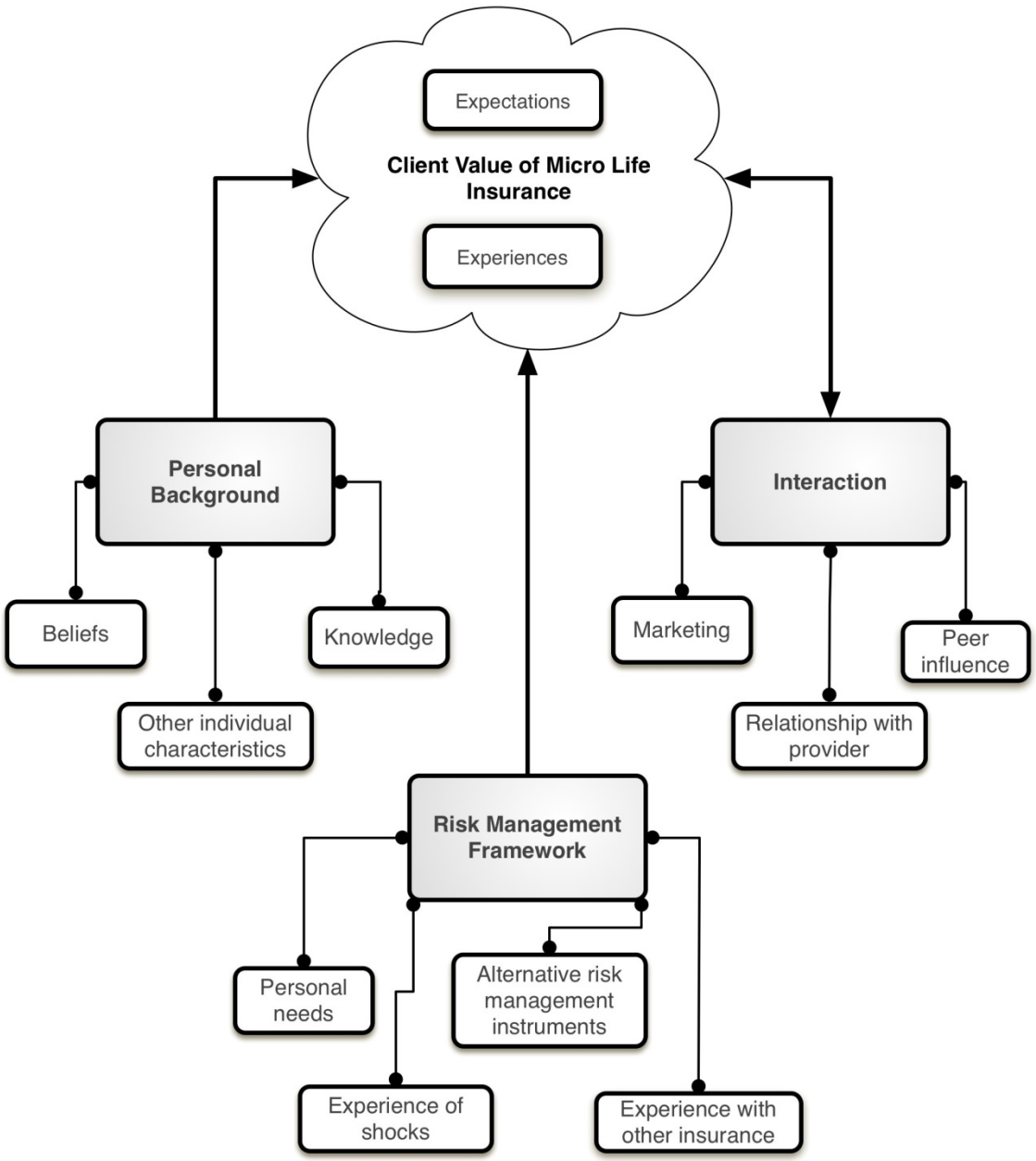
As mentioned above, the value perceived by the focus group participants in micro life insurance is mostly based on visions and expectations, rather than on prior experiences. Therefore, a substantial share of the identified value dimensions may be regarded as expected value, as opposed to received value (Flint and Woodruff 2001; Woodruff 1997).

It is important to note that insurance is generally very difficult to evaluate, as it contains only few so-called search properties but many credence and experience properties (Parasuraman et al. 1985; Zeithaml et al. 2009). In contrast to search properties, which can be examined prior to purchasing a good or service, experience properties are best evaluated after a good or service has been purchased and consumed. Credence properties, however, are impossible to understand and assess with certainty even after consumption.[91] Therefore, it is plausible to assume that value perceptions vis-à-vis insurance can never be fully based on experiences and objective information. Instead, part of the value perceptions will always be based on expectations, simply because insurance is hard to assess.

[90] It appears that they refer to the power of groups but it remains unclear what exactly they mean.

[91] This would, for instance, refer to the adequate level of premiums or insurance payouts that are hardly possible to assess without substantial actuarial knowledge.

Figure 5: Context factors and client value of micro life insurance



Source: Authors' own illustration

There is a tendency among the focus group participants to perceive low value in micro life insurance in the emotional, quality and cost dimensions of value (often in combination) when these are based on service experiences. In fact, these are the only perceptions of value that clients could have based on experiences and consequently could have compared the experiences with their prior expectations. This is because these dimensions are situated in the service process domain (Lemmink et al. 1998), which comprises all interactions with the insurance provider, starting with attending an information session. On the contrary, the consumption outcome dimension and, to a lesser extent, the social value are by and large assessed on the basis of expectations, as these dimensions are part of the service outcome domain (Ibid.). An assessment of this requires more experiences with the micro life insurance, most importantly to have asserted a claim. As exemplified in some of the quotations above, the majority of these latter evaluations are positive. Yet, the expected value attributes are often incorrect and/or very vaguely specified, for example when participants assume that the Anidaso policy will provide benefits not only in the case of death, but also in the case of any other hazardous event.

While the analysis does not allow for a longitudinal view on the process of value formation and its determinants – and hence it's changing nature over time – it demonstrates that the interaction of expectations and experiences appears to be of great relevance for the value judgements of the focus group participants. When they have made experiences with the micro life insurance, these experiences seem to have induced re-evaluations, and sometimes to have formed new expectations, of the value perceived. For example, the experience that sales agents pay little individualized attention to clients leads to an understanding that other aspects of micro life insurance will also be performed badly, which, in turn, makes clients consider exiting the contract. This is in line with the expectancy-disconfirmation paradigm outlined in the marketing literature (Oh 1999; Oliver 1980; Woodruff 1997). This paradigm describes that expectations of the value of a good or service are formed before the first experience with this good or service is made, and the expectations are either confirmed or disconfirmed with later experiences. This process influences both the post-purchase attitudes and perceptions of clients and their future purchase decisions. The results further suggest that this interaction between expectations and experiences strongly feeds back into the relationship with the insurance provider as well as the influence of peers (shown by the arrow from experiences to the interaction context factor in Figure 5), as further substantiated below.

5.5.2 Personal background, risk management framework, and interaction

The results of this study reveal three major context factors that shape client value in micro life insurance, as shown in Figure 5. These factors are the personal background, the prevailing risk management framework, and the interaction of clients with the insurance provider as well as their peers. They may or may not be specific to the empirical setting of the focus group discussions in southern Ghana. Further research is needed to find out whether these factors are equally important in other local settings and for other types of microinsurance.

First, client value is interrelated with the personal background of clients. This refers mostly to the personal knowledge about insurance.[92] The majority of evaluative statements in the focus groups relating to the Anidaso policy are based on very imprecise and sometimes erroneous knowledge about the specific details of the insurance coverage. Many participants openly state that they have limited education in general and have difficulties to understand explanations given by the insurance provider. Others mention that they simply have had too limited opportunities to accumulate knowledge about the funtioning of insurance in general or the micro life insurance in particular. While the general concept of insurance offering a benefit in the case of damage seems to be understood by many focus group participants, there is often uncertainty about the specific benefits included, the exact procedures behind insurance, and the way that one obtains coverage, as also found in other focus group discussions on microinsurance (Thornton et al. 2010). Such a lack of knowledge has important consequences for the perceptions of the value of micro life insurance. In our empirical case, there is evidence that people project either their wishful thinking or their unfounded negative ideas onto insurance.

Second, client value of micro life insurance is shaped by the existing risk management framework. This is particularly true for the perceived insurance benefits. The focus group participants judge whether the Anidaso policy would provide valuable benefits in the context of the shocks that they or others in their community typically experience. The main shocks and difficulties that are mentioned are illness, death and funerals, children's education (which is a concern especially to the women in Brakwa), and weather-related

[92] The value perceived in the micro life insurance seems to be related to other personal characteristics as well. For example, personal beliefs, such as considering self-reliance a better behaviour as compared to reliance on others in times of hardship, appear to be relevant. However, the exact role of such personal characteristics for the perceived value in micro life insurance remains inconclusive in the data at hand.

housing damage. In this context, the participants express the personal financial needs that result from such shocks. Most prominantly, they emphasize their need for finance to fund their children's education, medical treatments, and funerals. These specific financial needs account for many of the unrealistic expected benefits in the sense of wishful thinking.

Furthermore, the value of micro life insurance is typically assessed in comparison with other types of insurance or alternative risk management options. Particularly, this applies to evaluations of the costs of micro life insurance, the empathy, and emotional value attributes. This comparative behaviour is in line with the argument of McCord et al. (2012b: 2) that (potential) microinsurance clients "weigh the perceived value of insurance against the value of other available strategies for coping with the risk, such as liquidating savings or assets, or informal risk-sharing with families or communities". The focus group participants view other types of insurance, such as the SSNIT or private commercial insurance, as inaccessible and too expensive for them. This leads to high value perceived in micro life insurance. In contrast, the NHIS is mostly positively evaluated throughout the discussions and regarded as beneficial, easily accessible and thus valuable. Possibly, this is because the NHIS is explicitly targeted at the entire population and hence covers a large share of low-income people through which they feel included and appreciated. Interestingly, this does not lead to low value perceived in micro life insurance. The participants seem to transfer their experiences with and expectations from NHIS to the micro life insurance. It is possible that this even extends to the concrete insurance benefits, because the focus group participants frequently expect medical expenses to be covered by the Anidaso policy. Comparisons with alternative risk management options induce either high (in the case of informal loans or depletion of assets) or low (in the case of savings) value perceived in micro life insurance.

Third, client value is based on the interaction of the focus group participants with the insurance provider as well as with their peers. One way of interaction with the provider comes in the form of marketing efforts and the delivery of information, for example in the group meetings of professional associations. The information conveyed here is very relevant for clients' judgment of the value of micro life insurance, because of the inherent difficulty to assess insurance as well as clients' limited knowledge on financial matters outlined above. Much of the insufficient knowledge about the exact terms and conditions of the micro life insurance seems to result from incorrect information given by the sales agents. The reason for this may be that these are ill informed themselves due to a lack of

training by GLICO. Another reason, which should not be underestimated, seems to be an adverse incentive structure. Sales agents receive a bonus for each sold insurance policy, but not for subsequent customer services. Furthermore, considerable deficits in management practices of the insurance provider became evident during the field work, which contribute to erroneous expectations as well as confusion among the focus group participants. For instance, the debiting of premiums is not transparent for clients and the delivery of their policy documents is not always reliable, resulting in frequent insecurities about their actual insurance status.

Another interaction factor that influences value perceptions is the relationship that clients have with the insurance provider, especially the rural bank and the sales agents. For example, the focus group participants express positive or negative evaluations of trust in future benefits (assurance), service delivery (reliability) or attention provision (empathy) when they have had previous positive or negative encounters, respectively, with the rural bank. It is also evident that participants emphasize the importance to personally know the insurance sales agent. When their expectations on the insurance product and related services are not fulfilled, they often express personal disappointment by the particular sales agent in charge.[93] The discussions indicate that it is not uncommon that clients seek out sales agents at their homes. This relational aspect is rarely addressed by the literature on client value, even though the relationship between clients and provider might have a large effect on the overall client value (Ravald and Grönroos 1996). This is because maintaining a positive relationship may increase tolerance of clients towards occasionally low performance and encourage trust and loyalty of clients, subsequently increasing client value.

Many value assessments in the focus group discussions are associated with the influence of peers. This peer influence takes place internally within the focus groups, but also externally in terms of what people have heard about the micro life insurance and other types of insurance in their communities. With regard to the internal peer influence, the insured participants in the Brakwa female group, for example, repeatedly attempt to convince their non-insured peers about the value of the micro life insurance. This behaviour even turns into a form of pressure on the non-insured participants to purchase the Anidaso policy as soon as possible. In the opposite way, the one participant in the

[93] It is likely that the importance of the personal relationships between clients and bank staff as well as insurance sales agents is also related to the fact that many of them come from and reside in the same towns.

Brakwa male group whose expectations were strongly disappointed passes on his negative perceptions to other participants as well. As shown by Swenson et al. (1992), participants may learn as a result of their participation in focus group discussions and, in some cases, take action based on this learning experience. This implies that focus group discussions help convey information – in this case, both with regard to the Anidaso policy as well as to other types of insurance – and sometimes take on the form of interventions. Given that microinsurance, including the Anidaso policy, is often sold by approaching existing groups, this can provide good indications of real-life scenarios in the distribution of insurance products. In addition, this allows us to derive some indications about the way knowledge on microinsurance is generated and influenced by social networks. It was almost certain that bringing together insured and non-insured participants in the focus groups would not only stimulate debates on the value of micro life insurance, but also 'provoke an orientation to action' (Kleiber 2004: 97). Since the non-insured group participants have less experience with insurance, they are drawn towards the viewpoints of the insured. Along these lines, in both Brakwa groups the non-insured participants follow the evaluation tendency – negative or positive – revealed by their insured counterparts, whom they seem to respect as some kind of experts on the matter.

With regard to the external peer influence, both positive and negative value perceptions are based on the experiences and narratives of people with insurance in the participants' community. In many cases, participants relate to the specific encounters of relatives and/or friends with insurance and some participants link such stories to their own value judgments and their decision to purchase (or not) the Anidaso policy. The fact that other people's experience with insurance is important for the formation of one's own perception is substantiated by the narratives of how participants came to know about available types of insurance. It appears that hearsay is a very common way of learning about insurance.[94] These findings are in line with earlier research on microinsurance, which shows that many households that buy microinsurance do so on the advice of others or know others who have already claimed insurance benefits (Giné et al. 2008; Morsink and Geurts 2011).[95] In Ghana, Jehu-Appiah et al. (2011) find that peer pressure has a significant and cumulative

[94] TV programs as a source of information are also mentioned. There are several TV and radio programs in Ghana that aim at providing financial literacy to the public.

[95] This phenomenon is not specific to microinsurance. In their seminal work, Kunreuther et al. (1978), for example, find that in the United States one of the main distinctions between people who purchased disaster insurance and those who did not is that the former had acquaintance with others who had also taken out such insurance.

effect on individuals' perceptions of the quality, costs, and benefits of insurance within a community. In their empirical setting, this results in a negative effect of peer influence on consequent enrolment into the National Health Insurance Scheme. A previous negative experience with insurance (staff, claims procedures, and so on) shared among peers can thus substantially alter another person's perceived value of it, resulting in a negation of any contact with the provider and a disinterest in information about the specific insurance product.

5.6 Conclusion

This chapter addressed the perceived client value of a micro life insurance product in southern Ghana. The analysis was based on data obtained from focus group discussions and included the views of both existing and potential clients. This allowed us to observe a broad set of perceptions that emerge before and after people purchase insurance products. The chapter drew a first conceptual sketch of the dimensions that constitute client value. It became evident that earlier contributions on client value in the marketing literature, which typically investigated value in industrialised countries, provide a useful guide to study client value in microinsurance in developing countries. As in many models of client value, value was found to be a multidimensional concept. The chapter also investigated how and why focus group participants form the value perceptions they do.

The analysis showed that, in the setting of micro life insurance, clients base their perceptions of value on five dimensions, namely quality, costs, consumption outcome (all three are forms of functional value), emotional value, and social value. Among these, the focus group participants place high emphasis on the dimensions of quality, consumption outcome, and emotional value. In terms of quality, they mainly judge whether or not the insurance provider performs its services dependably and accurately (reliability), inspires trust and confidence among them (assurance), and provides caring and individualised attention (empathy). With regard to the consumption outcome, they perceive value in a range of insurance benefits that they expect to receive. Emotional value is mostly expressed by a sense of security ("peace of mind") induced by insurance coverage. It is important to mention that these aspects of client value may not be the most important to the focus group participants, but instead the most controversial. Future research that applies quantitative methodologies, such as in Lemmink et al. (1998), de Ruyter et al. (1997),

Sweeney and Soutar (2001) and Sánchez et al. (2006), is needed to investigate the relative importance of different dimensions and their attributes. Furthermore, beyond the rather narrow empirical setting of this study (two small towns in Ghana), research in different empirical settings could develop the proposed conceptual model of client value further.

The value perceived in micro life insurance was shown to be shaped by the gap between expectations of and experiences in combination with a number of contextual factors. On the one hand, large discrepancies between expectations and experiences reduce the value perceived in the insurance considerably. For example, the focus group participants have unrealistic expectations of insurance benefits, anticipating payouts for a large variety of damages that are not covered in the policy. For the time being, these expectations mostly lead to a high perceived value of micro life insurance. However, as soon as people's understandings are altered through engagement with the realities of the inusrance product, perceived value is promptly adjusted downwards.

On the other hand, perceptions of high or low value depend on a range of contextual factors. Three factors turn out to be of central relevance. First, the focus group participants have insufficient knowledge about insurance and financial matters in general. They often base their value judgments on very imprecise and sometimes erroneous information about the insurance policy, which leads to idealistically positive as well as overly negative judgments. Second, the focus group participants typically value micro life insurance in comparison with other types of insurance or alternative ways of coping with risk. For example, they appreciate the greater accessibility of micro life insurance relative to the SSNIT or conventional life insurance. Micro life insurance is often seen as less valuable than savings options, but is viewed as a more dignified way of coping with the risk of death than loans, especially when the latter are informal and depend on the goodwill of others. Third, peer influence plays a large role in the sense that positive and negative value perceptions are conveyed to the focus group participants by experiences and expectations expressed by fellow participants or other community members.

Finally, there are several implications of the findings for insurance providers. As far as the main findings from the focus group discussions are reflective of general judgments of microinsurance and perceptions of its value, insurance providers could be well advised to pay more attention to the provision of (correct) information so that there is no room for false expectations to evolve on the side of the clients. The obvious danger is that those

clients whose expectations are not met are left perceiving low value in microinsurance products. However, arguably the more significant implication is multiplication of such negative perceptions through peer networks. This is potentially of high relevance in developing countries where people do not have much access to provider information about specific insurance products but, instead, rely on peers as their main source of knowledge. Ultimately, it is of crucial importance that insurance providers understand the clients' perspective and invest in a long-term relationship by offering attentive and ongoing customer service (instead of rewarding sales agents on the basis of contract conclusions alone). Utilizing the multiplicative effect of peer influence in a positive way requires the maintaining of good relationships with existing clients in order to reduce the risk of losing large numbers of potential clients.

5.7 Appendix

Table 30: Code sheet of perceived value in the micro life insurance scheme

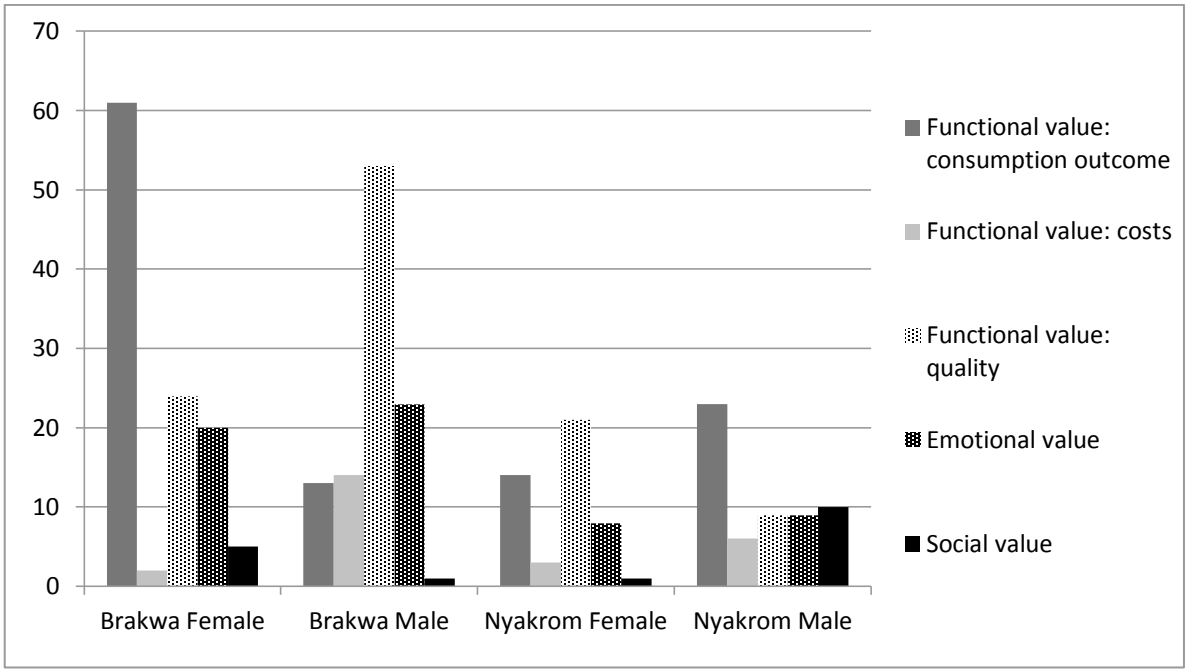
Value dimensions ***Attributes*** **Items**	**Brakwa Female**	**Brakwa Male**	**Nyakrom Female**	**Nyakrom Male**	**Total**	**Negative evaluations**
Functional value: consumption outcome						
help in future	27	3	5	9	44	2
access to loan/other payout	5	3	0	1	9	3
death payout	4	1	0	0	5	0
facilitates savings	2	2	4	1	9	2
finance education	9	0	0	0	9	0
finance fire/other construction damage	3	0	0	0	3	0
finance hospitalisation	1	0	1	0	2	0
finance medical treatment	5	1	3	3	12	1
help to progress	2	0	0	5	7	0
help to repay loans	2	0	1	0	3	0
pension	1	3	0	4	8	0
Functional value: costs						
Price						
interest	0	0	0	1	1	1
price_operation fees	0	0	1	0	1	1
price_premiums	1	4	0	5	10	6
price_premiums_reduce savings	0	5	0	0	5	5
Transaction costs						
running around/cumbersome walks	1	2	1	0	4	4
waiting time	0	2	0	0	2	2
Value for money (net benefit)	*0*	*3*	*1*	*0*	*4*	*3*
Functional value: quality						
Empathy						
access_eligibility/availability	2	2	1	4	9	0
access_reaching staff	3	1	1	0	5	4
easy and fast access to contributions	0	3	0	0	3	3
form of (re)payment	0	0	0	1	1	1
information provision	6	8	7	1	22	10
providing attention	0	6	2	1	9	4

Table continues on the next page

Reliability						
payout delivery (claim)	1	4	1	0	6	5
policy documents delivery	3	3	0	0	6	3
premium deductions	1	1	0	0	2	1
service promises	1	14	2	0	17	16
Assurance						
client permission	0	1	2	0	3	3
credible sales agent	1	1	0	0	2	1
trust in future benefit	3	6	4	1	14	7
trustable information	0	1	1	0	2	2
Responsiveness						
enter/exit membership	0	1	0	0	1	1
prompt and easy service delivery	1	0	0	0	1	0
immediate coverage	0	0	1	0	1	1
Tangibles						
brand name	0	1	0	1	2	0
office	1	0	0	0	1	1
policy document	1	0	0	0	1	0
Emotional value						
Sense of security						
hope	8	7	5	4	24	0
peace of mind	8	1	1	1	11	0
self-control	1	0	0	0	1	0
worry	0	1	1	0	2	2
confusion	1	1	1	0	3	3
Good mood						
feeling strong	1	0	0	1	2	0
happiness/joy/feeling good	1	0	0	3	4	0
Wish satisfaction						
disappointment	0	8	0	0	8	8
dissatisfaction/anger	0	4	0	0	4	4
jealousy	0	1	0	0	1	1
Social value						
bequest to children/family	3	1	1	5	10	0
mutual help	0	0	0	1	1	0
solidarity demonstration	2	0	0	4	6	0

Source: Authors' own compilation based on coding of transcripts.

Figure 6: Value dimensions of micro life insurance



Source: Authors' own calculation based on coding of transcripts.

References

Abbring, J.H., Chiappori, P.A., Heckman, J.J. and Pinquet, J. (2003), Adverse Selection and Moral Hazard in Insurance: Can Dynamic Data Help to Distinguish?, in: *Journal of the European Economic Association*, 1, 2-3, 512–521.

Addai, I. (2011), An Empirical Analysis of Gender Earnings Gap in the Ghanaian Informal Sector Using the 1998/1999 Ghana Living Standards Survey, in: *Pakistan Journal of Social Sciences*, 8, 3, 152–158.

Addison, T., Channing, A. and Tarp, F. (2011), The Triple Crisis and the Global Aid Architecture, in: *African Development Review*, 23, 4, 461–478.

Alderman, H. and Paxon, C.H. (1992), Do the Poor Insure? A Synthesis of the Literature on Risk and Consumption in Developing Countries, in: Bacha, E.L. (ed.), *Development, Trade and the Environment in a Changing World*, London: Macmillan, 48–78.

Allegri, M. de, Sanon, M., Bridges, J. and Sauerborn, R. (2005), Understanding Consumers' Preferences and Decision to Enrol in Community Based Health Insurance in Rural West Africa, in: *Health Policy*, 76, 1, 58–71.

Ando, A. and Modigliani, F. (1963), The Life-Cycle Hypothesis of Saving: Aggregate Implications and Tests, in: *American Economic Review*, 53, 1, 55–84.

Arhin, K. (1994), The Economic Implications of Transformations in Akan Funeral Rites, in: *Africa: Journal of the International African Institue*, 64, 3, 307–321.

Armendáriz, B. and Morduch, J. (2005), Savings and Insurance, in: Armendáriz, B. and Morduch, J. (eds.), *The Economics of Microfinance*, Cambridge, Massachusetts, London: The MIT Press, 169–210.

Arnott, R. and Stiglitz, J. (^{2}1991), The Welfare Economics of Moral Hazard, in: Loubergé, H. (ed.), *Risk, Information and Insurance*, Norwell, Dordrecht: Kluwer Academic Publishers, 91–121.

Arrow, K.J. (1971), Insurance, Risk and Resource Allocation, in: Arrow, K.J. (ed.), *Essays in the Theory of Risk Bearing*, Chicago: Markham Publishing Company, 90–133.

Arun, T., Bendig, M. and Arun, S. (2012), Bequest Motives and Determinants of Micro Life Insurance in Sri Lanka, in: *World Development*, 40, 8, 1700–1711.

Auerbach, A.J. and Kotlikoff, L.J. (1991), The Adequacy of Life Insurance Purchases, in: *Journal of Financial Intermediation*, 1, 3, 215–241.

Aura, S. (2005), Does the Balance of Power Within a Family Matter? The Case of the Retirement Equity Act, in: *Journal of Public Economics*, 89, 9–10, 1699–1717.

Ayalew, D. (2003), Risk-Sharing Networks among Households in Rural Ethiopia, Working Paper Series, 4, Oxford: Centre for the Study of African Economies, University of Oxford.

Babbel, D.F. and Ohtsuka, E. (1989), Aspects of Optimal Multiperiod Life Insurance, in: *The Journal of Risk and Insurance*, 56, 3, 460–481.

Babiarz, P., Robb, C.A. and Woodyard, A. (2012), Family Decision Making and Resource Protection Adequacy, in: *The Journal of Consumer Affairs*, 46, 1, 1–36.

Bajtelsmit, V.L., Bernasek, A. and Jianakoplos, N.A. (1999), Gender Differences in Defined Contribution Pension Decisions, in: *Financial Services Review*, 8, 1, 1–10.

Banerjee, A. V. and Duflo, E. (2011), *Poor Economics*, New York: Public Affairs.

Banthia, A., Johnson, S., McCord, M., and Mathews, B. (2009), Microinsurance That Works for Women: Making Gender-Sensitive Microinsurance Programs, Microinsurance Paper, 3, Geneva: International Labour Office.

Barslund, M. and Tarp, F. (2008), Formal and Informal Rural Credit in Four Provinces of Vietnam, in: Journal of Development Studies, 44, 4, 485–503.

Basu, A., Blavy, R., and Yulek, M. (2004), Microfinance in Africa: Experience and Lessons from Selected African Countries, IMF Working Paper, 04/174, Washington D.C.: International Monetary Fund.

Bernasek, A. and Shwiff, S. (2001), Gender, Risk and Retirement, in: *Journal of Economic Issues*, 35, 2, 345–356.

Bernheim, B.D., Forni, L., Gokhale, J. and Kotlikoff, L. (2003), The Mismatch between Life Insurance Holdings and Financial Vulnerabilities: Evidence from the Health and Retirement Study, in: *The American Economic Review*, 93, 1, 354–365.

Bernheim, B.D., Shleifer, A. and Summers, L.H. (1985), The Strategic Bequest Motive, in: *The Journal of Political Economy*, 93, 6, 1045–1076.

Besley, T. (1995), Savings, Credit and Insurance, in: Behrmann, J. and Srinivasan, T.N. (eds.), *Handbook of Development Economics*, Amsterdam: Elsevier Science B.V., 2123–2207.

Best, R.J. ([6]2013), *Market-Based Management. Strategies for Growing Customer Value and Profitability*, Boston: Pearson.

Bhattamishra, R. and Barrett, C.B. (2010), Community-Based Risk Management Arrangements: A Review, in: *World Development*, 38, 7, 923–932.

Black, K. and Skipper, H. ([13]2000), *Life and Health Insurance*, Upper Saddle River: Prentice Hall.

Bock, O. de and Gelade, W. (2012), The Demand for Microinsurance: A Literature Review, Research Paper, 26, Geneva: Microinsurance Innovation Facility, International Labour Organization.

Böhm, G. and Brun, W. (2008), Intuition and Affect in Risk Perception and Decision Making, in: *Judgment and Decision Making*, 3, 1, 1–4.

Bolton, R.N. and Drew, J.H. (1991), A Multistage Model of Customers' Assessments of Service Quality and Value, in: *Journal of Consumer Research*, 17, 4, 375–384.

Boon, E.K. (2007), Knowledge Systems and Social Security in Africa: A Case Study on Ghana, in: *Studies of Tribes and Tribals*, 63–76.

Brady, M.K. and Cronin Jr, J.J. (2001), Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach, in: *The Journal of Marketing*, 34–49.

Browne, M.J. and Kim, K. (1993), An International Analysis of Life Insurance Demand, in: *Journal of Risk and Insurance*, 60, 4, 616–634.

Browning, M., Bourguignon, F., Chiappori, P.A. and Lechene, V. (1994), Income and Outcomes: A Structural Model of Intrahousehold Allocation, in: *Journal of Political Economy*, 102, 6, 1067–1096.

Browning, M. and Lusardi, A. (1996), Household Saving. Micro Theory and Micro Facts, in: *Journal of Economic Literature*, 34, 4, 1797–1855.

Browning, M. (2000), The Saving Behaviour of a Two-Person Household, in: *The Scandinavian Journal of Economics*, 102, 2, 235–251.

Burnett, J.J. and Palmer, B.A. (1984), Examining Life Insurance Ownership Through Demographic and Psychographic Characteristic, in: *The Journal of Risk and Insurance*, 51, 3, 453–467.

Cai, H., Chen, Y., Fang, H., and Zhou, L.-A. (2009), Microinsurance, Trust and Economic Development: Evidence from a Randomized Natural Field Experiment, NBER Working Paper, 15396, Cambridge: National Bureau of Economic Research.

Cai, J., Janvry, A. de, and Sadoulet, E. (2013), Social Networks and the Decision to Insure, Mimeo, online: https://bepp.wharton.upenn.edu/bepp/assets/File/AE-S13-Cai.pdf (01. May 2013).

Campbell, J.Y. (2006), Household Finance, in: *The Journal of Finance*, 61, 4, 1553–1604.

Campbell, R.A. (1980), The Demand for Life Insurance: An Application of the Economics of Uncertainty, in: *The Journal of Finance*, 35, 5, 1155–1172.

Capellari, L. and Jenkins, S.P. (2003), Multivariate Probit Regression Using Simulated Maximum Likelihood, in: *The Stata Journal*, 3, 3, 278–294.

Carman, J.M. (1990), Consumer Perceptions of Service Quality: An Assessment of the SERVQUAL Dimensions, in: *Journal of Retailing*, 66, 1, 33–55.

Carr, E.R. (2008), Men's Crops and Women's Crops: The Importance of Gender to the Understanding of Agricultural and Development Outcomes in Ghana's Central Region, in: *World Development*, 36, 5, 900–915.

Carter, M.R. and Barrett, C.B. (2006), The Economics of Poverty Traps and Persistent Poverty: An Asset-Based Approach, in: *Journal of Development Studies*, 42, 2, 178–199.

Carter, M.R., Little, P.D., Mogues, T. and Negatu, W. (2007), Poverty Traps and Natural Disasters in Ethiopia and Honduras, in: *World Development*, 35, 5, 835–856.

Cawley, J. and Philipson, T. (1999), An Empirical Examination of Information Barriers to Trade in Insurance, in: *American Economic Review, American Economic Association*, 89, 4, 827–846.

Chankova, S., Sulzbach, S. and Diop, F. (2008), Impact of Mutual Health Organizations: Evidence from West Africa, in: *Health policy and Planning*, 23, 4, 264–276.

Chantarat, S., Mude, A.G., Barrett, C.B. and Carter, M.R. (2013), Designing Index-Based Livestock Insurance for Managing Asset Risk in Northern Kenya, in: *Journal of Risk and Insurance*, 80, 1, 205–237.

Chen, P., Ibbotson, R.G., Milevsky, M.A. and Zhu, K.X. (2006), Human Capital, Asset Allocation, and Life Insurance, in: *Financial Analysts Journal*, 62, 1, 97–109.

Chen, S. and Ravaillon, M. (2009), The Impact of the Global Financial Crisis on the World's Poorest, Mimeo, online: http://econ.tu.ac.th/archan/rangsun/ec%20460/EC%20460%20Readings/Global%20Issues/Global%20Financial%20Crisis%202007-2009/Academic%20Works%20By%20Instituion/VoxEU/Impact%20of%20Global%20FinCrisis%20on%20the%20World%27s%20Poorest.pdf (01. May 2013).

Chiappori, P.-A. and Donni, O. (2011), Nonunitary Models of Household Behavior: A Survey of the Literature, in: Molina, J.A. (ed.), *Household Economic Behaviors*, Berlin: Springer Science and Business Media, 1–40.

Chiappori, P.A., Fortin, B. and Lacroix, G. (2002), Marriage Market, Divorce Legislation, and Household Labor Supply, in: *The Journal of Political Economy*, 110, 1, 37–72.

Chiappori, P.-A. (2000), Econometric Models of Insurance Under Asymmetric Information, in: Dionne, G. (ed.), *Handbook of Insurance*, Boston, Dordrecht, London: Kluwer Academic Publishers, 365–393.

Churchill, C. and Matul, M. (2012), *Protecting the Poor. A Microinsurance Compendium*, Geneva: International Labour Organization.

Churchill, C. (2006), What is Insurance for the Poor?, in: Churchill, C. (ed.), *Protecting the Poor. A Micro Insurance Compendium*, Geneva: International Labour Organization, 12–24.

Claessens, S. (2006), Access to Financial Services: A Review of the Issues and Public Policy Objectives, in: *The World Bank Research Observer*, 21, 2, 207–240.

Clarke, D. and Kalani, G. (2012), Microinsurance Decisions: Evidence from Ethiopia, Research Paper, 19, Geneva: International Labour Office and Microinsurance Innovation Facility.

Cohen, M., McCord, M.J. and Sebstad, J. (2005), Reducing Vulnerability: Demand for and Supply of Microinsurance in East Africa, in: *Journal of International Development*, 17, 3, 319–325.

Cohen, M. and Sebstad, J. (2005), Reducing Vulnerability: The Demand For Microinsurance, in: *Journal of International Development*, 17, 3, 397–474.

Cohen, M. and Young, P. (2007), Using Microinsurance and Financial Education to Protect and Accumulate Assets, in: Moser, C.O.N. (ed.), *Reducing Global Poverty: The Case for Asset Accumulation*, Washington D.C.: Brookings Institution Press, 208–224.

Cole, S., Giné, X., Tobacman, J., Topalova, P., Townsend, R.M. and Vickery, J. (2013), Barriers to Household Risk Management: Evidence from India, in: *American Economic Journal: Applied Economics*, 5, 1, 104–135.

Collins, D., Morduch, J., Rutherford, S., and Ruthven, O. (2009), *Portfolio's of the Poor: How the World's Poor Live on Two Dollars a Day*, New Jersey, Woodstock, Oxfordshire: Princeton University Press.

Coulombe, H. (2008), Ghana Census - Based Poverty Map: District and Sub-District Level Results, in: Aryeetey, E. and Kanbur, R. (eds.), *The Economy of Ghana*, Accra: Woeli Publishing Services, 222–250.

Cronin Jr, J.J. and Taylor, S.A. (1992), Measuring Service Quality: A Reexamination and Extension, in: *The Journal of Marketing*, 55–68.

Cull, R. and Scott, K. (2010), Measuring Household Usage of Financial Services: Does It Matter How or Whom You Ask?, in: *The World Bank Economic Review*, 24, 2, 199–233.

Datta, D. (2004), Microcredit in Rural Bangladesh, in: *Journal of Microfinance*, 6, 1, 55–81.

Deaton, A. (1990), *Saving in Developing Countries: Theory and Review*, Proceedings of the World Bank Annual Conference on Development Economics 1989, Washington D.C.: The International Bank for Reconstruction and Development, The World Bank.

Deaton, A. (1992), Household Savings in LDC's: Credit Markets, Insurance and Welfare, in: *Scandinavian Journal of Economics*, 94, 2, 253–273.

Debreu, G. (1959), *Theory of Value*, New York: John Wiley & Sons, Inc.

Dercon, S., Bold, T., and Calvo, C. (2008), Insurance for the Poor?, in: Barrientos, A. and Hulme, D. (eds.), *Social Protection for the Poor and Poorest. Risk, Needs and Rights*, Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 47–63.

Dercon, S., Gunning, J.W., and Zeitlin, A. (2011), The Demand for Insurance Under Limited Credibility: Evidence from Kenya, Mimeo, University of Oxford, online: http://r4d.dfid.gov.uk/PDF/Outputs/IIG/p032.pdf (20. November 2012).

Dercon, S. (2002), Income Risk, Coping Strategies and Safety Nets, in: *The World Bank Research Observer*, 17, 2, 141–166.

Dercon, S. (2005), *Insurance Against Poverty*, A Study Prepared by the World Institute for Development Economics Research of the United Nations University (UNU-WIDER), Oxford, New York: Oxford University Press.

Dionne, G., Doherty, N., and Fombaron, N. (2000), Adverse Selection in Insurance Markets, in: Dionne, G. (ed.), *Handbook of Insurance*, Boston, Dordrecht, London: Kluwer Academic Publishers, 185–243.

Doherty, N. and Schlesinger, H. (1983), Optimal Insurance in Incomplete Markets, in: *Journal of Political Economy*, 91, 6, 1045–1ß54.

Dohmen, T., Falk, A., Huffman, D., Schupp, J., Sunde, U., and Wagner, G. (2006), Individual Risk Attitudes: New Evidence from a Large, Representative, Experimentally-Validated Survey, CEPR Discussion Paper, 5517, London: Centre for Economic Policy Research.

Doss, C.R. (1996), Testing among Models of Intrahousehold Resource Allocation, in: *World Development*, 24, 10, 1598–1609.

Doss, C.R. (2001), Is Risk Fully Pooled within the Household? Evidence from Ghana, in: *Economic Development and Cultural Change*, 50, 1, 101–130.

Dror, D.M., Koren, R. and Steinberg, D.M. (2006), The Impact of Filipino Micro Health Insurance Units on Income-Related Equality of Access to Healthcare, in: *Health Policy*, 77, 3, 304–317.

Duflo, E. (2003), Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold Allocation in South Africa, in: *The World Bank Economic Review*, 17, 1, 1–25.

Dwyer, P.D., Gilkenson, J.H. and List, J.A. (2002), Gender Differences in Revealed Risk-Taking: Evidence from Mutual Fund Investors, in: *Economic Letters*, 76, 2, 151–158.

Eswaran, M. and Kotwal, A. (1989), Credit as Insurance in Agrarian Economies, in: *Journal of Development Economics*, 31, 37–53.

Euwals, R., Eymann, A. and Börsch-Supan, A. (2004), Who Determines Household Savings for Old Age? Evidence from Dutch Panel Data, in: *Journal of Economic Psychology*, 25, 2, 195–211.

Ezemenari, K., Chaudhuri, N., and Owens, J. (2002), Gender and Risk in the Design of the Social Protection Interventions, Social Safety Net Primer Series, World Bank Institute, The World Bank Social Protection Unit.

Fafchamps, M. and Gubert, F. (2007), Contingent Loan Repayment in the Phillippines, in: *Economic Development & Cultural Change*, 55, 4, 633–667.

Fafchamps, M. and Lund, S. (2003), Risk-Sharing Networks in Rural Phillippines, in: *Journal of Development Economics*, 71, 2, 261–287.

Finmark Trust (2011), FinScope Ghana 2010 Report, Accra, Ghana.

Fischer, S. (1973), A Life Cycle Model of Life Insurance Purchases, in: *International Economic Review*, 14, 1, 132–52.

Fletschner, D. (2009), Rural Women's Access to Credit: Market Imperfections and Intrahousheold Dynamics, in: *World Development*, 37, 3, 618–631.

Flint, D.J. and Woodruff, R.B. (2001), The Initiators of Changes in Customers' Desired Value: Results from a Theory Building Study, in: *Industrial Marketing Management*, 30, 4, 321–337.

Folbre, N. (1988), The Black Four of Hearts: Toward a New Paradigm of Household Economics, in: Dwyer, D. and Bruce, J. (eds.), *A Home Divided: Women and Income in the Third World*, Stanford: Stanford University Press, 248–262.

Friedberg, L. and Webb, V. (2006), Determinants and Consequences of Bargaining Power in Households, NBER Working Paper Series, 12367, Cambridge: National Bureau of Economic Research.

Friedman, M. (1957), *A Theory of the Consumption Function*, Princeton: Princeton University Press.

Friese, S. (2012), *Qualitative Data Analysis with Atlas.ti*, Los Angeles, London, New Delhi, Singapore, Washington D.C.: SAGE Publications.

Gandolfi, A.S. and Miners, L. (1996), Gender-Based Differences in Life Insurance Ownership, in: *Journal of Risk and Insurance*, 683–693.

Geest, S.v.d. (2006), Between Death and Funeral: Mortuaries and the Exploitation of Liminality in Kwahu, Ghana, in: *Africa: Journal of the International African Institute*, 76, 4, 485–501.

Ghana Statistical Service (2007), Patterns and Trends of Poverty in Ghana 1991 - 2006, Accra, Ghana: Ghana Statistical Service.

Ghana Statistical Service (2008), Ghana Living Standards Survey. Report of the Fifth Round (GLSS5), Accra: Ghana Statistical Service.

Ghana Statistical Service (2011), 2010 Population and Housing Census of Ghana: Summary Report of Final Results, Accra: Ghana Statistical Service.

Giesbert, L., Steiner, S. and Bendig, M. (2011), Participation in Micro Life Insurance and the Use of Other Financial Services in Ghana, in: *Journal of Risk and Insurance*, 78, 1, 7–35.

Giles, J. and Yoo, K. (2007), Precautionary Behaviour, Migrant Networks, and Household Consumption Decisions: An Empirical Analysis Using Household Panel Data from Rural China, in: *The Review of Economics and Statistics*, 89, 3, 534–551.

Giné, X., Townsend, R.M. and Vickery, J. (2008), Patterns of Rainfall Insurance Participation in Rural India, in: *The World Bank Economic Review*, 22, 3, 539–566.

Giné, X. and Yang, D. (2009), Insurance, Credit, and Technology Adoption: Field Experimental Evidence from Malawi, in: *Journal of Development Economics*, 89, 1, 1–11.

Goldstein, M. (1999), Chop Time, No Friends. Intrahousehold and Individual Insurance Mechanisms in Southern Ghana, Mimeo, Department of Agricultural and Resource Economics, University of Berkeley and and The Economic Growth Center, Yale University, online: http://aida.econ.yale.edu/~cru2/pdf/insurancev2.pdf (01. October 2009).

Gollier, C. (2003), To Insure or Not to Insure? An Insurance Puzzle, in: *The Geneva Papers on Risk and Insurance Theory*, 28, 1, 5–24.

Greene, W.H. (2003), *Economic Analysis*, Upper Saddle River: Prentice Hall.

Grönroos, C. (1982), *Strategic Management and Marketing in the Service Sector*, Helsingfors: Swedish School of Economics and Business Administration.

Gruijters, Rob (ed.) (2012), *Promoting Microinsurance in Ghana*, Accra: National Insurance Commission (NIC), Deutsche Gesellschaft für Technische Zusammenarbeit (GIZ).

Guérin, Isabelle (2011), The Gender of Finance and Lessons for Microfinance, in: *The Handbook of Microfinance*, Singapore, Hackensack, London: World Scientific Publishing, 589–612.

Guiso, L. and Jappelli, T. (1998), Background Uncertainty and the Demand for Insurance Against Insurable Risks, in: *The Geneva Papers on Risk and Insurance Theory*, 23, 1, 7–27.

Guiso, L., Sapienza, P. and Zingales, L. (2008), Trusting the Stock Market, in: *Journal of Finance*, 63, 6, 2557–2600.

Hakansson, N.H. (1969), Optimal Investment and Consumption Strategies Under Risk, An Uncertain Lifetime, and Insurance, in: *International Economic Review*, 10, 443–466.

Hartman, R.S. (1973), *The Hartman Value Profile (HVP): Manual of Interpretation*, Muskegon: Research Concepts.

Hinz, R.P, Gremler, D.D., and Groenewald, J.A. (1997), Are Women Conservative Investors? Gender Differences in Participant-Directed Pension Investments, in: Gordon, M.S., Mitchell, O.S. and Twinney, M.M. (eds.), *Positioning Pensions for the Twenty-First Century*, Philadelphia: University of Pennsylvania Press, 91–106.

Holbrook, M.B. (1994), The Nature of Customer Value: An Axiology of Services in the Consumption Experience, in: Rust, R. and Oliver, R.L. (eds.), *Service Delivery: New Directions in Theory and Practice*, Thousand Oaks: SAGE Publications, 21–71.

Holbrook, M.B. (1996), Customer Value – A Framework for Analysis and Research, in: *Consumer Research*, 23, 1, 138–142.

Holzmann, R. and Jorgensen, S. (1999), Social Protection as Social Risk Management: Conceptual Underpinnings for the Social Protection Sector Strategy Paper, SP Discussion Paper, 9904, Washington D.C.: World Bank Social Protection Unit.

Hong, H., Kubik, S. and Stein, J. (2004), Social Interaction and Stock Market Participation, in: *Journal of Finance*, 59, 1, 137–163.

Hulme, D. and Mosley, P. (1997), Finance for the Poor or Poorest? Financial Innovations, Poverty and Vulnerability, in: Wood, G. and Sharif, I. (eds.), *Who Needs Credit? Poverty and Finance in Bangladesh*, Dhaka: Dhaka University Press, 97–130.

Hurd, M.D. (1989), Mortality Risk and Bequests, in: *Econometrica*, 57, 4, 779–813.

Hussels, S., Ward, D. and Zurbruegg, R. (2005), Stimulating the Demand for Insurance, in: *Risk Management and Insurance Review*, 8, 1, 257–278.

ILO (2001), Social security: A New Consensus, Geneva: International Labour Office, online: http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---secsoc/documents/publication/wcms_209311.pdf (01. March 2013).

ILO (2010), World Social Security Report 2010/11. Providing Coverage in Times of Crisis and Beyond, Geneva: International Labor Office, online: http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_146566.pdf (02. January 2012).

IMF (2006), Ghana. Poverty Reduction Strategy Paper, IMF Country Report, 06/225, Washington D.C.: International Monetary Fund.

Ito, S. and Kono, H. (2010), Why is the Take-Up of Microinsurance So Low? Evidence from a Health Insurance Scheme in India, in: *The Developing Economies*, 48, 1, 74–101.

Jabbar, M.A., Ehui, S.K. and Kaufmann, R.v. (2002), Supply and Demand for Livestock Credit in Sub-Saharan Africa: Lessons for Designing New Credit Schemes, in: *World Development*, 30, 6, 1029–1042.

Jalan, J. and Ravaillon, M. (2004), Household Income Danamics in Rural China, in: Dercon, S. (ed.), *Insurance against Poverty*, Oxford: Oxford University Press, 105–124.

Jehu-Appiah, C., Aryeetey, G., Agyepong, I., Spaan, E. and Baltussen, R. (2011), Household Perceptions and their Implications for Enrolment in the National Health Insurance Scheme in Ghana, in: *Health Policy and Planning*, 27, 3, 222–233.

Jianakoplos, N.A. and Bernasek, A. (1998), Are Women More Risk Averse?, in: *Economic Inquiry*, 36, 620–630.

Johnson, S. (2004), Gender Norms in Financial Markets: Evidence from Kenya, in: *World Development*, 32, 8, 1355–1374.

Jones, A. (2007), *Applied Econometrics for Health Economists: A Practical Guide*, Oxford: Radcliffe Publishing Ltd.

Jowett, M. (2003), Do Informal Risk Sharing Networks Crowd Out Public Voluntary Health Insurance? Evidence from Vietnam., in: *Applied Economics*, 35, 10, 1153–1161.

Kabeer, N. (2008), *Mainstreaming Gender in Social Protection for the Informal Economy*, New Gender Mainstreaming Series on Development Issues, London: Commonwealth Secretariat.

Kahnemann, D. and Tversky, A. (1979), Prospect Theory: An Analysis of Decision under Risk, in: *Econometrica*, 47, 2, 263–291.

Karni, E. (2006), Subjective Expected Utility Theory Without States of the World, in: *Journal of Mathematical Economics*, 42, 3, 325–342.

Kazianga, H. and Udry, C. (2006), Consumption Smoothing? Livestock, Insurance and Drought in Rural Burkina Faso, in: *Journal of Development Economics*, 79, 413–446.

Kelley, A.C. and Williamson, J.G. (1968), Household Saving Behaviour in the Developing Economies: The Indonesian Case, in: *Economic Development and Cultural Change*, 16, 3, 385–403.

Kiiza, B. and Pederson, G. (2002), Household Financial Savings Mobilization: Empirical Evidence from Uganda, in: *Journal of African Economies*, 10, 4, 390–409.

Kitzinger, J. (1994), The Methodology of Focus Groups: the Importance of Interaction between Research Participants, in: *Sociology of Health & Illness*, 16, 1, 103–121.

Kleiber, P. B. (2004), Focus Groups. More than a Method of Qualitative Inquiry, in: Marrais, K.B.d. and Lapan, S.D. (eds.), *Foundations of Research: Methods of Inquiry in Education and the Social Sciences*, Mawah, London: Lawrence Erlbaum Associates, 87–102.

Kunreuther, H. (1978), *Disaster Insurance Protection: Public Policy Lessons*, New York, Chichester, Brisbane, Toronto: John Wiley & Sons, Inc.

Lafourcade, A.-L., Isern, J., Mwangi, P., and Brown, M. (2005), Overview of the Outreach and Financial Performance of Microfinance Institutions in Africa, Microfinance Information Exchange, Inc., online: http://www.griequity.com/resources/industryandissues/financeandmicrofinance/Africa_Data_Study.pdf (05. May 2011).

Lee, J.J. and Sawada, Y. (2007), The Degree of Precautionary Saving: A Reexamination, in: *Economics Letters*, 96, 196–201.

Leeuwen, I. van (2005), Gender and Microinsurance, ISS Working Paper Series, 418, Den Haag: Institute of Social Studies.

Lemmink, J., Ruyter, K. de and Wetzels, M. (1998), The Role of Value in the Delivery Process of Hospitality Services, in: *Journal of Economic Psychology*, 19, 2, 159–177.

Lewis, F.D. (1989), Dependents and the Demand for Life Insurance, in: *The American Economic Review*, 79, 3, 452–467.

Lin, Y. and Grace, M.F. (2007), Household Life Cycle Protection: Life Insurance Holdings, Financial Vulnerability, and Portfolio Implications, in: *Journal of Risk and Insurance*, 74, 1, 141–173.

Loos, P. and Schäffer, B. (^{2}2012), *Das Gruppendiskussionsverfahren. Theoretische Grundlagen und Empirische Anwendung*, Wiesbaden: VS-Verlag.

Lundberg, S., Startz, R. and Stillman, S. (2003), The Retirement-Consumption Puzzle: A Marital Bargaining Approach, in: *Journal of Public Economics*, 87, 5-6, 1199–1218.

Lundberg, S.J., Pollak, R.A. and Wales, T.J. (1996), Do Husbands and Wives Pool Their Resources?, in: *The Journal of Human Resources*, 32, 3, 463–480.

Lundberg, S.J. and Ward-Batts, J. (2000), Saving for Retirement: Household Bargaining and Household Net Worth, Working Paper, 2000-004, Michigan: University of Michigan Retirement Research Centre.

Lyons, A., Neelakantan, U. and Scherpf, E. (2008), Gender and Marital Differences in Wealth and Investment Decisions, in: *Journal of Personal Finance*, 6, 4, 57–76.

Lyons, A. and Yilmazer, T. (2010), Marriage and the Allocation of Assets in Women's Defined Contribution Plan, in: *Journal of Family and Economic Issues*, 31, 2, 121–137.

Magnoni, B. and Zimmerman, E. (2011), Do Clients Get Value from Microinsurance? A Systematic Review of Recent and Current Research, Appleton: MicroInsurance Centre, online: http://www.microinsurancecentre.org/milk-project/milk-docs/doc_details/811-do-clients-get-value-from-microinsurance-a-systematic-review-of-recent-and-current-research.html (01. March 2013).

Malapit, H.J.L. (2012), Why Do Spouses Hide Income?, in: *The Journal of Socio-Economics*, 41, 584–593.

Mattson, J. (1991), A Service Quality Model Based on an Ideal Value Standard, in: *Journal of Service Industry Management*, 3, 3, 18–33.

Matul, M., McCord, M.J., Phily, C., and Harms, J. (2010), The Landscape of Microinsurance in Africa, Microinsurance Paper, 4, Geneva: International Labour Organization.

Matul, M., Tatin-Jaleran, C., and Kelly, E. (2011), Improving Client Value from Microinsurance: Insights from India, Kenya, and the Philippines, Microinsurance Paper, 12, Geneva: International Labour Organization.

Mayers, D. and Smith, C.W. (1983), The Interdependence of Individual Portfolio Decisions and the Demand for Insurance, in: *Journal of Political Economy*, 91, 2, 304–311.

Mayoux, L. (2011), Taking Gender Seriously: Towards a Gender Justice Protocol for Financial Services, in: Armendáriz, B. and Labie, M. (eds.), *The Handbook of Microfinance*, Singapore, Hackensack, London: World Scientific Publishing, 613–642.

Mazzucato, V., Kabki, M. and Smith, L. (2006), Transnational Migration and Economy of Funerals: Changing Practices in Ghana, in: *Development and Change*, 37, 5, 1047–72.

McCord, M., Steinmann, R., and Ingram, M. (2012a), The Landscape of Microinsurance in Africa 2012, online: http://www2.gtz.de/wbf/4tDx9kw63gma/2012-11-26%20Briefing%20Note%20-%20African%20Microinsurance%20Landscape%202012.pdf (01. February 2013).

McCord, M.J., Magnoni, B., and Zimmermann, E. (2012b), A Microinsurance Puzzle: How Do Demand Factors Link to Client Value?, MILK Brief, 7, Appleton: MicroInsurance Centre.

McDonald, J. and Moffitt, R. (1980), The Uses of Tobit Analysis, in: *Review of Economics and Statistics*, 62, 318–321.

Microensure (2011), M-Insurance Goes Live in Ghana, www.microensure.com, online: http://www.microensure.com/news.asp?id=123 (01. June 2013).

Miles, S. and Parker, K. (1997), Gender and Health Insurance, in: *New England Journal of Medicine*, 336, 218–212.

Monroe, K.B. (^{2}1990), *Pricing: Making Profitable Decisions*, New York: McGraw-Hill.

Morduch, J. (1995), Income Smoothing and Consumption Smoothing, in: *The Journal of Economic Perspectives*, 9, 3, 103–114.

Morgan, D.L. (1997), *Focus Groups as Qualitative Research*, Qualitative Research Methods Series, Thousand Oaks, London, New Delhi: SAGE Publications.

Morsink, K. and Geurts, P. (2011), Informal Trust Building Factors and the Demand for Microinsurance, Rio de Janeiro: 7th International Microinsurance Conference, 08 - 10 November 2011.

Mossin, J. (1968), Aspects of Rational Insurance Purchasing, in: *Journal of Political Economy*, 79, 553–568.

Munich Re Foundation (2012), Report of the „Learning Sessions – Ghana 2012“, Accra, Ghana: Munich Re Foundation, online: http://www.munichre-foundation.org/home/Projects/Microinsurance/Learning-Sessions-Ghana-2012.html (05. December 2012).

Muradoglu, G. and Taskin, F. (1996), Differences in Household Savings Behaviour: Evidence from Industrial and Developing Countries, in: *The Developing Economies*, 34, 2, 138–153.

Nair, A. and Fissha, A. (2010), Rural Banking: The Case of the Rural and Community Banks in Ghana, Agriculture and Rural Development Discussion Paper, 48, Washington D.C.: World Bank.

Navajas, S., Schreiner, M., Meyer, R.L., Gonzale-Vegas, C. and Rodriguez-Meza, J. (2000), Microcredit and the Poorest of the Poor. Theory and Evidence from Bolivia, in: *World Development*, 28, 2, 333–346.

Neumann, J. von and Morgenstern, O. (1944), *Theory of Games and Economic Behaviour*, Princeton, NJ: Princeton University Press.

NHIA (2010), National Health Insurance Scheme Annual Report, Accra, Ghana: National Health Insurance Authority.

Nyman, J.A. (2001), The Demand for Insurance: Expected Utility Theory from a Gain Perspective, Mimeo, University of Minnesota, online: http://www.econ.umn.edu/workingpapers/nyman1001.pdf (03. January 2009).

Oh, H. (1999), Service Quality, Customer Satisfaction, and Customer Value: A Holistic Perspective, in: *International Journal of Hospitality Management*, 18, 1, 67–82.

Okali, C. (1983), *Cocoa and Kinship in Ghana: The Matrilineal Akan of Ghana*, London: Kegan Paul International.

Olapade, M. and Froelich, M. (2012), The Impact of Insurance Literacy Education on Knowledge, Attitude and Behavior - A Randomized Controlled Trial, Twente: Research Conference on Microinsurance 11-13 April 2012.

Oliver, R.L. (1980), A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions, in: *Journal of Marketing Research*, 17, 4, 460–469.

Outreville, J.F. (1996), Life Insurance Markets in Developing Countries, in: *Journal of Risk and Insurance*, 63, 2, 263–278.

Pal, S. (2002), Household Sectoral Choice and Effective Demand for Rural Credit in India, in: *Applied Economics*, 34, 14, 1743–1755.

Parasuraman, A., Zeithaml, V. and Berry, L.L. (1985), A Conceptual Model of Service Quality and Its Implications for Future Research, in: *The Journal of Marketing*, 49, 4, 41–50.

Parasuraman, A., Zeithaml, V. and Berry, L.L. (1988), SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality, in: *Journal of Retailing*, 64, 1, 12–40.

Patt, A., Peterson, N., Carter, M., Velez, M., Hess, U. and Suarez, P. (2009), Making Index Insurance Attractive to Farmers, in: *Mitigation and Adaptation Strategies for Global Change*, 14, 8, 737–753.

Pissaridis, C.A. (1980), The Wealth - Age Relation with Life Insurance, in: *Economica*, 47, 451–457.

Pitt, M.M. and Khandker, S.R. (2002), Credit Programmes for the Poor and Seasonality in Rural Bangladesh, in: *Journal of Development Studies*, 39, 2, 1–24.

Platteau, J.P. (1997), Mutual Insurance as an Elusive Concept in Traditional Rural Communities, in: *Journal of Development Studies*, 33, 6, 764–796.

Prahalad, C.K. (2005), *Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits*, New York: Wharton School Publishing.

Pratt, J.W. (1964), Risk Aversion in the Small and in the Large, in: *Econometrica*, 32, 1/2, 122–136.

Pura, M. and Gummerus, J. (2008), *Perceived Value of Mobile Service Use and its Consequences*, Dissertation, Helsinki: Swedish School of Economics and Business Administration.

Quisumbing, A.R. and Maluccio, J. (2003), Resources at Marriage and Intrahousehold Allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa, in: *Oxford Bulletin of Economics and Statistics*, 65, 3, 283–327.

Ravald, A. and Grönroos, C. (1996), The Value Concept and Relational Marketing, in: *European Journal of Marketing*, 30, 2, 19–30.

Razavi, S. (1999), Gendered Poverty and Well-being: Introduction, in: *Development and Change*, 30, 3, 409–433.

Republic of Ghana (2007), Economic Survey 2001-2005, Accra: Ghana Statistical Service.

Rogers, G. (1997), The Dynamics of Risk Perception: How Does Perceived Risk Respond to Risk Events?, in: *Risk Analysis*, 17, 6, 745–757.

Rosenzweig, M.R. and Binswanger, H.P. (1993), Wealth, Weather Risk and the Composition and Profitability of Agricultural Investments, in: *The Economic Journal*, 103, 416, 56–78.

Roth, J., McChord, M.J., and Liber, D. (2007), The Landscape of Microinsurance in the World's 100 Poorest Countries, Appleton: The Microinsurance Centre, LLC, online: http://www.microfinancegateway.org/gm/document-1.9.29195/40285_file_15.pdf (12. January 2007).

Rothschild, M. and Stiglitz, J.E. (1976), Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information, in: *The Quarterly Journal of Economics*, 90, 4, 630–49.

Rust, R. and Oliver, R.L. (eds.) (1994), *Service Delivery: New Directions in Theory and Practice*, Thousand Oaks: SAGE Publications.

Ruyter, K. de, Wetzels, M., Lemmink, J. and Mattson, J. (1997), The Dynamics of the Service Delivery Process: a Value-Based Approach, in: *International Journal of Research in Marketing*, 14, 3, 231–243.

Sakurai, T. and Reardon, T. (1997), Potential Demand for Drought Insurance in Burkina Faso and Its Determinants, in: *American Journal of Agricultural Economics*, 79, 4, 1193–1207.

Saldaña, J. ([2]2013), *The Coding Manual for Qualitative Researchers*, Los Angeles, London, New Delhi, Singapore, Washington D.C.: SAGE Publications.

Sánchez, J., Callarisa, L., Rodriguez, R.M. and Moliner, M.A. (2006), Perceived Value of the Purchase of a Tourism Product, in: *Tourism Management*, 27, 3, 394–409.

Sánchez-Fernandez, R. and Iniesta-Bonillo, M.A. (2007), The Concept of Perceived Value: A Systematic Review of the Research, in: *Marketing Theory*, 7, 4, 427–451.

Sauter, N. (2012), Bequest Motives and the Demand for Life Insurance in East Germany, in: *German Economic Review*, Early View.

Schindler, K. (2010), Credit for What? Informal Credit as a Coping Strategy of Market Women in Northern Ghana, in: *Journal of Development Studies*, 46, 2, 234–253.

Schmidt, L. and Sevak, P. (2006), Gender, Marriage, and Asset Accumulation in the United States, in: *Feminist Economics*, 12, 1-2, 139–166.

Schneider, P. and Diop, F. (2004), Community-Based Health Insurance in Rwanda, in: Preker, A.S. and Carrin, G. (eds.), *Health Financing for Poor People - Resource Mobilization and Risk Sharing*, Washington: The World Bank, 251–274.

Sheth, J.N., Newman, B.I. and Gross, B.L. (1991), Why We Buy What We Buy: A Theory of Consumption Values, in: *Journal of Business Research*, 22, 2, 159–170.

Skinner, J. (1988), Risky Income, Life Cycle Consumption, and Precautionary Saving, in: *Journal of Monetary Economics*, 22, 2, 237–255.

Slovic, P., Fischhoff, B. and Lichtenstein, S. (1982), Why Study Risk Perception?, in: *Risk Analysis*, 2, 2, 83–93.

Slovic, P. (1987), Perception of Risk, in: *Science*, 236, 4799, 280–285.

Spio, K. and Groenewald, J.A. (1996), Rural Household Savings and the Life Cycle Hypothesis: The Case of South Africa, in: *South African Journal of Economics*, 64, 4, 294–304.

Steel, W. and Andah, D. (2008), Rural and Microfinance Regulation in Ghana: Implications for Development of the Industry, in: Aryeetey, E. and Kanbur, R. (eds.), *The Economy of Ghana*, Accra: Woeli Publishing Services, 195–221.

Swain, R.B. (2002), Credit Rationing in Rural India, in: *Journal of Economic Development*, 27, 2, 1–20.

Sweeney, J.C. and Soutar, G.N. (2001), Consumer Perceived Value: The Development of a Multiple Item Scale, in: *Journal of Retailing*, 77, 2, 203–220.

Swenson, J.D., Griswold, W.F. and Kleiber, P.B. (1992), Focus Groups: Method of Inquiry/Intervention, in: *Small Group Research*, 23, 4, 459–474.

Tesliuc, E.D. and Lindert, K. (2004), Risk and Vulnerability in Guatemala: A Quantitative and Qualitative Assessment, Social Protection Discussion Paper Series, 0404, Washington D.C.: The World Bank Social Protection Unit.

Thomas, D. (1990), Intra-Household Resource Allocation: An Inferential Approach, in: *The Journal of Human Resources*, 25, 4, 635–664.

Thornton, R., Field, E., Hyatt, L., Islam, M. and Solis, F. (2010), Social Security Health Insurance for the Informal Sector in Nicaragua: A Randomized Evaluation, in: *Health Economics*, 9, Suppl. 1, 181–206.

Tobin, J. (1958), Estimation of Relationships for Limited Dependent Variables, in: *Econometrica*, 26, 24–36.

Tomes, N. (1982), The Family, Inheritance, and the Intergenerational Transmission of Inequality, in: *Journal of Political Economy*, 89, 5, 928–958.

Tower, C. and McGuinness, E. (2012), A Friend Indeed: Evaluation of an Insurance Education Radio Campaign in Kenya, Microfinance Opportunities, online: http://microfinanceopportunities.org/wp-content/uploads/2011/08/Impact-Evaluation-of-ICE-K-Project2.pdf?utm_source=February+2012+E-Newsletter&utm_campaign=February+Newsletter&utm_medium=email (01. April 2013).

Townsend, R.M. (1995), Consumption Insurance: An Evaluation of Risk-Bearing Systems in Low-Income Economies, in: *Journal of Economic Perspectives*, 9, 3, 83–102.

Truett, D.B. and Truett, L.J. (1990), The Demand for Life Insurance in Mexico and the United States: A Comparative Study, in: *The Journal of Risk and Insurance*, 57, 2, 321–328.

Vanderpuye-Orgle, J. and Barrett, C.B. (2009), Risk Management and Social Visibility in Ghana, in: *African Development Review*, 21, 1, 5–35.

Villeneuve, B. (2001), Life Insurance, in: Dionne, G. (ed.), *Handbook of Insurance*, Boston, Dordrecht, London: Kluwer Academic Publishers, 901–931.

Wang, H.H. and Rosenman, R. (2007), Perceived Need and Actual Demand for Health Insurance Among Rural Chinese Residents, in: *China Economic Review*, 18, 4, 373–388.

Wibeck, V., Dahlgren, M.A. and Oberg, G. (2007), Learning in Focus Groups: An Analytical Dimension for Enhancing Focus Group Research, in: *Qualitative Research*, 7, 2, 249–267.

Wilkinson, S. (1998), Focus Group Methodology: a Review, in: *International Journal of Social Research Methodology*, 1, 3, 181–203.

Williams, Paul and Soutar, Geoffrey N. (2000), Dimensions of Customer Value and the Tourism Experience: An Exploratory Study, in: *Proceedings of the Australian and New Zealand Marketing Academy Conference 2000*, 28, 1415–1421.

Winter, R. (2000), Optimal Insurance Under Moral Hazard, in: Dionne, G. (ed.), *Handbook of Insurance*, Boston, Dordrecht, London: Kluwer Academic Publishers, 155–183.

Woodruff, R.B. and Flint, D.J. (2006), Marketing's Service-Dominant Logic and Customer Value, in: Lusch, R.F. and Vargo, S.L. (eds.), *The Service-Dominant Logic of Marketing. Dialog, Debate, and Directions*, Armonk, London: M.E. Sharpe, 183–195.

Woodruff, R.B. (1997), Customer Value: The Next Source for Competitive Advantage, in: *Journal of the Academy of Marketing Science*, 25, 2, 139–153.

World Bank (2011a), Africa's Pulse: An Analysis of Issues Shaping Africa's Economic Future, Washington D.C.: The World Bank Office of the Chief Economics for the Africa Region, online: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/04/12/000356161_20120412021520/Rendered/PDF/679950NEWS0no400Box367900B00PUBLIC0.pdf (01. March 2013).

World Bank (2011b), World Development Indicators, The World Bank, online: http://data.worldbank.org/indicator/FB.CBK.DPTR.P3 (01. May 2013).

World Bank (2012), World Development Report 2014: Managing Risk for Development. Concept Note, The World Bank, online: http://siteresources.worldbank.org/EXTNWDR2013/Resources/8258024-1352909193861/8936935-1356011448215/WDR_2014_Concept_Note.pdf (01. May 2013).

Yaari, M.E. (1965), Uncertain Lifetime, Life Insurance, and the Theory of the Consumer, in: *Review of Economic Studies*, 32, 2, 137–150.

Zeithaml, V., Bitner, M.J., and Gremler, D.D. ([5]2009), *Services Marketing. Integrating Customer Focus Across the Firm*, New York: McGraw-Hill.

Zeithaml, V. (1988), Consumer Perception of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence, in: *Journal of Marketing*, 52, 3, 2–22.

Zeldes, S. (1989), Consumption and Liquidity Constraints. An Empirical Investigation, in: *Journal of Political Economy*, 97, 2, 305–346.

Zeller, M. (2001), The Safety Net Role of Microfinance for Income and Consumption Smoothing, in: Lustig, N. (ed.), *Shielding the Poor. Social Protection in the Developing World*, Washington DC: Brookings Institution and Inter-American Development Bank, 217–238.

Zietz, E.N. (2003), An Examination of the Demand for Life Insurance, in: *Risk Management and Insurance Review*, 6, 2, 159–191.

Zimmerman, F.J. and Carter, M.R. (2003), Asset Smoothing, Consumption Smoothing and the Reproduction of Inequality Under Risk and Subsistence Constraints, in: *Journal of Development Economics*, 71, 2, 233–260.

Zusammenfassung

Im Zuge der rasanten Verbreitung von Mikrokrediten und Mikrosparprodukten werden seit ungefähr einem Jahrzehnt auch Mikroversicherungen an einkommensschwache Haushalte in Entwicklungsländern verkauft. Mikroversicherungen stellen für diese Haushalte eine Möglichkeit dar, mit den Folgen von Tod, Krankheit, Alter, wetterbedingten Ernteausfällen und anderen Risiken besser umzugehen. Staatliche Sozialversicherungssysteme sind in der Regel nur schwach ausgeprägt und überwiegend den Beschäftigten des formalen Sektors vorbehalten. Die Mehrheit der Haushalte ist jedoch in landwirtschaftlichen und kleinunternehmerischen Aktivitäten des informellen Sektors tätig. Diesen stehen häufig keine adäquaten Strategien im Umgang mit Risiken zur Verfügung, so dass ihr Konsum nur unvollständig gegen Einkommensschwankungen abgesichert ist. Risikovermeidungsstrategien und mangelnde Absicherung von Risiken werden als eine der Hauptursachen für anhaltende Armut in Entwicklungsländern betrachtet. In diesem Zusammenhang verspricht Mikroversicherung hohe Wohlfahrtsgewinne für die einkommensschwache Bevölkerung. Jedoch ist bisher nur unzureichend bekannt, unter welchen Bedingungen Haushalte und Individuen sich dafür entscheiden, Mikroversicherungen zu kaufen und welchen Wert sie in dieser Form der formalen Versicherung sehen. In dieser Arbeit werden sowohl quantitative als auch qualitative Analysemethoden – basierend auf eigenen Haushaltsumfragen und Fokusgruppendiskussionen – verwendet, um die Aufnahmebedingungen von Mikroversicherung und die Nutzung anderer Finanzdienstleistungen zur Risikoabsicherung und –Bewältigung im Fallbeispiel Ghana zu untersuchen. Bei der untersuchten Form von Mikroversicherung handelt es sich um Todesfallversicherung mit einem Sparanteil (*Universal Life*). Die Arbeit kommt zu drei Kernergebnissen.

Erstens zeigt sich, dass die realisierte Nachfrage nach Mikrolebensversicherung nicht vollständig den Vorhersagen klassischer Versicherungstheorien folgt. Über die Standarddeterminanten der Versicherungsfrage hinaus spielen Faktoren informeller Vertrauensbildung und die subjektive Risikoeinschätzung eine entscheidende Rolle. Dies begründet sich hauptsächlich in bestehenden Informationsasymmetrien und einer geringen Erfahrung mit dem Versicherungsprodukt und dem Versicherer. Ferner steht die Nutzung von Mikrolebensversicherung in einer sich verstärkenden Beziehung zu anderen formalen Finanzdienstleistungen, die in den ländlichen und semi-urbanen Untersuchungsgebieten in

Ghana angeboten werden. Gleichzeitig stellt sie kein Substitut für informelle Finanzdienstleistungen dar. Angesichts der Bandbreite verschiedener Risiken, denen die lokale Bevölkerung ausgesetzt ist, verlieren universellere Strategien, wie informelle Unterstützungsnetzwerke, gegenüber Mikroversicherung nicht ihre Bedeutung.

Zweitens wird deutlich, dass der Wert (*Client Value*), den die Zielgruppe der Mikroversicherung in dieser sieht, nicht allein auf Kosten- und Nutzenerwägungen basiert. Vielmehr spielen auch die Einschätzungen von Service Qualität, emotionalen- und sozialen Aspekten eine Rolle. Starke Diskrepanzen zwischen erwarteten und erfahrenen Kosten und Leistungen führen zu einer Abwertung der Mikroversicherung. Darüber hinaus wird der Kundenwert stark von Faktoren wie (geringen) Finanz- und Versicherungskenntnissen, der Beeinflussung durch die soziale Gruppe und dem Vergleich mit alternativen Risikomanagementstrategien beeinflusst.

Drittens bestehen genderspezifische Muster in der realisierten Nachfrage nach Mikrolebensversicherung und anderen Finanzdienstleistungen. Diese hängen mit dem Haushaltstyp und regional unterschiedliche soziokulturellen Bedingungen zusammen. Haushalte, die von alleinstehenden Frauen geführt werden, kaufen Mikrolebensversicherung mit einer geringeren Wahrscheinlichkeit, als andere Haushalte, was auf eine Genderdiskriminierung des Marktes hindeuten könnte. Im Gegensatz dazu zeigt sich jedoch, dass innerhalb von Paarhaushalten eher die Frau eine Mikrolebensversicherung kauft, als der Mann. Dies ist insbesondere der Fall in Regionen, die von einer matrilinearen Gesellschaft (die ethnische Gruppe der Akan) dominiert werden und in denen Ehemänner eine geringere Kontrolle über Haushaltsentscheidungen besitzen, als in patrilinearen Gesellschaften. Darüber hinaus zeigen Ergebnisse auf der individuellen Ebene innerhalb von Haushalten, dass die Verhandlungsstärke (*bargaining power*) von Ehefrauen die Aufnahme von Mikrolebensversicherung durch den Ehemann kaum beeinflusst. Vielmehr kaufen Ehefrauen mit wachsender Machtposition innerhalb des Haushalts mit größerer Wahrscheinlichkeit selbst eine Mikrolebensversicherung. Diese Ergebnisse weisen darauf hin, dass innerhalb von Haushalten unterschiedliche Präferenzen über die Absicherung von Tod und die Lebenshaltung im Alter besteht. In diesem Zusammenhang besteht eine zukünftige Forschungsaufgabe darin, die Möglichkeit unkooperativen Verhaltens im Hinblick auf (Mikro-) Versicherungsentscheidungen innerhalb von Haushalten empirisch zu überprüfen.

Eidesstattliche Erklärung

Ich versichere, dass ich die von mir vorgelegte Dissertation selbstständig und ohne unerlaubte Hilfe angefertigt und andere als die angegebenen Hilfsmittel nicht benutzt habe.

Lena Giesbert

Berlin, 27. Juni 2013